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July 1920.

THE
NAUTICAL ALMANAC

AND
ASTRONOMICAL EPHEMERIS

FOR THE YEAR

1922,

FOR THE MERIDIAN

OF THE

ROYAL OBSERVATORY AT GREENWICH

(WITH TWO INSET ECLIPSE MAPS.)

PUBLISHED BY ORDER OF
THE LORDS COMMISSIONERS OF THE ADMIRALTY.

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MCMXIX.

CONTENTS,

ALPHABETICALLY ARRANGED.

*** The large Roman Numerals indicate the Page of each Month ; the small, the Page of the Preface ; and the Arabic, the Page of the Book.*

Abbreviations and Symbols - - - - -	Page
Aries, Mean Time of Transit of First Point of	vii
Calendar, Principal Articles of the	III
Co-ordinates, Table for computing Geocentric	viii
Day of the Year - - - - -	587
Eclipses of the Sun - - - - -	584
Equation of Time - - - - -	461
Errata - - - - -	I and II
Explanation of the Articles, &c. - - - - -	ix
Festivals, Anniversaries, &c. - - - - -	599
Fraction of the Year - - - - -	viii
Julian Period, Days elapsed of the - - - - -	584
Jupiter, Ephemeris of, at Mean Noon - - - - -	586
----- at Transit - - - - -	162
----- for physical observations - - - - -	180
----- Satellites of - - - - -	574
Mars, Ephemeris of, at Mean Noon - - - - -	518
----- at Transit - - - - -	158
----- for physical observations - - - - -	176
----- Satellites of, - - - - -	566
Mercury, Ephemeris of, at Mean Noon - - - - -	517
----- Illuminated Disc - - - - -	146
Moon, Apogee and Perigee of the - - - - -	564
----- Ephemeris of the - - - - -	XII
----- at Transit - - - - -	III to XII
----- for physical observations - - - - -	432
----- Libration of the - - - - -	556
----- Mean Equator, Orbit, and Mean Longitude - - - - -	556
----- Mean Longitude - - - - -	555
----- Mean Longitude of the Ascending Node - - - - -	I and 555
----- Mean Longitude of Perigee - - - - -	I
----- Newcomb's corrections to Hansen's places - - - - -	I
----- Phases of the - - - - -	597
Neptune, Ephemeris of, at Mean Noon - - - - -	597
----- at Transit - - - - -	XII
----- Satellite of, Orbit and Elongations - - - - -	171
	188
	551

	Page
Nutation in Longitude and Obliquity - - - - -	198
----- in Right Ascension - - - - -	I
Obliquity of the Ecliptic - - - - -	I and 198
Observatories, Longitudes and Latitudes of - - - - -	588
Occultations of Stars by the Moon, Elements of - - - - -	475
----- visible at Greenwich - - - - -	513
Phenomena - - - - -	552
Precession in Longitude - - - - -	I and 198
Saturn, Ephemeris of, at mean Noon - - - - -	166
----- at Transit - - - - -	183
----- Rings of - - - - -	548
----- Satellites of - - - - -	543
Sidereal Time at Mean Noon - - - - -	II
Stars, Apparent Places of - - - - -	231
----- Mean Places of Occultation - - - - -	471
----- Bessel's Day Numbers for Reduction of - - - - -	213
----- Mean Places of Standard - - - - -	202
----- Moon-culminating - - - - -	432
----- Quantities for Reduction of - - - - -	223
Sun, Aberration of the - - - - -	I
----- Co-ordinates of the - - - - -	190
----- Ephemeris of the - - - - -	I to III
----- for physical observations - - - - -	554
----- Mean Longitude of the - - - - -	I
----- Parallax of the - - - - -	I
Time Equivalents, Tables of - - - - -	580
Times, Standard - - - - -	596
Uranus, Ephemeris of, at Mean Noon - - - - -	170
----- at Transit - - - - -	186
----- Satellites of, Orbits and Elongations - - - - -	549
Venus, Ephemeris of, at Mean Noon - - - - -	154
----- at Transit - - - - -	172
----- Illuminated Disc - - - - -	565

Admiralty Charts, &c. - - - - -	605

ECLIPSE MAPS.

To face page 461. Map of the Annular Eclipse of the Sun, March 27-28, 1922.

To face page 466. Map of the Total Eclipse of the Sun, September 20, 1922.

P R E F A C E.

THE contents and the arrangement of the NAUTICAL ALMANAC for the year 1922 are the same generally as those of the preceding year.

The following sections have been supplied from abroad :—

The Moon's longitude, latitude, parallax, semidiameter, right ascension, and declination from San Fernando.

Apparent Places of Polar Stars from Paris.

Apparent Places of Stars marked A. N. or A. E. at the foot of the column from San Fernando and Washington respectively.

Eclipses from Washington and Paris.

Elements of Occultations from Washington.

Jupiter's Fifth Satellite from Washington ; Jupiter's four principal Satellites from Paris ; Saturn's Satellites and Rings from Washington ; Satellites of Uranus and Neptune from Washington.

Physical Ephemerides of Sun, Moon (defective illumination excepted), Mercury, Venus, Mars, and Jupiter from Washington.

The places of the Sun are from NEWCOMB'S TABLES (*Astronomical Papers of the American Ephemeris and Nautical Almanac*, vol. vi., part 1.).

The places of the Moon are from HANSEN'S *Tables de la Lune* with NEWCOMB'S corrections.

The heliocentric places of the planets are from the Tables in the *Astronomical Papers of the American Ephemeris and Nautical Almanac*.

The mean places and proper motions and precessions of the Standard Stars have ordinarily been supplied by the office furnishing the apparent places. For the 83 stars whose apparent places have been calculated in this office, mean places and proper motions have been derived from NEWCOMB'S Catalogue of Fundamental Stars (*Astronomical Papers of the American Ephemeris and Nautical Almanac*, vol. viii., part II.). The names of the stars have in all cases been taken from this Catalogue.

The stellar magnitudes have been taken, with a few exceptions, from *Revised Harvard Photometry*. The magnitudes of the variable stars ϵ Aurigæ and α Orionis have been taken from "A Second Catalogue of Variable Stars" (*Harvard Annals*, vol. iv.). The spectral types have been taken from a manuscript list forwarded by Professor Pickering in 1916.

Since the date of the Preface of the last Almanac, no changes of staff have occurred.

The staff at present consists of :—

Chief Assistant.—Bernard Francis Bawtree.

Assistants.—John Abner Sprigge, William Fraser Doak, M.A. (Glas.), F.R.A.S., F.R.G.S., Thomas Charlton Hudson, B.A. (Cantab.), F.R.A.S.

P. H. COWELL,
Superintendent.

H M. Nautical Almanac Office,
86 Lee Road, London, S.E. 3.
July 9, 1919.

EXPLANATION OF ASTRONOMICAL SYMBOLS AND ABBREVIATIONS.

<p>☉ The Sun. ☾ The Moon. ☿ Mercury. ♀ Venus. ⊕ or ♂ The Earth.</p>	<p>♂ Mars. ♃ Jupiter. ♄ Saturn. ♅ Uranus. ♆ Neptune.</p>	<p>♌ Conjunction. ⊥ Quadrature. ♁ Opposition. ♊ Ascending Node. ♋ Descending Node.</p>
<p>^h Hours. ^m Minutes of Time. ^s Seconds of Time.</p>	<p>° Degrees. ' Minutes of Arc. " Seconds of Arc.</p>	<p>N. North. S. South. E. East. W. West.</p>

SIGNS OF THE ZODIAC.

<p>♈ Aries - - 0° I. ♉ Taurus - - 30 II. ♊ Gemini - - 60 III. ♋ Cancer - - 90</p>	<p>IV. ♌ Leo - - 120° V. ♍ Virgo - - 150 VI. ♎ Libra - - 180 VII. ♏ Scorpio - 210</p>	<p>VIII. ♐ Sagittarius 240° IX. ♑ Capricornus 270 X. ♒ Aquarius - 300 XI. ♓ Pisces - - 330</p>
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PRINCIPAL ARTICLES OF THE CALENDAR,
For the Year 1922.

Golden Number - - - - -	4		Dominical Letter - - - - -	A
Epact - - - - -	2		Julian Period (Year of) - - - -	6635

FIXED AND MOVABLE FESTIVALS, ANNIVERSARIES,
&c. &c.

Epiphany - - - - -	Jan. 6		<i>Rogation Sunday</i> - - - -	May 21
<i>Septuagesima Sunday</i> - - -	Feb. 12		<i>Ascension Day—Holy Thursday</i>	25
<i>Quinquagesima—Shrove Sunday</i> -	26		Birthday of Queen Mary - -	26
<i>Ash Wednesday</i> - - - - -	Mar. 1		Birthday of King George V. -	June 3
St. David - - - - -	1		<i>Whit Sunday</i> - - - - -	4
<i>Quadragesima—1st Sun. in Lent</i> -	5		<i>Trinity Sunday</i> - - - - -	11
St. Patrick - - - - -	17		<i>Corpus Christi</i> - - - - -	15
Annunciation—Lady Day - - -	25		Birthday of the Prince of Wales	23
<i>Palm Sunday</i> - - - - -	April 9		St. John Bapt.—Midsum. Day -	24
<i>Good Friday</i> - - - - -	14		St. Michael—Michaelmas Day	Sept. 29
<i>EASTER DAY</i> - - - - -	16		St. Andrew - - - - -	Nov. 30
<i>Low Sunday</i> - - - - -	23		Birthday of Queen Alexandra	Dec. 1
St. George - - - - -	23		<i>1st Sunday in Advent</i> - - -	3
Accession of King George V. -	May 6		St. Thomas - - - - -	21
Proclamation of King George V.	9		Christmas Day - - - - -	25

The Year 5683 of the Jewish Era begins on September 23.

The Year 1341 of the Mohammedan Era begins on August 24.

Ramadân (Month of Abstinence observed by the Turks) begins on April 28.

ERRATA.

(Continued from p. ix of the Nautical Almanac for 1921)

NAUTICAL ALMANAC FOR THE YEAR 1920.

Page 171. (Meridian Passage of Neptune on Feb. 25.) *For* 10^h 39·7^m *read* 10^h 29·7^m.

NAUTICAL ALMANAC FOR THE YEAR 1921.

Page 348. (R.A. of α Coronæ Borealis on Dec. 35·9.) *For* 21^s·186 *read* 22^s·186.

Page 494. (December 13, III. Tr. f.) *For* 7^h 56^m *read* 6^h 56^m.

NAUTICAL ALMANAC FOR THE YEAR 1922.

Page 71. (Moon's R.A. for June 23^d 16^h.) *For* 5^h 12^m 17^s·35 *read* 5^h 13^m 17^s·35.

1922.

Mean Noon.	Nutation in R.A. (in time).	The Sun's			The Moon's		
		Horizontal Parallax.	Aberration.	Mean Longitude.	Mean Longitude.	Mean Longitude Ascending Node.	Mean Longitude Perigee.
Jan. 1	+ 0.28	8.95	20.82	280.3587	315.9725	193.6423	149.5692
11	+ 0.30	8.95	20.81	290.2152	87.7365	193.1128	150.6833
21	+ 0.31	8.94	20.80	300.0716	219.5004	192.5832	151.7973
31	+ 0.31	8.93	20.77	309.9281	351.2644	192.0537	152.9114
Feb. 10	+ 0.30	8.92	20.74	319.7846	123.0284	191.5242	154.0254
20	+ 0.28	8.90	20.70	329.6410	254.7923	190.9946	155.1394
Mar. 2	+ 0.25	8.88	20.65	339.4975	26.5563	190.4651	156.2535
12	+ 0.22	8.85	20.60	349.3540	158.3203	189.9355	157.3675
22	+ 0.18	8.83	20.54	359.2105	290.0843	189.4060	158.4816
Apr. 1	+ 0.15	8.80	20.48	9.0669	61.8482	188.8765	159.5956
11	+ 0.11	8.78	20.42	18.9234	193.6122	188.3469	160.7096
21	+ 0.09	8.75	20.36	28.7799	325.3762	187.8174	161.8237
May 1	+ 0.07	8.73	20.31	38.6364	97.1401	187.2878	162.9377
11	+ 0.06	8.71	20.26	48.4928	228.9041	186.7583	164.0518
21	+ 0.06	8.69	20.22	58.3493	0.6681	186.2288	165.1658
31	+ 0.06	8.68	20.19	68.2058	132.4320	185.6992	166.2798
June 10	+ 0.07	8.67	20.16	78.0623	264.1960	185.1697	167.3939
20	+ 0.08	8.66	20.14	87.9187	35.9600	184.6401	168.5079
30	+ 0.10	8.66	20.13	97.7752	167.7240	184.1106	169.6219
July 10	+ 0.11	8.66	20.14	107.6317	299.4879	183.5811	170.7360
20	+ 0.12	8.66	20.15	117.4882	71.2519	183.0515	171.8500
30	+ 0.12	8.67	20.17	127.3446	203.0159	182.5220	172.9641
Aug. 9	+ 0.11	8.68	20.19	137.2011	334.7798	181.9924	174.0781
19	+ 0.09	8.70	20.23	147.0576	106.5438	181.4629	175.1921
29	+ 0.07	8.72	20.27	156.9140	238.3078	180.9334	176.3062
Sept. 8	+ 0.04	8.74	20.32	166.7705	10.0718	180.4038	177.4202
18	0.00	8.76	20.38	176.6270	141.8357	179.8743	178.5343
28	- 0.03	8.78	20.43	186.4835	273.5997	179.3447	179.6483
Oct. 8	- 0.07	8.81	20.49	196.3399	45.3637	178.8152	180.7623
18	- 0.10	8.83	20.55	206.1964	177.1276	178.2857	181.8764
28	- 0.12	8.86	20.61	216.0529	308.8916	177.7561	182.9904
Nov. 7	- 0.14	8.88	20.66	225.9094	80.6556	177.2266	184.1044
17	- 0.14	8.90	20.71	235.7658	212.4195	176.6970	185.2185
27	- 0.14	8.92	20.75	245.6223	344.1835	176.1675	186.3325
Dec. 7	- 0.13	8.93	20.78	255.4788	115.9475	175.6380	187.4466
17	- 0.11	8.94	20.80	265.3353	247.7115	175.1084	188.5606
27	- 0.09	8.95	20.82	275.1917	19.4754	174.5789	189.6746
37	- 0.07	8.95	20.82	285.0482	151.2394	174.0493	190.7887

Daily Motion.

Mean Obliquity, 1922.0 - - - 23° 26' 57.95"	+	+	-	+
Precession for the Year 1922 - - - 50.2614				
Precession for 1 Day - - - - 0.1376	0.98565	13.17640	0.05295	0.11140

AT APPARENT NOON.

		THE SUN'S				Sidereal Time of the Semi- diameter passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Var. in hour.
Date.	Apparent Right Ascension.	Var. in hour.	Apparent Declination.	Var. in hour.				
		h m s	°	' "	' "	m s	m s	s
Sun.	1	18 44 53.68	11.050	N.23 2 43.4	11.85	I 11.04	3 28.11	1.190
Mon.	2	18 49 18.73	11.036	22 57 45.3	12.99	I 10.99	3 56.52	1.176
Tues.	3	18 53 43.42	11.021	22 52 19.8	14.13	I 10.95	4 24.58	1.161
Wed.	4	18 58 7.73	11.004	22 46 27.0	15.26	I 10.90	4 52.25	1.144
Thur.	5	19 2 31.62	10.986	22 40 7.1	16.39	I 10.84	5 19.51	1.126
Fri.	6	19 6 55.06	10.967	22 33 20.2	17.51	I 10.78	5 46.32	1.107
Sat.	7	19 11 18.02	10.946	22 26 6.6	18.62	I 10.72	6 12.66	1.087
Sun.	8	19 15 40.48	10.925	22 18 26.6	19.72	I 10.65	6 38.49	1.065
Mon.	9	19 20 2.41	10.902	22 10 20.2	20.81	I 10.58	7 3.80	1.043
Tues.	10	19 24 23.78	10.879	22 1 47.8	21.89	I 10.50	7 28.55	1.019
Wed.	11	19 28 44.58	10.854	21 52 49.6	22.96	I 10.43	7 52.72	0.995
Thur.	12	19 33 4.78	10.829	21 43 25.9	24.02	I 10.35	8 16.30	0.970
Fri.	13	19 37 24.37	10.803	21 33 36.8	25.07	I 10.26	8 39.27	0.944
Sat.	14	19 41 43.33	10.777	21 23 22.7	26.10	I 10.18	9 1.61	0.918
Sun.	15	19 46 1.65	10.750	21 12 43.9	27.13	I 10.09	9 23.31	0.891
Mon.	16	19 50 19.31	10.722	21 1 40.7	28.14	I 9.99	9 44.36	0.863
Tues.	17	19 54 36.29	10.693	20 50 13.3	29.14	I 9.90	10 4.73	0.835
Wed.	18	19 58 52.59	10.665	20 38 22.1	30.13	I 9.80	10 24.42	0.806
Thur.	19	20 3 8.19	10.635	20 26 7.3	31.10	I 9.70	10 43.41	0.777
Fri.	20	20 7 23.08	10.605	20 13 29.4	32.06	I 9.60	11 1.70	0.747
Sat.	21	20 11 37.25	10.575	20 0 28.6	33.00	I 9.49	11 19.26	0.716
Sun.	22	20 15 50.67	10.544	19 47 5.4	33.93	I 9.39	11 36.08	0.685
Mon.	23	20 20 3.34	10.512	19 33 20.1	34.84	I 9.28	11 52.15	0.654
Tues.	24	20 24 15.24	10.480	19 19 13.0	35.74	I 9.17	12 7.45	0.621
Wed.	25	20 28 26.36	10.447	19 4 44.5	36.62	I 9.06	12 21.97	0.589
Thur.	26	20 32 36.69	10.414	18 49 55.1	37.49	I 8.95	12 35.71	0.556
Fri.	27	20 36 46.23	10.380	18 34 45.1	38.34	I 8.84	12 48.66	0.522
Sat.	28	20 40 54.95	10.346	18 19 14.9	39.17	I 8.73	13 0.79	0.488
Sun.	29	20 45 2.85	10.312	18 3 25.0	39.99	I 8.61	13 12.11	0.454
Mon.	30	20 49 9.93	10.278	17 47 15.6	40.79	I 8.50	13 22.60	0.420
Tues.	31	20 53 16.18	10.243	17 30 47.2	41.57	I 8.38	13 32.27	0.386
Wed.	32	20 57 21.60	10.208	S.17 14 0.3	42.33	I 8.27	13 41.11	0.351

* Mean time of the Semidiameter passing may be found by subtracting 0.19 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*		
<i>Sun.</i>	1	h m s 18 44 53.04	S. 23 2 44.1	16 17.49	m s 3 28.04	h m s 18 41 25.00
<i>Mon.</i>	2	18 49 18.00	22 57 46.2	16 17.50	3 56.45	18 45 21.56
<i>Tues.</i>	3	18 53 42.61	22 52 20.8	16 17.50	4 24.50	18 49 18.12
<i>Wed.</i>	4	18 58 6.83	22 46 28.2	16 17.50	4 52.16	18 53 14.67
<i>Thur.</i>	5	19 2 30.64	22 40 8.5	16 17.50	5 19.41	18 57 11.23
<i>Fri.</i>	6	19 6 54.00	22 33 21.9	16 17.49	5 46.22	19 1 7.78
<i>Sat.</i>	7	19 11 16.89	22 26 8.6	16 17.47	6 12.55	19 5 4.34
<i>Sun.</i>	8	19 15 39.27	22 18 28.7	16 17.45	6 38.37	19 9 0.90
<i>Mon.</i>	9	19 20 1.13	22 10 22.7	16 17.42	7 3.67	19 12 57.46
<i>Tues.</i>	10	19 24 22.43	22 1 50.5	16 17.39	7 28.42	19 16 54.01
<i>Wed.</i>	11	19 28 43.16	21 52 52.6	16 17.35	7 52.59	19 20 50.57
<i>Thur.</i>	12	19 33 3.29	21 43 29.1	16 17.31	8 16.17	19 24 47.12
<i>Fri.</i>	13	19 37 22.82	21 33 40.4	16 17.25	8 39.14	19 28 43.68
<i>Sat.</i>	14	19 41 41.71	21 23 26.7	16 17.20	9 1.48	19 32 40.24
<i>Sun.</i>	15	19 45 59.97	21 12 48.2	16 17.13	9 23.17	19 36 36.80
<i>Mon.</i>	16	19 50 17.57	21 1 45.3	16 17.06	9 44.21	19 40 33.35
<i>Tues.</i>	17	19 54 34.50	20 50 18.2	16 16.98	10 4.59	19 44 29.91
<i>Wed.</i>	18	19 58 50.75	20 38 27.3	16 16.90	10 24.28	19 48 26.46
<i>Thur.</i>	19	20 3 6.30	20 26.12.9	16 16.81	10 43.28	19 52 23.02
<i>Fri.</i>	20	20 7 21.13	20 13 35.3	16 16.72	11 1.56	19 56 19.58
<i>Sat.</i>	21	20 11 35.25	20 0 34.8	16 16.62	11 19.12	20 0 16.13
<i>Sun.</i>	22	20 15 48.63	19 47 11.9	16 16.52	11 35.94	20 4 12.69
<i>Mon.</i>	23	20 20 1.26	19 33 26.9	16 16.41	11 52.02	20 8 9.24
<i>Tues.</i>	24	20 24 13.12	19 19 20.2	16 16.30	12 7.32	20 12 5.80
<i>Wed.</i>	25	20 28 24.21	19 4 52.1	16 16.19	12 21.85	20 16 2.36
<i>Thur.</i>	26	20 32 34.51	18 50 3.0	16 16.07	12 35.60	20 19 58.91
<i>Fri.</i>	27	20 36 44.01	18 34 53.3	16 15.95	12 48.54	20 23 55.47
<i>Sat.</i>	28	20 40 52.70	18 19 23.4	16 15.83	13 0.68	20 27 52.02
<i>Sun.</i>	29	20 45 0.58	18 3 33.7	16 15.70	13 12.01	20 31 48.58
<i>Mon.</i>	30	20 49 7.64	17 47 24.7	16 15.57	13 22.51	20 35 45.13
<i>Tues.</i>	31	20 53 13.87	17 30 56.6	16 15.43	13 32.19	20 39 41.69
<i>Wed.</i>	32	20 57 19.27	S. 17 14 9.9	16 15.30	13 41.03	20 43 38.24

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude			Semidiameter.		Horizontal Parallax.	
					Noon.	Midnight.	Noon.	Midnight.
				h m s				
1	280° 18' 54.9	N. 0.62	9.9926913	5 17 42.81	14 47.90	14 46.60	54 13.05	54 8.27
2	281 20 5.4	0.54	.9926880	5 13 46.90	14 45.80	14 45.55	54 5.35	54 4.45
3	282 21 15.7	0.44	.9926867	5 9 50.98	14 45.90	14 46.89	54 5.73	54 9.33
4	283 22 25.7	0.33	9.9926873	5 5 55.07	14 48.53	14 50.85	54 15.33	54 23.85
5	284 23 35.4	0.22	.9926899	5 1 59.16	14 53.86	14 57.59	54 34.89	54 48.52
6	285 24 44.7	N. 0.09	.9926947	4 58 3.25	15 1.99	15 7.06	55 4.65	55 23.23
7	286 25 53.6	S. 0.03	9.9927017	4 54 7.34	15 12.76	15 19.03	55 44.12	56 7.11
8	287 27 2.0	0.16	.9927111	4 50 11.43	15 25.82	15 33.00	56 31.96	56 58.29
9	288 28 10.0	0.26	.9927230	4 46 15.52	15 40.50	15 48.15	57 25.74	57 53.79
10	289 29 17.4	0.34	9.9927375	4 42 19.61	15 55.81	16 3.33	58 21.88	58 49.43
11	290 30 24.3	0.39	.9927547	4 38 23.70	16 10.52	16 17.19	59 15.76	59 40.20
12	291 31 30.8	0.42	.9927747	4 34 27.79	16 23.16	16 28.28	60 2.08	60 20.84
13	292 32 36.8	0.43	9.9927976	4 30 31.88	16 32.39	16 35.39	60 35.90	60 46.88
14	293 33 42.3	0.39	.9928234	4 26 35.97	16 37.20	16 37.78	60 53.50	60 55.65
15	294 34 47.5	0.31	.9928521	4 22 40.06	16 37.16	16 35.39	60 53.38	60 46.90
16	295 35 52.4	0.21	9.9928835	4 18 44.15	16 32.58	16 28.83	60 36.58	60 22.85
17	296 36 56.9	S. 0.10	.9929177	4 14 48.24	16 24.29	16 19.13	60 6.24	59 47.33
18	297 38 1.1	N. 0.02	.9929545	4 10 52.32	16 13.51	16 7.55	59 26.69	59 4.87
19	298 39 5.1	0.15	9.9929937	4 6 56.41	16 1.41	15 55.21	58 42.38	58 19.66
20	299 40 8.7	0.29	.9930351	4 3 0.50	15 49.07	15 43.05	57 57.15	57 35.09
21	300 41 12.0	0.40	.9930786	3 59 4.59	15 37.23	15 31.67	57 13.79	56 53.39
22	301 42 14.8	0.50	9.9931241	3 55 8.68	15 26.39	15 21.41	56 34.05	56 15.82
23	302 43 17.2	0.58	.9931715	3 51 12.77	15 16.75	15 12.42	55 58.74	55 42.86
24	303 44 19.0	0.63	.9932205	3 47 16.86	15 8.40	15 4.68	55 28.13	55 14.52
25	304 45 20.2	0.66	9.9932712	3 43 20.96	15 1.27	14 58.16	55 2.03	54 50.61
26	305 46 20.6	0.66	.9933234	3 39 25.05	14 55.33	14 52.79	54 40.26	54 30.95
27	306 47 20.3	0.62	.9933771	3 35 29.14	14 50.54	14 48.57	54 22.70	54 15.51
28	307 48 19.0	0.57	9.9934323	3 31 33.23	14 46.92	14 45.59	54 9.46	54 4.57
29	308 49 16.8	0.49	.9934890	3 27 37.32	14 44.60	14 43.98	54 0.94	53 58.67
30	309 50 13.6	0.39	.9935471	3 23 41.41	14 43.75	14 43.95	53 57.82	53 58.56
31	310 51 9.2	0.28	.9936068	3 19 45.50	14 44.61	14 45.78	54 1.00	54 5.26
32	311 52 3.6	N. 0.16	9.9936679	3 15 49.59	14 47.47	14 49.72	54 11.45	54 19.71

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.		Noon.	Upper.	Lower.
1	316° 46' 31.2"	322° 43' 29.7"	N. 4° 11' 24.5"	N. 3° 52' 57.1"	d 3.26	h m 2 35.0	h m 14 57.0
2	328 38 56.8	334 33 17.6	3 32 1.2	3 8 50.4	4.26	3 18.6	15 40.1
3	340 27 1.4	346 20 40.1	2 43 38.5	2 16 40.0	5.26	4 1.3	16 22.4
4	352 14 48.6	358 10 4.5	1 48 9.4	1 18 21.9	6.26	4 43.5	17 4.7
5	4 7 7.4	10 6 38.5	N. 0 47 33.1	N. 0 15 59.2	7.26	5 26.1	17 47.8
6	16 9 19.8	22 15 53.7	S. 0 16 2.5	S. 0 48 13.5	8.26	6 9.9	18 32.5
7	28 27 1.7	34 43 23.7	1 20 14.1	1 51 42.7	9.26	6 55.6	19 19.5
8	41 5 36.5	47 34 12.8	2 22 16.1	2 51 29.1	10.26	7 44.1	20 9.5
9	54 9 39.8	60 52 16.7	3 18 54.7	3 44 4.5	11.26	8 35.9	21 3.0
10	67 42 14.1	74 39 31.7	4 6 28.8	4 25 37.9	12.26	9 31.0	21 59.7
11	81 43 57.7	88 55 7.2	4 41 2.7	4 52 16.2	13.26	10 29.1	22 58.8
12	96 12 22.9	103 34 54.9	4 58 55.2	5 0 41.4	14.26	11 28.9	23 59.0
13	111 1 42.4	118 31 36.4	4 57 23.3	4 48 57.0	15.26	12 29.0	* *
14	126 3 22.2	133 35 43.1	4 35 27.2	4 17 7.3	16.26	13 28.0	0 58.7
15	141 7 23.6	148 37 13.5	3 54 19.0	3 27 31.1	17.26	14 25.1	1 56.8
16	156 4 10.2	163 27 20.7	2 57 18.0	2 24 18.3	18.26	15 20.0	2 52.8
17	170 46 3.1	177 59 47.0	1 49 12.6	S. 1 12 42.3	19.26	16 13.2	3 46.8
18	185 8 12.9	192 11 11.5	S. 0 35 27.7	N. 0 1 53.2	20.26	17 5.0	4 39.2
19	199 8 41.9	206 0 50.6	N. 0 38 44.5	1 14 34.2	21.26	17 56.1	5 30.6
20	212 47 49.5	219 29 54.3	1 48 53.4	2 21 16.7	22.26	18 47.0	6 21.6
21	226 7 23.5	232 40 36.1	2 51 22.1	3 18 50.8	23.26	19 38.0	7 12.5
22	239 9 52.2	245 35 30.6	3 43 27.1	4 4 57.7	24.26	20 28.9	8 3.5
23	251 57 49.2	258 17 3.8	4 23 12.3	4 38 3.0	25.26	21 19.6	8 54.3
24	264 33 28.8	270 47 16.5	4 49 24.1	4 57 12.3	26.26	22 9.6	9 44.7
25	276 58 37.2	283 7 39.6	5 1 26.6	5 2 8.0	27.26	22 58.4	10 34.2
26	289 14 31.7	295 19 20.3	4 59 19.8	4 53 7.3	28.26	23 45.7	11 22.3
27	301 22 12.1	307 23 14.1	4 43 37.3	4 30 59.0	29.26	* *	12 8.8
28	313 22 33.9	319 20 20.7	4 15 22.8	3 57 0.4	0.51	0 31.5	12 53.8
29	325 16 45.4	331 12 0.7	3 36 5.3	3 12 51.2	1.51	1 15.7	13 37.4
30	337 6 22.0	343 0 7.5	2 47 33.4	2 20 27.4	2.51	1 58.8	14 20.0
31	348 53 37.8	354 47 16.8	1 51 49.3	1 21 55.7	3.51	2 41.1	15 2.2
32	0 41 31.2	6 36 50.6	N. 0 51 3.7	N. 0 19 30.5	4.51	3 23.4	15 44.6

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
SUNDAY 1.					TUESDAY 3.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	21 11 45.82	19.637	S. 11 48 51.9	74.46	0	22 43 40.83	18.800	S. 5 7 32.3	90.63
1	21 13 43.55	19.612	11 41 23.8	74.92	1	22 45 33.61	18.792	4 58 27.9	90.83
2	21 15 41.15	19.587	11 33 52.8	75.39	2	22 47 26.34	18.784	4 49 22.3	91.03
3	21 17 38.59	19.562	11 26 19.1	75.84	3	22 49 19.02	18.778	4 40 15.5	91.23
4	21 19 35.89	19.538	11 18 42.7	76.30	4	22 51 11.67	18.772	4 31 7.5	91.42
5	21 21 33.05	19.514	11 11 3.5	76.75	5	22 53 4.28	18.765	4 21 58.5	91.59
6	21 23 30.06	19.490	11 3 21.7	77.18	6	22 54 56.85	18.759	4 12 48.4	91.78
7	21 25 26.93	19.467	10 55 37.3	77.63	7	22 56 49.39	18.755	4 3 37.2	91.96
8	21 27 23.66	19.443	10 47 50.2	78.06	8	22 58 41.91	18.750	3 54 24.9	92.13
9	21 29 20.25	19.420	10 40 0.6	78.48	9	23 0 34.39	18.745	3 45 11.7	92.28
10	21 31 16.70	19.398	10 32 8.5	78.89	10	23 2 26.85	18.742	3 35 57.5	92.45
11	21 33 13.02	19.376	10 24 13.9	79.31	11	23 4 19.29	18.739	3 26 42.3	92.61
12	21 35 9.21	19.354	10 16 16.8	79.72	12	23 6 11.72	18.736	3 17 26.2	92.75
13	21 37 5.27	19.332	10 8 17.3	80.11	13	23 8 4.12	18.733	3 8 9.3	92.89
14	21 39 1.19	19.310	10 0 15.5	80.50	14	23 9 56.52	18.732	2 58 51.5	93.03
15	21 40 56.99	19.290	9 52 11.3	80.90	15	23 11 48.90	18.730	2 49 33.0	93.16
16	21 42 52.67	19.269	9 44 4.7	81.28	16	23 13 41.28	18.729	2 40 13.6	93.29
17	21 44 48.22	19.248	9 35 55.9	81.66	17	23 15 33.65	18.728	2 30 53.5	93.41
18	21 46 43.65	19.228	9 27 44.8	82.03	18	23 17 26.02	18.729	2 21 32.7	93.53
19	21 48 38.96	19.208	9 19 31.6	82.39	19	23 19 18.40	18.729	2 12 11.2	93.64
20	21 50 34.15	19.188	9 11 16.1	82.76	20	23 21 10.77	18.730	2 2 49.0	93.74
21	21 52 29.22	19.169	9 2 58.5	83.11	21	23 23 3.16	18.733	1 53 26.3	93.84
22	21 54 24.18	19.151	8 54 38.8	83.46	22	23 24 55.56	18.734	1 44 2.9	93.95
23	21 56 19.03	19.133	S. 8 46 17.0	83.81	23	23 26 47.97	18.737	S. 1 34 38.9	94.04
MONDAY 2.					WEDNESDAY 4.				
0	21 58 13.78	19.116	S. 8 37 53.1	84.14	0	23 28 40.40	18.739	S. 1 25 14.4	94.13
1	22 0 8.42	19.098	8 29 27.3	84.48	1	23 30 32.84	18.743	1 15 49.4	94.20
2	22 2 2.95	19.080	8 20 59.4	84.80	2	23 32 25.31	18.748	1 6 24.0	94.28
3	22 3 57.38	19.063	8 12 29.7	85.12	3	23 34 17.81	18.752	0 56 58.1	94.36
4	22 5 51.71	19.047	8 3 58.0	85.44	4	23 36 10.33	18.757	0 47 31.7	94.43
5	22 7 45.94	19.030	7 55 24.4	85.75	5	23 38 2.89	18.763	0 38 5.0	94.48
6	22 9 40.07	19.014	7 46 49.0	86.06	6	23 39 55.48	18.768	0 28 38.0	94.53
7	22 11 34.11	18.999	7 38 11.7	86.36	7	23 41 48.10	18.774	0 19 10.6	94.59
8	22 13 28.06	18.984	7 29 32.7	86.65	8	23 43 40.77	18.782	0 9 42.9	94.64
9	22 15 21.92	18.969	7 20 51.9	86.93	9	23 45 33.49	18.790	0 0 14.9	94.68
10	22 17 15.69	18.955	7 12 9.5	87.22	10	23 47 26.25	18.798	S. 0 9 13.2	94.71
11	22 19 9.38	18.942	7 3 25.3	87.50	11	23 49 19.06	18.806	N. 0 18 41.6	94.74
12	22 21 2.99	18.928	6 54 39.5	87.78	12	23 51 11.92	18.815	0 28 10.1	94.77
13	22 22 56.52	18.915	6 45 52.0	88.04	13	23 53 4.84	18.825	0 37 38.8	94.78
14	22 24 49.97	18.903	6 37 3.0	88.30	14	23 54 57.82	18.835	0 47 7.5	94.80
15	22 26 43.35	18.891	6 28 12.4	88.56	15	23 56 50.86	18.845	0 56 36.4	94.82
16	22 28 36.66	18.878	6 19 20.3	88.81	16	23 58 43.96	18.857	1 6 5.3	94.82
17	22 30 29.89	18.867	6 10 26.7	89.07	17	0 0 37.14	18.868	1 15 34.2	94.81
18	22 32 23.06	18.857	6 1 31.6	89.30	18	0 2 30.38	18.880	1 25 3.0	94.80
19	22 34 16.17	18.846	5 52 35.1	89.53	19	0 4 23.70	18.893	1 34 31.8	94.80
20	22 36 9.21	18.836	5 43 37.2	89.77	20	0 6 17.10	18.907	1 44 0.6	94.78
21	22 38 2.20	18.827	5 34 38.0	89.98	21	0 8 10.58	18.921	1 53 29.2	94.75
22	22 39 55.13	18.818	5 25 37.4	90.21	22	0 10 4.15	18.935	2 2 57.6	94.73
23	22 41 48.01	18.808	5 16 35.5	90.43	23	0 11 57.80	18.949	2 12 25.9	94.70
24	22 43 40.83	18.800	S. 5 7 32.3	90.63	24	0 13 51.54	18.965	N. 2 21 54.0	94.66

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in tom.	Declination.	Var. in tom.	Hour.	Right Ascension.	Var. in tom.	Declination.	Var. in tom.
THURSDAY 5.					SATURDAY 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	0 13 51.54	18.965	N. 2 21 54.0	94.66	0	1 47 39.64	20.318	N. 9 40 37.6	85.69
1	0 15 45.38	18.981	2 31 21.8	94.61	1	1 49 41.67	20.358	9 49 10.7	85.33
2	0 17 39.31	18.997	2 40 49.3	94.56	2	1 51 43.94	20.399	9 57 41.6	84.98
3	0 19 33.34	19.014	2 50 16.5	94.51	3	1 53 46.46	20.441	10 6 10.4	84.61
4	0 21 27.48	19.032	2 59 43.4	94.44	4	1 55 49.23	20.483	10 14 36.9	84.23
5	0 23 21.72	19.050	3 9 9.8	94.38	5	1 57 52.25	20.524	10 23 1.2	83.85
6	0 25 16.08	19.068	3 18 35.9	94.31	6	1 59 55.52	20.567	10 31 23.1	83.45
7	0 27 10.54	19.087	3 28 1.5	94.23	7	2 1 59.05	20.611	10 39 42.6	83.05
8	0 29 5.12	19.108	3 37 26.6	94.14	8	2 4 2.85	20.654	10 47 59.7	82.65
9	0 30 59.83	19.128	3 46 51.2	94.06	9	2 6 6.90	20.698	10 56 14.4	82.23
10	0 32 54.65	19.148	3 56 15.3	93.97	10	2 8 11.22	20.743	11 4 26.5	81.80
11	0 34 49.60	19.168	4 5 38.8	93.86	11	2 10 15.81	20.788	11 12 36.0	81.37
12	0 36 44.67	19.190	4 15 1.6	93.75	12	2 12 20.67	20.833	11 20 42.9	80.93
13	0 38 39.88	19.213	4 24 23.8	93.65	13	2 14 25.80	20.878	11 28 47.1	80.48
14	0 40 35.23	19.236	4 33 45.4	93.53	14	2 16 31.20	20.924	11 36 48.6	80.02
15	0 42 30.71	19.258	4 43 6.2	93.40	15	2 18 36.89	20.971	11 44 47.3	79.54
16	0 44 26.33	19.283	4 52 26.2	93.27	16	2 20 42.85	21.018	11 52 43.1	79.07
17	0 46 22.10	19.308	5 1 45.4	93.13	17	2 22 49.10	21.065	12 0 36.1	78.59
18	0 48 18.02	19.333	5 11 3.8	92.99	18	2 24 55.63	21.112	12 8 26.2	78.09
19	0 50 14.09	19.358	5 20 21.3	92.84	19	2 27 2.44	21.159	12 16 13.2	77.59
20	0 52 10.31	19.383	5 29 37.9	92.69	20	2 29 9.54	21.208	12 23 57.3	77.08
21	0 54 6.68	19.409	5 38 53.6	92.53	21	2 31 16.94	21.257	12 31 38.2	76.56
22	0 56 3.22	19.437	5 48 8.3	92.37	22	2 33 24.62	21.305	12 39 16.0	76.03
23	0 57 59.92	19.464	N. 5 57 22.0	92.19	23	2 35 32.60	21.355	N. 12 46 50.5	75.49
FRIDAY 6.					SUNDAY 8.				
0	0 59 56.79	19.492	N. 6 6 34.6	92.01	0	2 37 40.88	21.404	N. 12 54 21.9	74.95
1	1 1 53.82	19.520	6 15 46.1	91.83	1	2 39 49.45	21.454	13 1 49.9	74.38
2	1 3 51.03	19.550	6 24 56.5	91.64	2	2 41 58.33	21.504	13 9 14.5	73.82
3	1 5 48.42	19.580	6 34 5.8	91.44	3	2 44 7.50	21.554	13 16 35.7	73.25
4	1 7 45.99	19.610	6 43 13.8	91.23	4	2 46 16.98	21.605	13 23 53.5	72.67
5	1 9 43.74	19.640	6 52 20.5	91.02	5	2 48 26.76	21.656	13 31 7.7	72.07
6	1 11 41.67	19.671	7 1 26.0	90.81	6	2 50 36.85	21.708	13 38 18.3	71.47
7	1 13 39.79	19.703	7 10 30.2	90.58	7	2 52 47.25	21.759	13 45 25.3	70.86
8	1 15 38.10	19.735	7 19 33.0	90.34	8	2 54 57.96	21.811	13 52 28.6	70.23
9	1 17 36.61	19.768	7 28 34.3	90.10	9	2 57 8.98	21.863	13 59 28.1	69.60
10	1 19 35.32	19.802	7 37 34.2	89.87	10	2 59 20.31	21.914	14 6 23.8	68.97
11	1 21 34.23	19.835	7 46 32.7	89.62	11	3 1 31.95	21.967	14 13 15.7	68.32
12	1 23 33.34	19.869	7 55 29.6	89.35	12	3 3 43.91	22.020	14 20 3.6	67.65
13	1 25 32.66	19.904	8 4 24.9	89.08	13	3 5 56.19	22.073	14 26 47.5	66.98
14	1 27 32.19	19.939	8 13 18.6	88.82	14	3 8 8.78	22.126	14 33 27.3	66.30
15	1 29 31.93	19.974	8 22 10.7	88.54	15	3 10 21.70	22.179	14 40 3.1	65.62
16	1 31 31.88	20.011	8 31 1.1	88.25	16	3 12 34.93	22.232	14 46 34.7	64.91
17	1 33 32.06	20.048	8 39 49.7	87.95	17	3 14 48.48	22.285	14 53 2.0	64.20
18	1 35 32.45	20.084	8 48 36.5	87.65	18	3 17 2.35	22.338	14 59 25.1	63.49
19	1 37 33.07	20.122	8 57 21.5	87.35	19	3 19 16.54	22.393	15 5 43.9	62.76
20	1 39 33.92	20.161	9 6 4.7	87.03	20	3 21 31.06	22.446	15 11 58.2	62.02
21	1 41 35.00	20.199	9 14 45.9	86.70	21	3 23 45.89	22.499	15 18 8.1	61.27
22	1 43 36.31	20.238	9 23 25.1	86.38	22	3 26 1.05	22.554	15 24 13.4	60.51
23	1 45 37.86	20.278	9 32 2.4	86.04	23	3 28 16.54	22.608	15 30 14.2	59.74
24	1 47 39.64	20.318	N. 9 40 37.6	85.69	24	3 30 32.34	22.661	N. 15 36 10.3	58.96

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
MONDAY 9.					WEDNESDAY 11.				
	h m s	s	° ′ ″	″		h m s	s	° ′ ″	″
0	3 30 32.34	22.661	N.15 36 10.3	58.96	0	5 25 13.78	24.987	N.18 30 48.7	10.31
1	3 32 48.47	22.716	15 42 1.7	58.18	1	5 27 43.81	25.023	18 31 46.9	9.08
2	3 35 4.93	22.770	15 47 48.4	57.38	2	5 30 14.05	25.058	18 32 37.7	7.86
3	3 37 21.71	22.823	15 53 30.2	56.56	3	5 32 44.50	25.093	18 33 21.2	6.64
4	3 39 38.81	22.877	15 59 7.1	55.74	4	5 35 15.16	25.127	18 33 57.4	5.41
5	3 41 56.23	22.931	16 4 39.1	54.92	5	5 37 46.02	25.159	18 34 26.1	4.16
6	3 44 13.98	22.985	16 10 6.1	54.08	6	5 40 17.07	25.192	18 34 47.3	2.92
7	3 46 32.05	23.039	16 15 28.1	53.23	7	5 42 48.32	25.223	18 35 1.1	1.68
8	3 48 50.45	23.093	16 20 44.9	52.37	8	5 45 19.75	25.253	18 35 7.4	0.42
9	3 51 9.17	23.147	16 25 56.5	51.50	9	5 47 51.36	25.283	18 35 6.1	0.84
10	3 53 28.21	23.200	16 31 2.9	50.62	10	5 50 23.14	25.311	18 34 57.3	2.11
11	3 55 47.57	23.253	16 36 3.9	49.73	11	5 52 55.09	25.339	18 34 40.8	3.37
12	3 58 7.25	23.307	16 40 59.6	48.83	12	5 55 27.21	25.367	18 34 16.8	4.63
13	4 0 27.25	23.359	16 45 49.9	47.92	13	5 57 59.49	25.393	18 33 45.2	5.92
14	4 2 47.56	23.413	16 50 34.7	47.00	14	6 0 31.92	25.418	18 33 5.8	7.20
15	4 5 8.20	23.466	16 55 13.9	46.07	15	6 3 4.50	25.443	18 32 18.8	8.47
16	4 7 29.15	23.518	16 59 47.6	45.13	16	6 5 37.23	25.466	18 31 24.2	9.75
17	4 9 50.41	23.570	17 4 15.5	44.18	17	6 8 10.09	25.488	18 30 21.8	11.04
18	4 12 11.99	23.623	17 8 37.8	43.23	18	6 10 43.08	25.509	18 29 11.7	12.33
19	4 14 33.88	23.674	17 12 54.2	42.25	19	6 13 16.20	25.530	18 27 53.8	13.63
20	4 16 56.08	23.726	17 17 4.8	41.28	20	6 15 49.44	25.549	18 26 28.2	14.91
21	4 19 18.59	23.778	17 21 9.6	40.29	21	6 18 22.79	25.568	18 24 54.9	16.20
22	4 21 41.41	23.828	17 25 8.3	39.29	22	6 20 56.25	25.586	18 23 13.8	17.50
23	4 24 4.53	23.878	N.17 29 1.1	38.29	23	6 23 29.82	25.603	N.18 21 24.9	18.80
TUESDAY 10.					THURSDAY 12.				
0	4 26 27.95	23.928	N.17 32 47.8	37.27	0	6 26 3.48	25.618	N.18 19 28.2	20.10
1	4 28 51.67	23.978	17 36 28.3	36.24	1	6 28 37.23	25.633	18 17 23.7	21.39
2	4 31 15.69	24.028	17 40 2.7	35.21	2	6 31 11.07	25.647	18 15 11.5	22.68
3	4 33 40.01	24.078	17 43 30.8	34.16	3	6 33 44.99	25.660	18 12 51.5	23.98
4	4 36 4.62	24.126	17 46 52.6	33.11	4	6 36 18.99	25.672	18 10 23.7	25.28
5	4 38 29.52	24.174	17 50 8.1	32.05	5	6 38 53.05	25.683	18 7 48.1	26.58
6	4 40 54.71	24.222	17 53 17.2	30.98	6	6 41 27.18	25.693	18 5 4.7	27.88
7	4 43 20.18	24.269	17 56 19.8	29.89	7	6 44 1.36	25.701	18 2 13.5	29.18
8	4 45 45.94	24.317	17 59 15.9	28.81	8	6 46 35.59	25.709	17 59 14.6	30.46
9	4 48 11.98	24.363	18 2 5.5	27.71	9	6 49 9.87	25.717	17 56 8.0	31.75
10	4 50 38.29	24.408	18 4 48.4	26.60	10	6 51 44.19	25.723	17 52 53.6	33.04
11	4 53 4.88	24.454	18 7 24.7	25.49	11	6 54 18.54	25.728	17 49 31.5	34.33
12	4 55 31.74	24.498	18 9 54.3	24.37	12	6 56 52.92	25.732	17 46 1.6	35.62
13	4 57 58.86	24.543	18 12 17.1	23.23	13	6 59 27.32	25.734	17 42 24.1	36.90
14	5 0 26.25	24.587	18 14 33.1	22.10	14	7 2 1.73	25.737	17 38 38.8	38.18
15	5 2 53.90	24.629	18 16 42.3	20.95	15	7 4 36.16	25.738	17 34 45.9	39.45
16	5 5 21.80	24.672	18 18 44.5	19.79	16	7 7 10.59	25.738	17 30 45.4	40.73
17	5 7 49.96	24.713	18 20 39.8	18.63	17	7 9 45.02	25.738	17 26 37.2	41.99
18	5 10 18.36	24.754	18 22 28.1	17.47	18	7 12 19.44	25.736	17 22 21.5	43.25
19	5 12 47.01	24.795	18 24 9.4	16.29	19	7 14 53.85	25.733	17 17 58.2	44.52
20	5 15 15.90	24.835	18 25 43.6	15.10	20	7 17 28.24	25.730	17 13 27.3	45.77
21	5 17 45.03	24.873	18 27 10.6	13.91	21	7 20 2.61	25.726	17 8 49.0	47.02
22	5 20 14.38	24.912	18 28 30.5	12.72	22	7 22 36.95	25.721	17 4 3.1	48.26
23	5 22 43.97	24.950	18 29 43.2	11.52	23	7 25 11.26	25.714	16 59 9.9	49.49
24	5 25 13.78	24.987	N.18 30 48.7	10.31	24	7 27 45.52	25.707	N.16 54 9.2	50.73

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in ro ^m .	Declination.	Var. in ro ^m .	Hour.	Right Ascension.	Var. in ro ^m .	Declination.	Var. in ro ^m .					
FRIDAY 13.					SUNDAY 15.									
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"					
0	7 27 45	52	25 707	N. 16 54 9	2	50 73		0	9 28 57	70	24 588	N. 10 45 31	9	98 53
1	7 30 19	74	25 699	16 49 1	1	51 96		1	9 31 25	13	24 554	10 35 38	6	99 22
2	7 32 53	91	25 691	16 43 45	7	53 18		2	9 33 52	35	24 521	10 25 41	3	99 88
3	7 35 28	03	25 682	16 38 22	9	54 39		3	9 36 19	38	24 488	10 15 40	0	100 55
4	7 38 2	09	25 670	16 32 53	0	55 59		4	9 38 46	20	24 454	10 5 34	7	101 20
5	7 40 36	07	25 658	16 27 15	8	56 80		5	9 41 12	83	24 421	9 55 25	6	101 83
6	7 43 9	99	25 647	16 21 31	4	57 98		6	9 43 39	25	24 387	9 45 12	8	102 43
7	7 45 43	84	25 634	16 15 40	0	59 17		7	9 46 5	47	24 353	9 34 56	4	103 04
8	7 48 17	60	25 620	16 9 41	4	60 35		8	9 48 31	49	24 319	9 24 36	3	103 63
9	7 50 51	28	25 606	16 3 35	8	61 52		9	9 50 57	30	24 285	9 14 12	8	104 20
10	7 53 24	87	25 590	15 57 23	2	62 68		10	9 53 22	91	24 252	9 3 45	9	104 76
11	7 55 58	36	25 574	15 51 3	7	63 82		11	9 55 48	32	24 218	8 53 15	7	105 30
12	7 58 31	76	25 557	15 44 37	4	64 96		12	9 58 13	53	24 184	8 42 42	3	105 83
13	8 1 5	05	25 539	15 38 4	2	66 10		13	10 0 38	53	24 151	8 32 5	7	106 35
14	8 3 38	23	25 521	15 31 24	2	67 22		14	10 3 3	34	24 118	8 21 26	1	106 84
15	8 6 11	30	25 503	15 24 37	5	68 33		15	10 5 27	94	24 083	8 10 43	6	107 33
16	8 8 44	26	25 483	15 17 44	2	69 43		16	10 7 52	34	24 050	7 59 58	2	107 80
17	8 11 17	10	25 463	15 10 44	3	70 53		17	10 10 16	54	24 016	7 49 10	0	108 26
18	8 13 49	81	25 442	15 3 37	8	71 62		18	10 12 40	53	23 983	7 38 19	1	108 70
19	8 16 22	40	25 420	14 56 24	9	72 68		19	10 15 4	33	23 950	7 27 25	6	109 12
20	8 18 54	85	25 397	14 49 5	6	73 75		20	10 17 27	93	23 917	7 16 29	7	109 53
21	8 21 27	16	25 374	14 41 39	9	74 80		21	10 19 51	33	23 883	7 5 31	3	109 93
22	8 23 59	34	25 352	14 34 8	0	75 84		22	10 22 14	53	23 850	6 54 30	5	110 32
23	8 26 31	38	25 328	N. 14 26 29	8	76 87		23	10 24 37	53	23 818	N. 6 43 27	5	110 68
SATURDAY 14.					MONDAY 16.									
0	8 29 3	27	25 303	N. 14 18 45	5	77 89		0	10 27 0	34	23 785	N. 6 32 22	4	111 03
1	8 31 35	01	25 278	14 10 55	1	78 90		1	10 29 22	95	23 753	6 21 15	1	111 37
2	8 34 6	60	25 252	14 2 58	7	79 89		2	10 31 45	37	23 721	6 10 5	9	111 69
3	8 36 38	03	25 225	13 54 56	4	80 88		3	10 34 7	60	23 689	5 58 54	8	112 00
4	8 39 9	30	25 198	13 46 48	2	81 85		4	10 36 29	64	23 657	5 47 41	9	112 30
5	8 41 40	41	25 172	13 38 34	2	82 80		5	10 38 51	48	23 625	5 36 27	2	112 58
6	8 44 11	36	25 144	13 30 14	6	83 74		6	10 41 13	14	23 594	5 25 10	9	112 85
7	8 46 42	14	25 116	13 21 49	3	84 68		7	10 43 34	61	23 563	5 13 53	0	113 10
8	8 49 12	75	25 088	13 13 18	4	85 61		8	10 45 55	89	23 532	5 2 33	7	113 33
9	8 51 43	19	25 059	13 4 42	0	86 52		9	10 48 16	99	23 502	4 51 13	0	113 56
10	8 54 13	46	25 029	12 56 0	2	87 41		10	10 50 37	91	23 471	4 39 51	0	113 78
11	8 56 43	54	24 999	12 47 13	1	88 29		11	10 52 58	64	23 440	4 28 27	7	113 98
12	8 59 13	45	24 969	12 38 20	7	89 17		12	10 55 19	19	23 411	4 17 3	3	114 15
13	9 1 43	17	24 939	12 29 23	1	90 02		13	10 57 39	57	23 381	4 5 37	9	114 32
14	9 4 12	72	24 908	12 20 20	5	90 86		14	10 59 59	76	23 351	3 54 11	5	114 48
15	9 6 42	07	24 878	12 11 12	8	91 69		15	11 2 19	78	23 323	3 42 44	2	114 62
16	9 9 11	25	24 847	12 2 0	2	92 50		16	11 4 39	63	23 294	3 31 16	1	114 74
17	9 11 40	23	24 814	11 52 4	8	93 30		17	11 6 59	31	23 266	3 19 47	3	114 86
18	9 14 9	02	24 783	11 43 20	6	94 09		18	11 9 18	82	23 238	3 8 17	8	114 96
19	9 16 37	62	24 751	11 33 53	7	94 87		19	11 11 38	16	23 209	2 56 47	8	115 04
20	9 19 6	03	24 718	11 24 22	2	95 63		20	11 13 57	33	23 181	2 45 17	3	115 12
21	9 21 34	24	24 686	11 14 46	2	96 38		21	11 16 16	33	23 154	2 33 46	4	115 18
22	9 24 2	26	24 653	11 5 5	7	97 11		22	11 18 35	18	23 128	2 22 15	1	115 23
23	9 26 30	08	24 620	10 55 20	9	97 82		23	11 20 53	86	23 101	2 10 43	6	115 26
24	9 28 57	70	24 588	N. 10 45 31	9	98 53		24	11 23 12	39	23 075	N. 1 59 12	0	115 28

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 17.					THURSDAY 19.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	11 23 12.39	23.075	N. 1 59 12.0	115.28	0	13 11 39.13	22.255	S. 6 54 2.2	102.78
1	11 25 30.76	23.049	1 47 40.2	115.29	1	13 13 52.63	22.246	7 4 17.3	102.27
2	11 27 48.98	23.023	1 36 8.5	115.28	2	13 16 6.08	22.239	7 14 29.4	101.76
3	11 30 7.04	22.998	1 24 36.8	115.27	3	13 18 19.49	22.232	7 24 38.4	101.23
4	11 32 24.96	22.974	1 13 5.2	115.24	4	13 20 32.86	22.224	7 34 44.2	100.71
5	11 34 42.73	22.949	1 1 33.9	115.19	5	13 22 46.18	22.218	7 44 46.9	100.18
6	11 37 0.35	22.925	0 50 2.9	115.14	6	13 24 59.47	22.211	7 54 46.3	99.63
7	11 39 17.83	22.902	0 38 32.2	115.07	7	13 27 12.71	22.204	8 4 42.4	99.07
8	11 41 35.17	22.878	0 27 2.0	114.99	8	13 29 25.92	22.198	8 14 35.1	98.50
9	11 43 52.37	22.855	0 15 32.3	114.90	9	13 31 39.09	22.193	8 24 24.4	97.93
10	11 46 9.43	22.833	N. 0 4 3.2	114.80	10	13 33 52.23	22.188	8 34 10.3	97.36
11	11 48 26.36	22.811	S. 0 7 25.3	114.68	11	13 36 5.34	22.183	8 43 52.7	96.78
12	11 50 43.16	22.788	0 18 53.0	114.55	12	13 38 18.42	22.178	8 53 31.6	96.18
13	11 52 59.82	22.767	0 30 19.9	114.42	13	13 40 31.47	22.173	9 3 6.9	95.58
14	11 55 16.36	22.746	0 41 46.0	114.27	14	13 42 44.49	22.168	9 12 38.6	94.98
15	11 57 32.77	22.725	0 53 11.1	114.10	15	13 44 57.49	22.164	9 22 6.6	94.36
16	11 59 49.06	22.705	1 4 35.2	113.92	16	13 47 10.46	22.160	9 31 30.9	93.74
17	12 2 5.23	22.685	1 15 58.2	113.73	17	13 49 23.41	22.157	9 40 51.5	93.11
18	12 4 21.28	22.666	1 27 20.0	113.54	18	13 51 36.34	22.153	9 50 8.2	92.47
19	12 6 37.22	22.647	1 38 40.7	113.33	19	13 53 49.25	22.151	9 59 21.1	91.83
20	12 8 53.04	22.628	1 50 0.0	113.11	20	13 56 2.15	22.148	10 8 30.2	91.18
21	12 11 8.75	22.609	2 1 18.0	112.88	21	13 58 15.03	22.145	10 17 35.3	90.52
22	12 13 24.35	22.591	2 12 34.5	112.63	22	14 0 27.89	22.142	10 26 36.4	89.85
23	12 15 39.84	22.573	S. 2 23 49.6	112.38	23	14 2 40.73	22.140	S. 10 35 33.5	89.18
WEDNESDAY 18.					FRIDAY 20.				
0	12 17 55.23	22.557	S. 2 35 3.1	112.12	0	14 4 53.57	22.138	S. 10 44 26.6	88.51
1	12 20 10.52	22.540	2 46 15.0	111.84	1	14 7 6.39	22.137	10 53 15.6	87.82
2	12 22 25.71	22.523	2 57 25.2	111.56	2	14 9 19.21	22.135	11 2 0.4	87.13
3	12 24 40.80	22.508	3 8 33.7	111.27	3	14 11 32.01	22.133	11 10 41.1	86.43
4	12 26 55.80	22.492	3 19 40.4	110.96	4	14 13 44.81	22.133	11 19 17.6	85.73
5	12 29 10.70	22.476	3 30 45.2	110.63	5	14 15 57.60	22.131	11 27 49.9	85.02
6	12 31 25.51	22.461	3 41 48.0	110.31	6	14 18 10.38	22.130	11 36 17.9	84.30
7	12 33 40.23	22.447	3 52 48.9	109.98	7	14 20 23.16	22.130	11 44 41.5	83.58
8	12 35 54.87	22.433	4 3 47.7	109.63	8	14 22 35.94	22.129	11 53 0.8	82.86
9	12 38 9.42	22.418	4 14 44.4	109.27	9	14 24 48.71	22.128	12 1 15.8	82.13
10	12 40 23.89	22.406	4 25 38.9	108.90	10	14 27 1.48	22.128	12 9 26.3	81.38
11	12 42 38.29	22.393	4 36 31.2	108.53	11	14 29 14.25	22.129	12 17 32.3	80.63
12	12 44 52.60	22.379	4 47 21.2	108.14	12	14 31 27.03	22.129	12 25 33.9	79.88
13	12 47 6.84	22.368	4 58 8.9	107.75	13	14 33 39.80	22.128	12 33 30.9	79.13
14	12 49 21.01	22.355	5 8 54.2	107.34	14	14 35 52.57	22.128	12 41 23.4	78.37
15	12 51 35.10	22.343	5 19 37.0	106.92	15	14 38 5.34	22.129	12 49 11.3	77.59
16	12 53 49.13	22.333	5 30 17.2	106.49	16	14 40 18.12	22.130	12 56 54.5	76.82
17	12 56 3.09	22.321	5 40 54.9	106.07	17	14 42 30.90	22.130	13 4 33.1	76.04
18	12 58 16.98	22.311	5 51 30.0	105.63	18	14 44 43.68	22.130	13 12 7.0	75.26
19	13 0 30.82	22.301	6 2 2.4	105.17	19	14 46 56.46	22.131	13 19 36.2	74.48
20	13 2 44.59	22.291	6 12 32.0	104.71	20	14 49 9.25	22.133	13 27 0.7	73.68
21	13 4 58.31	22.282	6 22 58.9	104.24	21	14 51 22.05	22.133	13 34 20.3	72.88
22	13 7 11.97	22.272	6 33 22.9	103.76	22	14 53 34.85	22.133	13 41 35.2	72.08
23	13 9 25.57	22.263	6 43 44.0	103.28	23	14 55 47.65	22.134	13 48 45.2	71.26
24	13 11 39.13	22.255	S. 6 54 2.2	102.78	24	14 58 0.46	22.136	S. 13 55 50.3	70.44

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 21.					MONDAY 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	14 58 0.46	22.136	S. 13 55 50.3	70.44	0	16 44 17.21	22.099	S. 17 52 56.6	27.27
1	15 0 13.28	22.137	14 2 50.5	69.63	1	16 46 29.79	22.094	17 55 37.4	26.32
2	15 2 26.10	22.138	14 9 45.8	68.81	2	16 48 42.34	22.089	17 58 12.4	25.36
3	15 4 38.93	22.139	14 16 36.2	67.98	3	16 50 54.86	22.083	18 0 41.7	24.41
4	15 6 51.77	22.140	14 23 21.6	67.14	4	16 53 7.34	22.078	18 3 5.3	23.45
5	15 9 4.61	22.141	14 30 1.9	66.30	5	16 55 19.79	22.072	18 5 23.1	22.50
6	15 11 17.46	22.142	14 36 37.2	65.47	6	16 57 32.20	22.065	18 7 35.3	21.55
7	15 13 30.31	22.143	14 43 7.5	64.63	7	16 59 44.57	22.058	18 9 41.7	20.59
8	15 15 43.17	22.144	14 49 32.7	63.77	8	17 1 56.90	22.052	18 11 42.4	19.63
9	15 17 56.04	22.146	14 55 52.7	62.92	9	17 4 9.19	22.044	18 13 37.3	18.68
10	15 20 8.92	22.147	15 2 7.7	62.06	10	17 6 21.43	22.037	18 15 26.6	17.73
11	15 22 21.80	22.147	15 8 17.4	61.19	11	17 8 33.63	22.029	18 17 10.1	16.78
12	15 24 34.68	22.148	15 14 22.0	60.33	12	17 10 45.78	22.022	18 18 47.9	15.82
13	15 26 47.57	22.149	15 20 21.4	59.46	13	17 12 57.89	22.013	18 20 19.9	14.86
14	15 29 0.47	22.150	15 26 15.5	58.58	14	17 15 9.94	22.004	18 21 46.2	13.92
15	15 31 13.37	22.151	15 32 4.4	57.71	15	17 17 21.94	21.995	18 23 6.9	12.97
16	15 33 26.28	22.152	15 37 48.0	56.83	16	17 19 33.88	21.986	18 24 21.8	12.00
17	15 35 39.19	22.152	15 43 26.4	55.95	17	17 21 45.77	21.978	18 25 30.9	11.05
18	15 37 52.10	22.153	15 48 59.4	55.06	18	17 23 57.61	21.968	18 26 34.4	10.11
19	15 40 5.02	22.153	15 54 27.1	54.17	19	17 26 9.38	21.957	18 27 32.2	9.16
20	15 42 17.94	22.153	15 59 49.4	53.27	20	17 28 21.09	21.947	18 28 24.3	8.20
21	15 44 30.86	22.154	16 5 6.3	52.38	21	17 30 32.74	21.936	18 29 10.6	7.25
22	15 46 43.79	22.154	16 10 17.9	51.48	22	17 32 44.32	21.925	18 29 51.3	6.31
23	15 48 56.71	22.153	S. 16 15 24.0	50.58	23	17 34 55.84	21.913	S. 18 30 26.3	5.37
SUNDAY 22.					TUESDAY 24.				
0	15 51 9.63	22.153	S. 16 20 24.8	49.68	0	17 37 7.28	21.902	S. 18 30 55.7	4.42
1	15 53 22.55	22.153	16 25 20.1	48.76	1	17 39 18.66	21.891	18 31 19.3	3.47
2	15 55 35.47	22.153	16 30 9.9	47.84	2	17 41 29.97	21.878	18 31 37.3	2.53
3	15 57 48.39	22.153	16 34 54.2	46.93	3	17 43 41.20	21.865	18 31 49.7	1.59
4	16 0 1.30	22.152	16 39 33.1	46.02	4	17 45 52.35	21.853	18 31 56.4	0.64
5	16 2 14.21	22.151	16 44 6.4	45.09	5	17 48 3.43	21.840	18 31 57.4	0.29
6	16 4 27.11	22.150	16 48 34.2	44.17	6	17 50 14.43	21.827	18 31 52.9	1.23
7	16 6 40.01	22.149	16 52 56.5	43.25	7	17 52 25.35	21.813	18 31 42.7	2.16
8	16 8 52.90	22.148	16 57 13.2	42.33	8	17 54 36.18	21.798	18 31 27.0	3.09
9	16 11 5.79	22.147	17 1 24.4	41.40	9	17 56 46.93	21.785	18 31 5.6	4.03
10	16 13 18.66	22.144	17 5 30.0	40.47	10	17 58 57.60	21.770	18 30 38.7	4.95
11	16 15 31.52	22.143	17 9 30.0	39.53	11	18 1 8.17	21.754	18 30 6.2	5.88
12	16 17 44.37	22.141	17 13 24.4	38.60	12	18 3 18.65	21.739	18 29 28.2	6.80
13	16 19 57.21	22.138	17 17 13.2	37.66	13	18 5 29.04	21.724	18 28 44.6	7.73
14	16 22 10.03	22.136	17 20 56.3	36.72	14	18 7 39.34	21.709	18 27 55.5	8.64
15	16 24 22.84	22.133	17 24 33.8	35.78	15	18 9 49.55	21.693	18 27 0.9	9.56
16	16 26 35.63	22.131	17 28 5.7	34.85	16	18 11 59.65	21.676	18 26 0.8	10.48
17	16 28 48.41	22.128	17 31 32.0	33.90	17	18 14 9.66	21.659	18 24 55.2	11.38
18	16 31 1.16	22.124	17 34 52.5	32.95	18	18 16 19.56	21.642	18 23 44.2	12.29
19	16 33 13.90	22.121	17 38 7.4	32.01	19	18 18 29.36	21.625	18 22 27.7	13.20
20	16 35 26.61	22.117	17 41 16.6	31.07	20	18 20 39.06	21.608	18 21 5.8	14.10
21	16 37 39.30	22.113	17 44 20.2	30.12	21	18 22 48.66	21.590	18 19 38.5	15.00
22	16 39 51.96	22.108	17 47 18.0	29.17	22	18 24 58.14	21.572	18 18 5.8	15.90
23	16 42 4.60	22.104	17 50 10.2	28.22	23	18 27 7.52	21.554	18 16 27.7	16.79
24	16 44 17.21	22.099	S. 17 52 56.6	27.27	24	18 29 16.79	21.535	S. 18 14 44.3	17.68

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
WEDNESDAY 25.					FRIDAY 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	18 29 16.79	21.535	S. 18 14 44.3	17.68	0	20 10 6.83	20.423	S. 15 14 48.0	55.50
1	18 31 25.94	21.516	18 12 55.5	18.58	1	20 12 9.29	20.398	15 9 13.0	56.17
2	18 33 34.98	21.498	18 11 1.4	19.46	2	20 14 11.60	20.372	15 3 34.0	56.83
3	18 35 43.91	21.478	18 9 2.0	20.33	3	20 16 13.75	20.346	14 57 51.1	57.48
4	18 37 52.72	21.458	18 6 57.4	21.21	4	20 18 15.75	20.320	14 52 4.3	58.13
5	18 40 1.41	21.438	18 4 47.5	22.09	5	20 20 17.59	20.294	14 46 13.6	58.77
6	18 42 9.98	21.418	18 2 32.3	22.96	6	20 22 19.28	20.269	14 40 19.1	59.40
7	18 44 18.43	21.398	18 0 12.0	23.83	7	20 24 20.82	20.244	14 34 20.8	60.03
8	18 46 26.76	21.378	17 57 46.4	24.69	8	20 26 22.21	20.218	14 28 18.7	60.66
9	18 48 34.97	21.358	17 55 15.7	25.55	9	20 28 23.44	20.193	14 22 12.9	61.28
10	18 50 43.05	21.336	17 52 39.8	26.40	10	20 30 24.52	20.167	14 16 3.4	61.88
11	18 52 51.00	21.314	17 49 58.9	27.25	11	20 32 25.44	20.142	14 9 50.3	62.49
12	18 54 58.82	21.293	17 47 12.8	28.10	12	20 34 26.22	20.117	14 3 33.5	63.10
13	18 57 6.52	21.272	17 44 21.7	28.94	13	20 36 26.84	20.092	13 57 13.1	63.69
14	18 59 14.09	21.250	17 41 25.5	29.78	14	20 38 27.32	20.067	13 50 49.2	64.28
15	19 1 21.52	21.228	17 38 24.3	30.62	15	20 40 27.64	20.041	13 44 21.7	64.87
16	19 3 28.82	21.206	17 35 18.1	31.45	16	20 42 27.81	20.016	13 37 50.8	65.44
17	19 5 35.99	21.183	17 32 6.9	32.28	17	20 44 27.83	19.992	13 31 16.4	66.02
18	19 7 43.02	21.160	17 28 50.7	33.10	18	20 46 27.71	19.967	13 24 38.6	66.58
19	19 9 49.91	21.138	17 25 29.7	33.91	19	20 48 27.43	19.941	13 17 57.4	67.14
20	19 11 56.67	21.115	17 22 3.8	34.73	20	20 50 27.00	19.917	13 11 12.9	67.70
21	19 14 3.29	21.093	17 18 33.0	35.54	21	20 52 26.43	19.893	13 4 25.0	68.25
22	19 16 9.78	21.069	17 14 57.3	36.34	22	20 54 25.71	19.868	12 57 33.9	68.78
23	19 18 16.12	21.045	S. 17 11 16.9	37.14	23	20 56 24.85	19.844	S. 12 50 39.6	69.32
THURSDAY 26.					SATURDAY 28.				
0	19 20 22.32	21.021	S. 17 7 31.6	37.94	0	20 58 23.84	19.820	S. 12 43 42.1	69.85
1	19 22 28.37	20.998	17 3 41.6	38.73	1	21 0 22.69	19.796	12 36 41.4	70.38
2	19 24 34.29	20.974	16 59 46.9	39.51	2	21 2 21.39	19.772	12 29 37.5	70.90
3	19 26 40.06	20.949	16 55 47.5	40.29	3	21 4 19.95	19.748	12 22 30.6	71.40
4	19 28 45.68	20.925	16 51 43.4	41.07	4	21 6 18.37	19.725	12 15 20.7	71.91
5	19 30 51.16	20.902	16 47 34.6	41.84	5	21 8 16.65	19.702	12 8 7.7	72.42
6	19 32 56.50	20.877	16 43 21.3	42.60	6	21 10 14.79	19.678	12 0 51.7	72.92
7	19 35 1.68	20.852	16 39 3.4	43.37	7	21 12 12.79	19.655	11 53 32.7	73.40
8	19 37 6.72	20.828	16 34 40.9	44.13	8	21 14 10.65	19.632	11 46 10.9	73.88
9	19 39 11.61	20.803	16 30 13.9	44.88	9	21 16 8.37	19.609	11 38 46.2	74.36
10	19 41 16.35	20.778	16 25 42.4	45.63	10	21 18 5.96	19.588	11 31 18.6	74.83
11	19 43 20.94	20.753	16 21 6.4	46.36	11	21 20 3.42	19.565	11 23 48.2	75.29
12	19 45 25.38	20.728	16 16 26.1	47.09	12	21 22 0.74	19.543	11 16 15.1	75.75
13	19 47 29.67	20.703	16 11 41.3	47.83	13	21 23 57.93	19.521	11 8 39.2	76.21
14	19 49 33.81	20.678	16 6 52.2	48.55	14	21 25 54.99	19.499	11 1 0.6	76.66
15	19 51 37.80	20.653	16 1 58.7	49.27	15	21 27 51.92	19.478	10 53 19.3	77.09
16	19 53 41.64	20.628	15 57 1.0	49.98	16	21 29 48.72	19.456	10 45 35.5	77.53
17	19 55 45.33	20.602	15 51 58.9	50.69	17	21 31 45.39	19.435	10 37 49.0	77.96
18	19 57 48.86	20.576	15 46 52.7	51.39	18	21 33 41.94	19.414	10 30 0.0	78.38
19	19 59 52.24	20.550	15 41 42.2	52.09	19	21 35 38.36	19.393	10 22 8.4	78.80
20	20 1 55.46	20.525	15 36 27.6	52.78	20	21 37 34.66	19.373	10 14 14.4	79.21
21	20 3 58.54	20.500	15 31 8.8	53.47	21	21 39 30.84	19.353	10 6 17.9	79.61
22	20 6 1.46	20.473	15 25 45.9	54.15	22	21 41 26.89	19.333	9 58 19.0	80.02
23	20 8 4.22	20.448	15 20 19.0	54.83	23	21 43 22.83	19.313	9 50 17.7	80.41
24	20 10 6.83	20.423	S. 15 14 48.0	55.50	24	21 45 18.65	19.293	S. 9 42 14.1	80.79

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 29.					TUESDAY 31.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	21 45 18.65	19.293	S. 9 42 14.1	80.79	0	23 16 14.46	18.724	S. 2 40 50.4	92.60
1	21 47 14.35	19.274	9 34 8.2	81.18	1	23 18 6.79	18.721	2 31 34.5	92.71
2	21 49 9.94	19.256	9 26 0.0	81.55	2	23 19 59.11	18.719	2 22 17.9	92.82
3	21 51 5.42	19.237	9 17 49.6	81.92	3	23 21 51.42	18.717	2 13 0.7	92.92
4	21 53 0.78	19.218	9 9 37.0	82.28	4	23 23 43.71	18.715	2 3 42.9	93.01
5	21 54 56.04	19.200	9 1 22.2	82.64	5	23 25 36.00	18.714	1 54 24.6	93.09
6	21 56 51.18	19.182	8 53 5.3	82.99	6	23 27 28.28	18.713	1 45 5.8	93.18
7	21 58 46.22	19.165	8 44 46.3	83.33	7	23 29 20.55	18.713	1 35 46.5	93.25
8	22 0 41.16	19.148	8 36 25.3	83.68	8	23 31 12.83	18.713	1 26 26.8	93.33
9	22 2 35.99	19.130	8 28 2.2	84.02	9	23 33 5.10	18.713	1 17 6.6	93.39
10	22 4 30.72	19.113	8 19 37.1	84.34	10	23 34 57.38	18.713	1 7 46.1	93.44
11	22 6 25.35	19.097	8 11 10.1	84.67	11	23 36 49.66	18.715	0 58 25.3	93.50
12	22 8 19.88	19.081	8 2 41.1	84.98	12	23 38 41.96	18.717	0 49 4.1	93.55
13	22 10 14.32	19.065	7 54 10.3	85.29	13	23 40 34.26	18.718	0 39 42.7	93.59
14	22 12 8.66	19.049	7 45 37.6	85.60	14	23 42 26.58	18.721	0 30 21.0	93.63
15	22 14 2.91	19.034	7 37 3.1	85.90	15	23 44 18.91	18.724	0 20 59.2	93.66
16	22 15 57.07	19.019	7 28 26.8	86.19	16	23 46 11.27	18.728	0 11 37.1	93.69
17	22 17 51.14	19.004	7 19 48.8	86.48	17	23 48 3.64	18.731	S. 0 2 14.9	93.71
18	22 19 45.12	18.990	7 11 9.1	86.76	18	23 49 56.04	18.736	N. 0 7 7.4	93.73
19	22 21 39.02	18.977	7 2 27.7	87.04	19	23 51 48.47	18.740	0 16 29.8	93.74
20	22 23 32.84	18.963	6 53 44.6	87.32	20	23 53 40.92	18.745	0 25 52.3	93.75
21	22 25 26.57	18.949	6 44 59.9	87.58	21	23 55 33.41	18.751	0 35 14.8	93.74
22	22 27 20.23	18.936	6 36 13.7	87.83	22	23 57 25.93	18.757	0 44 37.2	93.73
23	22 29 13.80	18.923	S. 6 27 25.9	88.08	23	23 59 18.49	18.763	N. 0 53 59.6	93.73
MONDAY 30.					WEDNESDAY, FEB. 1.				
0	22 31 7.31	18.912	S. 6 18 36.7	88.33	0	0 1 11.09	18.770	N. 1 3 21.9	93.71
1	22 33 0.74	18.899	6 9 45.9	88.58					
2	22 34 54.10	18.888	6 0 53.7	88.82					
3	22 36 47.39	18.876	5 52 0.1	89.04					
4	22 38 40.61	18.865	5 43 5.2	89.27					
5	22 40 33.77	18.855	5 34 8.9	89.49					
6	22 42 26.87	18.845	5 25 11.3	89.71					
7	22 44 19.91	18.835	5 16 12.4	89.92					
8	22 46 12.89	18.825	5 7 12.3	90.12					
9	22 48 5.81	18.816	4 58 11.0	90.31					
10	22 49 58.68	18.808	4 49 8.6	90.50					
11	22 51 51.50	18.798	4 40 5.0	90.69					
12	22 53 44.26	18.790	4 31 0.3	90.88					
13	22 55 36.98	18.783	4 21 54.5	91.05					
14	22 57 29.66	18.776	4 12 47.7	91.21					
15	22 59 22.29	18.768	4 3 40.0	91.38					
16	23 1 14.88	18.763	3 54 31.2	91.54					
17	23 3 7.44	18.757	3 45 21.5	91.69					
18	23 4 59.96	18.750	3 36 10.9	91.83					
19	23 6 52.44	18.745	3 26 59.5	91.98					
20	23 8 44.90	18.740	3 17 47.2	92.12					
21	23 10 37.32	18.735	3 8 34.1	92.24					
22	23 12 29.72	18.732	2 59 20.3	92.37					
23	23 14 22.10	18.728	2 50 5.7	92.49					
24	23 16 14.46	18.724	S. 2 40 50.4	92.60					

PHASES OF THE MOON.

	h	m
Jan. 5	)	First Quarter - 22 23.8
13	○	Full Moon - - 2 36.5
19	(	Last Quarter - - 17 59.8
27	●	New Moon - - 11 48.2

	h
Jan. 2	(Apogee - - - - 10.9
14	(Perigee - - - - 11.8
30	(Apogee - - - - 0.4

AT APPARENT NOON.

Date.	THE SUN'S				Sidereal Time of the Semi-diameter passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Var. in hour.	
	Apparent Right Ascension.	Var. in hour.	Apparent Declination.	Var. in hour.				
Wed.	1	h m s	s	° ' "	"	m s	m s	s
Thur.	2	20 57 21.60	10.208	S. 17 14 0.3	42.33	1 8.27	13 41.11	0.351
Frid.	3	21 1 26.18	10.174	16 56 55.2	43.08	1 8.15	13 49.12	0.316
Sat.	4	21 5 29.93	10.139	16 39 32.4	43.81	1 8.04	13 56.29	0.281
Sun.	5	21 9 32.83	10.104	16 21 52.2	44.53	1 7.92	14 2.62	0.246
Mon.	6	21 13 34.90	10.069	16 3 55.1	45.22	1 7.81	14 8.12	0.212
Tues.	7	21 17 36.13	10.034	15 45 41.6	45.90	1 7.70	14 12.79	0.177
Wed.	8	21 21 36.54	10.000	15 27 11.9	46.56	1 7.58	14 16.63	0.143
Thur.	9	21 25 36.12	9.966	15 8 26.6	47.21	1 7.47	14 19.64	0.109
Frid.	10	21 29 34.89	9.932	14 49 26.0	47.84	1 7.36	14 21.85	0.075
Sat.	11	21 33 32.85	9.899	14 30 10.5	48.45	1 7.25	14 23.26	0.042
Sun.	12	21 37 30.02	9.866	14 10 40.5	49.04	1 7.14	14 23.87	0.009
Mon.	13	21 41 26.41	9.834	13 50 56.4	49.62	1 7.03	14 23.71	0.023
Tues.	14	21 45 22.04	9.803	13 30 58.7	50.18	1 6.92	14 22.79	0.054
Wed.	15	21 49 16.93	9.772	13 10 47.7	50.73	1 6.81	14 21.12	0.085
Thur.	16	21 53 11.08	9.741	12 50 23.8	51.26	1 6.71	14 18.73	0.115
Frid.	17	21 57 4.51	9.712	12 29 47.4	51.77	1 6.60	14 15.62	0.145
Sat.	18	22 0 57.24	9.683	12 8 58.9	52.26	1 6.50	14 11.81	0.173
Sun.	19	22 4 49.28	9.654	11 47 58.7	52.74	1 6.40	14 7.30	0.202
Mon.	20	22 8 40.65	9.626	11 26 47.3	53.20	1 6.30	14 2.13	0.229
Tues.	21	22 12 31.35	9.599	11 5 25.1	53.64	1 6.20	13 56.30	0.256
Wed.	22	22 16 21.40	9.572	10 43 52.4	54.07	1 6.10	13 49.82	0.283
Thur.	23	22 20 10.82	9.546	10 22 9.8	54.48	1 6.01	13 42.70	0.310
Frid.	24	22 23 59.61	9.520	10 0 17.6	54.87	1 5.92	13 34.96	0.335
Sat.	25	22 27 47.79	9.495	9 38 16.2	55.24	1 5.83	13 26.61	0.360
Sun.	26	22 31 35.37	9.470	9 16 6.1	55.60	1 5.74	13 17.66	0.385
Mon.	27	22 35 22.37	9.446	8 53 47.6	55.93	1 5.66	13 8.13	0.409
Tues.	28	22 39 8.79	9.423	8 31 21.3	56.25	1 5.58	12 58.03	0.432
Wed.	29	22 42 54.66	9.400	8 8 47.4	56.56	1 5.50	12 47.38	0.455
Thur.	30	22 46 39.99	9.378	S. 7 46 6.5	56.84	1 5.42	12 36.18	0.477

* Mean Time of the Semidiameter passing may be found by subtracting 0.18 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*		
Wed.	1	h m s 20 57 19.27	S. ° ' " 17 14 9.9	16 15.30	m s 13 41.03	h m s 20 43 38.24
Thur.	2	21 1 23.84	16 57 5.1	16 15.16	13 49.05	20 47 34.80
Frid.	3	21 5 27.57	16 39 42.6	16 15.01	13 56.22	20 51 31.35
Sat.	4	21 9 30.47	16 22 2.6	16 14.86	14 2.56	20 55 27.90
Sun.	5	21 13 32.53	16 4 5.8	16 14.71	14 8.07	20 59 24.46
Mon.	6	21 17 33.76	15 45 52.5	16 14.56	14 12.74	21 3 21.01
Tues.	7	21 21 34.16	15 27 23.0	16 14.40	14 16.59	21 7 17.57
Wed.	8	21 25 33.74	15 8 37.8	16 14.23	14 19.62	21 11 14.12
Thur.	9	21 29 32.51	14 49 37.4	16 14.06	14 21.83	21 15 10.68
Frid.	10	21 33 30.48	14 30 22.1	16 13.88	14 23.25	21 19 7.23
Sat.	11	21 37 27.65	14 10 52.2	16 13.70	14 23.87	21 23 3.78
Sun.	12	21 41 24.06	13 51 8.3	16 13.52	14 23.72	21 27 0.34
Mon.	13	21 45 19.70	13 31 10.7	16 13.32	14 22.80	21 30 56.89
Tues.	14	21 49 14.59	13 10 59.8	16 13.13	14 21.14	21 34 53.44
Wed.	15	21 53 8.76	12 50 36.0	16 12.93	14 18.76	21 38 50.00
Thur.	16	21 57 2.20	12 29 59.7	16 12.72	14 15.65	21 42 46.55
Frid.	17	22 0 54.95	12 9 11.3	16 12.51	14 11.85	21 46 43.10
Sat.	18	22 4 47.01	11 48 11.2	16 12.30	14 7.35	21 50 39.66
Sun.	19	22 8 38.40	11 26 59.8	16 12.08	14 2.18	21 54 36.21
Mon.	20	22 12 29.12	11 5 37.6	16 11.86	13 56.36	21 58 32.76
Tues.	21	22 16 19.20	10 44 4.9	16 11.64	13 49.88	22 2 29.32
Wed.	22	22 20 8.64	10 22 22.2	16 11.41	13 42.77	22 6 25.87
Thur.	23	22 23 57.46	10 0 30.0	16 11.19	13 35.03	22 10 22.42
Frid.	24	22 27 45.66	9 38 28.5	16 10.96	13 26.69	22 14 18.98
Sat.	25	22 31 33.27	9 16 18.4	16 10.73	13 17.75	22 18 15.53
Sun.	26	22 35 20.30	8 53 59.8	16 10.50	13 8.22	22 22 12.08
Mon.	27	22 39 6.76	8 31 33.4	16 10.26	12 58.12	22 26 8.63
Tues.	28	22 42 52.66	8 8 59.5	16 10.03	12 47.47	22 30 5.19
Wed.	29	22 46 38.02	S. 7 46 18.4	16 9.79	12 36.28	22 34 1.74

* The Semidiameter for Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
					Noon.	Midnight.	Noon.	Midnight.
				h m s				
1	311° 52' 3.6"	N. 0° 16'	9.9936679	3 15 49.59	14 47.47	14 49.72	54 11.45	54 19.71
2	312 52 56.7	N. 0.03	.9937306	3 11 53.68	14 52.56	14 56.01	54 30.10	54 42.73
3	313 53 48.5	S. 0.09	.9937950	3 7 57.77	15 0.08	15 4.78	54 57.65	55 14.87
4	314 54 38.9	0.21	9.9938610	3 4 1.86	15 10.10	15 16.01	55 34.35	55 56.04
5	315 55 27.8	0.32	.9939288	3 0 5.96	15 22.49	15 29.49	56 19.79	56 45.41
6	316 56 15.2	0.40	.9939984	2 56 10.05	15 36.92	15 44.68	57 12.63	57 41.08
7	317 57 1.1	0.46	9.9940701	2 52 14.14	15 52.65	16 0.71	58 10.31	58 39.82
8	318 57 45.5	0.50	.9941438	2 48 18.23	16 8.67	16 16.34	59 8.96	59 37.06
9	319 58 28.4	0.49	.9942197	2 44 22.32	16 23.52	16 30.02	60 3.39	60 27.20
10	320 59 9.7	0.46	9.9942979	2 40 26.41	16 35.63	16 40.18	60 47.76	61 4.42
11	321 59 49.6	0.39	.9943785	2 36 30.51	16 43.50	16 45.48	61 16.58	61 23.86
12	323 0 28.0	0.30	.9944614	2 32 34.60	16 46.07	16 45.25	61 26.01	61 22.99
13	324 1 5.0	0.19	9.9945467	2 28 38.69	16 43.05	16 39.59	61 14.96	61 2.28
14	325 1 40.8	S. 0.07	.9946343	2 24 42.78	16 34.99	16 29.40	60 45.41	60 24.95
15	326 2 15.3	N. 0.07	.9947241	2 20 46.88	16 23.04	16 16.10	60 1.64	59 36.19
16	327 2 48.5	0.21	9.9948158	2 16 50.97	16 8.75	16 1.18	59 9.25	58 41.55
17	328 3 20.6	0.33	.9949094	2 12 55.06	15 53.57	15 46.08	58 13.68	57 46.19
18	329 3 51.3	0.44	.9950047	2 8 59.15	15 38.79	15 31.82	57 19.47	56 53.95
19	330 4 20.9	0.52	9.9951015	2 5 3.24	15 25.24	15 19.11	56 29.84	56 7.40
20	331 4 49.1	0.59	.9951996	2 1 7.34	15 13.47	15 8.34	55 46.72	55 27.92
21	332 5 16.0	0.63	.9952990	1 57 11.43	15 3.73	14 59.63	55 11.01	54 56.00
22	333 5 41.5	0.62	9.9953995	1 53 15.52	14 56.03	14 52.92	54 42.81	54 31.43
23	334 6 5.5	0.59	.9955009	1 49 19.62	14 50.28	14 48.08	54 21.76	54 13.70
24	335 6 28.0	0.54	.9956032	1 45 23.71	14 46.32	14 44.95	54 7.24	54 2.22
25	336 6 49.0	0.46	9.9957063	1 41 27.80	14 43.97	14 43.36	53 58.63	53 56.38
26	337 7 8.2	0.37	.9958101	1 37 31.90	14 43.10	14 43.19	53 55.45	53 55.79
27	338 7 25.8	0.25	.9959147	1 33 35.99	14 43.64	14 44.43	53 57.43	54 0.34
28	339 7 41.6	N. 0.12	.9960199	1 29 40.08	14 45.59	14 47.13	54 4.58	54 10.21
29	340 7 55.5	S. 0.01	9.9961257	1 25 44.18	14 49.05	14 51.38	54 17.25	54 25.80

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.		Noon.	Upper.	Lower.
	h m s	h m s	N. S. h m s	N. S. h m s	d	h m	h m
1	0 41 31.2	6 36 50.6	N. 0 51 3.7	N. 0 19 30.5	4.51	3 23.4	15 44.6
2	12 33 47.1	18 32 55.6	S. 0 12 26.2	S. 0 44 28.4	5.51	4 6.1	16 27.9
3	24 34 52.7	30 40 16.3	1 16 17.0	1 47 32.8	6.51	4 50.2	17 12.9
4	36 49 45.5	43 3 59.4	2 17 55.4	2 47 3.3	7.51	5 36.2	18 0.2
5	49 23 35.7	55 49 10.7	3 14 33.9	3 40 3.4	8.51	6 24.8	18 50.3
6	62 21 16.7	69 0 21.3	4 3 7.2	4 23 19.4	9.51	7 16.5	19 43.6
7	75 46 45.4	82 40 41.3	4 40 13.9	4 53 24.7	10.51	8 11.4	20 39.8
8	89 42 11.3	96 51 6.1	5 2 26.8	5 6 58.0	11.51	9 8.8	21 38.3
9	104 7 2.9	111 29 25.7	5 6 39.4	5 1 17.4	12.51	10 8.0	22 37.9
10	118 57 25.4	126 30 0.6	4 50 45.3	4 35 4.4	13.51	11 7.7	23 37.3
11	134 5 59.5	141 44 3.3	4 14 24.9	3 49 6.3	14.51	12 6.7	* *
12	149 22 49.1	157 0 54.4	3 19 37.1	2 46 33.5	15.51	13 4.3	0 35.7
13	164 36 59.8	172 9 53.3	2 10 37.7	1 32 36.1	16.51	14 0.3	1 32.5
14	179 38 31.8	187 2 4.1	S. 0 53 16.9	S. 0 13 27.7	17.51	14 55.0	2 27.8
15	194 19 50.4	201 31 23.6	N. 0 26 6.3	N. 1 4 43.4	18.51	15 48.5	3 21.9
16	208 36 27.8	215 34 57.6	1 41 46.8	2 16 45.0	19.51	16 41.4	4 15.0
17	222 26 56.6	229 12 35.9	2 49 11.8	3 18 45.8	20.51	17 33.7	5 7.6
18	235 52 11.7	242 26 5.6	3 45 10.5	4 8 13.6	21.51	18 25.5	5 59.7
19	248 54 41.2	255 18 24.2	4 27 46.2	4 43 42.3	22.51	19 16.7	6 51.2
20	261 37 41.0	267 52 58.1	4 55 58.9	5 4 35.1	23.51	20 6.9	7 41.9
21	274 4 41.2	280 13 15.1	5 9 31.7	5 10 51.3	24.51	20 55.8	8 31.5
22	286 19 2.9	292 22 26.3	5 8 38.2	5 2 57.8	25.51	21 43.3	9 19.7
23	298 23 45.1	304 23 17.6	4 53 57.1	4 41 44.4	26.51	22 29.2	10 6.4
24	310 21 20.7	316 18 9.9	4 26 29.4	4 8 22.8	27.51	23 13.8	10 51.6
25	322 13 59.6	328 9 3.9	3 47 36.8	3 24 24.8	28.51	23 57.2	11 35.6
26	334 3 36.2	339 57 50.1	2 59 1.2	2 31 41.7	29.51	* *	12 18.5
27	345 51 59.6	351 46 19.8	2 2 42.6	1 32 21.3	0.72	0 39.8	13 1.0
28	357 41 6.3	3 36 36.3	N. 1 0.55.8	N. 0 28 44.9	1.72	1 22.2	13 43.4
29	9 33 8.7	15 31 3.9	S. 0 3 52.4	S. 0 36 36.6	2.72	2 4.8	14 26.4

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 1.					FRIDAY 3.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	0 11 09	18.770	N. 1 3 21.9	93.71	0	1 32 57.06	19.644	N. 8 20 39.8	86.28
1	0 3 3.73	18.778	1 12 44.1	93.69	1	1 34 55.01	19.673	8 29 16.5	85.96
2	0 4 56.42	18.786	1 22 6.2	93.67	2	1 36 53.14	19.704	8 37 51.3	85.66
3	0 6 49.16	18.793	1 31 28.1	93.63	3	1 38 51.46	19.735	8 46 24.4	85.35
4	0 8 41.94	18.802	1 40 49.7	93.58	4	1 40 49.96	19.765	8 54 55.5	85.02
5	0 10 34.78	18.812	1 50 11.1	93.55	5	1 42 48.64	19.796	9 3 24.6	84.69
6	0 12 27.68	18.822	1 59 32.3	93.50	6	1 44 47.51	19.828	9 11 51.8	84.36
7	0 14 20.64	18.832	2 8 53.1	93.44	7	1 46 46.58	19.861	9 20 16.9	84.02
8	0 16 13.66	18.842	2 18 13.6	93.38	8	1 48 45.84	19.893	9 28 40.0	83.67
9	0 18 6.74	18.853	2 27 33.7	93.32	9	1 50 45.30	19.927	9 37 0.9	83.31
10	0 19 59.89	18.864	2 36 53.4	93.25	10	1 52 44.96	19.960	9 45 19.7	82.96
11	0 21 53.11	18.877	2 46 12.7	93.17	11	1 54 44.82	19.993	9 53 36.4	82.59
12	0 23 46.41	18.889	2 55 31.4	93.08	12	1 56 44.88	20.027	10 1 50.8	82.21
13	0 25 39.78	18.901	3 4 49.7	93.00	13	1 58 45.15	20.063	10 10 2.9	81.83
14	0 27 33.22	18.914	3 14 7.4	92.90	14	2 0 45.64	20.098	10 18 12.7	81.43
15	0 29 26.75	18.928	3 23 24.5	92.80	15	2 2 46.33	20.133	10 26 20.1	81.03
16	0 31 20.36	18.943	3 32 41.0	92.70	16	2 4 47.24	20.170	10 34 25.1	80.63
17	0 33 14.06	18.958	3 41 56.9	92.59	17	2 6 48.37	20.207	10 42 27.7	80.23
18	0 35 7.85	18.973	3 51 12.1	92.48	18	2 8 49.72	20.243	10 50 27.8	79.81
19	0 37 1.73	18.988	4 0 26.6	92.34	19	2 10 51.29	20.281	10 58 25.4	79.38
20	0 38 55.71	19.005	4 9 40.3	92.23	20	2 12 53.09	20.319	11 6 20.4	78.95
21	0 40 49.79	19.021	4 18 53.3	92.09	21	2 14 55.12	20.357	11 14 12.8	78.52
22	0 42 43.96	19.038	4 28 5.4	91.95	22	2 16 57.37	20.395	11 22 2.6	78.08
23	0 44 38.24	19.056	N. 4 37 16.7	91.81	23	2 18 59.86	20.434	N. 11 29 49.7	77.62
THURSDAY 2.					SATURDAY 4.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	0 46 32.63	19.073	N. 4 46 27.1	91.66	0	2 21 2.58	20.473	N. 11 37 34.0	77.15
1	0 48 27.12	19.092	4 55 36.6	91.50	1	2 23 5.54	20.513	11 45 15.5	76.68
2	0 50 21.73	19.111	5 4 45.1	91.34	2	2 25 8.74	20.553	11 52 54.2	76.21
3	0 52 16.45	19.129	5 13 52.7	91.18	3	2 27 12.18	20.594	12 0 30.0	75.74
4	0 54 11.28	19.149	5 22 59.2	90.99	4	2 29 15.87	20.635	12 8 2.9	75.24
5	0 56 6.24	19.171	5 32 4.6	90.82	5	2 31 19.80	20.676	12 15 32.9	74.74
6	0 58 1.33	19.192	5 41 9.0	90.64	6	2 33 23.98	20.718	12 22 59.8	74.23
7	0 59 56.54	19.212	5 50 12.3	90.44	7	2 35 28.41	20.759	12 30 23.7	73.72
8	1 1 51.87	19.233	5 59 14.3	90.24	8	2 37 33.09	20.802	12 37 44.4	73.19
9	1 3 47.34	19.256	6 8 15.2	90.05	9	2 39 38.03	20.844	12 45 2.0	72.67
10	1 5 42.94	19.278	6 17 14.9	89.83	10	2 41 43.22	20.887	12 52 16.4	72.13
11	1 7 38.68	19.302	6 26 13.2	89.62	11	2 43 48.67	20.930	12 59 27.6	71.59
12	1 9 34.56	19.325	6 35 10.3	89.40	12	2 45 54.38	20.973	13 6 35.5	71.03
13	1 11 30.58	19.349	6 44 6.0	89.18	13	2 48 0.35	21.018	13 13 40.0	70.48
14	1 13 26.75	19.374	6 53 0.4	88.94	14	2 50 6.59	21.063	13 20 41.2	69.91
15	1 15 23.07	19.398	7 1 53.3	88.70	15	2 52 13.10	21.107	13 27 38.9	69.33
16	1 17 19.53	19.424	7 10 44.8	88.45	16	2 54 19.87	21.151	13 34 33.2	68.75
17	1 19 16.16	19.451	7 19 34.7	88.20	17	2 56 26.91	21.196	13 41 23.9	68.15
18	1 21 12.94	19.476	7 28 23.2	87.95	18	2 58 34.22	21.242	13 48 11.0	67.55
19	1 23 9.87	19.503	7 37 10.1	87.68	19	3 0 41.81	21.288	13 54 54.5	66.95
20	1 25 6.97	19.531	7 45 55.4	87.41	20	3 2 49.67	21.334	14 1 34.4	66.33
21	1 27 4.24	19.559	7 54 39.0	87.13	21	3 4 57.81	21.379	14 8 10.5	65.70
22	1 29 1.68	19.587	8 3 21.0	86.85	22	3 7 6.22	21.426	14 14 42.8	65.07
23	1 30 59.28	19.615	8 12 1.2	86.57	23	3 9 14.92	21.473	14 21 11.3	64.43
24	1 32 57.06	19.644	N. 8 20 39.8	86.28	24	3 11 23.89	21.519	N. 14 27 35.9	63.78

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. In rom.	Declination.	Var. In rom.	Hour.	Right Ascension.	Var. In rom.	Declination.	Var. In rom.
SUNDAY 5.					TUESDAY 7.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	3 11 23.89	21.519	N. 14 27 35.9	63.78	0	5 0 18.71	23.849	N. 18 2 33.1	22.49
1	3 13 33.15	21.567	14 33 56.6	63.12	1	5 2 41.94	23.894	18 4 44.9	21.43
2	3 15 42.69	21.614	14 40 13.3	62.45	2	5 5 5.44	23.938	18 6 50.2	20.35
3	3 17 52.52	21.662	14 46 26.0	61.78	3	5 7 29.20	23.983	18 8 49.1	19.28
4	3 20 2.63	21.710	14 52 34.7	61.10	4	5 9 53.23	24.028	18 10 41.5	18.18
5	3 22 13.04	21.758	14 58 39.2	60.40	5	5 12 17.53	24.071	18 12 27.3	17.09
6	3 24 23.73	21.805	15 4 39.5	59.70	6	5 14 42.08	24.113	18 14 6.5	15.98
7	3 26 34.70	21.853	15 10 35.6	58.99	7	5 17 6.89	24.157	18 15 39.1	14.88
8	3 28 45.97	21.903	15 16 27.4	58.27	8	5 19 31.96	24.199	18 17 5.1	13.76
9	3 30 57.54	21.952	15 22 14.8	57.54	9	5 21 57.28	24.241	18 18 24.3	12.64
10	3 33 9.39	22.000	15 27 57.9	56.82	10	5 24 22.85	24.282	18 19 36.8	11.51
11	3 35 21.54	22.049	15 33 36.6	56.07	11	5 26 48.66	24.322	18 20 42.4	10.37
12	3 37 33.98	22.098	15 39 10.7	55.32	12	5 29 14.71	24.363	18 21 41.2	9.23
13	3 39 46.72	22.148	15 44 40.4	54.56	13	5 31 41.01	24.403	18 22 33.2	8.09
14	3 41 59.75	22.197	15 50 5.4	53.78	14	5 34 7.55	24.443	18 23 18.3	6.93
15	3 44 13.08	22.246	15 55 25.8	53.01	15	5 36 34.32	24.481	18 23 56.4	5.77
16	3 46 26.70	22.295	16 0 41.5	52.23	16	5 39 1.32	24.519	18 24 27.5	4.60
17	3 48 40.62	22.345	16 5 52.5	51.43	17	5 41 28.55	24.557	18 24 51.6	3.43
18	3 50 54.84	22.395	16 10 58.6	50.62	18	5 43 56.00	24.593	18 25 8.6	2.25
19	3 53 9.36	22.444	16 15 59.9	49.81	19	5 46 23.67	24.630	18 25 18.6	1.07
20	3 55 24.17	22.494	16 20 56.3	48.99	20	5 48 51.56	24.666	18 25 21.4	0.13
21	3 57 39.29	22.544	16 25 47.8	48.16	21	5 51 19.66	24.701	18 25 17.1	1.32
22	3 59 54.70	22.593	16 30 34.2	47.32	22	5 53 47.97	24.736	18 25 5.6	2.52
23	4 2 10.41	22.643	N. 16 35 15.6	46.47	23	5 56 16.49	24.770	N. 18 24 46.9	3.73
MONDAY 6.					WEDNESDAY 8.				
0	4 4 26.42	22.693	N. 16 39 51.8	45.61	0	5 58 45.21	24.803	N. 18 24 20.9	4.93
1	4 6 42.72	22.743	16 44 22.9	44.75	1	6 1 14.13	24.836	18 23 47.7	6.14
2	4 8 59.33	22.793	16 48 48.8	43.87	2	6 3 43.24	24.868	18 23 7.2	7.36
3	4 11 16.23	22.842	16 53 9.3	42.98	3	6 6 12.54	24.899	18 22 19.4	8.58
4	4 13 33.43	22.892	16 57 24.6	42.10	4	6 8 42.03	24.930	18 21 24.2	9.81
5	4 15 50.93	22.942	17 1 34.5	41.20	5	6 11 11.70	24.960	18 20 21.7	11.03
6	4 18 8.73	22.991	17 5 39.0	40.28	6	6 13 41.55	24.989	18 19 11.8	12.28
7	4 20 26.82	23.039	17 9 37.9	39.37	7	6 16 11.57	25.018	18 17 54.4	13.51
8	4 22 45.20	23.088	17 13 31.4	38.45	8	6 18 41.76	25.045	18 16 29.7	14.74
9	4 25 3.88	23.138	17 17 19.3	37.51	9	6 21 12.11	25.073	18 14 57.5	15.98
10	4 27 22.86	23.188	17 21 1.5	36.56	10	6 23 42.63	25.099	18 13 17.9	17.23
11	4 29 42.13	23.236	17 24 38.0	35.62	11	6 26 13.30	25.124	18 11 30.8	18.48
12	4 32 1.69	23.284	17 28 8.9	34.66	12	6 28 44.12	25.149	18 9 36.2	19.73
13	4 34 21.54	23.333	17 31 33.9	33.68	13	6 31 15.09	25.173	18 7 34.1	20.98
14	4 36 41.69	23.382	17 34 53.1	32.71	14	6 33 46.20	25.197	18 5 24.5	22.23
15	4 39 2.12	23.428	17 38 6.4	31.73	15	6 36 17.45	25.220	18 3 7.3	23.48
16	4 41 22.83	23.476	17 41 13.8	30.73	16	6 38 48.84	25.242	18 0 42.7	24.73
17	4 43 43.83	23.523	17 44 15.2	29.73	17	6 41 20.35	25.262	17 58 10.5	25.99
18	4 46 5.11	23.571	17 47 10.5	28.72	18	6 43 51.98	25.283	17 55 30.8	27.25
19	4 48 26.68	23.618	17 49 59.8	27.70	19	6 46 23.74	25.303	17 52 43.5	28.51
20	4 50 48.53	23.665	17 52 42.9	26.67	20	6 48 55.61	25.321	17 49 48.7	29.77
21	4 53 10.66	23.711	17 55 19.8	25.63	21	6 51 27.59	25.338	17 46 46.3	31.03
22	4 55 33.06	23.758	17 57 50.5	24.60	22	6 53 59.67	25.355	17 43 36.4	32.28
23	4 57 55.75	23.804	18 0 15.0	23.55	23	6 56 31.85	25.372	17 40 18.9	33.54
24	5 0 18.71	23.849	N. 18 2 33.1	22.49	24	6 59 4.13	25.388	N. 17 36 53.9	34.80

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.				
THURSDAY 9.					SATURDAY 11.								
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"				
0	6 59 4	13	25.388	N. 17 36 53	9	34.80	0	9 1 15	28	25.258	N. 12 32 25	2	89.37
1	7 1 36	50	25.402	17 33 21	3	36.06	1	9 3 46	78	25.241	12 23 26	2	90.28
2	7 4 8	95	25.416	17 29 41	2	37.31	2	9 6 18	17	25.222	12 14 21	8	91.19
3	7 6 41	49	25.429	17 25 53	6	38.57	3	9 8 40	45	25.204	12 5 11	9	92.08
4	7 9 14	10	25.441	17 21 58	4	39.82	4	9 11 20	62	25.185	11 55 56	8	92.96
5	7 11 46	78	25.453	17 17 55	8	41.07	5	9 13 51	67	25.166	11 46 36	4	93.83
6	7 14 19	53	25.463	17 13 45	6	42.32	6	9 16 22	61	25.147	11 37 10	8	94.68
7	7 16 52	34	25.473	17 9 28	0	43.56	7	9 18 53	43	25.127	11 27 40	2	95.52
8	7 19 25	21	25.483	17 5 2 9	4	44.80	8	9 21 24	13	25.106	11 18 4 6	6	96.34
9	7 21 58	13	25.491	17 0 30	4	46.04	9	9 23 54	70	25.085	11 8 24	1	97.15
10	7 24 31	10	25.498	16 55 50	4	47.28	10	9 26 25	15	25.064	10 58 38	8	97.95
11	7 27 4	11	25.505	16 51 3 0	1	48.51	11	9 28 55	47	25.043	10 48 48	7	98.74
12	7 29 37	16	25.511	16 46 8 3	12	49.73	12	9 31 25	67	25.022	10 38 53	9	99.51
13	7 32 10	24	25.516	16 41 6 2	13	50.97	13	9 33 55	73	24.999	10 28 54	6	100.26
14	7 34 43	35	25.521	16 35 56	7	52.19	14	9 36 25	66	24.978	10 18 50	8	101.00
15	7 37 16	49	25.524	16 30 39	9	53.41	15	9 38 55	46	24.955	10 8 42	6	101.73
16	7 39 49	64	25.527	16 25 15	8	54.62	16	9 41 25	12	24.932	9 58 30	1	102.44
17	7 42 22	81	25.529	16 19 44	5	55.82	17	9 43 54	64	24.909	9 48 13	3	103.14
18	7 44 55	99	25.530	16 14 6 0	0	57.02	18	9 46 24	03	24.887	9 37 52	4	103.82
19	7 47 29	17	25.531	16 8 20	2	58.23	19	9 48 53	28	24.863	9 27 27	5	104.48
20	7 50 2	36	25.531	16 2 27	3	59.41	20	9 51 22	39	24.839	9 16 58	6	105.14
21	7 52 35	54	25.529	15 56 27	3	60.59	21	9 53 51	35	24.816	9 6 25	8	105.78
22	7 55 8	71	25.528	15 50 20	2	61.78	22	9 56 20	18	24.793	8 55 49	3	106.39
23	7 57 41	87	25.526	N. 15 44 6	0	62.95	23	9 58 48	86	24.768	N. 8 45 9	1	107.00
FRIDAY 10.					SUNDAY 12.								
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"				
0	8 0 15	02	25.523	N. 15 37 44	8	64.11	0	10 1 17	40	24.744	N. 8 34 25	3	107.60
1	8 2 48	14	25.518	15 31 16	7	65.27	1	10 3 45	79	24.719	8 23 37	9	108.18
2	8 5 21	24	25.514	15 24 41	6	66.42	2	10 6 14	03	24.695	8 12 47	2	108.73
3	8 7 54	31	25.509	15 17 59	7	67.56	3	10 8 42	13	24.672	8 1 53	1	109.28
4	8 10 27	35	25.503	15 11 10	9	68.70	4	10 11 10	09	24.647	7 50 55	9	109.80
5	8 13 0	35	25.497	15 4 15	3	69.82	5	10 13 37	89	24.622	7 39 55	5	110.32
6	8 15 33	31	25.489	14 57 13	1	70.93	6	10 16 5	55	24.598	7 28 52	1	110.82
7	8 18 6	22	25.481	14 50 4 1	0	72.05	7	10 18 33	06	24.573	7 17 45	7	111.30
8	8 20 39	08	25.473	14 42 48	5	73.15	8	10 21 0	43	24.548	7 6 36	5	111.77
9	8 23 11	89	25.464	14 35 26	3	74.24	9	10 23 27	64	24.523	6 55 24	5	112.22
10	8 25 44	65	25.454	14 27 57	6	75.32	10	10 25 54	70	24.498	6 44 9	9	112.65
11	8 28 17	34	25.443	14 20 22	5	76.39	11	10 28 21	62	24.474	6 32 52	7	113.08
12	8 30 49	97	25.433	14 12 40	9	77.47	12	10 30 48	39	24.448	6 21 33	0	113.48
13	8 33 22	53	25.421	14 4 52	9	78.52	13	10 33 15	00	24.423	6 10 11	0	113.86
14	8 35 55	02	25.408	13 56 58	7	79.55	14	10 35 41	47	24.399	5 58 46	7	114.23
15	8 38 27	43	25.396	13 48 58	3	80.58	15	10 38 7	79	24.374	5 47 20	3	114.58
16	8 40 59	77	25.383	13 40 51	7	81.61	16	10 40 33	96	24.349	5 35 51	7	114.93
17	8 43 32	02	25.368	13 32 39	0	82.62	17	10 42 59	98	24.324	5 24 21	1	115.25
18	8 46 4	19	25.355	13 24 20	3	83.62	18	10 45 25	85	24.300	5 12 48	7	115.55
19	8 48 36	28	25.340	13 15 55	6	84.60	19	10 47 51	58	24.276	5 1 14	5	115.85
20	8 51 8	27	25.324	13 7 25	1	85.58	20	10 50 17	16	24.251	4 49 38	5	116.13
21	8 53 40	17	25.309	12 58 48	7	86.55	21	10 52 42	59	24.226	4 38 1 0	0	116.38
22	8 56 11	98	25.293	12 50 6 5	5	87.50	22	10 55 7	87	24.202	4 26 21	9	116.63
23	8 58 43	68	25.275	12 41 18	7	88.44	23	10 57 33	01	24.178	4 14 41	4	116.86
24	9 1 15	28	25.258	N. 12 32 25	2	89.37	24	10 59 58	00	24.153	N. 4 2 59	6	117.07

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour.	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
MONDAY 13.					WEDNESDAY 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	10 59 58.00	24.153	N. 4 2 59.6	117.07	0	12 53 26.34	23.208	S. 5 15 3.4	110.13
1	11 2 22.85	24.130	3 51 16.6	117.27	1	12 55 45.54	23.193	5 26 2.8	109.66
2	11 4 47.56	24.106	3 39 32.4	117.45	2	12 58 4.66	23.180	5 36 59.3	109.18
3	11 7 12.12	24.082	3 27 47.2	117.62	3	13 0 23.70	23.166	5 47 53.0	108.71
4	11 9 36.54	24.058	3 16 1.0	117.77	4	13 2 42.65	23.152	5 58 43.8	108.21
5	11 12 0.82	24.034	3 4 14.0	117.90	5	13 5 1.52	23.139	6 9 31.5	107.70
6	11 14 24.95	24.011	2 52 26.2	118.03	6	13 7 20.32	23.126	6 20 16.2	107.19
7	11 16 48.95	23.988	2 40 37.7	118.13	7	13 9 39.03	23.113	6 30 57.8	106.67
8	11 19 12.80	23.964	2 28 48.7	118.21	8	13 11 57.67	23.100	6 41 36.2	106.13
9	11 21 36.52	23.942	2 16 59.2	118.29	9	13 14 16.23	23.088	6 52 11.3	105.58
10	11 24 0.10	23.918	2 5 9.2	118.35	10	13 16 34.72	23.076	7 2 43.2	105.03
11	11 26 23.54	23.896	1 53 19.0	118.38	11	13 18 53.14	23.063	7 13 11.6	104.46
12	11 28 46.85	23.873	1 41 28.6	118.41	12	13 21 11.48	23.052	7 23 36.7	103.88
13	11 31 10.02	23.851	1 29 38.1	118.43	13	13 23 29.76	23.040	7 33 58.2	103.29
14	11 33 33.06	23.829	1 17 47.5	118.43	14	13 25 47.96	23.028	7 44 16.2	102.71
15	11 35 55.97	23.808	1 5 57.0	118.41	15	13 28 6.09	23.017	7 54 30.7	102.10
16	11 38 18.75	23.786	0 54 6.6	118.38	16	13 30 24.16	23.006	8 4 41.4	101.48
17	11 40 41.40	23.764	0 42 16.5	118.33	17	13 32 42.16	22.994	8 14 48.5	100.87
18	11 43 3.92	23.743	0 30 26.7	118.27	18	13 35 0.09	22.983	8 24 51.8	100.23
19	11 45 26.31	23.722	0 18 37.3	118.19	19	13 37 17.96	22.973	8 34 51.3	99.60
20	11 47 48.58	23.701	N. 0 6 48.4	118.10	20	13 39 35.77	22.963	8 44 47.0	98.95
21	11 50 10.72	23.680	S. 0 4 59.9	117.99	21	13 41 53.51	22.953	8 54 38.7	98.28
22	11 52 32.74	23.659	0 16 47.5	117.87	22	13 44 11.20	22.943	9 4 26.4	97.62
23	11 54 54.63	23.639	S. 0 28 34.3	117.74	23	13 46 28.82	22.932	S. 9 14 10.1	96.95
TUESDAY 14.					THURSDAY 16.				
0	11 57 16.41	23.619	S. 0 40 20.4	117.60	0	13 48 46.38	22.923	S. 9 23 49.8	96.27
1	11 59 38.06	23.599	0 52 5.5	117.43	1	13 51 3.89	22.913	9 33 25.3	95.58
2	12 1 59.60	23.580	1 3 49.6	117.26	2	13 53 21.34	22.903	9 42 56.7	94.88
3	12 4 21.02	23.561	1 15 32.6	117.07	3	13 55 38.73	22.893	9 52 23.9	94.18
4	12 6 42.33	23.542	1 27 14.4	116.87	4	13 57 56.06	22.884	10 1 46.8	93.46
5	12 9 3.52	23.523	1 38 55.0	116.65	5	14 0 13.34	22.876	10 11 5.4	92.74
6	12 11 24.60	23.504	1 50 34.2	116.42	6	14 2 30.57	22.867	10 20 19.7	92.02
7	12 13 45.57	23.485	2 2 12.0	116.18	7	14 4 47.74	22.858	10 29 29.6	91.28
8	12 16 6.42	23.467	2 13 48.3	115.92	8	14 7 4.86	22.849	10 38 35.1	90.53
9	12 18 27.17	23.449	2 25 23.0	115.65	9	14 9 21.93	22.841	10 47 36.0	89.78
10	12 20 47.81	23.432	2 36 56.1	115.38	10	14 11 38.95	22.832	10 56 32.5	89.03
11	12 23 8.35	23.414	2 48 27.5	115.08	11	14 13 55.91	22.823	11 5 24.4	88.27
12	12 25 28.78	23.397	2 59 57.0	114.76	12	14 16 12.83	22.816	11 14 11.7	87.50
13	12 27 49.11	23.380	3 11 24.6	114.44	13	14 18 29.70	22.807	11 22 54.4	86.73
14	12 30 9.34	23.363	3 22 50.3	114.12	14	14 20 46.51	22.798	11 31 32.4	85.94
15	12 32 29.46	23.346	3 34 14.0	113.77	15	14 23 3.28	22.791	11 40 5.7	85.15
16	12 34 49.49	23.330	3 45 35.5	113.41	16	14 25 20.00	22.783	11 48 34.2	84.36
17	12 37 9.42	23.314	3 56 54.9	113.04	17	14 27 36.67	22.775	11 56 58.0	83.56
18	12 39 29.26	23.298	4 8 12.0	112.66	18	14 29 53.30	22.768	12 5 16.9	82.75
19	12 41 49.00	23.283	4 19 26.8	112.27	19	14 32 9.88	22.760	12 13 31.0	81.94
20	12 44 8.65	23.267	4 30 39.2	111.86	20	14 34 26.42	22.753	12 21 40.2	81.12
21	12 46 28.20	23.252	4 41 49.1	111.44	21	14 36 42.91	22.744	12 29 44.4	80.29
22	12 48 47.67	23.238	4 52 56.5	111.02	22	14 38 59.35	22.737	12 37 43.7	79.48
23	12 51 7.05	23.223	5 4 1.3	110.58	23	14 41 15.75	22.729	12 45 38.1	78.64
24	12 53 26.34	23.208	S. 5 15 3.4	110.13	24	14 43 32.10	22.722	S. 12 53 27.4	77.79

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
FRIDAY 17.					SUNDAY 19.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	14 43 32.10	22.722	S. 12 53 27.4	77.75	0	16 31 41.05	22.309	S. 17 22 54.5	33.49
1	14 45 48.41	22.714	13 1 11.6	76.95	1	16 33 54.87	22.297	17 26 12.6	32.53
2	14 48 4.67	22.707	13 8 50.8	76.11	2	16 36 8.61	22.285	17 29 24.9	31.57
3	14 50 20.89	22.699	13 16 24.9	75.25	3	16 38 22.29	22.274	17 32 31.4	30.59
4	14 52 37.06	22.692	13 23 53.8	74.38	4	16 40 35.90	22.262	17 35 32.0	29.63
5	14 54 53.19	22.685	13 31 17.5	73.53	5	16 42 49.43	22.249	17 38 26.9	28.67
6	14 57 9.28	22.678	13 38 36.1	72.66	6	16 45 2.89	22.238	17 41 16.0	27.70
7	14 59 25.32	22.669	13 45 49.4	71.78	7	16 47 16.28	22.225	17 43 59.3	26.73
8	15 1 41.31	22.662	13 52 57.5	70.91	8	16 49 29.59	22.212	17 46 36.8	25.77
9	15 3 57.26	22.655	14 0 0.3	70.03	9	16 51 42.82	22.198	17 49 8.5	24.80
10	15 6 13.17	22.648	14 6 57.8	69.14	10	16 53 55.97	22.186	17 51 34.4	23.84
11	15 8 29.03	22.640	14 13 50.0	68.25	11	16 56 9.05	22.173	17 53 54.6	22.88
12	15 10 44.85	22.633	14 20 36.8	67.36	12	16 58 22.04	22.159	17 56 8.9	21.91
13	15 13 0.62	22.624	14 27 18.3	66.47	13	17 0 34.96	22.146	17 58 17.5	20.95
14	15 15 16.34	22.617	14 33 54.4	65.56	14	17 2 47.79	22.131	18 0 20.3	19.98
15	15 17 32.02	22.610	14 40 25.0	64.65	15	17 5 0.53	22.117	18 2 17.3	19.03
16	15 19 47.66	22.603	14 46 50.2	63.75	16	17 7 13.19	22.103	18 4 8.6	18.07
17	15 22 3.25	22.594	14 53 10.0	62.84	17	17 9 25.77	22.089	18 5 54.1	17.10
18	15 24 18.79	22.587	14 59 24.3	61.93	18	17 11 38.26	22.074	18 7 33.8	16.14
19	15 26 34.29	22.579	15 5 33.1	61.01	19	17 13 50.66	22.058	18 9 7.8	15.19
20	15 28 49.74	22.571	15 11 36.4	60.09	20	17 16 2.96	22.043	18 10 36.1	14.23
21	15 31 5.14	22.563	15 17 34.2	59.17	21	17 18 15.18	22.029	18 11 58.6	13.28
22	15 33 20.50	22.556	15 23 26.4	58.23	22	17 20 27.31	22.013	18 13 15.4	12.33
23	15 35 35.81	22.548	S. 15 29 13.0	57.31	23	17 22 39.34	21.998	S. 18 14 26.5	11.38
SATURDAY 18.					MONDAY 20.				
0	15 37 51.07	22.539	S. 15 34 54.1	56.38	0	17 24 51.28	21.982	S. 18 15 31.9	10.43
1	15 40 6.28	22.531	15 40 29.6	55.44	1	17 27 3.12	21.965	18 16 31.6	9.48
2	15 42 21.44	22.523	15 45 59.4	54.51	2	17 29 14.86	21.949	18 17 25.6	8.53
3	15 44 36.55	22.514	15 51 23.7	53.58	3	17 31 26.51	21.933	18 18 13.9	7.58
4	15 46 51.61	22.506	15 56 42.3	52.63	4	17 33 38.06	21.917	18 18 56.6	6.64
5	15 49 6.62	22.498	16 1 55.2	51.68	5	17 35 49.51	21.899	18 19 33.6	5.69
6	15 51 21.58	22.488	16 7 2.5	50.75	6	17 38 0.85	21.883	18 20 4.9	4.75
7	15 53 36.48	22.479	16 12 4.2	49.80	7	17 40 12.10	21.866	18 20 30.6	3.82
8	15 55 51.33	22.471	16 17 0.1	48.84	8	17 42 23.24	21.848	18 20 50.7	2.88
9	15 58 6.13	22.462	16 21 50.3	47.89	9	17 44 34.27	21.830	18 21 5.2	1.95
10	16 0 20.87	22.453	16 26 34.8	46.94	10	17 46 45.20	21.813	18 21 14.1	1.02
11	16 2 35.56	22.443	16 31 13.6	45.99	11	17 48 56.02	21.794	18 21 17.4	0.09
12	16 4 50.19	22.434	16 35 46.7	45.04	12	17 51 6.73	21.776	18 21 15.2	0.83
13	16 7 4.77	22.424	16 40 14.1	44.08	13	17 53 17.33	21.758	18 21 7.4	1.77
14	16 9 19.28	22.414	16 44 35.7	43.12	14	17 55 27.82	21.739	18 20 54.0	2.69
15	16 11 33.74	22.405	16 48 51.5	42.16	15	17 57 38.20	21.720	18 20 35.1	3.60
16	16 13 48.14	22.394	16 53 1.6	41.21	16	17 59 48.46	21.701	18 20 10.8	4.52
17	16 16 2.47	22.384	16 57 6.0	40.24	17	18 1 58.61	21.682	18 19 40.9	5.43
18	16 18 16.75	22.374	17 1 4.5	39.28	18	18 4 8.64	21.663	18 19 5.6	6.34
19	16 20 30.96	22.363	17 4 57.3	38.32	19	18 6 18.56	21.643	18 18 24.8	7.26
20	16 22 45.11	22.353	17 8 44.3	37.36	20	18 8 28.36	21.624	18 17 38.5	8.16
21	16 24 59.19	22.342	17 12 25.6	36.39	21	18 10 38.05	21.604	18 16 46.9	9.06
22	16 27 13.21	22.331	17 16 1.0	35.43	22	18 12 47.61	21.583	18 15 49.8	9.97
23	16 29 27.16	22.320	17 19 30.7	34.46	23	18 14 57.05	21.563	18 14 47.3	10.86
24	16 31 41.05	22.309	S. 17 22 54.5	33.49	24	18 17 6.37	21.543	S. 18 13 39.5	11.76

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 21.					THURSDAY 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	18 17 6.37	21.543	S. 18 13 39.5	11.76	0	19 57 55.78	20.437	S. 15 41 16.2	50.13
1	18 19 15.57	21.523	18 12 26.2	12.65	1	19 59 58.33	20.413	15 36 13.4	50.80
2	18 21 24.64	21.502	18 11 7.7	13.53	2	20 2 0.73	20.388	15 31 6.6	51.49
3	18 23 33.59	21.481	18 9 43.8	14.42	3	20 4 2.98	20.363	15 25 55.6	52.17
4	18 25 42.41	21.460	18 8 14.7	15.29	4	20 6 5.09	20.340	15 20 40.5	52.84
5	18 27 51.11	21.439	18 6 40.3	16.18	5	20 8 7.06	20.316	15 15 21.5	53.51
6	18 29 59.68	21.418	18 5 0.6	17.06	6	20 10 8.88	20.292	15 9 58.4	54.18
7	18 32 8.12	21.397	18 3 15.6	17.93	7	20 12 10.56	20.268	15 4 31.4	54.83
8	18 34 16.44	21.375	18 1 25.5	18.78	8	20 14 12.10	20.244	14 59 0.4	55.49
9	18 36 24.62	21.353	17 59 30.2	19.65	9	20 16 13.49	20.220	14 53 25.5	56.13
10	18 38 32.67	21.331	17 57 29.7	20.52	10	20 18 14.74	20.197	14 47 46.8	56.77
11	18 40 40.59	21.309	17 55 24.0	21.38	11	20 20 15.85	20.173	14 42 4.3	57.41
12	18 42 48.38	21.288	17 53 13.2	22.23	12	20 22 16.81	20.149	14 36 17.9	58.05
13	18 44 56.04	21.265	17 50 57.3	23.08	13	20 24 17.64	20.126	14 30 27.7	58.68
14	18 47 3.56	21.242	17 48 36.3	23.92	14	20 26 18.32	20.103	14 24 33.8	59.29
15	18 49 10.94	21.220	17 46 10.3	24.75	15	20 28 18.87	20.079	14 18 36.2	59.91
16	18 51 18.20	21.198	17 43 39.3	25.59	16	20 30 19.27	20.056	14 12 34.9	60.52
17	18 53 25.31	21.174	17 41 3.2	26.43	17	20 32 19.54	20.033	14 6 30.0	61.12
18	18 55 32.29	21.152	17 38 22.1	27.26	18	20 34 19.66	20.009	14 0 21.5	61.72
19	18 57 39.13	21.128	17 35 36.1	28.08	19	20 36 19.65	19.987	13 54 9.4	62.32
20	18 59 45.83	21.106	17 32 45.1	28.91	20	20 38 19.50	19.963	13 47 53.7	62.91
21	19 1 52.40	21.083	17 29 49.2	29.73	21	20 40 19.21	19.941	13 41 34.5	63.49
22	19 3 58.82	21.059	17 26 48.4	30.53	22	20 42 18.79	19.918	13 35 11.8	64.07
23	19 6 5.11	21.036	S. 17 23 42.8	31.34	23	20 44 18.23	19.896	S. 13 28 45.7	64.64
WEDNESDAY 22.					FRIDAY 24.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	19 8 11.25	21.013	S. 17 20 32.3	32.16	0	20 46 17.54	19.874	S. 13 22 16.1	65.21
1	19 10 17.26	20.989	17 17 16.9	32.96	1	20 48 16.72	19.852	13 15 43.2	65.77
2	19 12 23.12	20.965	17 13 56.8	33.75	2	20 50 15.76	19.829	13 9 6.9	66.33
3	19 14 28.84	20.942	17 10 31.9	34.54	3	20 52 14.67	19.807	13 2 27.3	66.88
4	19 16 34.42	20.918	17 7 2.3	35.33	4	20 54 13.44	19.785	12 55 44.4	67.43
5	19 18 39.86	20.895	17 3 28.0	36.12	5	20 56 12.09	19.763	12 48 58.2	67.97
6	19 20 45.16	20.871	16 59 48.9	36.90	6	20 58 10.60	19.742	12 42 8.8	68.49
7	19 22 50.31	20.847	16 56 5.2	37.67	7	21 0 8.99	19.721	12 35 16.3	69.02
8	19 24 55.32	20.823	16 52 16.9	38.43	8	21 2 7.25	19.699	12 28 20.6	69.55
9	19 27 0.19	20.799	16 48 24.0	39.20	9	21 4 5.38	19.678	12 21 21.7	70.07
10	19 29 4.91	20.774	16 44 26.5	39.97	10	21 6 3.39	19.658	12 14 19.8	70.58
11	19 31 9.48	20.750	16 40 24.4	40.73	11	21 8 1.27	19.637	12 7 14.8	71.08
12	19 33 13.91	20.727	16 36 17.8	41.48	12	21 9 59.03	19.616	12 0 6.8	71.58
13	19 35 18.20	20.703	16 32 6.7	42.22	13	21 11 56.66	19.595	11 52 55.8	72.08
14	19 37 22.35	20.679	16 27 51.2	42.96	14	21 13 54.17	19.575	11 45 41.9	72.57
15	19 39 26.35	20.654	16 23 31.2	43.70	15	21 15 51.56	19.555	11 38 25.0	73.06
16	19 41 30.20	20.629	16 19 6.8	44.43	16	21 17 48.83	19.536	11 31 5.2	73.53
17	19 43 33.90	20.605	16 14 38.0	45.16	17	21 19 45.99	19.516	11 23 42.6	74.00
18	19 45 37.46	20.582	16 10 4.9	45.88	18	21 21 43.02	19.496	11 16 17.2	74.47
19	19 47 40.88	20.558	16 5 27.4	46.61	19	21 23 39.94	19.477	11 8 49.0	74.93
20	19 49 44.15	20.533	16 0 45.6	47.32	20	21 25 36.74	19.458	11 1 18.0	75.39
21	19 51 47.28	20.509	15 55 59.6	48.03	21	21 27 33.43	19.438	10 53 44.3	75.84
22	19 53 50.26	20.484	15 51 9.3	48.73	22	21 29 30.00	19.419	10 46 7.9	76.28
23	19 55 53.09	20.460	15 46 14.9	49.43	23	21 31 26.46	19.402	10 38 28.9	76.72
24	19 57 55.78	20.437	S. 15 41 16.2	50.13	24	21 33 22.82	19.383	S. 10 30 47.3	77.15

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 25.					MONDAY 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	21 33 22.82	19.383	S. 10 30 47.3	77.15	0	23 4 47.48	18.813	S. 3 41 23.8	91.22
1	21 35 19.06	19.365	10 23 3.1	77.58	1	23 6 40.34	18.808	3 32 16.0	91.37
2	21 37 15.20	19.348	10 15 16.3	78.01	2	23 8 33.18	18.805	3 23 7.4	91.51
3	21 39 11.23	19.330	10 7 27.0	78.43	3	23 10 26.00	18.802	3 13 57.9	91.66
4	21 41 7.16	19.313	9 59 35.2	78.83	4	23 12 18.80	18.798	3 4 47.5	91.79
5	21 43 2.98	19.295	9 51 41.0	79.23	5	23 14 11.57	18.794	2 55 36.4	91.92
6	21 44 58.70	19.278	9 43 44.4	79.63	6	23 16 4.33	18.792	2 46 24.5	92.04
7	21 46 54.32	19.262	9 35 45.4	80.03	7	23 17 57.07	18.789	2 37 11.9	92.16
8	21 48 49.84	19.245	9 27 44.0	80.42	8	23 19 49.80	18.788	2 27 58.6	92.28
9	21 50 45.26	19.228	9 19 40.4	80.79	9	23 21 42.52	18.786	2 18 44.6	92.38
10	21 52 40.58	19.213	9 11 34.5	81.18	10	23 23 35.23	18.784	2 9 30.0	92.48
11	21 54 35.81	19.198	9 3 26.3	81.55	11	23 25 27.93	18.783	2 0 14.9	92.57
12	21 56 30.95	19.183	8 55 15.9	81.91	12	23 27 20.63	18.783	1 50 59.2	92.66
13	21 58 26.00	19.167	8 47 3.4	82.27	13	23 29 13.32	18.782	1 41 43.0	92.74
14	22 0 20.95	19.152	8 38 48.7	82.63	14	23 31 6.01	18.782	1 32 26.3	92.82
15	22 2 15.82	19.137	8 30 31.9	82.97	15	23 32 58.70	18.783	1 23 9.2	92.89
16	22 4 10.59	19.122	8 22 13.1	83.31	16	23 34 51.40	18.783	1 13 51.6	92.96
17	22 6 5.28	19.108	8 13 52.2	83.65	17	23 36 44.10	18.784	1 4 33.7	93.01
18	22 7 59.89	19.095	8 5 29.3	83.98	18	23 38 36.81	18.786	0 55 15.5	93.07
19	22 9 54.42	19.081	7 57 4.4	84.30	19	23 40 29.53	18.788	0 45 56.9	93.12
20	22 11 48.86	19.068	7 48 37.7	84.62	20	23 42 22.26	18.790	0 36 38.1	93.16
21	22 13 43.23	19.055	7 40 9.0	84.94	21	23 44 15.01	18.793	0 27 19.0	93.20
22	22 15 37.52	19.042	7 31 38.4	85.24	22	23 46 7.77	18.795	0 17 59.7	93.23
23	22 17 31.73	19.028	S. 7 23 6.1	85.54	23	23 48 0.55	18.798	S. 0 8 40.3	93.24
SUNDAY 26.					TUESDAY 28.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	22 19 25.86	19.017	S. 7 14 31.9	85.84	0	23 49 53.35	18.802	N. 0 0 39.2	93.25
1	22 21 19.93	19.005	7 5 56.0	86.13	1	23 51 46.17	18.806	0 9 58.9	93.28
2	22 23 13.92	18.993	6 57 18.4	86.41	2	23 53 39.02	18.810	0 19 18.6	93.28
3	22 25 7.84	18.982	6 48 39.1	86.69	3	23 55 31.89	18.814	0 28 38.3	93.28
4	22 27 1.70	18.971	6 39 58.1	86.97	4	23 57 24.79	18.820	0 37 58.0	93.28
5	22 28 55.49	18.960	6 31 15.5	87.23	5	23 59 17.73	18.826	0 47 17.7	93.28
6	22 30 49.22	18.950	6 22 31.3	87.50	6	0 1 10.70	18.831	0 56 37.3	93.26
7	22 32 42.89	18.939	6 13 45.5	87.75	7	0 3 3.70	18.837	1 5 56.8	93.23
8	22 34 36.49	18.929	6 4 58.3	88.00	8	0 4 56.74	18.844	1 15 16.1	93.21
9	22 36 30.04	18.920	5 56 9.5	88.25	9	0 6 49.83	18.851	1 24 35.3	93.18
10	22 38 23.53	18.910	5 47 19.3	88.49	10	0 8 42.95	18.858	1 33 54.2	93.13
11	22 40 16.96	18.901	5 38 27.6	88.72	11	0 10 36.12	18.866	1 43 12.9	93.09
12	22 42 10.34	18.893	5 29 34.6	88.94	12	0 12 29.34	18.874	1 52 31.3	93.03
13	22 44 3.67	18.884	5 20 40.3	89.17	13	0 14 22.61	18.883	2 1 49.3	92.98
14	22 45 56.95	18.877	5 11 44.6	89.38	14	0 16 15.93	18.891	2 11 7.0	92.92
15	22 47 50.19	18.869	5 2 47.7	89.58	15	0 18 9.30	18.900	2 20 24.3	92.85
16	22 49 43.38	18.861	4 53 49.6	89.79	16	0 20 2.73	18.910	2 29 41.2	92.78
17	22 51 36.52	18.853	4 44 50.2	89.99	17	0 21 56.22	18.920	2 38 57.6	92.69
18	22 53 29.62	18.847	4 35 49.7	90.18	18	0 23 49.77	18.930	2 48 13.5	92.60
19	22 55 22.69	18.841	4 26 48.0	90.37	19	0 25 43.38	18.941	2 57 28.8	92.51
20	22 57 15.71	18.834	4 17 45.2	90.55	20	0 27 37.06	18.952	3 6 43.6	92.42
21	22 59 8.70	18.829	4 8 41.4	90.73	21	0 29 30.80	18.963	3 15 57.8	92.31
22	23 1 1.66	18.823	3 59 36.5	90.90	22	0 31 24.62	18.975	3 25 11.3	92.19
23	23 2 54.58	18.818	3 50 30.6	91.06	23	0 33 18.50	18.987	3 34 24.1	92.08
24	23 4 47.48	18.813	S. 3 41 23.8	91.22	24	0 35 12.46	19.000	N. 3 43 36.2	91.96

PHASES OF THE MOON.

				h	m
Feb.	4	)	<i>First Quarter</i>	16	52.3
	11	(	Full Moon	13	17.5
	18	(	<i>Last Quarter</i>	6	18.1
	26	●	New Moon	6	47.7

				h
Feb.	11	(	Perigee	23.0
	26	(	Apogee	2.8

AT APPARENT NOON.

Date.	THE SUN'S				Sidereal Time of the Semidiameter passing the Meridian.*	Equation of Time, to be added to Apparent Time.		Var. in hour.
	Apparent Right Ascension.	Var. in hour.	Apparent Declination.	Var. in hour.		m	s	
Wed.	1	h m s 22 46 39.99	s 9.378	S. ° ′ ″ 7 46 6.5	56.84	m s 1 5.42	m s 12 36.18	s 0.477
Thur.	2	22 50 24.79	9.356	7 23 18.9	57.11	1 5.35	12 24.46	0.499
Frid.	3	22 54 9.08	9.335	7 0 25.1	57.37	1 5.28	12 12.23	0.520
Sat.	4	22 57 52.88	9.315	6 37 25.4	57.60	1 5.21	11 59.51	0.540
Sun.	5	23 1 36.19	9.295	6 14 20.2	57.82	1 5.14	11 46.31	0.560
Mon.	6	23 5 19.04	9.276	5 51 10.0	58.02	1 5.08	11 32.65	0.579
Tues.	7	23 9 1.45	9.258	5 27 55.1	58.21	1 5.02	11 18.54	0.597
Wed.	8	23 12 43.43	9.241	5 4 35.9	58.38	1 4.96	11 4.01	0.614
Thur.	9	23 16 25.01	9.225	4 41 12.9	58.53	1 4.91	10 49.08	0.630
Frid.	10	23 20 6.21	9.209	4 17 46.3	58.68	1 4.85	10 33.77	0.646
Sat.	11	23 23 47.04	9.194	3 54 16.5	58.80	1 4.80	10 18.09	0.660
Sun.	12	23 27 27.54	9.181	3 30 43.9	58.91	1 4.76	10 2.08	0.674
Mon.	13	23 31 7.73	9.169	3 7 8.9	59.00	1 4.72	9 45.76	0.686
Tues.	14	23 34 47.64	9.157	2 43 31.8	59.08	1 4.67	9 29.16	0.697
Wed.	15	23 38 27.28	9.147	2 19 53.0	59.15	1 4.64	9 12.30	0.707
Thur.	16	23 42 6.69	9.138	1 56 12.7	59.20	1 4.60	8 55.20	0.717
Frid.	17	23 45 45.89	9.129	1 32 31.3	59.24	1 4.57	8 37.90	0.725
Sat.	18	23 49 24.90	9.122	1 8 49.3	59.26	1 4.54	8 20.40	0.732
Sun.	19	23 53 3.74	9.115	0 45 7.0	59.26	1 4.52	8 2.74	0.739
Mon.	20	23 56 42.44	9.110	S. 0 21 24.6	59.26	1 4.49	7 44.94	0.744
Tues.	21	0 0 21.02	9.105	N. 0 2 17.3	59.23	1 4.47	7 27.01	0.749
Wed.	22	0 3 59.49	9.101	0 25 58.5	59.19	1 4.45	7 8.98	0.753
Thur.	23	0 7 37.87	9.098	0 49 38.5	59.14	1 4.44	6 50.87	0.756
Frid.	24	0 11 16.19	9.096	1 13 17.1	59.07	1 4.43	6 32.68	0.759
Sat.	25	0 14 54.46	9.094	1 36 53.8	58.98	1 4.42	6 14.45	0.760
Sun.	26	0 18 32.70	9.093	2 0 28.2	58.88	1 4.42	5 56.19	0.761
Mon.	27	0 22 10.92	9.092	2 24 0.0	58.76	1 4.42	5 37.91	0.762
Tues.	28	0 25 49.14	9.093	2 47 28.9	58.64	1 4.42	5 19.63	0.761
Wed.	29	0 29 27.39	9.095	3 10 54.5	58.49	1 4.42	5 1.38	0.760
Thur.	30	0 33 5.68	9.096	3 34 16.3	58.33	1 4.43	4 43.16	0.758
Frid.	31	0 36 44.02	9.099	3 57 34.1	58.15	1 4.44	4 25.00	0.755
Sat.	32	0 40 22.42	9.102	N. 4 20 47.5	57.96	1 4.45	4 6.90	0.752

* Mean Time of the Semidiameter passing may be found by subtracting 0^m.18 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*		
Wed.	1	h m s 22 46 38.02	S. ° ′ ″ 7 46 18.4	16 ′ ″ 9.79	m s 12 36.28	h m s 22 34 1.74
Thur.	2	22 50 22.86	7 23 30.7	16 9.56	12 24.57	22 37 58.29
Frid.	3	22 54 7.18	7 0 36.7	16 9.32	12 12.34	22 41 54.84
Sat.	4	22 57 51.01	6 37 36.9	16 9.08	11 59.62	22 45 51.40
Sun.	5	23 1 34.37	6 14 31.5	16 8.83	11 46.42	22 49 47.95
Mon.	6	23 5 17.26	5 51 21.1	16 8.59	11 32.76	22 53 44.50
Tues.	7	23 8 59.71	5 28 6.1	16 8.34	11 18.65	22 57 41.05
Wed.	8	23 12 41.73	5 4 46.7	16 8.09	11 4.13	23 1 37.60
Thur.	9	23 16 23.35	4 41 23.4	16 7.84	10 49.19	23 5 34.16
Frid.	10	23 20 4.59	4 17 56.6	16 7.59	10 33.88	23 9 30.71
Sat.	11	23 23 45.47	3 54 26.6	16 7.33	10 18.21	23 13 27.26
Sun.	12	23 27 26.01	3 30 53.8	16 7.08	10 2.20	23 17 23.81
Mon.	13	23 31 6.24	3 7 18.5	16 6.81	9 45.88	23 21 20.36
Tues.	14	23 34 46.19	2 43 41.2	16 6.55	9 29.27	23 25 16.91
Wed.	15	23 38 25.88	2 20 2.0	16 6.28	9 12.41	23 29 13.47
Thur.	16	23 42 5.33	1 56 21.5	16 6.01	8 55.31	23 33 10.02
Frid.	17	23 45 44.57	1 32 39.9	16 5.74	8 38.00	23 37 6.57
Sat.	18	23 49 23.63	1 8 57.6	16 5.46	8 20.50	23 41 3.12
Sun.	19	23 53 2.52	0 45 14.9	16 5.18	8 2.84	23 44 59.67
Mon.	20	23 56 41.26	S. 0 21 32.3	16 4.91	7 45.04	23 48 56.22
Tues.	21	0 0 19.88	N. 0 2 10.0	16 4.63	7 27.11	23 52 52.78
Wed.	22	0 3 58.40	0 25 51.4	16 4.35	7 9.07	23 56 49.33
Thur.	23	0 7 36.83	0 49 31.8	16 4.07	6 50.95	0 0 45.88
Frid.	24	0 11 15.20	1 13 10.6	16 3.79	6 32.76	0 4 42.43
Sat.	25	0 14 53.51	1 36 47.6	16 3.51	6 14.53	0 8 38.98
Sun.	26	0 18 31.79	2 0 22.4	16 3.23	5 56.26	0 12 35.54
Mon.	27	0 22 10.06	2 23 54.5	16 2.95	5 37.98	0 16 32.09
Tues.	28	0 25 48.34	2 47 23.7	16 2.68	5 19.70	0 20 28.64
Wed.	29	0 29 26.63	3 10 49.6	16 2.40	5 1.44	0 24 25.19
Thur.	30	0 33 4.96	3 34 11.7	16 2.13	4 43.22	0 28 21.74
Frid.	31	0 36 43.35	3 57 29.8	16 1.85	4 25.05	0 32 18.29
Sat.	32	0 40 21.80	N. 4 20 43.5	16 1.58	4 6.95	0 36 14.85

* The Semidiameter for Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	<i>Noon.</i>	<i>Noon.</i>			<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
1	34 ⁰ 7 55.5	S. 0.01	9.9961257	^{h m s} 1 25 44.18	14 49.05	14 51.38	54 17.25	54 25.80
2	341 8 7.5	0.14	.9962322	1 21 48.27	14 54.15	14 57.36	54 35.93	54 47.69
3	342 8 17.5	0.26	.9963393	1 17 52.36	15 1.04	15 5.21	55 1.17	55 16.44
4	343 8 25.5	0.38	9.9964472	1 13 56.46	15 9.87	15 15.02	55 33.51	55 52.40
5	344 8 31.4	0.48	.9965558	1 10 0.55	15 20.65	15 26.75	56 13.04	56 35.40
6	345 8 35.2	0.55	.9966652	1 6 4.65	15 33.28	15 40.17	56 59.30	57 24.55
7	346 8 36.8	0.59	9.9967755	1 2 8.74	15 47.36	15 54.74	57 50.89	58 17.94
8	347 8 36.2	0.59	.9968868	0 58 12.83	16 2.20	16 9.59	58 45.27	59 12.35
9	348 8 33.4	0.57	.9969993	0 54 16.93	16 16.76	16 23.50	59 38.60	60 3.35
10	349 8 28.5	0.52	9.9971130	0 50 21.02	16 29.66	16 35.03	60 25.89	60 45.55
11	350 8 21.4	0.43	.9972280	0 46 25.12	16 39.41	16 42.66	61 1.60	61 13.53
12	351 8 12.2	0.32	.9973443	0 42 29.21	16 44.65	16 45.29	61 20.82	61 23.14
13	352 8 1.0	0.19	9.9974621	0 38 33.30	16 44.53	16 42.41	61 20.38	61 12.59
14	353 7 47.8	S. 0.05	.9975813	0 34 37.40	16 38.97	16 34.34	61 0.00	60 43.03
15	354 7 32.7	N. 0.07	.9977018	0 30 41.49	16 28.67	16 22.13	60 22.26	59 58.31
16	355 7 15.9	0.21	9.9978236	0 26 45.59	16 14.94	16 7.27	59 31.94	59 3.85
17	356 6 57.2	0.33	.9979464	0 22 49.68	15 59.34	15 51.32	58 34.79	58 5.42
18	357 6 36.8	0.42	.9980701	0 18 53.77	15 43.39	15 35.68	57 36.35	57 8.09
19	358 6 14.7	0.48	9.9981946	0 14 57.87	15 28.30	15 21.37	56 41.07	56 15.68
20	359 5 50.9	0.52	.9983196	0 11 1.96	15 14.96	15 9.11	55 52.18	55 30.74
21	0 5 25.4	0.54	.9984450	0 7 6.06	15 3.87	14 59.25	55 11.54	54 54.63
22	1 4 58.0	0.52	9.9985707	{ ^{0 3 10-15} _{23 59 14-24} }	14 55.27	14 51.92	54 40.03	54 27.75
23	2 4 28.9	0.47	.9986966	23 55 18.34	14 49.18	14 47.03	54 17.72	54 9.87
24	3 3 58.0	0.40	.9988224	23 51 22.43	14 45.46	14 44.42	54 4.09	54 0.31
25	4 3 25.2	0.31	9.9989482	23 47 26.53	14 43.89	14 43.84	53 58.36	53 58.15
26	5 2 50.5	0.19	.9990737	23 43 30.62	14 44.21	14 45.00	53 59.54	54 2.40
27	6 2 13.9	N. 0.06	.9991990	23 39 34.72	14 46.16	14 47.67	54 6.66	54 12.18
28	7 1 35.3	S. 0.07	9.9993239	23 35 38.81	14 49.50	14 51.64	54 18.90	54 26.74
29	8 0 54.7	0.20	.9994484	23 31 42.90	14 54.08	14 56.79	54 35.66	54 45.60
30	9 0 12.0	0.33	.9995725	23 27 47.00	14 59.79	15 3.06	54 56.58	55 8.58
31	9 59 27.1	0.44	.9996961	23 23 51.09	15 6.62	15 10.46	55 21.60	55 35.67
32	10 58 40.0	S. 0.54	9.9998192	23 19 55.19	15 14.59	15 19.01	55 50.81	56 7.02

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.	Noon.	Upper.	Lower.
	° ' "	° ' "	N. ° ' "	S. ° ' "	d	h m	h m
1	9 33 8.7	15 31 3.9	S. 0 3 52.4	S. 0 36 36.6	2.72	2 4.8	14 26.4
2	21 30 44.4	27 32 31.4	1 9 7.7	1 41 5.6	3.72	2 48.3	15 10.5
3	33 36 59.9	39 44 28.6	2 12 9.7	2 41 59.2	4.72	3 33.2	15 56.4
4	45 55 29.7	52 10 32.6	3 10 13.2	3 36 30.3	5.72	4 20.1	16 44.4
5	58 30 7.5	64 54 43.9	4 0 28.7	4 21 46.7	6.72	5 9.4	17 35.0
6	71 24 49.8	78 0 50.4	4 40 2.3	4 54 53.7	7.72	6 1.2	18 28.0
7	84 43 7.5	91 31 57.5	5 5 59.5	5 12 59.8	8.72	6 55.5	19 23.4
8	98 27 30.6	105 29 48.2	5 15 36.0	5 13 32.7	9.72	7 51.7	20 20.3
9	112 38 43.1	119 53 57.2	5 6 38.0	4 54 45.4	10.72	8 49.1	21 18.0
10	127 15 1.3	134 41 14.9	4 37 54.2	4 16 11.6	11.72	9 46.9	22 15.7
11	142 11 46.7	149 45 35.8	3 49 52.4	3 19 20.4	12.72	10 44.4	23 12.9
12	157 21 33.6	164 58 26.8	2 45 7.3	2 7 52.5	13.72	11 41.3	* *
13	172 34 59.3	180 9 56.5	1 28 21.1	S. 0 47 22.5	14.72	12 37.4	0 9.4
14	187 42 7.2	195 10 26.8	S. 0 5 47.6	N. 0 35 33.3	15.72	13 33.0	1 5.3
15	202 33 59.3	209 51 58.4	N. 1 15 52.7	1 54 27.4	16.72	14 28.1	2 0.6
16	217 3 48.7	224 9 5.9	2 30 40.2	3 4 0.0	17.72	15 22.7	2 55.5
17	231 7 36.3	237 59 15.4	3 34 2.5	4 0 29.4	18.72	16 16.8	3 49.9
18	244 44 8.2	251 22 26.7	4 23 8.4	4 41 51.9	19.72	17 9.9	4 43.5
19	257 54 29.0	264 20 38.1	4 56 36.8	5 7 23.2	20.72	18 1.7	5 36.0
20	270 41 20.9	276 57 6.4	5 14 14.0	5 17 14.1	21.72	18 51.9	6 27.0
21	283 8 25.7	289 15 50.2	5 16 30.0	5 12 9.6	22.72	19 40.2	7 16.3
22	295 19 51.9	301 21 1.9	5 4 21.6	4 53 15.6	23.72	20 26.8	8 3.7
23	307 19 50.8	313 16 47.9	4 39 1.9	4 21 51.6	24.72	21 11.7	8 49.4
24	319 12 20.8	325 6 55.7	4 1 56.6	3 39 29.3	25.72	21 55.3	9 33.6
25	331 0 57.0	336 54 47.3	3 14 43.4	2 47 53.2	26.72	22 38.1	10 16.8
26	342 48 47.6	348 43 17.5	2 19 14.0	1 49 2.4	27.72	23 20.6	10 59.4
27	354 38 34.9	0 34 56.7	1 17 35.8	N. 0 45 12.6	28.72	* *	11 41.9
28	6 32 38.6	12 31 55.6	N. 0 12 12.2	S. 0 21 5.2	29.72	0 3.3	12 24.9
29	18 33 2.1	24 36 12.1	S. 0 54 18.6	1 27 6.6	0.96	0 46.8	13 9.0
30	30 41 39.4	36 49 38.2	1 59 7.2	2 29 58.5	1.96	1 31.5	13 54.5
31	43 0 22.6	49 14 7.6	2 59 18.1	3 26 44.1	2.96	2 18.0	14 42.0
32	55 31 7.8	61 51 39.1	S. 3 51 54.8	S. 4 14 29.0	3.96	3 6.5	15 31.5

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 1.					FRIDAY 3.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	0 35 12.46	19.000	N. 3 43 36.2	91.96	0	2 8 33.88	20.039	N. 10 39 12.2	78.79
1	0 37 6.50	19.013	3 52 47.6	91.83	1	2 10 34.20	20.068	10 47 3.7	78.36
2	0 39 0.61	19.026	4 1 58.1	91.69	2	2 12 34.70	20.099	10 54 52.5	77.92
3	0 40 54.81	19.040	4 11 7.9	91.55	3	2 14 35.39	20.131	11 2 38.7	77.48
4	0 42 49.09	19.054	4 20 16.7	91.40	4	2 16 36.27	20.162	11 10 22.2	77.03
5	0 44 43.46	19.068	4 29 24.7	91.25	5	2 18 37.33	20.193	11 18 3.0	76.57
6	0 46 37.91	19.082	4 38 31.7	91.09	6	2 20 38.59	20.225	11 25 41.0	76.10
7	0 48 32.45	19.098	4 47 37.8	90.93	7	2 22 40.03	20.257	11 33 16.2	75.63
8	0 50 27.09	19.114	4 56 42.9	90.76	8	2 24 41.67	20.290	11 40 48.5	75.15
9	0 52 21.82	19.130	5 5 46.9	90.58	9	2 26 43.51	20.323	11 48 18.0	74.67
10	0 54 16.65	19.146	5 14 49.8	90.39	10	2 28 45.54	20.355	11 55 44.5	74.17
11	0 56 11.57	19.163	5 23 51.6	90.21	11	2 30 47.77	20.389	12 3 8.0	73.67
12	0 58 6.60	19.180	5 32 52.3	90.02	12	2 32 50.21	20.423	12 10 28.5	73.16
13	1 0 1.73	19.198	5 41 51.8	89.81	13	2 34 52.84	20.456	12 17 45.9	72.64
14	1 1 56.97	19.215	5 50 50.0	89.60	14	2 36 55.68	20.491	12 25 0.2	72.13
15	1 3 52.31	19.233	5 59 47.0	89.39	15	2 38 58.73	20.525	12 32 11.4	71.60
16	1 5 47.77	19.253	6 8 42.7	89.17	16	2 41 1.98	20.559	12 39 19.4	71.07
17	1 7 43.34	19.271	6 17 37.0	88.94	17	2 43 5.44	20.594	12 46 24.2	70.53
18	1 9 39.02	19.291	6 26 30.0	88.71	18	2 45 9.11	20.629	12 53 25.7	69.97
19	1 11 34.83	19.311	6 35 21.5	88.47	19	2 47 12.99	20.665	13 0 23.8	69.42
20	1 13 30.75	19.330	6 44 11.6	88.23	20	2 49 17.09	20.701	13 7 18.7	68.86
21	1 15 26.79	19.351	6 53 0.3	87.98	21	2 51 21.40	20.737	13 14 10.1	68.28
22	1 17 22.96	19.372	7 1 47.4	87.72	22	2 53 25.93	20.773	13 20 58.1	67.71
23	1 19 19.25	19.393	N. 7 10 32.9	87.45	23	2 55 30.67	20.809	N. 13 27 42.6	67.13
THURSDAY 2.					SATURDAY 4.				
0	1 21 15.67	19.414	N. 7 19 16.8	87.18	0	2 57 35.64	20.846	N. 13 34 23.6	66.53
1	1 23 12.22	19.437	7 27 59.1	86.92	1	2 59 40.82	20.883	13 41 1.0	65.93
2	1 25 8.91	19.459	7 36 39.8	86.63	2	3 1 46.23	20.920	13 47 34.8	65.33
3	1 27 5.73	19.481	7 45 18.7	86.33	3	3 3 51.86	20.957	13 54 4.9	64.72
4	1 29 2.68	19.504	7 53 55.8	86.04	4	3 5 57.71	20.994	14 0 31.4	64.10
5	1 30 59.78	19.528	8 2 31.2	85.75	5	3 8 3.79	21.033	14 6 54.1	63.47
6	1 32 57.01	19.551	8 11 4.8	85.44	6	3 10 10.10	21.070	14 13 13.0	62.83
7	1 34 54.39	19.576	8 19 36.5	85.12	7	3 12 16.63	21.108	14 19 28.1	62.20
8	1 36 51.92	19.601	8 28 6.2	84.80	8	3 14 23.40	21.147	14 25 39.4	61.55
9	1 38 49.60	19.626	8 36 34.1	84.48	9	3 16 30.39	21.185	14 31 46.7	60.89
10	1 40 47.42	19.650	8 44 59.9	84.14	10	3 18 37.62	21.223	14 37 50.1	60.23
11	1 42 45.40	19.676	8 53 23.8	83.81	11	3 20 45.07	21.262	14 43 49.4	59.55
12	1 44 43.53	19.701	9 1 45.6	83.45	12	3 22 52.76	21.302	14 49 44.7	58.88
13	1 46 41.81	19.728	9 10 5.2	83.10	13	3 25 0.69	21.341	14 55 36.0	58.20
14	1 48 40.26	19.754	9 18 22.8	82.75	14	3 27 8.85	21.379	15 1 23.1	57.50
15	1 50 38.86	19.781	9 26 38.2	82.38	15	3 29 17.24	21.419	15 7 6.0	56.80
16	1 52 37.63	19.809	9 34 51.3	82.00	16	3 31 25.88	21.459	15 12 44.7	56.10
17	1 54 36.57	19.837	9 43 2.2	81.63	17	3 33 34.75	21.498	15 18 19.2	55.38
18	1 56 35.67	19.863	9 51 10.9	81.24	18	3 35 43.85	21.538	15 23 49.3	54.66
19	1 58 34.93	19.892	9 59 17.1	80.85	19	3 37 53.20	21.578	15 29 15.1	53.93
20	2 0 34.37	19.921	10 7 21.1	80.46	20	3 40 2.79	21.618	15 34 36.5	53.20
21	2 2 33.98	19.950	10 15 22.6	80.04	21	3 42 12.61	21.658	15 39 53.5	52.46
22	2 4 33.77	19.979	10 23 21.6	79.63	22	3 44 22.68	21.698	15 45 6.0	51.70
23	2 6 33.73	20.009	10 31 18.2	79.22	23	3 46 32.99	21.738	15 50 13.9	50.94
24	2 8 33.88	20.039	N. 10 39 12.2	78.79	24	3 48 43.54	21.778	N. 15 55 17.3	50.18

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 5.					TUESDAY 7.				
	h m s	s	N. 15 55 17.3	50.18		h m s	s	N. 18 14 44.1	5.40
0	3 48 43.54	21.778	16 0 16.1	49.42	0	5 37 50.49	23.631	18 15 13.3	4.33
1	3 50 54.33	21.819	16 5 10.3	48.63	1	5 40 12.38	23.664	18 15 36.0	3.23
2	3 53 5.37	21.860	16 9 59.7	47.84	2	5 42 34.46	23.697	18 15 52.1	2.13
3	3 55 16.65	21.900	16 14 44.4	47.05	3	5 44 56.74	23.729	18 16 1.6	1.04
4	3 57 28.17	21.940	16 19 24.3	46.25	4	5 47 19.21	23.761	18 16 4.6	0.06
5	3 59 39.93	21.981	16 23 59.4	45.45	5	5 49 41.87	23.793	18 16 0.9	1.16
6	4 1 51.94	22.022	16 28 29.7	44.63	6	5 52 4.72	23.824	18 15 50.6	2.27
7	4 4 4.19	22.062	16 32 55.0	43.80	7	5 54 27.76	23.855	18 15 33.7	3.38
8	4 6 16.68	22.103	16 37 15.3	42.98	8	5 56 50.98	23.886	18 15 10.0	4.50
9	4 8 29.42	22.143	16 41 30.7	42.14	9	5 59 14.39	23.916	18 14 39.7	5.62
10	4 10 42.40	22.184	16 45 41.0	41.29	10	6 1 37.97	23.945	18 14 2.6	6.75
11	4 12 55.63	22.225	16 49 46.2	40.44	11	6 4 1.73	23.974	18 13 18.7	7.88
12	4 15 9.10	22.265	16 53 46.3	39.59	12	6 6 25.66	24.003	18 12 28.1	9.01
13	4 17 22.81	22.305	16 57 41.3	38.73	13	6 8 49.76	24.031	18 11 30.6	10.14
14	4 19 36.76	22.346	17 1 31.0	37.84	14	6 11 14.03	24.059	18 10 26.4	11.28
15	4 21 50.96	22.387	17 5 15.4	36.97	15	6 13 38.47	24.087	18 9 15.3	12.43
16	4 24 5.40	22.427	17 8 54.6	36.08	16	6 16 3.07	24.113	18 8 32.4	13.58
17	4 26 20.08	22.468	17 12 28.4	35.19	17	6 18 27.83	24.140	18 7 50.7	14.72
18	4 28 35.01	22.508	17 15 56.9	34.29	18	6 20 52.75	24.166	18 7 32.0	15.87
19	4 30 50.17	22.547	17 19 19.9	33.38	19	6 23 17.82	24.191	18 6 32.5	17.02
20	4 33 5.57	22.588	17 22 37.4	32.47	20	6 25 43.04	24.216	18 5 36.5	18.17
21	4 35 21.22	22.628	17 25 49.5	31.55	21	6 28 8.41	24.241	17 54 44.0	19.33
22	4 37 37.10	22.667	17 28 56.0	30.62	22	6 30 33.93	24.265	17 57 44.6	20.48
23	4 39 53.22	22.707			23	6 32 59.59	24.288		
MONDAY 6.					WEDNESDAY 8.				
0	4 42 9.58	22.747	N. 17 31 56.9	29.68	0	6 35 25.39	24.311	N. 17 55 38.2	21.65
1	4 44 26.18	22.786	17 34 52.2	28.75	1	6 37 51.32	24.333	17 53 24.8	22.81
2	4 46 43.01	22.825	17 37 41.9	27.80	2	6 40 17.39	24.356	17 51 4.5	23.98
3	4 49 0.08	22.864	17 40 25.8	26.84	3	6 42 43.59	24.378	17 48 37.1	25.14
4	4 51 17.38	22.903	17 43 4.0	25.88	4	6 45 9.92	24.398	17 46 2.8	26.30
5	4 53 34.92	22.942	17 45 36.4	24.92	5	6 47 36.37	24.418	17 43 21.5	27.47
6	4 55 52.68	22.980	17 48 3.0	23.94	6	6 50 2.94	24.438	17 40 33.2	28.64
7	4 58 10.68	23.019	17 50 23.7	22.97	7	6 52 29.63	24.458	17 37 37.8	29.81
8	5 0 28.91	23.057	17 52 38.6	21.98	8	6 54 56.43	24.477	17 34 35.5	30.97
9	5 2 47.36	23.094	17 54 47.5	20.98	9	6 57 23.35	24.495	17 31 26.2	32.14
10	5 5 6.04	23.133	17 56 50.4	19.98	10	6 59 50.37	24.513	17 28 9.8	33.32
11	5 7 24.95	23.170	17 58 47.3	18.98	11	7 2 17.50	24.530	17 24 46.4	34.48
12	5 9 44.08	23.207	18 0 38.2	17.97	12	7 4 44.73	24.547	17 21 16.0	35.65
13	5 12 3.43	23.243	18 2 22.9	16.95	13	7 7 12.06	24.563	17 17 38.6	36.82
14	5 14 23.00	23.280	18 4 1.6	15.93	14	7 9 39.49	24.578	17 13 54.2	37.99
15	5 16 42.79	23.317	18 5 34.1	14.90	15	7 12 7.00	24.593	17 10 2.7	39.16
16	5 19 2.80	23.352	18 7 0.4	13.87	16	7 14 34.61	24.608	17 6 4.3	40.32
17	5 21 23.03	23.389	18 8 20.5	12.83	17	7 17 2.30	24.623	17 1 58.9	41.48
18	5 23 43.47	23.424	18 9 34.3	11.78	18	7 19 30.08	24.637	16 57 46.5	42.65
19	5 26 4.12	23.459	18 10 41.9	10.73	19	7 21 57.94	24.649	16 53 27.1	43.82
20	5 28 24.98	23.494	18 11 43.1	9.68	20	7 24 25.87	24.661	16 49 0.7	44.98
21	5 30 46.05	23.529	18 12 38.0	8.61	21	7 26 53.87	24.673	16 44 27.4	46.13
22	5 33 7.33	23.563	18 13 26.4	7.54	22	7 29 21.95	24.685	16 39 47.2	47.28
23	5 35 28.81	23.597	18 14 8.5	6.48	23	7 31 50.09	24.696	16 35 0.0	48.44
24	5 37 50.49	23.631	N. 18 14 44.1	5.40	24	7 34 18.30	24.706	N. 16 30 5.9	49.59

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
THURSDAY 9.					SATURDAY 11.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	7 34 18.30	24.706	N. 16 30 5.9	49.59	0	9 33 11.35	24.678	N. 10 29 21.2	97.75
1	7 36 46.56	24.715	16 25 4.9	50.74	1	9 35 39.39	24.668	10 19 32.4	98.52
2	7 39 14.88	24.725	16 19 57.0	51.89	2	9 38 7.37	24.659	10 9 39.0	99.28
3	7 41 43.26	24.734	16 14 42.2	53.03	3	9 40 35.30	24.651	9 59 41.0	100.03
4	7 44 11.69	24.743	16 9 20.6	54.17	4	9 43 3.18	24.642	9 49 38.6	100.78
5	7 46 40.17	24.750	16 3 52.2	55.30	5	9 45 31.00	24.633	9 39 31.7	101.50
6	7 49 8.69	24.757	15 58 17.0	56.43	6	9 47 58.76	24.622	9 29 20.6	102.21
7	7 51 37.25	24.763	15 52 35.0	57.56	7	9 50 26.46	24.612	9 19 5.2	102.91
8	7 54 5.85	24.770	15 46 46.3	58.68	8	9 52 54.10	24.602	9 8 45.7	103.58
9	7 56 34.49	24.776	15 40 50.9	59.80	9	9 55 21.68	24.593	8 58 22.2	104.26
10	7 59 3.16	24.781	15 34 48.7	60.92	10	9 57 49.20	24.582	8 47 54.6	104.93
11	8 1 31.86	24.786	15 28 39.9	62.03	11	10 0 16.66	24.571	8 37 23.1	105.57
12	8 4 0.59	24.790	15 22 24.4	63.13	12	10 2 44.05	24.560	8 26 47.8	106.20
13	8 6 29.34	24.794	15 16 2.4	64.23	13	10 5 11.38	24.550	8 16 8.7	106.82
14	8 8 58.12	24.798	15 9 33.7	65.32	14	10 7 38.65	24.539	8 5 26.0	107.41
15	8 11 26.91	24.800	15 2 58.6	66.40	15	10 10 5.85	24.528	7 54 39.8	108.00
16	8 13 55.72	24.803	14 56 16.9	67.49	16	10 12 32.99	24.518	7 43 50.0	108.58
17	8 16 24.54	24.805	14 49 28.7	68.56	17	10 15 0.06	24.506	7 32 56.8	109.14
18	8 18 53.38	24.807	14 42 34.2	69.63	18	10 17 27.06	24.495	7 22 0.3	109.68
19	8 21 22.22	24.807	14 35 33.2	70.69	19	10 19 54.00	24.484	7 11 0.6	110.22
20	8 23 51.06	24.808	14 28 25.9	71.75	20	10 22 20.87	24.473	6 59 57.7	110.73
21	8 26 19.91	24.808	14 21 12.2	72.80	21	10 24 47.68	24.462	6 48 51.8	111.23
22	8 28 48.75	24.808	14 13 52.3	73.83	22	10 27 14.41	24.450	6 37 42.9	111.72
23	8 31 17.60	24.808	N. 14 6 26.2	74.87	23	10 29 41.08	24.439	N. 6 26 31.1	112.20
FRIDAY 10.					SUNDAY 12.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	8 33 46.44	24.806	N. 13 58 53.9	75.88	0	10 32 7.68	24.428	N. 6 15 16.5	112.66
1	8 36 15.27	24.804	13 51 15.5	76.90	1	10 34 34.21	24.417	6 3 59.2	113.10
2	8 38 44.09	24.803	13 43 30.9	77.92	2	10 37 0.68	24.406	5 52 39.3	113.52
3	8 41 12.90	24.800	13 35 40.3	78.92	3	10 39 27.08	24.394	5 41 16.9	113.93
4	8 43 41.69	24.798	13 27 43.7	79.91	4	10 41 53.41	24.383	5 29 52.1	114.33
5	8 46 10.47	24.795	13 19 41.2	80.90	5	10 44 19.67	24.371	5 18 24.9	114.72
6	8 48 39.23	24.791	13 11 32.8	81.89	6	10 46 45.86	24.359	5 6 55.5	115.08
7	8 51 7.96	24.788	13 3 18.5	82.86	7	10 49 11.98	24.348	4 55 24.0	115.43
8	8 53 36.68	24.783	12 54 58.5	83.82	8	10 51 38.04	24.338	4 43 50.4	115.77
9	8 56 5.36	24.778	12 46 32.8	84.78	9	10 54 4.03	24.326	4 32 14.8	116.09
10	8 58 34.02	24.775	12 38 1.4	85.73	10	10 56 29.95	24.314	4 20 37.0	116.40
11	9 1 2.66	24.770	12 29 24.4	86.66	11	10 58 55.80	24.303	4 8 58.3	116.68
12	9 3 31.26	24.763	12 20 41.8	87.56	12	11 1 21.58	24.292	3 57 17.1	116.95
13	9 5 59.82	24.758	12 11 53.8	88.46	13	11 3 47.30	24.281	3 45 34.6	117.21
14	9 8 28.35	24.753	12 3 0.3	89.36	14	11 6 12.95	24.269	3 33 50.6	117.45
15	9 10 56.85	24.746	11 54 1.5	90.25	15	11 8 38.53	24.258	3 22 5.2	117.68
16	9 13 25.30	24.738	11 44 57.3	91.13	16	11 11 4.05	24.247	3 10 18.5	117.89
17	9 15 53.71	24.732	11 35 47.9	91.99	17	11 13 29.49	24.236	2 58 30.5	118.08
18	9 18 22.08	24.725	11 26 33.4	92.85	18	11 15 54.88	24.226	2 46 41.5	118.26
19	9 20 50.41	24.718	11 17 13.7	93.70	19	11 18 20.20	24.214	2 34 51.4	118.43
20	9 23 18.70	24.710	11 7 49.0	94.53	20	11 20 45.45	24.203	2 23 0.4	118.58
21	9 25 46.93	24.702	10 58 19.4	95.35	21	11 23 10.64	24.193	2 11 8.5	118.71
22	9 28 15.12	24.694	10 48 44.8	96.17	22	11 25 35.76	24.183	1 59 15.9	118.82
23	9 30 43.26	24.686	10 39 5.4	96.97	23	11 28 0.83	24.172	1 47 22.7	118.92
24	9 33 11.35	24.678	N. 10 29 21.2	97.75	24	11 30 25.82	24.161	N. 1 35 28.9	119.00

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
MONDAY 13.					WEDNESDAY 15.				
	h m s	s	° ′ ″	″		h m s	s	° ′ ″	″
0	11 30 25.82	24.161	N. 1 35 28.9	119.00	0	13 25 22.59	23.767	S. 7 36 32.3	105.54
1	11 32 50.76	24.151	1 23 34.7	119.07	1	13 27 45.17	23.760	7 47 3.7	104.93
2	11 35 15.63	24.140	1 11 40.1	119.13	2	13 30 7.21	23.753	7 57 31.4	104.31
3	11 37 40.44	24.131	0 59 45.2	119.16	3	13 32 30.21	23.748	8 7 55.4	103.68
4	11 40 5.20	24.121	0 47 50.2	119.18	4	13 34 52.68	23.741	8 18 15.6	103.04
5	11 42 29.89	24.110	0 35 55.1	119.18	5	13 37 15.10	23.734	8 28 31.9	102.39
6	11 44 54.52	24.100	0 24 0.0	119.18	6	13 39 37.49	23.728	8 38 44.3	101.73
7	11 47 19.09	24.090	0 12 5.0	119.15	7	13 41 59.84	23.721	8 48 52.6	101.05
8	11 49 43.60	24.080	N. 0 0 10.2	119.11	8	13 44 22.14	23.714	8 58 56.9	100.38
9	11 52 8.05	24.071	S. 0 11 44.3	119.05	9	13 46 44.41	23.708	9 8 57.1	99.68
10	11 54 32.45	24.062	0 23 38.4	118.98	10	13 49 6.64	23.703	9 18 53.0	98.98
11	11 56 56.79	24.052	0 35 32.1	118.89	11	13 51 28.84	23.696	9 28 44.8	98.27
12	11 59 21.07	24.043	0 47 25.1	118.78	12	13 53 50.99	23.688	9 38 32.2	97.53
13	12 1 45.30	24.034	0 59 17.5	118.67	13	13 56 13.10	23.683	9 48 15.2	96.80
14	12 4 9.48	24.024	1 11 9.1	118.53	14	13 58 35.18	23.676	9 57 53.8	96.06
15	12 6 33.59	24.015	1 22 59.9	118.39	15	14 0 57.21	23.669	10 7 27.9	95.31
16	12 8 57.66	24.007	1 34 49.8	118.23	16	14 3 19.21	23.663	10 16 57.5	94.54
17	12 11 21.67	23.998	1 46 38.6	118.04	17	14 5 41.16	23.656	10 26 22.4	93.78
18	12 13 45.63	23.988	1 58 26.3	117.85	18	14 8 3.08	23.649	10 35 42.8	93.00
19	12 16 9.53	23.979	2 10 12.8	117.64	19	14 10 24.95	23.642	10 44 58.4	92.21
20	12 18 33.38	23.972	2 21 58.0	117.42	20	14 12 46.78	23.635	10 54 9.3	91.42
21	12 20 57.19	23.963	2 33 41.8	117.18	21	14 15 8.57	23.628	11 3 15.4	90.61
22	12 23 20.94	23.954	2 45 24.1	116.93	22	14 17 30.32	23.622	11 12 16.6	89.79
23	12 25 44.64	23.947	S. 2 57 4.9	116.66	23	14 19 52.03	23.614	S. 11 21 12.9	88.98
TUESDAY 14.					THURSDAY 16.				
0	12 28 8.30	23.938	S. 3 8 44.0	116.38	0	14 22 13.69	23.607	S. 11 30 4.3	88.15
1	12 30 31.90	23.930	3 20 21.4	116.08	1	14 24 35.31	23.600	11 38 50.7	87.31
2	12 32 55.46	23.923	3 31 57.0	115.77	2	14 26 56.89	23.593	11 47 32.0	86.47
3	12 35 18.97	23.914	3 43 30.6	115.44	3	14 29 18.42	23.585	11 56 8.3	85.62
4	12 37 42.43	23.907	3 55 2.3	115.11	4	14 31 39.91	23.578	12 4 39.4	84.75
5	12 40 5.85	23.899	4 6 31.9	114.75	5	14 34 1.35	23.570	12 13 5.3	83.89
6	12 42 29.22	23.892	4 17 59.3	114.38	6	14 36 22.75	23.562	12 21 26.1	83.03
7	12 44 52.55	23.884	4 29 24.5	114.00	7	14 38 44.09	23.553	12 29 41.6	82.14
8	12 47 15.83	23.877	4 40 47.3	113.61	8	14 41 5.59	23.546	12 37 51.8	81.25
9	12 49 39.07	23.869	4 52 7.8	113.20	9	14 43 26.64	23.538	12 45 56.6	80.36
10	12 52 2.26	23.862	5 3 25.7	112.78	10	14 45 47.85	23.530	12 53 56.1	79.47
11	12 54 25.41	23.855	5 14 41.1	112.35	11	14 48 9.00	23.521	13 1 50.2	78.56
12	12 56 48.52	23.848	5 25 53.9	111.90	12	14 50 30.10	23.513	13 9 38.8	77.64
13	12 59 11.58	23.840	5 37 3.9	111.43	13	14 52 51.15	23.503	13 17 21.9	76.73
14	13 1 34.60	23.833	5 48 11.1	110.96	14	14 55 12.14	23.495	13 24 59.5	75.81
15	13 3 57.58	23.827	5 59 15.4	110.48	15	14 57 33.09	23.486	13 32 31.6	74.88
16	13 6 20.52	23.820	6 10 16.8	109.98	16	14 59 53.97	23.476	13 39 58.1	73.95
17	13 8 43.42	23.813	6 21 15.1	109.46	17	15 2 14.80	23.468	13 47 19.0	73.01
18	13 11 6.28	23.807	6 32 10.3	108.94	18	15 4 35.58	23.458	13 54 34.2	72.07
19	13 13 29.10	23.800	6 43 2.4	108.41	19	15 6 56.30	23.448	14 1 43.8	71.12
20	13 15 51.88	23.793	6 53 51.2	107.85	20	15 9 16.96	23.438	14 8 47.6	70.17
21	13 18 14.61	23.786	7 4 36.6	107.28	21	15 11 37.56	23.428	14 15 45.8	69.22
22	13 20 37.31	23.780	7 15 18.6	106.72	22	15 13 58.10	23.418	14 22 38.2	68.25
23	13 22 59.97	23.773	7 25 57.2	106.14	23	15 16 18.57	23.408	14 29 24.8	67.28
24	13 25 22.59	23.767	S. 7 36 32.3	105.54	24	15 18 38.99	23.398	S. 14 36 5.6	66.31

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 17.					SUNDAY 19.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	15 18 38.99	23.398	S. 14 36 5.6	66.31	0	17 9 18.17	22.615	S. 17 58 22.2	17.72
1	15 20 59.34	23.386	14 42 40.5	65.34	1	17 11 33.79	22.593	18 0 5.5	16.72
2	15 23 19.62	23.375	14 49 9.7	64.37	2	17 13 49.28	22.570	18 1 42.8	15.71
3	15 25 39.84	23.364	14 55 32.9	63.38	3	17 16 4.63	22.548	18 3 14.0	14.70
4	15 27 59.99	23.352	15 1 50.3	62.40	4	17 18 19.85	22.525	18 4 39.2	13.71
5	15 30 20.06	23.340	15 8 1.7	61.41	5	17 20 34.93	22.501	18 5 58.5	12.72
6	15 32 40.07	23.329	15 14 7.2	60.42	6	17 22 49.86	22.478	18 7 11.8	11.72
7	15 35 0.01	23.317	15 20 6.7	59.43	7	17 25 4.66	22.454	18 8 19.1	10.73
8	15 37 19.87	23.304	15 26 0.3	58.43	8	17 27 19.31	22.430	18 9 20.5	9.73
9	15 39 39.66	23.292	15 31 47.9	57.43	9	17 29 33.82	22.406	18 10 15.9	8.75
10	15 41 59.38	23.279	15 37 29.5	56.43	10	17 31 48.18	22.382	18 11 5.5	7.78
11	15 44 19.01	23.266	15 43 5.0	55.42	11	17 34 2.40	22.358	18 11 49.2	6.79
12	15 46 38.57	23.253	15 48 34.5	54.42	12	17 36 16.47	22.333	18 12 27.0	5.81
13	15 48 58.05	23.240	15 53 58.0	53.41	13	17 38 30.39	22.308	18 12 58.9	4.83
14	15 51 17.45	23.227	15 59 15.4	52.39	14	17 40 44.16	22.283	18 13 25.0	3.87
15	15 53 36.77	23.213	16 4 26.7	51.38	15	17 42 57.78	22.258	18 13 45.3	2.89
16	15 55 56.00	23.198	16 9 32.0	50.37	16	17 45 11.25	22.232	18 13 59.7	1.93
17	15 58 15.14	23.183	16 14 31.1	49.35	17	17 47 24.56	22.206	18 14 8.4	0.97
18	16 0 34.20	23.169	16 19 24.2	48.33	18	17 49 37.72	22.181	18 14 11.3	0.01
19	16 2 53.17	23.154	16 24 11.1	47.31	19	17 51 50.73	22.155	18 14 8.5	0.94
20	16 5 12.05	23.139	16 28 51.9	46.29	20	17 54 3.58	22.128	18 14 0.0	1.90
21	16 7 30.84	23.124	16 33 26.6	45.28	21	17 56 16.27	22.102	18 13 45.7	2.85
22	16 9 49.54	23.108	16 37 55.2	44.25	22	17 58 28.80	22.075	18 13 25.8	3.79
23	16 12 8.14	23.093	S. 16 42 17.6	43.23	23	18 0 41.17	22.048	S. 18 13 0.2	4.73
SATURDAY 18.					MONDAY 20.				
0	16 14 26.65	23.077	S. 16 46 33.9	42.20	0	18 2 53.38	22.022	S. 18 12 29.0	5.67
1	16 16 45.06	23.060	16 50 44.0	41.18	1	18 5 5.43	21.995	18 11 52.2	6.60
2	16 19 3.37	23.043	16 54 48.0	40.15	2	18 7 17.32	21.968	18 11 9.8	7.53
3	16 21 21.58	23.027	16 58 45.8	39.13	3	18 9 29.05	21.941	18 10 21.8	8.47
4	16 23 39.69	23.010	17 2 37.5	38.10	4	18 11 40.61	21.913	18 9 28.2	9.38
5	16 25 57.70	22.993	17 6 23.0	37.08	5	18 13 52.00	21.885	18 8 29.2	10.30
6	16 28 15.60	22.974	17 10 2.4	36.05	6	18 16 3.23	21.858	18 7 24.6	11.22
7	16 30 33.40	22.957	17 13 35.6	35.03	7	18 18 14.29	21.830	18 6 14.6	12.13
8	16 32 51.08	22.938	17 17 2.7	34.00	8	18 20 25.19	21.802	18 4 59.1	13.03
9	16 35 8.66	22.921	17 20 23.6	32.97	9	18 22 35.91	21.773	18 3 38.2	13.93
10	16 37 26.13	22.902	17 23 38.3	31.94	10	18 24 46.47	21.746	18 2 11.9	14.83
11	16 39 43.48	22.883	17 26 46.9	30.93	11	18 26 56.86	21.718	18 0 40.2	15.73
12	16 42 0.72	22.864	17 29 49.4	29.90	12	18 29 7.08	21.689	17 59 3.2	16.62
13	16 44 17.85	22.844	17 32 45.7	28.88	13	18 31 17.13	21.661	17 57 20.8	17.50
14	16 46 34.85	22.824	17 35 35.9	27.86	14	18 33 27.01	21.633	17 55 33.2	18.38
15	16 48 51.74	22.805	17 38 20.0	26.84	15	18 35 36.72	21.604	17 53 40.2	19.27
16	16 51 8.51	22.785	17 40 58.0	25.82	16	18 37 46.26	21.575	17 51 42.0	20.13
17	16 53 25.16	22.764	17 43 29.8	24.79	17	18 39 55.62	21.546	17 49 38.6	20.99
18	16 55 41.68	22.743	17 45 55.5	23.78	18	18 42 4.81	21.518	17 47 30.1	21.86
19	16 57 58.08	22.723	17 48 15.2	22.77	19	18 44 13.83	21.488	17 45 16.3	22.73
20	17 0 14.36	22.703	17 50 28.7	21.75	20	18 46 22.67	21.459	17 42 57.4	23.58
21	17 2 30.51	22.680	17 52 36.2	20.74	21	18 48 31.34	21.430	17 40 33.4	24.43
22	17 4 46.53	22.658	17 54 37.6	19.73	22	18 50 39.83	21.401	17 38 4.3	25.28
23	17 7 2.41	22.637	17 56 32.9	18.72	23	18 52 48.15	21.373	17 35 30.1	26.11
24	17 9 18.17	22.615	S. 17 58 22.2	17.72	24	18 54 56.30	21.343	S. 17 32 51.0	26.94

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
TUESDAY 21.					THURSDAY 23.				
	h m s	s	S. ° ' "	"		h m s	s	S. ° ' "	"
0	18 54 56	30	21.343	S. 17 32 51	0	20 34 4	48	19.997	S. 13 56 36
1	18 57 4	27	21.313	17 30 6	1	20 36 4	39	19.973	13 50 27
2	18 59 12	06	21.284	17 27 17	2	20 38 4	15	19.948	13 44 15
3	19 1 19	68	21.256	17 24 23	3	20 40 3	76	19.923	13 37 59
4	19 3 27	13	21.226	17 21 24	4	20 42 3	22	19.898	13 31 40
5	19 5 34	39	21.196	17 18 20	5	20 44 2	54	19.874	13 25 17
6	19 7 41	48	21.168	17 15 11	6	20 46 1	71	19.850	13 18 51
7	19 9 48	40	21.138	17 11 58	7	20 48 0	74	19.826	13 12 21
8	19 11 55	14	21.109	17 8 39	8	20 49 59	62	19.803	13 5 49
9	19 14 1	71	21.080	17 5 16	9	20 51 58	37	19.780	12 59 13
10	19 16 8	10	21.050	17 1 48	10	20 53 56	98	19.757	12 52 33
11	19 18 14	31	21.021	16 58 16	11	20 55 55	45	19.733	12 45 51
12	19 20 20	35	20.993	16 54 39	12	20 57 53	78	19.710	12 39 5
13	19 22 26	22	20.963	16 50 57	13	20 59 51	97	19.688	12 32 16
14	19 24 31	91	20.933	16 47 10	14	21 1 50	03	19.666	12 25 24
15	19 26 37	42	20.904	16 43 19	15	21 3 47	96	19.644	12 18 29
16	19 28 42	76	20.876	16 39 23	16	21 5 45	76	19.623	12 11 31
17	19 30 47	93	20.847	16 35 23	17	21 7 43	43	19.601	12 4 30
18	19 32 52	92	20.818	16 31 18	18	21 9 40	97	19.579	11 57 26
19	19 34 57	74	20.788	16 27 9	19	21 11 38	38	19.558	11 50 19
20	19 37 2	38	20.759	16 22 55	20	21 13 35	67	19.538	11 43 9
21	19 39 6	85	20.731	16 18 37	21	21 15 32	83	19.517	11 35 56
22	19 41 11	15	20.703	16 14 15	22	21 17 29	87	19.497	11 28 40
23	19 43 15	28	20.674	S. 16 9 48	23	21 19 26	79	19.478	S. 11 21 22
WEDNESDAY 22.					FRIDAY 24.				
	h m s	s	S. ° ' "	"		h m s	s	S. ° ' "	"
0	19 45 19	24	20.646	S. 16 5 17	0	21 21 23	60	19.458	S. 11 14 0
1	19 47 23	03	20.617	16 0 42	1	21 23 20	28	19.438	11 6 36
2	19 49 26	64	20.588	15 56 2	2	21 25 16	85	19.418	10 59 9
3	19 51 30	09	20.560	15 51 18	3	21 27 13	30	19.400	10 51 40
4	19 53 33	36	20.532	15 46 30	4	21 29 9	65	19.382	10 44 7
5	19 55 36	47	20.504	15 41 38	5	21 31 5	88	19.363	10 36 32
6	19 57 39	41	20.476	15 36 41	6	21 33 2	00	19.344	10 28 55
7	19 59 42	18	20.448	15 31 41	7	21 34 58	01	19.327	10 21 15
8	20 1 44	78	20.420	15 26 36	8	21 36 53	92	19.309	10 13 32
9	20 3 47	22	20.393	15 21 28	9	21 38 49	72	19.292	10 5 47
10	20 5 49	50	20.366	15 16 15	10	21 40 45	42	19.275	9 57 59
11	20 7 51	61	20.338	15 10 59	11	21 42 41	02	19.259	9 50 9
12	20 9 53	55	20.311	15 5 38	12	21 44 36	53	19.243	9 42 17
13	20 11 55	34	20.284	15 0 14	13	21 46 31	93	19.226	9 34 22
14	20 13 56	96	20.257	14 54 46	14	21 48 27	24	19.210	9 26 24
15	20 15 58	42	20.230	14 49 13	15	21 50 22	45	19.195	9 18 25
16	20 17 59	72	20.203	14 43 37	16	21 52 17	58	19.180	9 10 23
17	20 20 0	86	20.177	14 37 58	17	21 54 12	61	19.164	9 2 19
18	20 22 1	84	20.151	14 32 14	18	21 56 7	55	19.150	8 54 12
19	20 24 2	67	20.125	14 26 27	19	21 58 2	41	19.136	8 46 4
20	20 26 3	34	20.098	14 20 36	20	21 59 57	18	19.122	8 37 53
21	20 28 3	85	20.073	14 14 42	21	22 1 51	87	19.108	8 29 40
22	20 30 4	22	20.048	14 8 43	22	22 3 46	48	19.095	8 21 25
23	20 32 4	43	20.022	14 2 42	23	22 5 41	01	19.082	8 13 8
24	20 34 4	48	19.997	S. 13 56 36	24	22 7 35	46	19.069	S. 8 4 49

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
SATURDAY 25.					MONDAY 27.				
	h m s	s	S. ° ' "	"		h m s	s	S. ° ' "	"
0	22 7 35.46	19.069	8 4 49.6	83.34	0	23 38 16.89	18.849	0 56 29.6	92.98
1	22 9 29.84	19.057	7 56 28.5	83.68	1	23 40 10.00	18.853	0 47 11.5	93.04
2	22 11 24.14	19.044	7 48 5.5	84.00	2	23 42 3.13	18.858	0 37 53.1	93.10
3	22 13 18.37	19.033	7 39 40.5	84.32	3	23 43 56.29	18.863	0 28 34.3	93.15
4	22 15 12.54	19.022	7 31 13.7	84.63	4	23 45 49.48	18.868	0 19 15.3	93.19
5	22 17 6.63	19.010	7 22 44.9	84.94	5	23 47 42.70	18.873	0 9 56.0	93.23
6	22 19 0.66	18.999	7 14 14.4	85.24	6	23 49 35.95	18.878	S. 0 0 36.5	93.27
7	22 20 54.62	18.989	7 5 42.0	85.55	7	23 51 29.24	18.885	N. 0 8 43.2	93.29
8	22 22 48.53	18.979	6 57 7.8	85.83	8	23 53 22.57	18.891	0 18 3.0	93.31
9	22 24 42.37	18.968	6 48 32.0	86.12	9	23 55 15.93	18.898	0 27 22.9	93.32
10	22 26 36.15	18.959	6 39 54.4	86.41	10	23 57 9.34	18.905	0 36 42.8	93.33
11	22 28 29.88	18.950	6 31 15.1	86.68	11	23 59 2.79	18.912	0 46 2.9	93.34
12	22 30 23.55	18.941	6 22 34.2	86.95	12	0 0 56.28	18.919	0 55 22.9	93.33
13	22 32 17.17	18.933	6 13 51.7	87.22	13	0 2 49.82	18.928	1 4 42.8	93.32
14	22 34 10.75	18.926	6 5 7.6	87.48	14	0 4 43.42	18.937	1 14 2.7	93.31
15	22 36 4.27	18.917	5 56 22.0	87.73	15	0 6 37.06	18.945	1 23 22.5	93.28
16	22 37 57.75	18.909	5 47 34.9	87.98	16	0 8 30.76	18.954	1 32 42.1	93.26
17	22 39 51.18	18.902	5 38 46.3	88.23	17	0 10 24.51	18.964	1 42 1.6	93.23
18	22 41 44.57	18.895	5 29 56.2	88.47	18	0 12 18.33	18.974	1 51 20.8	93.18
19	22 43 37.92	18.888	5 21 4.7	88.69	19	0 14 12.20	18.983	2 0 39.7	93.13
20	22 45 31.23	18.883	5 12 11.9	88.92	20	0 16 6.13	18.994	2 9 58.4	93.08
21	22 47 24.51	18.877	5 3 17.7	89.14	21	0 18 0.13	19.006	2 19 16.7	93.03
22	22 49 17.75	18.871	4 54 22.2	89.36	22	0 19 54.20	19.018	2 28 34.7	92.96
23	22 51 10.96	18.866	S. 4 45 25.4	89.57	23	0 21 48.33	19.028	N. 2 37 52.2	92.88
SUNDAY 26.					TUESDAY 28.				
	h m s	s	S. ° ' "	"		h m s	s	N. ° ' "	"
0	22 53 4.14	18.861	S. 4 36 27.4	89.77	0	0 23 42.54	19.041	N. 2 47 9.3	92.81
1	22 54 57.29	18.857	4 27 28.2	89.97	1	0 25 36.82	19.053	2 56 25.9	92.73
2	22 56 50.42	18.853	4 18 27.8	90.17	2	0 27 31.17	19.065	3 5 42.0	92.63
3	22 58 43.52	18.849	4 9 26.2	90.35	3	0 29 25.60	19.078	3 14 57.5	92.53
4	23 0 36.61	18.846	4 0 23.6	90.53	4	0 31 20.11	19.093	3 24 12.4	92.43
5	23 2 29.67	18.842	3 51 19.8	90.72	5	0 33 14.71	19.106	3 33 26.7	92.33
6	23 4 22.71	18.839	3 42 15.0	90.88	6	0 35 9.38	19.119	3 42 40.4	92.22
7	23 6 15.74	18.838	3 33 9.2	91.04	7	0 37 4.14	19.133	3 51 53.3	92.08
8	23 8 8.76	18.835	3 24 2.5	91.21	8	0 38 58.98	19.148	4 1 5.4	91.96
9	23 10 1.76	18.833	3 14 54.7	91.37	9	0 40 53.92	19.163	4 10 16.8	91.83
10	23 11 54.75	18.832	3 5 46.1	91.51	10	0 42 48.94	19.178	4 19 27.4	91.68
11	23 13 47.74	18.831	2 56 36.6	91.65	11	0 44 44.06	19.195	4 28 37.0	91.53
12	23 15 40.72	18.830	2 47 26.3	91.78	12	0 46 39.28	19.211	4 37 45.8	91.39
13	23 17 33.70	18.830	2 38 15.2	91.92	13	0 48 34.59	19.227	4 46 53.7	91.23
14	23 19 26.68	18.830	2 29 3.3	92.04	14	0 50 30.00	19.244	4 56 0.6	91.06
15	23 21 19.66	18.831	2 19 50.7	92.17	15	0 52 25.52	19.261	5 5 6.4	90.88
16	23 23 12.65	18.831	2 10 37.3	92.28	16	0 54 21.13	19.278	5 14 11.2	90.71
17	23 25 5.63	18.832	2 1 23.3	92.38	17	0 56 16.85	19.296	5 23 14.9	90.53
18	23 26 58.63	18.834	1 52 8.7	92.48	18	0 58 12.68	19.314	5 32 17.5	90.33
19	23 28 51.64	18.836	1 42 53.5	92.58	19	1 0 8.62	19.332	5 41 18.9	90.13
20	23 30 44.66	18.838	1 33 37.7	92.68	20	1 2 4.66	19.350	5 50 19.1	89.93
21	23 32 37.69	18.840	1 24 21.3	92.77	21	1 4 0.82	19.370	5 59 18.0	89.71
22	23 34 30.74	18.843	1 15 4.5	92.83	22	1 5 57.10	19.389	6 8 15.6	89.49
23	23 36 23.80	18.846	1 5 47.3	92.91	23	1 7 53.49	19.408	6 17 11.9	89.27
24	23 38 16.89	18.849	S. 0 56 29.6	92.98	24	1 9 50.00	19.428	N. 6 26 6.8	89.03

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 29.					FRIDAY 31.				
	h m s	s	N. ° ' "	89 ^m		h m s	s	N. 12 ° ' "	69 ^m
0	1 9 50.00	19.428	6 26 6.8	89.03	0	2 45 55.25	20.703	12 53 49.8	69.84
1	1 11 46.63	19.448	6 35 0.3	88.80	1	2 47 59.56	20.734	13 0 47.2	69.27
2	1 13 43.38	19.469	6 43 52.4	88.56	2	2 50 4.06	20.766	13 7 41.1	68.68
3	1 15 40.26	19.490	6 52 43.0	88.30	3	2 52 8.75	20.798	13 14 31.4	68.10
4	1 17 37.26	19.511	7 1 32.0	88.04	4	2 54 13.64	20.831	13 21 18.3	67.52
5	1 19 34.39	19.533	7 10 19.5	87.78	5	2 56 18.72	20.863	13 28 1.6	66.91
6	1 21 31.65	19.554	7 19 5.3	87.50	6	2 58 23.99	20.895	13 34 41.2	66.30
7	1 23 29.04	19.577	7 27 49.5	87.23	7	3 0 29.46	20.928	13 41 17.2	65.69
8	1 25 26.57	19.599	7 36 32.0	86.94	8	3 2 35.12	20.960	13 47 49.5	65.08
9	1 27 24.23	19.621	7 45 12.8	86.65	9	3 4 40.98	20.993	13 54 18.1	64.44
10	1 29 22.02	19.644	7 53 51.8	86.35	10	3 6 47.03	21.026	14 0 42.8	63.80
11	1 31 19.96	19.668	8 2 29.0	86.04	11	3 8 53.29	21.059	14 7 3.7	63.17
12	1 33 18.03	19.691	8 11 4.3	85.73	12	3 10 59.74	21.092	14 13 20.8	62.52
13	1 35 16.25	19.715	8 19 37.8	85.42	13	3 13 6.39	21.124	14 19 33.9	61.85
14	1 37 14.61	19.738	8 28 9.3	85.08	14	3 15 13.23	21.158	14 25 43.0	61.19
15	1 39 13.11	19.763	8 36 38.8	84.75	15	3 17 20.28	21.192	14 31 48.2	60.53
16	1 41 11.77	19.788	8 45 6.3	84.41	16	3 19 27.53	21.225	14 37 49.3	59.84
17	1 43 10.57	19.813	8 53 31.7	84.06	17	3 21 34.98	21.258	14 43 46.3	59.16
18	1 45 9.52	19.838	9 1 55.0	83.71	18	3 23 42.62	21.291	14 49 39.2	58.47
19	1 47 8.62	19.863	9 10 16.2	83.35	19	3 25 50.47	21.325	14 55 27.9	57.77
20	1 49 7.88	19.889	9 18 35.2	82.98	20	3 27 58.52	21.358	15 1 12.4	57.07
21	1 51 7.29	19.915	9 26 52.0	82.61	21	3 30 6.77	21.392	15 6 52.7	56.36
22	1 53 6.86	19.941	9 35 6.5	82.23	22	3 32 15.22	21.425	15 12 28.7	55.63
23	1 55 6.58	19.968	N. 9 43 18.7	81.84	23	3 34 23.87	21.459	N. 15 18 0.3	54.91
THURSDAY 30.					SATURDAY, APRIL 1.				
0	1 57 6.47	19.995	N. 9 51 28.6	81.44	0	3 36 32.73	21.493	N. 15 23 27.6	54.18
1	1 59 6.52	20.022	9 59 36.0	81.04					
2	2 1 6.73	20.048	10 7 41.1	80.63					
3	2 3 7.10	20.076	10 15 43.6	80.21					
4	2 5 7.64	20.104	10 23 43.6	79.79					
5	2 7 8.35	20.133	10 31 41.1	79.36					
6	2 9 9.23	20.160	10 39 35.9	78.92					
7	2 11 10.27	20.188	10 47 28.1	78.48					
8	2 13 11.49	20.218	10 55 17.7	78.03					
9	2 15 12.88	20.247	11 3 4.5	77.57					
10	2 17 14.45	20.276	11 10 48.5	77.10					
11	2 19 16.19	20.304	11 18 29.7	76.63					
12	2 21 18.10	20.333	11 26 8.0	76.15					
13	2 23 20.19	20.363	11 33 43.5	75.67					
14	2 25 22.46	20.393	11 41 16.0	75.17					
15	2 27 24.91	20.424	11 48 45.5	74.67					
16	2 29 27.55	20.454	11 56 12.0	74.16					
17	2 31 30.36	20.484	12 3 35.4	73.64					
18	2 33 33.36	20.515	12 10 55.7	73.13					
19	2 35 36.54	20.546	12 18 12.9	72.59					
20	2 37 39.91	20.577	12 25 26.8	72.05					
21	2 39 43.46	20.608	12 32 37.5	71.52					
22	2 41 47.20	20.639	12 39 45.0	70.97					
23	2 43 51.13	20.671	12 46 49.1	70.40					
24	2 45 55.25	20.703	N. 12 53 49.8	69.84					

PHASES OF THE MOON.

		h	m
Mar. 6	☽ First Quarter	7	21.6
12	☾ Full Moon	23	14.4
19	☾ Last Quarter	20	43.0
28	● New Moon	1	3.4

		h
Mar. 12	☾ Perigee	11.5
25	☾ Apogee	7.6

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semidiameter passing the Meridian.*	Equation of Time, to be added to		Var. in hour.
		Apparent Right Ascension.	Var. in hour.	Apparent Declination.	Var. in hour.		subtracted from Apparent Time.		
		h m s	s	N. ° ' "	"	m s	m s	s	
Sat.	1	0 40 22.42	9.102	N. 4 20' 47.5"	57.96	1 4.45	4 6.90	0.752	
Sun.	2	0 44 0.92	9.106	4 43 56.0	57.75	1 4.47	3 48.89	0.748	
Mon.	3	0 47 39.51	9.110	5 6 59.4	57.53	1 4.49	3 30.98	0.744	
Tues.	4	0 51 18.22	9.116	5 29 57.3	57.29	1 4.51	3 13.19	0.738	
Wed.	5	0 54 57.08	9.122	5 52 49.4	57.04	1 4.54	2 55.54	0.732	
Thur.	6	0 58 36.08	9.129	6 15 35.3	56.78	1 4.56	2 38.04	0.726	
Frid.	7	1 2 15.25	9.136	6 38 14.6	56.49	1 4.59	2 20.71	0.718	
Sat.	8	1 5 54.62	9.145	7 0 47.0	56.20	1 4.63	2 3.58	0.710	
Sun.	9	1 9 34.21	9.154	7 23 12.3	55.90	1 4.66	1 46.65	0.700	
Mon.	10	1 13 14.02	9.164	7 45 30.0	55.57	1 4.70	1 29.96	0.690	
Tues.	11	1 16 54.10	9.176	8 7 39.8	55.24	1 4.74	1 13.53	0.679	
Wed.	12	1 20 34.45	9.188	8 29 41.5	54.89	1 4.78	0 57.37	0.667	
Thur.	13	1 24 15.10	9.201	8 51 34.7	54.53	1 4.83	0 41.52	0.654	
Frid.	14	1 27 56.08	9.215	9 13 19.1	54.16	1 4.87	0 25.98	0.640	
Sat.	15	1 31 37.40	9.229	9 34 54.4	53.78	1 4.92	0 10.79	0.626	
Sun.	16	1 35 19.07	9.244	9 56 20.3	53.37	1 4.97	0 4.05	0.610	
Mon.	17	1 39 1.12	9.260	10 17 36.3	52.96	1 5.03	0 18.51	0.594	
Tues.	18	1 42 43.57	9.277	10 38 42.3	52.53	1 5.08	0 32.57	0.577	
Wed.	19	1 46 26.43	9.294	10 59 37.9	52.09	1 5.14	0 46.23	0.560	
Thur.	20	1 50 9.70	9.312	11 20 22.6	51.63	1 5.20	0 59.47	0.543	
Frid.	21	1 53 53.41	9.331	11 40 56.3	51.16	1 5.26	1 12.28	0.524	
Sat.	22	1 57 37.57	9.350	12 1 18.5	50.68	1 5.33	1 24.64	0.506	
Sun.	23	2 1 22.19	9.369	12 21 29.0	50.18	1 5.39	1 36.55	0.486	
Mon.	24	2 5 7.27	9.388	12 41 27.3	49.67	1 5.46	1 47.99	0.467	
Tues.	25	2 8 52.83	9.409	13 1 13.2	49.15	1 5.53	1 58.95	0.447	
Wed.	26	2 12 38.88	9.429	13 20 46.3	48.60	1 5.60	2 9.43	0.426	
Thur.	27	2 16 25.42	9.449	13 40 6.2	48.05	1 5.67	2 19.42	0.406	
Frid.	28	2 20 12.45	9.470	13 59 12.7	47.48	1 5.74	2 28.91	0.385	
Sat.	29	2 24 0.00	9.492	14 18 5.4	46.90	1 5.82	2 37.89	0.364	
Sun.	30	2 27 48.05	9.513	14 36 44.0	46.31	1 5.89	2 46.37	0.342	
Mon.	31	2 31 36.62	9.534	N.14 55 8.1	45.70	1 5.97	2 54.33	0.321	

* Mean Time of the Semidiameter passing may be found by subtracting 0^s.18 from the Sidereal Time

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to		Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*	subtracted from Apparent Time.		
Sat.	1	h m s 0 40 21.80	N. ° ' " 4 20 43.5	16' 1".58	m s 4 6.95	h m s 0 36 14.85	
Sun.	2	0 44 0.34	4 43 52.3	16 1.31	3 48.94	0 40 11.40	
Mon.	3	0 47 38.98	5 6 56.1	16 1.04	3 31.03	0 44 7.95	
Tues.	4	0 51 17.74	5 29 54.3	16 0.77	3 13.23	0 48 4.50	
Wed.	5	0 54 56.63	5 52 46.6	16 0.50	2 55.58	0 52 1.05	
Thur.	6	0 58 35.68	6 15 32.8	16 0.23	2 38.07	0 55 57.60	
Frid.	7	I 2 14.90	6 38 12.4	15 59.96	2 20.74	0 59 54.16	
Sat.	8	I 5 54.31	7 0 45.1	15 59.69	2 3.60	I 3 50.71	
Sun.	9	I 9 33.94	7 23 10.6	15 59.42	I 46.67	I 7 47.26	
Mon.	10	I 13 13.80	7 45 28.6	15 59.15	I 29.98	I 11 43.81	
Tues.	11	I 16 53.91	8 7 38.7	15 58.88	I 13.55	I 15 40.37	
Wed.	12	I 20 34.30	8 29 40.6	15 58.61	0 57.39	I 19 36.92	
Thur.	13	I 24 15.00	8 51 34.1	15 58.34	0 41.53	I 23 33.47	
Frid.	14	I 27 56.01	9 13 18.7	15 58.07	0 25.99	I 27 30.02	
Sat.	15	I 31 37.37	9 34 54.2	15 57.79	0 10.79	I 31 26.58	
Sun.	16	I 35 19.08	9 56 20.3	15 57.52	0 4.05	I 35 23.13	
Mon.	17	I 39 1.17	10 17 36.6	15 57.25	0 18.51	I 39 19.68	
Tues.	18	I 42 43.66	10 38 42.8	15 56.98	0 32.58	I 43 16.23	
Wed.	19	I 46 26.55	10 59 38.5	15 56.71	0 46.24	I 47 12.79	
Thur.	20	I 50 9.86	11 20 23.5	15 56.45	0 59.48	I 51 9.34	
Frid.	21	I 53 53.60	11 40 57.3	15 56.18	I 12.29	I 55 5.89	
Sat.	22	I 57 37.79	12 1 19.7	15 55.92	I 24.65	I 59 2.45	
Sun.	23	2 1 22.44	12 21 30.3	15 55.66	I 36.56	2 2 59.00	
Mon.	24	2 5 7.55	12 41 28.8	15 55.40	I 48.00	2 6 55.55	
Tues.	25	2 8 53.14	13 1 14.8	15 55.14	I 58.96	2 10 52.11	
Wed.	26	2 12 39.22	13 20 48.0	15 54.89	2 9.44	2 14 48.66	
Thur.	27	2 16 25.78	13 40 8.1	15 54.64	2 19.43	2 18 45.21	
Frid.	28	2 20 12.84	13 59 14.7	15 54.40	2 28.92	2 22 41.77	
Sat.	29	2 24 0.41	14 18 7.5	15 54.16	2 37.91	2 26 38.32	
Sun.	30	2 27 48.49	14 36 46.1	15 53.92	2 46.39	2 30 34.87	
Mon.	31	2 31 37.08	N. 14 55 10.3	15 53.68	2 54.35	2 34 31.43	

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	Noon.	Noon.			Noon.	Midnight.	Noon.	Midnight.
				h m s				
1	10 58 40.0	S. 0.54	9.9998192	23 19 55.19	15 14.59	15 19.01	55 50.81	56 7.02
2	11 57 50.7	0.63	9.9999419	23 15 59.28	15 23.73	15 28.73	56 24.31	56 42.64
3	12 56 59.1	0.68	0.0000643	23 12 3.37	15 34.01	15 39.53	57 1.97	57 22.21
4	13 56 5.2	0.69	0.0001863	23 8 7.47	15 45.27	15 51.16	57 43.22	58 4.80
5	14 55 9.0	0.67	.0003081	23 4 11.56	15 57.12	16 3.10	58 26.69	58 48.60
6	15 54 10.4	0.63	.0004298	23 0 15.66	16 8.98	16 14.64	59 10.11	59 30.84
7	16 53 9.4	0.56	0.0005515	22 56 19.75	16 19.92	16 24.71	59 50.23	60 7.76
8	17 52 6.2	0.45	.0006733	22 52 23.84	16 28.84	16 32.18	60 22.91	60 35.14
9	18 51 0.7	0.32	.0007952	22 48 27.94	16 34.59	16 35.96	60 43.97	60 48.98
10	19 49 53.1	0.19	0.0009175	22 44 32.03	16 36.21	16 35.29	60 49.89	60 46.52
11	20 48 43.3	S. 0.05	.0010401	22 40 36.12	16 33.20	16 29.97	60 38.85	60 27.04
12	21 47 31.5	N. 0.08	.0011629	22 36 40.22	16 25.70	16 20.48	60 11.38	59 52.27
13	22 46 17.7	0.21	0.0012861	22 32 44.31	16 14.47	16 7.82	59 30.22	59 5.87
14	23 45 2.1	0.32	.0014093	22 28 48.40	16 0.71	15 53.31	58 39.81	58 12.70
15	24 43 44.7	0.40	.0015326	22 24 52.50	15 45.80	15 38.32	57 45.16	57 17.78
16	25 42 25.6	0.45	0.0016558	22 20 56.59	15 31.03	15 24.05	56 51.07	56 25.51
17	26 41 4.7	0.48	.0017788	22 17 0.68	15 17.49	15 11.44	56 1.45	55 39.28
18	27 39 42.2	0.47	.0019013	22 13 4.78	15 5.96	15 1.10	55 19.18	55 1.38
19	28 38 18.0	0.43	0.0020233	22 9 8.87	14 56.90	14 53.37	54 45.99	54 33.08
20	29 36 52.2	0.36	.0021445	22 5 12.96	14 50.54	14 48.39	54 22.71	54 14.84
21	30 35 24.7	0.28	.0022649	22 1 17.06	14 46.91	14 46.09	54 9.43	54 6.41
22	31 33 55.5	0.18	0.0023843	21 57 21.15	14 45.88	14 46.26	54 5.65	54 7.04
23	32 32 24.7	N. 0.06	.0025027	21 53 25.24	14 47.19	14 48.62	54 10.43	54 15.67
24	33 30 52.1	S. 0.07	.0026199	21 49 29.33	14 50.50	14 52.79	54 22.57	54 30.97
25	34 29 17.8	0.20	0.0027358	21 45 33.43	14 55.44	14 58.41	54 40.67	54 51.53
26	35 27 41.8	0.32	.0028503	21 41 37.52	15 1.63	15 5.08	55 3.35	55 15.97
27	36 26 4.0	0.44	.0029634	21 37 41.61	15 8.71	15 12.48	55 29.25	55 43.07
28	37 24 24.3	0.55	0.0030750	21 33 45.70	15 16.35	15 20.33	55 57.29	56 11.85
29	38 22 42.8	0.63	.0031851	21 29 49.80	15 24.36	15 28.45	56 26.64	56 41.62
30	39 20 59.4	0.70	.0032937	21 25 53.89	15 32.57	15 36.74	56 56.72	57 11.96
31	40 19 14.0	S. 0.73	0.0034009	21 21 57.98	15 40.91	15 45.09	57 27.25	57 42.57

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.	Noon.	Upper.	Lower.
					d	h m	h m
1	55° 31' 7.8	61° 51' 39.1	S. 3° 51' 54.8	S. 4° 14' 29.0	3.96	3 6.5	15 31.5
2	68 15 57.0	74 44 17.0	4 34 6.4	4 50 27.4	4.96	3 57.1	16 23.1
3	81 16 54.5	87 54 3.6	5 3 13.7	5 12 8.3	5.96	4 49.6	17 16.5
4	94 35 57.0	101 22 45.2	5 16 56.4	5 17 24.9	6.96	5 43.8	18 11.2
5	108 14 35.4	115 11 30.9	5 13 24.0	5 4 47.0	7.96	6 38.9	19 6.6
6	122 13 30.1	129 20 25.5	4 51 31.3	4 33 39.3	8.96	7 34.4	20 2.1
7	136 32 3.0	143 48 1.4	4 11 18.7	3 44 43.2	9.96	8 29.8	20 57.5
8	151 7 51.9	158 30 57.8	3 14 13.4	2 40 16.4	10.96	9 25.0	21 52.6
9	165 56 35.4	173 23 54.5	2 3 25.7	1 24 20.6	11.96	10 20.1	22 47.6
10	180 52 0.3	188 19 53.5	S. 0 43 45.1	S. 0 2 26.3	12.96	11 15.2	23 42.8
11	195 46 34.2	203 11 2.5	N. 0 38 47.7	N. 1 19 8.9	13.96	12 10.5	* *
12	210 32 21.7	217 49 39.3	1 57 52.5	2 34 17.7	14.96	13 6.1	0 38.3
13	225 2 9.7	232 9 14.4	3 7 49.3	3 37 58.5	15.96	14 1.8	1 34.0
14	239 10 24.0	246 5 18.1	4 4 23.2	4 26 47.8	16.96	14 57.1	2 29.5
15	252 53 45.3	259 35 43.1	4 45 3.2	4 59 5.3	17.96	15 51.2	3 24.3
16	266 11 17.1	272 40 39.9	5 8 54.8	5 14 36.3	18.96	16 43.7	4 17.7
17	279 4 10.7	285 22 13.7	5 16 17.0	5 14 6.2	19.96	17 34.0	5 9.1
18	291 35 17.3	297 43 53.1	5 8 14.8	4 58 54.7	20.96	18 22.1	5 58.3
19	303 48 35.2	309 49 58.6	4 46 18.3	4 30 38.7	21.96	19 8.0	6 45.3
20	315 48 39.6	321 45 14.5	4 12 8.9	3 51 2.6	22.96	19 52.3	7 30.3
21	327 40 19.1	333 34 28.4	3 27 33.3	3 1 55.2	23.96	20 35.3	8 13.9
22	339 28 16.0	345 22 14.1	2 34 22.7	2 5 11.3	24.96	21 17.9	8 56.6
23	351 16 52.6	357 12 39.8	1 34 36.7	N. 1 2 56.1	25.96	22 0.4	9 39.1
24	3 10 0.9	9 9 18.9	N. 0 30 27.1	S. 0 2 31.3	26.96	22 43.7	10 22.0
25	15 10 54.5	21 15 5.1	S. 0 35 38.9	1 8 34.6	27.96	23 28.3	11 5.8
26	27 22 5.6	33 32 8.2	1 40 56.4	2 12 21.7	28.96	* *	11 51.2
27	39 45 22.3	46 1 55.2	2 42 26.9	3 10 48.6	0.29	0 14.6	12 38.6
28	52 21 51.5	58 45 13.8	3 37 3.4	4 0 48.5	1.29	1 3.0	13 28.1
29	65 12 3.4	71 42 19.8	4 21 41.9	4 39 23.2	2.29	1 53.6	14 19.7
30	78 16 1.7	84 53 6.7	4 53 33.6	5 3 56.6	3.29	2 46.1	15 12.9
31	91 33 32.5	98 17 16.0	S. 5 10 18.2	S. 5 12 27.6	4.29	3 40.0	16 7.3

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 1.					MONDAY 3.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	3 36 32.73	21.493	N. 15 23 27.6	54.18	0	5 23 26.21	22.984	N. 18 7 0.8	11.74
1	3 38 41.78	21.526	15 28 50.5	53.44	1	5 25 44.19	23.010	18 8 8.2	10.73
2	3 40 51.04	21.560	15 34 8.9	52.69	2	5 28 2.33	23.037	18 9 9.6	9.72
3	3 43 0.50	21.593	15 39 22.8	51.94	3	5 30 20.63	23.062	18 10 4.8	8.69
4	3 45 10.16	21.627	15 44 32.2	51.18	4	5 32 39.07	23.086	18 10 53.9	7.67
5	3 47 20.02	21.660	15 49 37.0	50.41	5	5 34 57.66	23.111	18 11 36.8	6.64
6	3 49 30.08	21.694	15 54 37.1	49.64	6	5 37 16.40	23.135	18 12 13.6	5.61
7	3 51 40.35	21.728	15 59 32.7	48.87	7	5 39 35.28	23.159	18 12 44.1	4.57
8	3 53 50.82	21.761	16 4 23.5	48.08	8	5 41 54.31	23.183	18 13 8.4	3.53
9	3 56 1.48	21.794	16 9 9.6	47.28	9	5 44 13.48	23.206	18 13 26.5	2.49
10	3 58 12.35	21.828	16 13 50.9	46.48	10	5 46 32.78	23.228	18 13 38.3	1.44
11	4 0 23.41	21.861	16 18 27.4	45.68	11	5 48 52.22	23.252	18 13 43.8	0.39
12	4 2 34.68	21.894	16 22 59.0	44.87	12	5 51 11.80	23.274	18 13 43.1	0.66
13	4 4 46.14	21.927	16 27 25.8	44.05	13	5 53 31.51	23.295	18 13 35.9	1.72
14	4 6 57.80	21.960	16 31 47.6	43.22	14	5 55 51.34	23.317	18 13 22.5	2.77
15	4 9 9.66	21.993	16 36 4.4	42.39	15	5 58 11.31	23.338	18 13 2.7	3.83
16	4 11 21.72	22.026	16 40 16.3	41.56	16	6 0 31.40	23.358	18 12 36.5	4.90
17	4 13 33.97	22.058	16 44 23.1	40.71	17	6 2 51.61	23.379	18 12 3.9	5.97
18	4 15 46.42	22.092	16 48 24.8	39.86	18	6 5 11.95	23.399	18 11 24.9	7.03
19	4 17 59.07	22.124	16 52 21.4	39.00	19	6 7 32.40	23.418	18 10 39.5	8.10
20	4 20 11.91	22.156	16 56 12.8	38.14	20	6 9 52.97	23.438	18 9 47.7	9.17
21	4 22 24.94	22.188	16 59 59.1	37.27	21	6 12 13.66	23.457	18 8 49.5	10.25
22	4 24 38.17	22.221	17 3 40.1	36.39	22	6 14 34.46	23.475	18 7 44.7	11.33
23	4 26 51.59	22.253	N. 17 7 15.8	35.52	23	6 16 55.36	23.493	N. 18 6 33.5	12.40
SUNDAY 2.					TUESDAY 4.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	4 29 5.20	22.284	N. 17 10 46.3	34.63	0	6 19 16.38	23.512	N. 18 5 15.9	13.48
1	4 31 19.00	22.316	17 14 11.4	33.74	1	6 21 37.50	23.528	18 3 51.7	14.57
2	4 33 32.99	22.347	17 17 31.2	32.84	2	6 23 58.72	23.545	18 2 21.1	15.65
3	4 35 47.16	22.378	17 20 45.5	31.93	3	6 26 20.04	23.562	18 0 43.9	16.73
4	4 38 1.53	22.410	17 23 54.4	31.03	4	6 28 41.46	23.578	17 59 0.3	17.82
5	4 40 16.08	22.441	17 26 57.9	30.12	5	6 31 2.98	23.594	17 57 10.1	18.91
6	4 42 30.82	22.472	17 29 55.8	29.19	6	6 33 24.59	23.609	17 55 13.4	20.00
7	4 44 45.74	22.503	17 32 48.2	28.27	7	6 35 46.29	23.624	17 53 10.1	21.09
8	4 47 0.85	22.533	17 35 35.0	27.33	8	6 38 8.08	23.639	17 51 0.3	22.18
9	4 49 16.13	22.563	17 38 16.2	26.40	9	6 40 29.96	23.653	17 48 44.0	23.26
10	4 51 31.60	22.593	17 40 51.8	25.46	10	6 42 51.92	23.667	17 46 21.2	24.35
11	4 53 47.24	22.622	17 43 21.7	24.51	11	6 45 13.96	23.680	17 43 51.8	25.44
12	4 56 3.06	22.652	17 45 45.9	23.56	12	6 47 36.08	23.693	17 41 15.9	26.53
13	4 58 19.06	22.681	17 48 4.4	22.60	13	6 49 58.28	23.706	17 38 33.4	27.63
14	5 0 35.23	22.710	17 50 17.1	21.63	14	6 52 20.55	23.718	17 35 44.3	28.73
15	5 2 51.58	22.739	17 52 24.0	20.67	15	6 54 42.90	23.730	17 32 48.7	29.81
16	5 5 8.10	22.767	17 54 25.1	19.69	16	6 57 5.31	23.741	17 29 46.6	30.89
17	5 7 24.78	22.795	17 56 20.3	18.72	17	6 59 27.79	23.753	17 26 38.0	31.98
18	5 9 41.64	22.823	17 58 9.7	17.73	18	7 1 50.34	23.763	17 23 22.8	33.08
19	5 11 58.66	22.851	17 59 53.1	16.74	19	7 4 12.95	23.773	17 20 1.0	34.17
20	5 14 15.85	22.878	18 1 30.6	15.76	20	7 6 35.62	23.783	17 16 32.8	35.25
21	5 16 33.20	22.905	18 3 2.2	14.76	21	7 8 58.35	23.793	17 12 58.0	36.34
22	5 18 50.71	22.932	18 4 27.7	13.76	22	7 11 21.14	23.803	17 9 16.7	37.43
23	5 21 8.38	22.958	18 5 47.3	12.76	23	7 13 43.98	23.812	17 5 28.9	38.51
24	5 23 26.21	22.984	N. 18 7 0.8	11.74	24	7 16 6.88	23.820	N. 17 1 34.6	39.59

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 5.					FRIDAY 7.				
	h m s	s	N. 1° 1'	"		h m s	s	N. 11° 53'	"
0	7 16 6.88	23.820	N. 17 1 34.6	39.59	0	9 10 49.60	23.883	N. 11 53 14.0	86.89
1	7 18 29.82	23.828	16 57 33.8	40.67	1	9 13 12.89	23.879	11 44 30.1	87.73
2	7 20 52.81	23.835	16 53 26.6	41.75	2	9 15 36.15	23.876	11 35 41.2	88.55
3	7 23 15.84	23.843	16 49 12.8	42.83	3	9 17 59.40	23.873	11 26 47.5	89.35
4	7 25 38.92	23.850	16 44 52.6	43.90	4	9 20 22.62	23.868	11 17 49.0	90.16
5	7 28 2.04	23.857	16 40 26.0	44.98	5	9 22 45.82	23.865	11 8 45.6	90.96
6	7 30 25.20	23.863	16 35 52.9	46.04	6	9 25 9.00	23.862	10 59 37.5	91.73
7	7 32 48.39	23.868	16 31 13.5	47.11	7	9 27 32.16	23.858	10 50 24.8	92.51
8	7 35 11.62	23.874	16 26 27.6	48.18	8	9 29 55.30	23.854	10 41 7.4	93.28
9	7 37 34.88	23.880	16 21 35.3	49.24	9	9 32 18.41	23.850	10 31 45.5	94.03
10	7 39 58.18	23.885	16 16 36.7	50.29	10	9 34 41.50	23.846	10 22 19.1	94.78
11	7 42 21.50	23.889	16 11 31.8	51.35	11	9 37 4.56	23.842	10 12 48.2	95.51
12	7 44 44.85	23.893	16 6 20.5	52.41	12	9 39 27.60	23.838	10 3 13.0	96.23
13	7 47 8.22	23.898	16 1 2.9	53.46	13	9 41 50.62	23.835	9 53 33.5	96.94
14	7 49 31.62	23.902	15 55 39.0	54.50	14	9 44 13.62	23.831	9 43 49.7	97.65
15	7 51 55.04	23.904	15 50 8.9	55.54	15	9 46 36.59	23.826	9 34 1.7	98.35
16	7 54 18.47	23.908	15 44 32.5	56.58	16	9 48 59.53	23.823	9 24 9.5	99.03
17	7 56 41.93	23.911	15 38 49.9	57.62	17	9 51 22.46	23.819	9 14 13.3	99.69
18	7 59 5.40	23.913	15 33 1.1	58.65	18	9 53 45.36	23.815	9 4 13.2	100.35
19	8 1 28.88	23.915	15 27 6.1	59.68	19	9 56 8.24	23.811	8 54 9.1	101.01
20	8 3 52.38	23.918	15 21 5.0	60.70	20	9 58 31.09	23.807	8 44 1.1	101.65
21	8 6 15.89	23.919	15 14 57.7	61.72	21	10 0 53.92	23.803	8 33 49.3	102.28
22	8 8 39.41	23.920	15 8 44.4	62.72	22	10 3 16.73	23.800	8 23 33.8	102.89
23	8 11 2.93	23.921	N. 15 2 25.1	63.73	23	10 5 39.52	23.796	N. 8 13 14.6	103.50
THURSDAY 6.					SATURDAY 8.				
	h m s	s	N. 14° 55'	"		h m s	s	N. 8° 25'	"
0	8 13 26.46	23.923	N. 14 55 59.6	64.74	0	10 8 2.28	23.792	N. 8 25 1.8	104.09
1	8 15 50.00	23.923	14 49 28.2	65.73	1	10 10 25.02	23.789	7 52 25.5	104.67
2	8 18 13.53	23.923	14 42 50.8	66.73	2	10 12 47.75	23.786	7 41 55.7	105.24
3	8 20 37.07	23.923	14 36 7.5	67.71	3	10 15 10.45	23.782	7 31 22.6	105.80
4	8 23 0.61	23.923	14 29 18.3	68.69	4	10 17 33.13	23.778	7 20 46.1	106.35
5	8 25 24.15	23.923	14 22 23.2	69.67	5	10 19 55.79	23.775	7 10 6.4	106.88
6	8 27 47.69	23.923	14 15 22.3	70.63	6	10 22 18.43	23.772	6 59 23.5	107.40
7	8 30 11.22	23.921	14 8 15.6	71.60	7	10 24 41.05	23.769	6 48 37.6	107.91
8	8 32 34.74	23.920	14 1 3.1	72.55	8	10 27 3.66	23.766	6 37 48.6	108.41
9	8 34 58.26	23.919	13 53 45.0	73.50	9	10 29 26.24	23.763	6 26 56.7	108.89
10	8 37 21.77	23.918	13 46 21.1	74.45	10	10 31 48.81	23.760	6 16 1.9	109.37
11	8 39 45.28	23.917	13 38 51.6	75.38	11	10 34 11.36	23.758	6 5 4.3	109.83
12	8 42 8.77	23.915	13 31 16.5	76.32	12	10 36 33.90	23.755	5 54 4.0	110.27
13	8 44 32.26	23.913	13 23 35.8	77.24	13	10 38 56.42	23.753	5 43 1.1	110.70
14	8 46 55.73	23.910	13 15 49.6	78.16	14	10 41 18.93	23.750	5 31 55.6	111.12
15	8 49 19.18	23.908	13 7 57.9	79.07	15	10 43 41.42	23.748	5 20 47.7	111.53
16	8 51 42.63	23.907	13 0 0.8	79.97	16	10 46 3.90	23.746	5 9 37.3	111.92
17	8 54 6.06	23.903	12 51 58.3	80.86	17	10 48 26.37	23.743	4 58 24.6	112.30
18	8 56 29.47	23.901	12 43 50.5	81.74	18	10 50 48.82	23.741	4 47 9.7	112.67
19	8 58 52.87	23.899	12 35 37.4	82.63	19	10 53 11.26	23.740	4 35 52.6	113.03
20	9 1 16.26	23.896	12 27 19.0	83.50	20	10 55 33.70	23.738	4 24 33.4	113.37
21	9 3 39.62	23.893	12 18 55.4	84.36	21	10 57 56.12	23.737	4 13 12.2	113.7
22	9 6 2.97	23.889	12 10 26.7	85.22	22	11 0 18.54	23.735	4 1 49.1	114.06
23	9 8 26.29	23.886	12 1 52.8	86.06	23	11 2 40.94	23.733	3 50 24.2	114.68
24	9 10 49.60	23.883	N. 11 53 14.0	86.89	24	11 5 3.34	23.733	N. 3 38 57.5	115.00

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 9.					TUESDAY 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	11 5 3.34	23.733	N. 3 38 57.5	114.59	0	12 59 7.49	23.844	S. 5 36 49.4	111.43
1	11 7 25.74	23.732	3 27 29.1	114.86	1	13 1 30.57	23.849	5 47 56.7	111.01
2	11 9 48.12	23.731	3 15 59.2	115.12	2	13 3 53.68	23.854	5 59 1.5	110.58
3	11 12 10.51	23.731	3 4 27.7	115.37	3	13 6 16.82	23.859	6 10 3.7	110.14
4	11 14 32.89	23.730	2 52 54.8	115.59	4	13 8 39.99	23.863	6 21 3.2	109.68
5	11 16 55.27	23.729	2 41 20.6	115.81	5	13 11 3.18	23.868	6 31 59.9	109.21
6	11 19 17.64	23.729	2 29 45.1	116.01	6	13 13 26.41	23.874	6 42 53.7	108.73
7	11 21 40.02	23.730	2 18 8.5	116.20	7	13 15 49.67	23.878	6 53 44.6	108.23
8	11 24 2.40	23.729	2 6 30.7	116.37	8	13 18 12.95	23.883	7 4 32.5	107.72
9	11 26 24.77	23.729	1 54 52.0	116.53	9	13 20 36.27	23.888	7 15 17.2	107.19
10	11 28 47.15	23.731	1 43 12.4	116.68	10	13 22 59.61	23.893	7 25 58.8	106.66
11	11 31 9.54	23.732	1 31 31.9	116.81	11	13 25 22.99	23.898	7 36 37.1	106.11
12	11 33 31.93	23.732	1 19 50.7	116.93	12	13 27 46.39	23.903	7 47 12.1	105.55
13	11 35 54.32	23.733	1 8 8.8	117.03	13	13 30 9.82	23.908	7 57 43.7	104.97
14	11 38 16.72	23.733	0 56 26.4	117.11	14	13 32 33.28	23.913	8 8 11.8	104.38
15	11 40 39.12	23.734	0 44 43.5	117.18	15	13 34 56.77	23.917	8 18 36.3	103.78
16	11 43 1.53	23.736	0 33 0.2	117.25	16	13 37 20.28	23.922	8 28 57.2	103.17
17	11 45 23.95	23.738	0 21 16.5	117.29	17	13 39 43.83	23.927	8 39 14.4	102.55
18	11 47 46.38	23.739	N. 0 9 32.7	117.31	18	13 42 7.40	23.931	8 49 27.8	101.92
19	11 50 8.82	23.741	S. 0 2 11.2	117.33	19	13 44 31.00	23.935	8 59 37.4	101.27
20	11 52 31.27	23.743	0 13 55.2	117.33	20	13 46 54.62	23.939	9 9 43.0	100.61
21	11 54 53.74	23.746	0 25 39.2	117.32	21	13 49 18.27	23.943	9 19 44.7	99.93
22	11 57 16.22	23.748	0 37 23.0	117.28	22	13 51 41.94	23.948	9 29 42.2	99.24
23	11 59 38.71	23.749	S. 0 49 6.6	117.24	23	13 54 5.64	23.952	S. 9 39 35.6	98.56
MONDAY 10.					WEDNESDAY 12.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	12 2 1.21	23.751	S. 1 0 49.9	117.18	0	13 56 29.36	23.955	S. 9 49 24.9	97.86
1	12 4 23.72	23.754	1 12 32.8	117.11	1	13 58 53.10	23.958	9 59 9.9	97.13
2	12 6 46.26	23.758	1 24 15.2	117.02	2	14 1 16.86	23.963	10 8 50.5	96.40
3	12 9 8.81	23.760	1 35 57.0	116.92	3	14 3 40.65	23.966	10 18 26.7	95.67
4	12 11 31.38	23.763	1 47 38.2	116.80	4	14 6 4.45	23.969	10 27 58.5	94.92
5	12 13 53.97	23.766	1 59 18.6	116.67	5	14 8 28.28	23.973	10 37 25.7	94.16
6	12 16 16.57	23.769	2 10 58.2	116.53	6	14 10 52.12	23.975	10 46 48.4	93.39
7	12 18 39.20	23.773	2 22 36.9	116.37	7	14 13 15.98	23.978	10 56 6.4	92.61
8	12 21 1.85	23.777	2 34 14.6	116.18	8	14 15 39.85	23.980	11 5 19.7	91.82
9	12 23 24.52	23.780	2 45 51.1	115.99	9	14 18 3.74	23.983	11 14 28.2	91.02
10	12 25 47.21	23.783	2 57 26.5	115.79	10	14 20 27.65	23.985	11 23 31.9	90.20
11	12 28 9.92	23.787	3 9 0.6	115.58	11	14 22 51.56	23.987	11 32 30.6	89.38
12	12 30 32.65	23.791	3 20 33.4	115.34	12	14 25 15.49	23.989	11 41 24.5	88.56
13	12 32 55.41	23.796	3 32 4.7	115.09	13	14 27 39.43	23.991	11 50 13.3	87.71
14	12 35 18.20	23.800	3 43 34.5	114.83	14	14 30 3.38	23.992	11 58 57.0	86.87
15	12 37 41.01	23.803	3 55 2.7	114.55	15	14 32 27.33	23.993	12 7 35.7	86.02
16	12 40 3.84	23.808	4 6 29.1	114.26	16	14 34 51.29	23.994	12 16 9.2	85.14
17	12 42 26.70	23.813	4 17 53.8	113.96	17	14 37 15.26	23.994	12 24 37.4	84.27
18	12 44 49.59	23.818	4 29 16.6	113.64	18	14 39 39.22	23.994	12 33 0.4	83.38
19	12 47 12.51	23.822	4 40 37.5	113.30	19	14 42 3.19	23.995	12 41 18.0	82.49
20	12 49 35.45	23.826	4 51 56.3	112.95	20	14 44 27.16	23.994	12 49 30.3	81.60
21	12 51 58.42	23.830	5 3 12.9	112.59	21	14 46 51.12	23.994	12 57 37.2	80.68
22	12 54 21.41	23.835	5 14 27.4	112.22	22	14 49 15.09	23.993	13 5 38.5	79.77
23	12 56 44.44	23.840	5 25 39.6	111.83	23	14 51 39.04	23.992	13 13 34.4	78.85
24	1 59 7.49	23.844	S. 5 36 49.4	111.43	24	14 54 2.99	23.991	S. 13 21 24.7	77.92

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
THURSDAY 13.					SATURDAY 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	14 54 2.99	23.991	S. 13 21 24.7	77.92	0	16 48 21.10	23.478	S. 17 38 18.6	27.97
1	14 56 26.93	23.988	13 29 9.4	76.98	1	16 50 41.91	23.458	17 41 3.1	26.88
2	14 58 50.85	23.987	13 36 48.5	76.03	2	16 53 2.59	23.436	17 43 41.2	25.81
3	15 1 14.77	23.985	13 44 21.8	75.08	3	16 55 23.14	23.414	17 46 12.8	24.73
4	15 3 38.67	23.983	13 51 49.4	74.13	4	16 57 43.56	23.392	17 48 38.0	23.66
5	15 6 2.56	23.979	13 59 11.3	73.16	5	17 0 3.84	23.368	17 50 56.7	22.58
6	15 8 26.42	23.975	14 6 27.3	72.18	6	17 2 23.98	23.346	17 53 8.9	21.51
7	15 10 50.26	23.972	14 13 37.5	71.21	7	17 4 43.99	23.323	17 55 14.8	20.44
8	15 13 14.08	23.968	14 20 41.8	70.23	8	17 7 3.85	23.298	17 57 14.2	19.37
9	15 15 37.88	23.964	14 27 40.2	69.24	9	17 9 23.57	23.275	17 59 7.2	18.30
10	15 18 1.65	23.959	14 34 32.7	68.24	10	17 11 43.15	23.250	18 0 53.8	17.23
11	15 20 25.39	23.953	14 41 19.1	67.23	11	17 14 2.57	23.224	18 2 34.0	16.18
12	15 22 49.09	23.948	14 47 59.5	66.23	12	17 16 21.84	23.199	18 4 7.9	15.12
13	15 25 12.77	23.943	14 54 33.9	65.22	13	17 18 40.96	23.174	18 5 35.4	14.06
14	15 27 36.40	23.936	15 1 2.1	64.20	14	17 20 59.93	23.148	18 6 56.6	13.00
15	15 30 0.00	23.930	15 7 24.3	63.18	15	17 23 18.73	23.121	18 8 11.4	11.95
16	15 32 23.56	23.923	15 13 40.3	62.16	16	17 25 37.38	23.094	18 9 20.0	10.90
17	15 34 47.08	23.916	15 19 50.2	61.13	17	17 27 55.86	23.067	18 10 22.2	9.85
18	15 37 10.55	23.908	15 25 53.8	60.09	18	17 30 14.18	23.039	18 11 18.2	8.82
19	15 39 33.97	23.900	15 31 51.3	59.06	19	17 32 32.33	23.011	18 12 8.0	7.78
20	15 41 57.35	23.892	15 37 42.5	58.01	20	17 34 50.31	22.983	18 12 51.5	6.73
21	15 44 20.67	23.882	15 43 27.4	56.97	21	17 37 8.13	22.955	18 13 28.8	5.70
22	15 46 43.93	23.873	15 49 6.1	55.92	22	17 39 25.77	22.925	18 13 59.9	4.68
23	15 49 7.14	23.863	S. 15 54 38.4	54.86	23	17 41 43.23	22.896	S. 18 14 24.9	3.65
FRIDAY 14.					SUNDAY 16.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	15 51 30.29	23.853	S. 16 0 4.4	53.81	0	17 44 0.52	22.868	S. 18 14 43.7	2.63
1	15 53 53.37	23.842	16 5 24.1	52.75	1	17 46 17.64	22.838	18 14 56.4	1.60
2	15 56 16.39	23.832	16 10 37.4	51.68	2	17 48 34.57	22.807	18 15 2.9	0.58
3	15 58 39.35	23.820	16 15 44.3	50.62	3	17 50 51.32	22.776	18 15 3.4	0.42
4	16 1 2.23	23.808	16 20 44.8	49.56	4	17 53 7.88	22.745	18 14 57.9	1.43
5	16 3 25.04	23.795	16 25 39.0	48.49	5	17 55 24.26	22.715	18 14 46.3	2.43
6	16 5 47.77	23.782	16 30 26.7	47.41	6	17 57 40.46	22.683	18 14 28.7	3.43
7	16 8 10.42	23.769	16 35 7.9	46.33	7	17 59 56.46	22.652	18 14 5.2	4.42
8	16 10 33.00	23.756	16 39 42.7	45.27	8	18 2 12.28	22.620	18 13 35.7	5.42
9	16 12 55.49	23.742	16 44 11.1	44.19	9	18 4 27.90	22.588	18 13 0.2	6.40
10	16 15 17.90	23.728	16 48 33.0	43.12	10	18 6 43.33	22.556	18 12 18.9	7.38
11	16 17 40.22	23.712	16 52 48.5	42.03	11	18 8 58.57	22.523	18 11 31.7	8.35
12	16 20 2.44	23.697	16 56 57.4	40.95	12	18 11 13.61	22.490	18 10 38.7	9.33
13	16 22 24.58	23.681	17 0 59.9	39.88	13	18 13 28.45	22.458	18 9 39.8	10.29
14	16 24 46.61	23.664	17 4 55.9	38.79	14	18 15 43.10	22.424	18 8 35.2	11.25
15	16 27 8.55	23.648	17 8 45.4	37.71	15	18 17 57.54	22.390	18 7 24.8	12.21
16	16 29 30.39	23.631	17 12 28.4	36.63	16	18 20 11.78	22.357	18 6 8.7	13.16
17	16 31 52.12	23.613	17 16 4.9	35.54	17	18 22 25.82	22.323	18 4 46.9	14.10
18	16 34 13.74	23.595	17 19 34.9	34.46	18	18 24 39.66	22.290	18 3 19.5	15.04
19	16 36 35.26	23.577	17 22 58.4	33.38	19	18 26 53.30	22.256	18 1 46.4	15.98
20	16 38 56.66	23.558	17 26 15.5	32.30	20	18 29 6.73	22.221	18 0 7.7	16.92
21	16 41 17.95	23.538	17 29 26.0	31.21	21	18 31 19.95	22.187	17 58 23.4	17.84
22	16 43 39.12	23.518	17 32 30.0	30.13	22	18 33 32.97	22.153	17 56 33.6	18.76
23	16 46 0.17	23.498	17 35 27.5	29.05	23	18 35 45.78	22.118	17 54 38.3	19.68
24	16 48 21.10	23.478	S. 17 38 18.6	27.97	24	18 37 58.38	22.083	S. 17 52 37.5	20.60

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
MONDAY 17.					WEDNESDAY 19.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	18 37 58.38	22.083	S. 17 52 37.5	20.59	0	20 19 53.32	20.405	S. 14 39 49.7	57.48
1	18 40 10.77	22.048	17 50 31.2	21.49	1	20 21 55.65	20.373	14 34 2.9	58.11
2	18 42 22.95	22.012	17 48 19.6	22.39	2	20 23 57.80	20.342	14 28 12.4	58.73
3	18 44 34.91	21.977	17 46 2.5	23.28	3	20 25 59.75	20.309	14 22 18.2	59.34
4	18 46 46.67	21.943	17 43 40.2	24.17	4	20 28 1.51	20.278	14 16 20.3	59.95
5	18 48 58.22	21.907	17 41 12.5	25.06	5	20 30 3.09	20.248	14 10 18.8	60.55
6	18 51 9.55	21.871	17 38 39.5	25.93	6	20 32 4.48	20.216	14 4 13.7	61.14
7	18 53 20.67	21.835	17 36 1.3	26.81	7	20 34 5.68	20.185	13 58 5.1	61.73
8	18 55 31.57	21.799	17 33 17.8	27.68	8	20 36 6.70	20.155	13 51 52.9	62.32
9	18 57 42.26	21.764	17 30 29.2	28.53	9	20 38 7.54	20.126	13 45 37.3	62.89
10	18 59 52.74	21.728	17 27 35.5	29.38	10	20 40 8.20	20.095	13 39 18.2	63.47
11	19 2 3.00	21.693	17 24 36.6	30.23	11	20 42 8.68	20.065	13 32 55.7	64.03
12	19 4 13.05	21.657	17 21 32.7	31.08	12	20 44 8.98	20.036	13 26 29.8	64.60
13	19 6 22.88	21.620	17 18 23.7	31.92	13	20 46 9.11	20.007	13 20 0.5	65.15
14	19 8 32.49	21.584	17 15 9.7	32.74	14	20 48 9.06	19.978	13 13 28.0	65.69
15	19 10 41.89	21.549	17 11 50.8	33.57	15	20 50 8.85	19.950	13 6 52.2	66.24
16	19 12 51.08	21.513	17 8 26.9	34.39	16	20 52 8.46	19.921	13 0 13.1	66.78
17	19 15 0.05	21.477	17 4 58.1	35.20	17	20 54 7.90	19.893	12 53 30.8	67.31
18	19 17 8.80	21.441	17 1 24.5	36.01	18	20 56 7.18	19.866	12 46 45.4	67.84
19	19 19 17.34	21.405	16 57 46.0	36.82	19	20 58 6.29	19.838	12 39 56.7	68.37
20	19 21 25.66	21.369	16 54 2.7	37.61	20	21 0 5.24	19.811	12 33 5.0	68.88
21	19 23 33.77	21.334	16 50 14.7	38.39	21	21 2 4.02	19.784	12 26 10.2	69.38
22	19 25 41.67	21.298	16 46 22.0	39.18	22	21 4 2.65	19.758	12 19 12.4	69.89
23	19 27 49.35	21.263	S. 16 42 24.5	39.96	23	21 6 1.12	19.732	S. 12 12 11.5	70.39
TUESDAY 18.					THURSDAY 20.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	19 29 56.82	21.227	S. 16 38 22.5	40.73	0	21 7 59.43	19.706	S. 12 5 7.7	70.88
1	19 32 4.07	21.191	16 34 15.8	41.50	1	21 9 57.59	19.681	11 58 0.9	71.38
2	19 34 11.11	21.155	16 30 4.5	42.27	2	21 11 55.60	19.655	11 50 51.2	71.86
3	19 36 17.93	21.120	16 25 48.6	43.02	3	21 13 53.45	19.630	11 43 38.6	72.34
4	19 38 24.55	21.085	16 21 28.3	43.76	4	21 15 51.16	19.606	11 36 23.1	72.81
5	19 40 30.95	21.049	16 17 3.5	44.50	5	21 17 48.72	19.582	11 29 4.9	73.28
6	19 42 37.14	21.014	16 12 34.3	45.24	6	21 19 46.14	19.558	11 21 43.8	73.73
7	19 44 43.12	20.979	16 8 0.6	45.98	7	21 21 43.41	19.534	11 14 20.1	74.18
8	19 46 48.89	20.944	16 3 22.6	46.70	8	21 23 40.55	19.511	11 6 53.6	74.64
9	19 48 54.45	20.909	15 58 40.2	47.42	9	21 25 37.54	19.488	10 59 24.4	75.09
10	19 50 59.80	20.874	15 53 53.6	48.13	10	21 27 34.40	19.466	10 51 52.5	75.53
11	19 53 4.94	20.840	15 49 2.7	48.83	11	21 29 31.13	19.444	10 44 18.1	75.96
12	19 55 9.88	20.806	15 44 7.6	49.53	12	21 31 27.73	19.422	10 36 41.0	76.39
13	19 57 14.61	20.772	15 39 8.3	50.23	13	21 33 24.19	19.400	10 29 1.4	76.81
14	19 59 19.14	20.738	15 34 4.8	50.92	14	21 35 20.53	19.379	10 21 19.3	77.23
15	20 1 23.46	20.703	15 28 57.2	51.60	15	21 37 16.74	19.358	10 13 34.7	77.64
16	20 3 27.58	20.669	15 23 45.6	52.28	16	21 39 12.83	19.338	10 5 47.6	78.05
17	20 5 31.49	20.636	15 18 29.9	52.95	17	21 41 8.80	19.318	9 57 58.1	78.45
18	20 7 35.21	20.602	15 13 10.2	53.62	18	21 43 4.65	19.298	9 50 6.2	78.84
19	20 9 38.72	20.568	15 7 46.5	54.28	19	21 45 0.38	19.279	9 42 12.0	79.23
20	20 11 42.03	20.536	15 2 18.9	54.93	20	21 46 56.00	19.261	9 34 15.4	79.63
21	20 13 45.15	20.503	14 56 47.3	55.58	21	21 48 51.51	19.243	9 26 16.5	80.01
22	20 15 48.07	20.470	14 51 11.9	56.22	22	21 50 46.91	19.224	9 18 15.3	80.38
23	20 17 50.79	20.438	14 45 32.7	56.85	23	21 52 42.20	19.206	9 10 11.9	80.75
24	20 19 53.32	20.405	S. 14 39 49.7	57.48	24	21 54 37.38	19.188	S. 9 2 6.3	81.12

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 21.					SUNDAY 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	21 54 37.38	19.188	S. 9 2 6.3	81.12	0	23 25 28.75	18.825	S. 2 0 30.3	92.54
1	21 56 32.46	19.172	8 53 58.4	81.48	1	23 27 21.71	18.828	I 51 14.7	92.65
2	21 58 27.44	19.156	8 45 48.5	81.83	2	23 29 14.68	18.831	I 41 58.5	92.75
3	22 0 22.33	19.139	8 37 36.4	82.18	3	23 31 7.66	18.833	I 32 41.7	92.85
4	22 2 17.11	19.123	8 29 22.3	82.53	4	23 33 0.67	18.837	I 23 24.3	92.94
5	22 4 11.80	19.108	8 21 6.1	82.88	5	23 34 53.70	18.841	I 14 6.4	93.03
6	22 6 6.40	19.093	8 12 47.8	83.21	6	23 36 46.76	18.846	I 4 47.9	93.12
7	22 8 0.91	19.078	8 4 27.6	83.53	7	23 38 39.85	18.850	O 55 29.0	93.18
8	22 9 55.33	19.063	7 56 5.5	83.85	8	23 40 32.96	18.855	O 46 9.7	93.25
9	22 11 49.67	19.050	7 47 41.4	84.18	9	23 42 26.11	18.861	O 36 50.0	93.32
10	22 13 43.93	19.037	7 39 15.4	84.49	10	23 44 19.29	18.868	O 27 29.9	93.38
11	22 15 38.11	19.023	7 30 47.5	84.80	11	23 46 12.52	18.874	O 18 9.4	93.43
12	22 17 32.21	19.011	7 22 17.8	85.10	12	23 48 5.78	18.881	S. O 8 48.7	93.48
13	22 19 26.24	18.998	7 13 46.3	85.39	13	23 49 59.09	18.888	N. O 0 32.3	93.52
14	22 21 20.19	18.986	7 5 13.1	85.68	14	23 51 52.44	18.896	O 9 53.5	93.56
15	22 23 14.07	18.974	6 56 38.1	85.98	15	23 53 45.84	18.904	O 19 15.0	93.59
16	22 25 7.88	18.963	6 48 1.3	86.27	16	23 55 39.29	18.913	O 28 36.6	93.61
17	22 27 1.63	18.953	6 39 22.9	86.53	17	23 57 32.79	18.922	O 37 58.3	93.63
18	22 28 55.32	18.943	6 30 42.9	86.80	18	23 59 26.35	18.931	O 47 20.1	93.64
19	22 30 48.94	18.933	6 22 1.3	87.08	19	0 1 19.96	18.941	O 56 42.0	93.65
20	22 32 42.51	18.923	6 13 18.0	87.34	20	0 3 13.64	18.952	I 6 3.9	93.65
21	22 34 36.02	18.914	6 4 33.2	87.59	21	0 5 7.38	18.962	I 15 25.8	93.64
22	22 36 29.48	18.906	5 55 46.9	87.84	22	0 7 1.18	18.973	I 24 47.6	93.63
23	22 38 22.89	18.898	S. 5 46 59.1	88.09	23	0 8 55.05	18.984	N. I 34 9.4	93.62
SATURDAY 22.					MONDAY 24.				
0	22 40 16.25	18.889	S. 5 38 9.8	88.33	0	0 10 48.99	18.996	N. I 43 31.0	93.59
1	22 42 9.56	18.882	5 29 19.1	88.57	1	0 12 43.00	19.008	I 52 52.5	93.57
2	22 44 2.83	18.875	5 20 27.0	88.80	2	0 14 37.08	19.020	2 2 13.8	93.53
3	22 45 56.06	18.868	5 11 33.5	89.03	3	0 16 31.24	19.033	2 11 34.9	93.49
4	22 47 49.25	18.862	5 2 38.7	89.24	4	0 18 25.48	19.047	2 20 55.7	93.44
5	22 49 42.40	18.856	4 53 42.6	89.46	5	0 20 19.80	19.061	2 30 16.2	93.38
6	22 51 35.52	18.851	4 44 45.2	89.67	6	0 22 14.21	19.075	2 39 36.3	93.33
7	22 53 28.61	18.846	4 35 46.6	89.88	7	0 24 8.70	19.089	2 48 56.1	93.27
8	22 55 21.67	18.841	4 26 46.7	90.08	8	0 26 3.28	19.104	2 58 15.5	93.20
9	22 57 14.70	18.837	4 17 45.7	90.26	9	0 27 57.95	19.119	3 7 34.5	93.12
10	22 59 7.71	18.833	4 8 43.6	90.45	10	0 29 52.71	19.134	3 16 52.9	93.03
11	23 1 0.70	18.831	3 59 40.3	90.64	11	0 31 47.56	19.151	3 26 10.9	92.95
12	23 2 53.68	18.827	3 50 35.9	90.82	12	0 33 42.52	19.168	3 35 28.3	92.84
13	23 4 46.63	18.824	3 41 30.5	90.99	13	0 35 37.57	19.184	3 44 45.0	92.74
14	23 6 39.57	18.823	3 32 24.0	91.16	14	0 37 32.73	19.202	3 54 1.2	92.64
15	23 8 32.50	18.821	3 23 16.6	91.32	15	0 39 27.99	19.218	4 3 16.7	92.52
16	23 10 25.42	18.819	3 14 8.2	91.48	16	0 41 23.35	19.237	4 12 31.4	92.40
17	23 12 18.33	18.818	3 4 58.8	91.63	17	0 43 18.83	19.255	4 21 45.5	92.28
18	23 14 11.24	18.818	2 55 48.6	91.78	18	0 45 14.41	19.273	4 30 58.7	92.13
19	23 16 4.15	18.818	2 46 37.5	91.92	19	0 47 10.11	19.293	4 40 11.1	91.99
20	23 17 57.06	18.818	2 37 25.6	92.05	20	0 49 5.93	19.313	4 49 22.6	91.84
21	23 19 49.97	18.819	2 28 12.9	92.18	21	0 51 1.86	19.332	4 58 33.2	91.69
22	23 21 42.89	18.820	2 18 59.4	92.31	22	0 52 57.91	19.352	5 7 42.9	91.53
23	23 23 35.81	18.822	2 9 45.2	92.43	23	0 54 54.08	19.372	5 16 51.6	91.37
24	23 25 28.75	18.825	S. 2 0 30.3	92.54	24	0 56 50.37	19.393	N. 5 25 59.3	91.

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
TUESDAY 25.					THURSDAY 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	0 56 50.37	19.393	N. 5 25 59.3	91.19	0	2 32 54.27	20.734	N. 12 10 18.7	74.46
1	0 58 46.79	19.414	5 35 5.9	91.01	1	2 34 58.77	20.769	12 17 43.9	73.93
2	1 0 43.34	19.436	5 44 11.4	90.83	2	2 37 3.47	20.801	12 25 5.9	73.40
3	1 2 40.02	19.458	5 53 15.8	90.63	3	2 39 8.38	20.834	12 32 24.7	72.85
4	1 4 36.83	19.479	6 2 18.9	90.43	4	2 41 13.48	20.868	12 39 40.1	72.29
5	1 6 33.77	19.502	6 11 20.9	90.23	5	2 43 18.79	20.902	12 46 52.2	71.73
6	1 8 30.85	19.525	6 20 21.6	90.00	6	2 45 24.30	20.935	12 54 0.8	71.15
7	1 10 28.07	19.548	6 29 20.9	89.78	7	2 47 30.01	20.969	13 1 6.0	70.58
8	1 12 25.42	19.571	6 38 18.9	89.55	8	2 49 35.93	21.003	13 8 7.8	70.00
9	1 14 22.92	19.595	6 47 15.5	89.32	9	2 51 42.05	21.037	13 15 6.0	69.40
10	1 16 20.56	19.619	6 56 10.7	89.08	10	2 53 48.37	21.071	13 22 0.6	68.80
11	1 18 18.35	19.644	7 5 4.5	88.83	11	2 55 54.90	21.106	13 28 51.6	68.19
12	1 20 16.29	19.668	7 13 56.7	88.57	12	2 58 1.64	21.140	13 35 38.9	67.57
13	1 22 14.37	19.693	7 22 47.3	88.31	13	3 0 8.58	21.174	13 42 22.4	66.94
14	1 24 12.61	19.719	7 31 36.4	88.04	14	3 2 15.73	21.209	13 49 2.2	66.32
15	1 26 11.00	19.744	7 40 23.8	87.76	15	3 4 23.09	21.243	13 55 38.2	65.68
16	1 28 9.54	19.770	7 49 9.5	87.47	16	3 6 30.65	21.278	14 2 10.4	65.03
17	1 30 8.24	19.797	7 57 53.4	87.18	17	3 8 38.42	21.312	14 8 38.6	64.38
18	1 32 7.10	19.823	8 6 35.6	86.89	18	3 10 46.39	21.346	14 15 2.9	63.71
19	1 34 6.12	19.851	8 15 16.1	86.58	19	3 12 54.57	21.381	14 21 23.1	63.04
20	1 36 5.31	19.878	8 23 54.6	86.26	20	3 15 2.96	21.415	14 27 39.4	62.37
21	1 38 4.65	19.904	8 32 31.2	85.94	21	3 17 11.55	21.449	14 33 51.5	61.68
22	1 40 4.16	19.933	8 41 5.9	85.62	22	3 19 20.35	21.483	14 39 59.5	60.98
23	1 42 3.84	19.961	N. 8 49 38.7	85.28	23	3 21 29.35	21.518	N. 14 46 3.3	60.28
WEDNESDAY 26.					FRIDAY 28.				
0	1 44 3.69	19.988	N. 8 58 9.3	84.93	0	3 23 38.57	21.553	N. 14 52 2.9	59.58
1	1 46 3.70	20.017	9 6 37.9	84.58	1	3 25 47.99	21.587	14 57 58.3	58.87
2	1 48 3.89	20.046	9 15 4.3	84.23	2	3 27 57.61	21.621	15 3 49.3	58.13
3	1 50 4.25	20.075	9 23 28.6	83.87	3	3 30 7.44	21.655	15 9 35.9	57.41
4	1 52 4.79	20.104	9 31 50.7	83.49	4	3 32 17.47	21.689	15 15 18.2	56.68
5	1 54 5.50	20.133	9 40 10.5	83.11	5	3 34 27.71	21.723	15 20 56.0	55.93
6	1 56 6.39	20.163	9 48 28.0	82.73	6	3 36 38.15	21.758	15 26 29.3	55.18
7	1 58 7.46	20.193	9 56 43.2	82.33	7	3 38 48.80	21.792	15 31 58.1	54.42
8	2 0 8.71	20.223	10 4 56.0	81.93	8	3 40 59.65	21.825	15 37 22.3	53.65
9	2 2 10.14	20.254	10 13 6.4	81.52	9	3 43 10.70	21.858	15 42 41.9	52.88
10	2 4 11.76	20.285	10 21 14.2	81.10	10	3 45 21.95	21.892	15 47 56.8	52.09
11	2 6 13.56	20.315	10 29 19.6	80.68	11	3 47 33.40	21.925	15 53 7.0	51.30
12	2 8 15.54	20.346	10 37 22.4	80.25	12	3 49 45.05	21.958	15 58 12.4	50.51
13	2 10 17.71	20.376	10 45 22.6	79.81	13	3 51 56.90	21.992	16 3 13.1	49.71
14	2 12 20.07	20.409	10 53 20.1	79.36	14	3 54 8.95	22.025	16 8 8.9	48.89
15	2 14 22.62	20.441	11 1 14.9	78.90	15	3 56 21.20	22.058	16 12 59.8	48.08
16	2 16 25.36	20.473	11 9 6.9	78.44	16	3 58 33.64	22.090	16 17 45.9	47.27
17	2 18 28.29	20.505	11 16 56.2	77.98	17	4 0 46.28	22.123	16 22 27.0	46.43
18	2 20 31.42	20.537	11 24 42.6	77.49	18	4 2 59.11	22.155	16 27 3.0	45.59
19	2 22 34.73	20.569	11 32 26.1	77.01	19	4 5 12.14	22.187	16 31 34.1	44.75
20	2 24 38.25	20.602	11 40 6.7	76.52	20	4 7 25.36	22.218	16 36 0.0	43.90
21	2 26 41.96	20.634	11 47 44.3	76.02	21	4 9 38.76	22.250	16 40 20.9	43.04
22	2 28 45.86	20.667	11 55 18.9	75.51	22	4 11 52.36	22.282	16 44 36.5	42.18
23	2 30 49.96	20.701	12 2 50.4	74.98	23	4 14 6.15	22.313	16 48 47.0	41.32
24	2 32 54.27	20.734	N. 12 10 18.7	74.46	24	4 16 20.12	22.343	N. 16 52 52.3	40.43

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 29.					SUNDAY 30.				
	h m s	s	N. 16 52 52.3	40.43		h m s	s	N. 18 3 15.5	17.71
0	4 16 20.12	22.343	16 56 52.2	39.55	0	5 10 47.02	22.998	18 4 58.7	16.70
1	4 18 34.27	22.375	17 0 46.9	38.67	1	5 13 5.07	23.020	18 6 35.9	15.69
2	4 20 48.62	22.406	17 4 36.2	37.78	2	5 15 23.26	23.043	18 8 7.0	14.68
3	4 23 3.14	22.435	17 8 20.2	36.88	3	5 17 41.58	23.064	18 9 32.0	13.65
4	4 25 17.84	22.465	17 11 58.7	35.96	4	5 20 0.03	23.086	18 10 50.8	12.63
5	4 27 32.72	22.495	17 15 31.7	35.05	5	5 22 18.61	23.108	18 12 3.5	11.60
6	4 29 47.78	22.525	17 18 59.3	34.13	6	5 24 37.32	23.128	18 13 10.0	10.57
7	4 32 3.02	22.554	17 22 21.3	33.21	7	5 26 56.15	23.148	18 14 10.3	9.53
8	4 34 18.43	22.583	17 25 37.8	32.28	8	5 29 15.10	23.168	18 15 4.4	8.49
9	4 36 34.01	22.611	17 28 48.6	31.34	9	5 31 34.16	23.187	18 15 52.2	7.45
10	4 38 49.76	22.639	17 31 53.9	30.41	10	5 33 53.34	23.207	18 16 33.8	6.42
11	4 41 5.68	22.668	17 34 53.5	29.46	11	5 36 12.64	23.225	18 17 9.2	5.37
12	4 43 21.77	22.695	17 37 47.4	28.50	12	5 38 32.04	23.243	18 18 1.0	4.32
13	4 45 38.02	22.722	17 40 35.5	27.54	13	5 40 51.55	23.260	18 18 17.4	3.27
14	4 47 54.43	22.748	17 43 17.9	26.58	14	5 43 11.16	23.278	18 18 27.5	2.21
15	4 50 11.00	22.775	17 45 54.5	25.62	15	5 45 30.88	23.294	18 18 31.2	1.15
16	4 52 27.73	22.802	17 48 25.3	24.64	16	5 47 50.69	23.310	18 18 28.6	0.09
17	4 54 44.62	22.828	17 50 50.2	23.67	17	5 50 10.60	23.327	18 18 19.6	2.03
18	4 57 1.66	22.853	17 53 9.3	22.69	18	5 52 30.61	23.342	18 17 4.2	3.10
19	4 59 18.86	22.878	17 55 22.5	21.70	19	5 54 50.70	23.356	18 17 42.4	4.17
20	5 1 36.20	22.903	17 57 29.7	20.71	20	5 57 10.88	23.371	18 17 14.2	5.23
21	5 3 53.69	22.927	18 1 26.2	18.71	21	5 59 31.15	23.384	18 16 39.6	6.30
22	5 6 11.32	22.951	18 3 15.5	17.71	22	6 1 51.49	23.398	18 15 58.6	7.38
23	5 8 29.10	22.975			23	6 4 11.92	23.411		
24	5 10 47.02	22.998			24	6 6 32.42	23.423		

PHASES OF THE MOON.

		h	m
Apr. 4	☽ First Quarter	17	45.6
11	☉ Full Moon	8	43.7
18	☾ Last Quarter	12	53.7
26	● New Moon	17	3.7

		h
Apr. 9	☾ Perigee	20.6
21	☾ Apogee	22.2

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semidiameter passing the Meridian.*	Equation of Time, to be subtracted from Apparent Time.	Var. in hour.
		Apparent Right Ascension.	Var. in hour.	Apparent Declination.	Var. in hour.			
Mon.	1	h m s	s	° ' "	"	m s	m s	s
		2 31 36.62	9.534	N.14 55 8.1	45.70	1 5.97	2 54.33	0.321
Tues.	2	2 35 25.70	9.556	15 13 17.4	45.07	1 6.05	3 1.78	0.300
Wed.	3	2 39 15.31	9.578	15 31 11.6	44.44	1 6.13	3 8.71	0.278
Thur.	4	2 43 5.45	9.600	15 48 50.3	43.79	1 6.21	3 15.10	0.255
Frid.	5	2 46 56.13	9.623	16 6 13.3	43.13	1 6.29	3 20.97	0.233
Sat.	6	2 50 47.34	9.645	16 23 20.3	42.46	1 6.37	3 26.30	0.211
Sun.	7	2 54 39.09	9.668	16 40 10.8	41.76	1 6.45	3 31.08	0.188
Mon.	8	2 58 31.40	9.691	16 56 44.7	41.06	1 6.53	3 35.32	0.165
Tues.	9	3 2 24.26	9.714	17 13 1.6	40.35	1 6.62	3 39.00	0.142
Wed.	10	3 6 17.69	9.738	17 29 1.3	39.62	1 6.70	3 42.12	0.118
Thur.	11	3 10 11.69	9.762	17 44 43.4	38.89	1 6.78	3 44.66	0.094
Frid.	12	3 14 6.27	9.786	18 0 7.8	38.14	1 6.86	3 46.63	0.070
Sat.	13	3 18 1.43	9.811	18 15 14.0	37.38	1 6.94	3 48.02	0.046
Sun.	14	3 21 57.18	9.835	18 30 1.9	36.61	1 7.03	3 48.83	0.022
Mon.	15	3 25 53.51	9.859	18 44 31.2	35.83	1 7.11	3 49.06	0.003
Tues.	16	3 29 50.43	9.884	18 58 41.5	35.03	1 7.19	3 48.69	0.028
Wed.	17	3 33 47.94	9.908	19 12 32.7	34.23	1 7.27	3 47.74	0.052
Thur.	18	3 37 46.03	9.932	19 26 4.4	33.41	1 7.35	3 46.21	0.076
Frid.	19	3 41 44.69	9.956	19 39 16.4	32.58	1 7.43	3 44.11	0.100
Sat.	20	3 45 43.93	9.980	19 52 8.4	31.74	1 7.50	3 41.43	0.123
Sun.	21	3 49 43.73	10.003	20 4 40.1	30.89	1 7.58	3 38.19	0.146
Mon.	22	3 53 44.09	10.026	20 16 51.3	30.04	1 7.66	3 34.40	0.169
Tues.	23	3 57 45.00	10.049	20 28 41.8	29.17	1 7.73	3 30.06	0.192
Wed.	24	4 1 46.45	10.071	20 40 11.3	28.29	1 7.80	3 25.18	0.214
Thur.	25	4 5 48.42	10.093	20 51 19.5	27.40	1 7.87	3 19.78	0.235
Frid.	26	4 9 50.90	10.114	21 2 6.3	26.50	1 7.94	3 13.88	0.256
Sat.	27	4 13 53.87	10.134	21 12 31.3	25.59	1 8.01	3 7.48	0.277
Sun.	28	4 17 57.32	10.153	21 22 34.4	24.67	1 8.08	3 0.60	0.296
Mon.	29	4 22 1.23	10.172	21 32 15.3	23.74	1 8.15	2 53.26	0.315
Tues.	30	4 26 5.59	10.190	21 41 33.8	22.80	1 8.21	2 45.48	0.333
Wed.	31	4 30 10.37	10.208	21 50 29.8	21.86	1 8.27	2 37.28	0.350
Thur.	32	4 34 15.56	10.224	N.21 59 2.9	20.90	1 8.33	2 28.67	0.367

* Mean Time of the Semidiameter passing may be found by subtracting 0.18 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be subtracted from Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*		
		h m s	N. ° ' "	' "	m s	h m s
Mon.	1	2 31 37.08	N. 14 55 10.3	15 53.68	2 54.35	2 34 31.43
Tues.	2	2 35 26.19	15 13 19.7	15 53.45	3 1.80	2 38 27.98
Wed.	3	2 39 15.82	15 31 13.9	15 53.22.	3 8.72	2 42 24.54
Thur.	4	2 43 5.97	15 48 52.7	15 53.00	3 15.12	2 46 21.09
Frid.	5	2 46 56.66	16 6 15.7	15 52.77	3 20.98	2 50 17.64
Sat.	6	2 50 47.89	16 23 22.7	15 52.55	3 26.31	2 54 14.20
Sun.	7	2 54 39.66	16 40 13.2	15 52.33	3 31.09	2 58 10.75
Mon.	8	2 58 31.98	16 56 47.1	15 52.11	3 35.33	3 2 7.31
Tues.	9	3 2 24.85	17 13 4.1	15 51.90	3 39.01	3 6 3.86
Wed.	10	3 6 18.29	17 29 3.7	15 51.68	3 42.12	3 10 0.42
Thur.	11	3 10 12.30	17 44 45.9	15 51.47	3 44.67	3 13 56.97
Frid.	12	3 14 6.89	18 0 10.2	15 51.26	3 46.64	3 17 53.53
Sat.	13	3 18 2.05	18 15 16.4	15 51.05	3 48.03	3 21 50.08
Sun.	14	3 21 57.80	18 30 4.3	15 50.84	3 48.83	3 25 46.64
Mon.	15	3 25 54.14	18 44 33.5	15 50.63	3 49.06	3 29 43.19
Tues.	16	3 29 51.06	18 58 43.7	15 50.43	3 48.69	3 33 39.75
Wed.	17	3 33 48.56	19 12 34.8	15 50.23	3 47.74	3 37 36.30
Thur.	18	3 37 46.65	19 26 6.5	15 50.03	3 46.21	3 41 32.86
Frid.	19	3 41 45.31	19 39 18.4	15 49.84	3 44.10	3 45 29.41
Sat.	20	3 45 44.54	19 52 10.3	15 49.65	3 41.42	3 49 25.97
Sun.	21	3 49 44.34	20 4 42.0	15 49.46	3 38.18	3 53 22.52
Mon.	22	3 53 44.69	20 16 53.1	15 49.28	3 34.39	3 57 19.08
Tues.	23	3 57 45.59	20 28 43.5	15 49.10	3 30.04	4 1 15.63
Wed.	24	4 1 47.02	20 40 12.9	15 48.92	3 25.17	4 5 12.19
Thur.	25	4 5 48.98	20 51 21.0	15 48.75	3 19.77	4 9 8.74
Frid.	26	4 9 51.44	21 2 7.7	15 48.59	3 13.86	4 13 5.30
Sat.	27	4 13 54.40	21 12 32.6	15 48.43	3 7.46	4 17 1.86
Sun.	28	4 17 57.83	21 22 35.6	15 48.27	3 0.58	4 20 58.41
Mon.	29	4 22 1.72	21 32 16.4	15 48.12	2 53.25	4 24 54.97
Tues.	30	4 26 6.06	21 41 34.9	15 47.97	2 45.47	4 28 51.52
Wed.	31	4 30 10.81	21 50 30.7	15 47.83	2 37.27	4 32 48.08
Thur.	32	4 34 15.98	N. 21 59 3.8	15 47.70	2 28.66	4 36 44.64

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	Noon.	Noon.	Noon.		Noon.	Midnight.	Noon.	Midnight.
				h m s				
1	40° 19' 14.0	S. 0.73	0.0034009	21 21 57.98	15 40.91	15 45.09	57 27.25	57 42.57
2	41 17 26.6	0.72	.0035066	21 18 2.07	15 49.27	15 53.40	57 57.86	58 13.04
3	42 15 37.3	0.68	.0036109	21 14 6.16	15 57.49	16 1.49	58 28.01	58 42.67
4	43 13 45.9	0.61	0.0037141	21 10 10.25	16 5.34	16 9.00	58 56.79	59 10.20
5	44 11 52.5	0.51	.0038161	21 6 14.35	16 12.40	16 15.45	59 22.63	59 33.80
6	45 9 57.2	0.39	.0039171	21 2 18.44	16 18.06	16 20.17	59 43.40	59 51.15
7	46 7 59.9	0.26	0.0040172	20 58 22.53	16 21.68	16 22.51	59 56.68	59 59.71
8	47 6 0.7	S. 0.13	.0041165	20 54 26.62	16 22.59	16 21.86	59 59.99	59 57.34
9	48 3 59.7	N. 0.01	.0042151	20 50 30.71	16 20.30	16 17.92	59 51.62	59 42.85
10	49 1 57.0	0.14	0.0043130	20 46 34.80	16 14.70	16 10.72	59 31.07	59 16.48
11	49 59 52.7	0.25	.0044103	20 42 38.89	16 6.04	16 0.75	58 59.33	58 39.98
12	50 57 46.8	0.33	.0045069	20 38 42.98	15 54.99	15 48.87	58 18.86	57 56.42
13	51 55 39.5	0.40	0.0046028	20 34 47.08	15 42.51	15 36.06	57 33.12	57 9.49
14	52 53 30.8	0.43	.0046978	20 30 51.17	15 29.65	15 23.39	56 46.01	56 23.08
15	53 51 20.9	0.43	.0047919	20 26 55.26	15 17.41	15 11.81	56 1.18	55 40.64
16	54 49 9.7	0.39	0.0048849	20 22 59.35	15 6.66	15 2.05	55 21.77	55 4.86
17	55 46 57.3	0.33	.0049767	20 19 3.44	14 58.03	14 54.64	54 50.13	54 37.74
18	56 44 43.8	0.26	.0050672	20 15 7.53	14 51.94	14 49.93	54 27.83	54 20.46
19	57 42 29.1	0.17	0.0051562	20 11 11.62	14 48.62	14 48.01	54 15.67	54 13.46
20	58 40 13.4	N. 0.06	.0052436	20 7 15.71	14 48.10	14 48.87	54 13.78	54 16.58
21	59 37 56.5	S. 0.07	.0053293	20 3 19.80	14 50.27	14 52.28	54 21.73	54 29.10
22	60 35 38.5	0.20	0.0054132	19 59 23.89	14 54.85	14 57.93	54 38.50	54 49.78
23	61 33 19.5	0.33	.0054951	19 55 27.98	15 1.45	15 5.35	55 2.68	55 16.97
24	62 30 59.4	0.44	.0055751	19 51 32.07	15 9.56	15 14.01	55 32.39	55 48.69
25	63 28 38.1	0.55	0.0056528	19 47 36.16	15 18.61	15 23.30	56 5.56	56 22.75
26	64 26 15.7	0.64	.0057284	19 43 40.25	15 28.01	15 32.66	56 40.00	56 57.03
27	65 23 52.2	0.70	.0058018	19 39 44.34	15 37.19	15 41.54	57 13.62	57 29.56
28	66 21 27.4	0.73	0.0058728	19 35 48.43	15 45.67	15 49.54	57 44.68	57 58.85
29	67 19 1.4	0.73	.0059416	19 31 52.52	15 53.11	15 56.38	58 11.96	58 23.95
30	68 16 34.2	0.71	.0060081	19 27 56.61	15 59.34	16 1.97	58 34.79	58 44.45
31	69 14 5.6	0.65	.0060725	19 24 0.70	16 4.30	16 6.30	58 52.95	59 0.28
32	70 11 35.7	S. 0.56	0.0061348	19 20 4.79	16 7.98	16 9.36	59 6.46	59 11.49

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.		Noon.	Upper.	Lower.
1	91° 33' 32.5"	98° 17' 16.0"	S. 5° 10' 18.2"	S. 5° 12' 27.6"	d 4.29	h 3 m 40.0	h 16 m 7.3
2	105 4 14.3	111 54 24.0	5 10 16.9	5 3 41.9	5.29	4 34.6	17 1.9
3	118 47 41.9	125 44 3.7	4 52 42.1	4 37 21.4	6.29	5 29.2	17 56.3
4	132 43 24.7	139 45 38.4	4 17 47.6	3 54 13.2	7.29	6 23.3	18 50.1
5	146 50 36.5	153 58 8.0	3 26 55.3	2 56 15.7	8.29	7 16.8	19 43.4
6	161 7 58.9	168 19 51.2	2 22 40.7	1 46 41.1	9.29	8 9.9	20 36.4
7	175 33 22.7	182 48 6.7	S. 1° 08' 51.9"	S. 0° 29' 51.0"	10.29	9 3.0	21 29.7
8	190 3 32.1	197 19 3.4	N. 0° 9' 40.9"	N. 0° 49' 1.9"	11.29	9 56.6	22 23.6
9	204 34 1.7	211 47 45.5	1 27 29.8	2 4 24.2	12.29	10 50.9	23 18.3
10	218 59 31.7	226 8 37.8	2 39 6.6	3 11 3.2	13.29	11 46.0	* *
11	233 14 22.1	240 16 6.9	3 39 44.5	4 4 47.0	14.29	12 41.6	0 13.8
12	247 13 18.4	254 5 29.2	4 25 52.8	4 42 50.5	15.29	13 37.0	1 9.4
13	260 52 18.1	267 33 31.4	4 55 33.9	5 4 2.3	16.29	14 31.4	2 4.4
14	274 9 2.8	280 38 53.7	5 8 19.6	5 8 32.9	17.29	15 23.9	2 57.9
15	287 3 12.5	293 22 14.0	5 4 52.6	4 57 30.9	18.29	16 14.1	3 49.3
16	299 36 18.8	305 45 52.6	4 46 41.8	4 32 39.9	19.29	17 1.8	4 38.2
17	311 51 25.4	317 53 30.6	4 15 40.4	3 55 58.6	20.29	17 47.3	5 24.8
18	323 52 43.9	329 49 43.1	3 33 50.2	3 9 30.2	21.29	18 31.1	6 9.4
19	335 45 7.1	341 39 35.4	2 43 14.3	2 15 17.4	22.29	19 13.9	6 52.6
20	347 33 47.3	353 28 21.8	1 45 55.6	1 15 24.3	23.29	19 56.3	7 35.1
21	359 23 56.3	5 21 7.1	N. 0° 44' 0.2"	N. 0° 12' 0.3"	24.29	20 39.1	8 17.6
22	11 20 27.6	17 22 29.1	S. 0° 20' 17.3"	S. 0° 52' 33.7"	25.29	21 22.9	9 0.8
23	23 27 39.3	29 36 22.6	1 24 28.5	1 55 40.5	26.29	22 8.6	9 45.5
24	35 48 58.5	42 5 42.8	2 25 47.4	2 54 25.8	27.29	22 56.5	10 32.3
25	48 26 45.8	54 52 13.1	3 21 12.0	3 45 41.6	28.29	23 46.9	11 21.4
26	61 22 4.7	67 56 16.0	4 7 31.1	4 26 17.4	29.29	* *	12 13.1
27	74 34 37.5	81 16 55.2	4 41 39.2	4 53 17.2	0.75	0 39.7	13 6.8
28	88 2 51.7	94 52 6.9	5 0 55.2	5 4 20.5	1.75	1 34.3	14 2.0
29	101 44 18.9	108 39 4.7	5 3 24.4	4 58 2.6	2.75	2 29.8	14 57.7
30	115 36 2.0	122 34 48.9	4 48 15.7	4 34 8.8	3.75	3 25.4	15 52.9
31	129 35 5.8	136 36 34.8	4 15 52.2	3 53 40.4	4.75	4 20.1	16 47.0
32	143 39 0.7	150 42 10.4	S. 3° 27' 52.4"	S. 2° 58' 51.0"	5.75	5 13.7	17 40.1

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
MONDAY 1.					WEDNESDAY 3.				
	h m s	s	N. 18° 15' 58".6	7".38		h m s	s	N. 15° 37' 46".1	57".78
0	6 6 32.42	23.423	18 15 11.1	8.45	0	7 59 33.96	23.519	15 31 56.5	58.75
1	6 8 53.00	23.436	18 14 17.2	9.53	1	8 1 55.05	23.513	15 26 1.1	59.73
2	6 11 13.65	23.447	18 13 16.8	10.60	2	8 4 16.11	23.507	15 19 59.8	60.69
3	6 13 34.36	23.458	18 12 10.0	11.67	3	8 6 37.13	23.500	15 13 52.8	61.65
4	6 15 55.14	23.468	18 10 56.8	12.74	4	8 8 58.11	23.493	15 7 40.0	62.61
5	6 18 15.98	23.478	18 9 37.1	13.83	5	8 11 19.04	23.484	15 1 21.5	63.55
6	6 20 36.88	23.488	18 8 10.9	14.90	6	8 13 39.92	23.477	14 54 57.4	64.49
7	6 22 57.84	23.498	18 6 38.3	15.98	7	8 16 0.76	23.470	14 48 27.6	65.43
8	6 25 18.85	23.507	18 4 59.2	17.06	8	8 18 21.56	23.463	14 41 52.2	66.36
9	6 27 39.92	23.515	18 3 13.6	18.14	9	8 20 42.31	23.454	14 35 11.3	67.28
10	6 30 1.03	23.522	18 1 21.5	19.22	10	8 23 3.01	23.446	14 28 24.8	68.21
11	6 32 22.18	23.529	17 59 23.0	20.29	11	8 25 23.66	23.438	14 21 32.8	69.12
12	6 34 43.38	23.537	17 57 18.0	21.37	12	8 27 44.26	23.429	14 14 35.4	70.02
13	6 37 4.62	23.543	17 55 6.6	22.44	13	8 30 4.81	23.420	14 7 32.6	70.92
14	6 39 25.90	23.549	17 52 48.7	23.52	14	8 32 25.30	23.412	14 0 24.4	71.82
15	6 41 47.21	23.554	17 50 24.4	24.59	15	8 34 45.75	23.403	13 53 10.8	72.70
16	6 44 8.55	23.560	17 47 53.6	25.68	16	8 37 6.14	23.393	13 45 52.0	73.58
17	6 46 29.93	23.565	17 45 16.3	26.75	17	8 39 26.47	23.384	13 38 27.9	74.45
18	6 48 51.33	23.568	17 42 32.6	27.82	18	8 41 46.75	23.376	13 30 58.6	75.32
19	6 51 12.75	23.573	17 39 42.5	28.88	19	8 44 6.98	23.367	13 23 24.1	76.18
20	6 53 34.20	23.576	17 36 46.0	29.95	20	8 46 27.15	23.357	13 15 44.5	77.02
21	6 55 55.66	23.578	17 33 43.1	31.02	21	8 48 47.26	23.348	13 7 59.9	77.87
22	6 58 17.14	23.582	N. 17° 30' 33".8	32.09	22	8 51 7.32	23.338	N. 13° 0' 10".1	78.71
23	7 0 38.64	23.584			23	8 53 27.32	23.328		
TUESDAY 2.					THURSDAY 4.				
	h m s	s	N. 17° 27' 18".0	33".16		h m s	s	N. 12° 52' 15".4	79".53
0	7 3 0.15	23.585	17 23 55.9	34.21	0	8 55 47.26	23.319	12 44 15.8	80.35
1	7 5 21.66	23.587	17 20 27.5	35.27	1	8 58 7.15	23.310	12 36 11.2	81.17
2	7 7 43.19	23.587	17 16 52.7	36.33	2	9 0 26.98	23.300	12 28 1.8	81.97
3	7 10 4.71	23.588	17 13 11.5	37.38	3	9 2 46.75	23.291	12 19 47.6	82.76
4	7 12 26.24	23.588	17 9 24.1	38.43	4	9 5 6.47	23.282	12 11 28.7	83.55
5	7 14 47.77	23.588	17 5 30.3	39.49	5	9 7 26.13	23.272	12 3 5.0	84.34
6	7 17 9.30	23.587	17 1 30.2	40.53	6	9 9 45.73	23.262	11 54 36.6	85.12
7	7 19 30.82	23.586	16 57 23.9	41.58	7	9 12 5.27	23.252	11 46 3.6	85.88
8	7 21 52.33	23.585	16 53 11.3	42.63	8	9 14 24.76	23.243	11 37 26.1	86.63
9	7 24 13.84	23.583	16 48 52.4	43.66	9	9 16 44.19	23.233	11 28 44.1	87.38
10	7 26 35.33	23.581	16 44 27.4	44.69	10	9 19 3.56	23.224	11 19 57.6	88.12
11	7 28 56.81	23.578	16 39 56.1	45.73	11	9 21 22.88	23.215	11 11 6.7	88.85
12	7 31 18.27	23.576	16 35 18.7	46.75	12	9 23 42.14	23.205	11 2 11.4	89.58
13	7 33 39.72	23.573	16 30 35.1	47.78	13	9 26 1.34	23.196	10 53 11.8	90.28
14	7 36 1.14	23.569	16 25 45.4	48.79	14	9 28 20.49	23.187	10 44 8.0	90.98
15	7 38 22.55	23.566	16 20 49.6	49.81	15	9 30 39.58	23.178	10 35 0.0	91.68
16	7 40 43.93	23.562	16 15 47.7	50.83	16	9 32 58.63	23.170	10 25 47.8	92.38
17	7 43 5.29	23.558	16 10 39.7	51.83	17	9 35 17.62	23.160	10 16 31.5	93.05
18	7 45 26.62	23.553	16 5 25.7	52.83	18	9 37 36.55	23.152	10 7 11.2	93.72
19	7 47 47.92	23.548	16 0 5.7	53.83	19	9 39 55.44	23.143	9 57 46.9	94.38
20	7 50 9.19	23.543	15 54 39.7	54.83	20	9 42 14.27	23.134	9 48 18.7	95.03
21	7 52 30.44	23.538	15 49 7.8	55.82	21	9 44 33.05	23.126	9 38 46.6	95.67
22	7 54 51.65	23.532	15 43 29.9	56.81	22	9 46 51.78	23.118	9 29 10.7	96.29
23	7 57 12.82	23.526			23	9 49 10.47	23.110		
24	7 59 33.96	23.519	N. 15° 37' 46".1	57".78	24	9 51 29.10	23.102	N. 9° 19' 31".1	96.92

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 5.					SUNDAY 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	9 51 29.10	23.102	N. 9 19 31.1	96.92	0	11 41 51.93	22.989	N. 0 42 47.2	114.05
1	9 53 47.69	23.095	9 9 47.7	97.53	1	11 44 9.88	22.994	0 31 22.7	114.12
2	9 56 6.24	23.088	9 0 0.8	98.13	2	11 46 27.86	22.999	0 19 57.8	114.18
3	9 58 24.74	23.079	8 50 10.2	98.73	3	11 48 45.87	23.004	N. 0 8 32.6	114.23
4	10 0 43.19	23.073	8 40 16.1	99.30	4	11 51 3.91	23.009	S. 0 2 52.9	114.26
5	10 3 1.60	23.065	8 30 18.6	99.87	5	11 53 21.98	23.014	0 14 18.5	114.28
6	10 5 19.97	23.058	8 20 17.7	100.43	6	11 55 40.08	23.020	0 25 44.2	114.28
7	10 7 38.30	23.051	8 10 13.4	100.98	7	11 57 58.22	23.027	0 37 9.8	114.27
8	10 9 56.58	23.044	8 0 5.9	101.53	8	12 0 16.40	23.033	0 48 35.4	114.26
9	10 12 14.83	23.038	7 49 55.1	102.06	9	12 2 34.62	23.039	1 0 0.9	114.23
10	10 14 33.04	23.033	7 39 41.2	102.58	10	12 4 52.87	23.046	1 11 26.1	114.18
11	10 16 51.22	23.027	7 29 24.2	103.08	11	12 7 11.17	23.054	1 22 51.0	114.12
12	10 19 9.36	23.020	7 19 4.2	103.58	12	12 9 29.52	23.062	1 34 15.5	114.05
13	10 21 27.46	23.014	7 8 41.2	104.07	13	12 11 47.91	23.069	1 45 39.6	113.98
14	10 23 45.53	23.009	6 58 15.3	104.55	14	12 14 6.35	23.078	1 57 3.2	113.88
15	10 26 3.57	23.004	6 47 46.6	105.02	15	12 16 24.84	23.085	2 8 26.1	113.76
16	10 28 21.58	23.000	6 37 15.1	105.48	16	12 18 43.37	23.093	2 19 48.3	113.64
17	10 30 39.57	22.995	6 26 40.9	105.93	17	12 21 1.96	23.103	2 31 9.8	113.52
18	10 32 57.52	22.990	6 16 4.0	106.37	18	12 23 20.60	23.112	2 42 30.5	113.37
19	10 35 15.45	22.987	6 5 24.5	106.78	19	12 25 39.30	23.121	2 53 50.2	113.20
20	10 37 33.36	22.983	5 54 42.6	107.19	20	12 27 58.05	23.130	3 5 8.9	113.03
21	10 39 51.25	22.979	5 43 58.2	107.60	21	12 30 16.86	23.139	3 16 26.5	112.84
22	10 42 9.11	22.976	5 33 11.4	107.99	22	12 32 35.72	23.149	3 27 43.0	112.64
23	10 44 26.96	22.973	N. 5 22 22.3	108.37	23	12 34 54.65	23.160	S. 3 38 58.2	112.43
SATURDAY 6.					MONDAY 8.				
0	10 46 44.79	22.970	N. 5 11 31.0	108.73	0	12 37 13.64	23.170	S. 3 50 12.1	112.21
1	10 49 2.60	22.968	5 0 37.5	109.09	1	12 39 32.69	23.180	4 1 24.7	111.98
2	10 51 20.40	22.966	4 49 41.9	109.44	2	12 41 51.80	23.191	4 12 35.8	111.72
3	10 53 38.19	22.964	4 38 44.2	109.77	3	12 44 10.98	23.203	4 23 45.3	111.46
4	10 55 55.97	22.963	4 27 44.6	110.09	4	12 46 30.23	23.213	4 34 53.3	111.18
5	10 58 13.74	22.961	4 16 43.1	110.41	5	12 48 49.54	23.224	4 45 59.5	110.89
6	11 0 31.50	22.960	4 5 39.7	110.71	6	12 51 8.92	23.236	4 57 4.0	110.59
7	11 2 49.26	22.959	3 54 34.6	110.99	7	12 53 28.37	23.248	5 8 6.6	110.28
8	11 5 7.01	22.959	3 43 27.8	111.27	8	12 55 47.89	23.259	5 19 7.3	109.95
9	11 7 24.77	22.959	3 32 19.4	111.53	9	12 58 7.48	23.272	5 30 6.0	109.61
10	11 9 42.52	22.958	3 21 9.4	111.78	10	13 0 27.15	23.283	5 41 2.6	109.26
11	11 12 0.27	22.959	3 9 58.0	112.03	11	13 2 46.88	23.296	5 51 57.1	108.89
12	11 14 18.03	22.959	2 58 45.1	112.26	12	13 5 6.70	23.308	6 2 49.3	108.51
13	11 16 35.78	22.960	2 47 30.9	112.48	13	13 7 26.58	23.320	6 13 39.2	108.13
14	11 18 53.55	22.962	2 36 15.4	112.68	14	13 9 46.54	23.333	6 24 26.8	107.73
15	11 21 11.32	22.963	2 24 58.8	112.87	15	13 12 6.58	23.346	6 35 11.9	107.31
16	11 23 29.10	22.965	2 13 41.0	113.05	16	13 14 26.69	23.358	6 45 54.5	106.88
17	11 25 46.90	22.968	2 2 22.2	113.22	17	13 16 46.88	23.372	6 56 34.4	106.43
18	11 28 4.71	22.969	1 51 2.4	113.38	18	13 19 7.15	23.385	7 7 11.7	105.98
19	11 30 22.53	22.972	1 39 41.7	113.52	19	13 21 27.50	23.398	7 17 46.2	105.52
20	11 32 40.37	22.975	1 28 20.1	113.65	20	13 23 47.93	23.412	7 28 17.9	105.04
21	11 34 58.23	22.978	1 16 57.9	113.77	21	13 26 8.44	23.425	7 38 46.7	104.55
22	11 37 16.11	22.982	1 5 34.9	113.88	22	13 28 29.03	23.438	7 49 12.5	104.04
23	11 39 34.01	22.985	0 54 11.3	113.98	23	13 30 49.09	23.451	7 59 35.2	103.53
24	11 41 51.93	22.989	N. 0 42 47.2	114.05	24	13 33 10.44	23.465	S. 8 9 54.8	103.00

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 9.					THURSDAY 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	13 33 10.44	23.465	S. 8 9 54.8	103.00	0	15 27 11.47	23.963	S. 15 2 29.6	65.17
1	13 35 31.27	23.478	8 20 11.2	102.47	1	15 29 35.26	23.967	15 8 57.6	64.17
2	13 37 52.17	23.491	8 30 24.4	101.92	2	15 31 59.07	23.969	15 15 19.6	63.17
3	13 40 13.16	23.505	8 40 34.2	101.34	3	15 34 22.89	23.972	15 21 35.6	62.16
4	13 42 34.23	23.519	8 50 40.5	100.77	4	15 36 46.73	23.973	15 27 45.5	61.14
5	13 44 55.39	23.533	9 0 43.4	100.18	5	15 39 10.57	23.974	15 33 49.3	60.12
6	13 47 16.62	23.545	9 10 42.7	99.58	6	15 41 34.42	23.976	15 39 47.0	59.09
7	13 49 37.93	23.558	9 20 38.4	98.97	7	15 43 58.28	23.977	15 45 38.4	58.06
8	13 51 59.32	23.573	9 30 30.4	98.35	8	15 46 22.14	23.977	15 51 23.7	57.03
9	13 54 20.80	23.586	9 40 18.6	97.72	9	15 48 46.00	23.977	15 57 2.7	55.98
10	13 56 42.35	23.598	9 50 3.0	97.08	10	15 51 9.86	23.975	16 2 35.4	54.93
11	13 59 3.98	23.613	9 59 43.5	96.42	11	15 53 33.70	23.973	16 8 1.9	53.88
12	14 1 25.70	23.626	10 9 20.0	95.75	12	15 55 57.54	23.972	16 13 22.0	52.82
13	14 3 47.49	23.638	10 18 52.5	95.07	13	15 58 21.36	23.969	16 18 35.7	51.76
14	14 6 9.35	23.651	10 28 20.8	94.38	14	16 0 45.17	23.966	16 23 43.1	50.70
15	14 8 31.30	23.664	10 37 45.0	93.68	15	16 3 8.95	23.962	16 28 44.1	49.63
16	14 10 53.32	23.677	10 47 5.0	92.97	16	16 5 32.71	23.958	16 33 38.7	48.57
17	14 13 15.42	23.689	10 56 20.6	92.24	17	16 7 56.45	23.954	16 38 26.9	47.48
18	14 15 37.59	23.702	11 5 31.9	91.52	18	16 10 20.16	23.948	16 43 8.5	46.40
19	14 17 59.84	23.715	11 14 38.8	90.77	19	16 12 43.83	23.943	16 47 43.7	45.33
20	14 20 22.17	23.727	11 23 41.1	90.01	20	16 15 7.47	23.937	16 52 12.5	44.25
21	14 22 44.56	23.738	11 32 38.9	89.25	21	16 17 31.07	23.930	16 56 34.7	43.16
22	14 25 7.03	23.750	11 41 32.1	88.48	22	16 19 54.63	23.923	17 0 50.4	42.07
23	14 27 29.56	23.762	S. 11 50 20.6	87.69	23	16 22 18.14	23.914	S. 17 4 59.5	40.98
WEDNESDAY 10.					FRIDAY 12.				
0	14 29 52.17	23.774	S. 11 59 4.4	86.89	0	16 24 41.60	23.906	S. 17 9 2.1	39.88
1	14 32 14.85	23.785	12 7 43.3	86.08	1	16 27 5.01	23.898	17 12 58.1	38.79
2	14 34 37.59	23.796	12 16 17.4	85.27	2	16 29 28.37	23.888	17 16 47.6	37.70
3	14 37 0.40	23.807	12 24 46.6	84.45	3	16 31 51.66	23.877	17 20 30.5	36.59
4	14 39 23.27	23.817	12 33 10.8	83.62	4	16 34 14.89	23.867	17 24 6.7	35.49
5	14 41 46.20	23.828	12 41 30.0	82.78	5	16 36 38.06	23.856	17 27 36.4	34.40
6	14 44 9.20	23.838	12 49 44.1	81.92	6	16 39 1.16	23.843	17 30 59.5	33.29
7	14 46 32.26	23.848	12 57 53.0	81.06	7	16 41 24.18	23.831	17 34 15.9	32.19
8	14 48 55.37	23.857	13 5 56.8	80.19	8	16 43 47.13	23.818	17 37 25.8	31.09
9	14 51 18.54	23.867	13 13 55.3	79.31	9	16 46 10.00	23.804	17 40 29.0	29.98
10	14 53 41.77	23.875	13 21 48.5	78.42	10	16 48 32.78	23.790	17 43 25.6	28.88
11	14 56 5.04	23.883	13 29 36.3	77.53	11	16 50 55.48	23.775	17 46 15.5	27.78
12	14 58 28.37	23.892	13 37 18.8	76.62	12	16 53 18.08	23.760	17 48 58.9	26.68
13	15 0 51.74	23.899	13 44 55.7	75.70	13	16 55 40.60	23.745	17 51 35.6	25.57
14	15 3 15.16	23.908	13 52 27.2	74.79	14	16 58 3.02	23.728	17 54 5.7	24.46
15	15 5 38.63	23.915	13 59 53.2	73.86	15	17 0 25.34	23.711	17 56 29.1	23.36
16	15 8 2.14	23.922	14 7 13.5	72.92	16	17 2 47.55	23.693	17 58 46.0	22.26
17	15 10 25.69	23.928	14 14 28.2	71.98	17	17 5 9.66	23.676	18 0 56.2	21.15
18	15 12 49.28	23.934	14 21 37.3	71.03	18	17 7 31.66	23.657	18 2 59.8	20.05
19	15 15 12.90	23.940	14 28 40.6	70.07	19	17 9 53.54	23.637	18 4 56.8	18.96
20	15 17 36.56	23.945	14 35 38.1	69.10	20	17 12 15.30	23.618	18 6 47.3	17.86
21	15 20 0.24	23.950	14 42 29.8	68.13	21	17 14 36.95	23.598	18 8 31.1	16.76
22	15 22 23.96	23.955	14 49 15.6	67.15	22	17 16 58.47	23.577	18 10 8.4	15.67
23	15 24 47.70	23.959	14 55 55.6	66.17	23	17 19 19.87	23.556	18 11 39.1	14.58
24	15 27 11.47	23.963	S. 15 2 29.6	65.17	24	17 21 41.14	23.533	S. 18 13 3.3	13.48

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 13.					MONDAY 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	17 21 41.14	23.533	S. 18 13 3.3	13.48	0	19 11 16.12	21.994	S. 17 18 59.8	34.13
1	17 24 2.27	23.510	18 14 20.9	12.39	1	19 13 27.97	21.955	17 15 32.5	34.98
2	17 26 23.26	23.488	18 15 32.0	11.32	2	19 15 39.58	21.917	17 12 0.0	35.83
3	17 28 44.12	23.465	18 16 36.7	10.23	3	19 17 50.97	21.878	17 8 22.5	36.67
4	17 31 4.84	23.441	18 17 34.8	9.14	4	19 20 2.12	21.839	17 4 40.0	37.51
5	17 33 25.41	23.416	18 18 26.4	8.07	5	19 22 13.04	21.800	17 0 52.4	38.34
6	17 35 45.83	23.391	18 19 11.6	6.99	6	19 24 23.72	21.761	16 56 59.9	39.16
7	17 38 6.10	23.365	18 19 50.3	5.92	7	19 26 34.17	21.723	16 53 2.5	39.98
8	17 40 26.21	23.339	18 20 22.6	4.85	8	19 28 44.39	21.683	16 49 0.2	40.78
9	17 42 46.17	23.313	18 20 48.5	3.78	9	19 30 54.37	21.644	16 44 53.1	41.59
10	17 45 5.97	23.286	18 21 8.0	2.72	10	19 33 4.12	21.605	16 40 41.1	42.39
11	17 47 25.60	23.258	18 21 21.1	1.66	11	19 35 13.63	21.566	16 36 24.4	43.18
12	17 49 45.07	23.231	18 21 27.9	0.61	12	19 37 22.91	21.527	16 32 3.0	43.96
13	17 52 4.37	23.203	18 21 28.3	0.45	13	19 39 31.95	21.488	16 27 36.9	44.73
14	17 54 23.50	23.173	18 21 22.5	1.49	14	19 41 40.76	21.449	16 23 6.2	45.50
15	17 56 42.45	23.144	18 21 10.4	2.54	15	19 43 49.34	21.410	16 18 30.9	46.26
16	17 59 1.23	23.115	18 20 52.0	3.58	16	19 45 57.68	21.371	16 13 51.1	47.02
17	18 1 19.83	23.085	18 20 27.4	4.62	17	19 48 5.79	21.332	16 9 6.7	47.77
18	18 3 38.25	23.054	18 19 56.6	5.65	18	19 50 13.66	21.293	16 4 17.8	48.51
19	18 5 56.48	23.023	18 19 19.6	6.68	19	19 52 21.30	21.254	15 59 24.6	49.24
20	18 8 14.52	22.992	18 18 36.4	7.70	20	19 54 28.71	21.216	15 54 26.9	49.98
21	18 10 32.38	22.961	18 17 47.2	8.72	21	19 56 35.89	21.177	15 49 24.9	50.70
22	18 12 50.05	22.928	18 16 51.8	9.73	22	19 58 42.83	21.138	15 44 18.5	51.42
23	18 15 7.52	22.896	S. 18 15 50.4	10.73	23	20 0 49.55	21.100	S. 15 39 7.9	52.12
SUNDAY 14.					TUESDAY 16.				
0	18 17 24.80	22.863	S. 18 14 43.0	11.74	0	20 2 56.03	21.061	S. 15 33 53.1	52.82
1	18 19 41.88	22.830	18 13 29.5	12.74	1	20 5 2.28	21.023	15 28 34.1	53.52
2	18 21 58.76	22.797	18 12 10.1	13.73	2	20 7 8.31	20.985	15 23 10.9	54.21
3	18 24 15.44	22.763	18 10 44.8	14.72	3	20 9 14.10	20.947	15 17 43.6	54.88
4	18 26 31.91	22.728	18 9 13.5	15.70	4	20 11 19.67	20.909	15 12 12.3	55.56
5	18 28 48.18	22.694	18 7 36.4	16.68	5	20 13 25.01	20.872	15 6 36.9	56.23
6	18 31 4.24	22.659	18 5 53.4	17.65	6	20 15 30.13	20.834	15 0 57.5	56.89
7	18 33 20.09	22.624	18 4 4.6	18.62	7	20 17 35.02	20.797	14 55 14.2	57.54
8	18 35 35.73	22.589	18 2 10.0	19.58	8	20 19 39.69	20.760	14 49 27.0	58.19
9	18 37 51.16	22.553	18 0 9.7	20.53	9	20 21 44.14	20.723	14 43 35.9	58.83
10	18 40 6.37	22.518	17 58 3.7	21.48	10	20 23 48.36	20.686	14 37 41.0	59.47
11	18 42 21.37	22.483	17 55 52.0	22.43	11	20 25 52.37	20.650	14 31 42.3	60.09
12	18 44 36.16	22.446	17 53 34.6	23.36	12	20 27 56.16	20.613	14 25 39.9	60.72
13	18 46 50.72	22.408	17 51 11.7	24.29	13	20 29 59.72	20.576	14 19 33.7	61.33
14	18 49 5.06	22.372	17 48 43.2	25.22	14	20 32 3.07	20.541	14 13 23.9	61.94
15	18 51 19.18	22.335	17 46 9.1	26.13	15	20 34 6.21	20.506	14 7 10.4	62.54
16	18 53 33.08	22.298	17 43 29.6	27.04	16	20 36 9.14	20.470	14 0 53.4	63.13
17	18 55 46.75	22.260	17 40 44.6	27.96	17	20 38 11.85	20.434	13 54 32.8	63.73
18	18 58 0.20	22.223	17 37 54.1	28.86	18	20 40 14.35	20.399	13 48 8.7	64.31
19	19 0 13.42	22.185	17 34 58.3	29.74	19	20 42 16.64	20.364	13 41 41.1	64.89
20	19 2 26.42	22.148	17 31 57.2	30.63	20	20 44 18.72	20.330	13 35 10.0	65.46
21	19 4 39.19	22.109	17 28 50.7	31.52	21	20 46 20.60	20.296	13 28 35.6	66.02
22	19 6 51.73	22.071	17 25 38.9	32.39	22	20 48 22.27	20.262	13 21 57.8	66.58
23	19 9 4.04	22.033	17 22 22.0	33.26	23	20 50 23.74	20.228	13 15 16.7	67.13
24	19 11 16.12	21.994	S. 17 18 59.8	34.13	24	20 52 25.01	20.195	S. 13 8 32.3	67.67

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	
WEDNESDAY 17.					FRIDAY 19.					
	h m s	s	° ' "	"		h m s	s	° ' "	"	
0	20 52 25	01	20.195	S. 13 8 32.3	67.67	0	22 26 9.73	19.017	S. 6 52 25.1	86.87
1	20 54 26	08	20.163	13 1 44.7	68.20	1	22 28 3.78	19.002	6 43 43.1	87.13
2	20 56 26	06	20.129	12 54 53.9	68.73	2	22 29 57.75	18.988	6 34 59.5	87.39
3	20 58 27	63	20.096	12 47 59.9	69.27	3	22 31 51.64	18.975	6 26 14.4	87.65
4	21 0 28	11	20.063	12 41 2.7	69.78	4	22 33 45.45	18.963	6 17 27.7	87.90
5	21 2 28	40	20.033	12 34 2.5	70.29	5	22 35 39.19	18.950	6 8 39.6	88.14
6	21 4 28	50	20.001	12 26 59.2	70.81	6	22 37 32.85	18.938	5 59 50.0	88.38
7	21 6 28	41	19.970	12 19 52.8	71.31	7	22 39 26.44	18.926	5 50 59.0	88.62
8	21 8 28	14	19.938	12 12 43.5	71.79	8	22 41 19.96	18.915	5 42 6.6	88.84
9	21 10 27	68	19.909	12 5 31.3	72.28	9	22 43 13.42	18.904	5 33 12.9	89.07
10	21 12 27	04	19.878	11 58 16.1	72.77	10	22 45 6.81	18.893	5 24 17.8	89.29
11	21 14 26	22	19.848	11 50 58.1	73.24	11	22 47 0.14	18.884	5 15 21.4	89.51
12	21 16 25	21	19.818	11 43 37.2	73.72	12	22 48 53.42	18.875	5 6 23.7	89.72
13	21 18 24	03	19.789	11 36 13.5	74.18	13	22 50 46.64	18.866	4 57 24.8	89.92
14	21 20 22	68	19.761	11 28 47.0	74.64	14	22 52 39.81	18.858	4 48 24.7	90.12
15	21 22 21	16	19.733	11 21 17.8	75.09	15	22 54 32.94	18.851	4 39 23.4	90.32
16	21 24 19	47	19.704	11 13 45.9	75.53	16	22 56 26.02	18.843	4 30 20.9	90.51
17	21 26 17	61	19.676	11 6 11.4	75.98	17	22 58 19.05	18.835	4 21 17.3	90.68
18	21 28 15	58	19.648	10 58 34.2	76.42	18	23 0 12.04	18.829	4 12 12.7	90.86
19	21 30 13	39	19.622	10 50 54.4	76.84	19	23 2 5.00	18.824	4 3 7.0	91.04
20	21 32 11	04	19.595	10 43 12.1	77.27	20	23 3 57.93	18.818	3 54 0.2	91.21
21	21 34 8	53	19.569	10 35 27.2	77.68	21	23 5 50.82	18.813	3 44 52.5	91.37
22	21 36 5	87	19.543	10 27 39.9	78.09	22	23 7 43.69	18.809	3 35 43.8	91.53
23	21 38 3	05	19.518	S. 10 19 50.1	78.50	23	23 9 36.53	18.805	S. 3 26 34.1	91.68
THURSDAY 18.					SATURDAY 20.					
	h m s	s	"	° ' "	"		h m s	s	° ' "	"
0	21 40 0	08	19.493	S. 10 11 57.9	78.90	0	23 11 29.35	18.801	S. 3 17 23.6	91.83
1	21 41 56	06	19.468	10 4 3.3	79.29	1	23 13 22.14	18.798	3 8 12.2	91.98
2	21 43 53	69	19.443	9 56 6.4	79.68	2	23 15 14.92	18.796	2 58 59.9	92.12
3	21 45 50	28	19.419	9 48 7.1	80.07	3	23 17 7.69	18.793	2 49 46.8	92.24
4	21 47 46	72	19.396	9 40 5.5	80.45	4	23 19 0.44	18.792	2 40 33.0	92.37
5	21 49 43	03	19.373	9 32 1.7	80.82	5	23 20 53.19	18.791	2 31 18.4	92.50
6	21 51 39	20	19.350	9 23 55.7	81.18	6	23 22 45.93	18.790	2 22 3.0	92.62
7	21 53 35	23	19.328	9 15 47.5	81.54	7	23 24 38.67	18.790	2 12 47.0	92.73
8	21 55 31	14	19.307	9 7 37.2	81.90	8	23 26 31.41	18.790	2 3 30.3	92.83
9	21 57 26	91	19.285	8 59 24.7	82.26	9	23 28 24.15	18.791	1 54 13.0	92.93
10	21 59 22	56	19.264	8 51 10.1	82.60	10	23 30 16.90	18.793	1 44 55.1	93.03
11	22 1 18	08	19.243	8 42 53.5	82.93	11	23 32 9.66	18.794	1 35 36.6	93.13
12	22 3 13	48	19.223	8 34 34.9	83.28	12	23 34 2.43	18.796	1 26 17.6	93.22
13	22 5 8	76	19.203	8 26 14.2	83.61	13	23 35 55.21	18.799	1 16 58.0	93.30
14	22 7 3	92	19.184	8 17 51.6	83.93	14	23 37 48.02	18.803	1 7 38.0	93.37
15	22 8 58	97	19.166	8 9 27.1	84.24	15	23 39 40.84	18.805	0 58 17.6	93.44
16	22 10 53	91	19.148	8 1 0.7	84.56	16	23 41 33.68	18.809	0 48 56.7	93.51
17	22 12 48	74	19.130	7 52 32.4	84.88	17	23 43 26.55	18.815	0 39 35.5	93.57
18	22 14 43	47	19.113	7 44 2.3	85.18	18	23 45 19.46	18.820	0 30 13.9	93.63
19	22 16 38	09	19.094	7 35 30.4	85.46	19	23 47 12.39	18.825	0 20 51.9	93.68
20	22 18 32	60	19.078	7 26 56.8	85.75	20	23 49 5.36	18.831	0 11 29.7	93.72
21	22 20 27	02	19.063	7 18 21.4	86.04	21	23 50 58.36	18.838	S. 0 2 7.3	93.76
22	22 22 21	35	19.047	7 9 44.3	86.33	22	23 52 51.41	18.845	N. 0 7 15.4	93.80
23	22 24 15	58	19.032	7 1 5.5	86.60	23	23 54 44.50	18.852	0 16 38.3	93.83
24	22 26 9	73	19.017	S. 6 52 25.1	86.87	24	23 56 37.63	18.860	N. 0 26 1.3	93.85

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 21.					TUESDAY 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	23 56 37.63	18.860	N. 0 26 1.3	93.85	0	1 28 56.66	19.774	N. 7 48 22.3	88.11
1	23 58 30.82	18.869	0 35 24.5	93.87	1	1 30 55.39	19.803	7 57 10.2	87.83
2	0 0 24.06	18.878	0 44 47.7	93.88	2	1 32 54.29	19.832	8 5 56.3	87.54
3	0 2 17.35	18.887	0 54 11.0	93.89	3	1 34 53.37	19.863	8 14 40.7	87.26
4	0 4 10.70	18.897	1 3 34.4	93.89	4	1 36 52.64	19.893	8 23 23.4	86.96
5	0 6 4.11	18.907	1 12 57.7	93.88	5	1 38 52.09	19.923	8 32 4.2	86.65
6	0 7 57.58	18.918	1 22 21.0	93.88	6	1 40 51.72	19.954	8 40 43.2	86.34
7	0 9 51.12	18.929	1 31 44.3	93.87	7	1 42 51.54	19.985	8 49 20.3	86.02
8	0 11 44.73	18.941	1 41 7.4	93.84	8	1 44 51.54	20.017	8 57 55.4	85.68
9	0 13 38.41	18.953	1 50 30.4	93.82	9	1 46 51.74	20.049	9 6 28.5	85.35
10	0 15 32.16	18.965	1 59 53.2	93.78	10	1 48 52.13	20.082	9 14 59.6	85.01
11	0 17 25.99	18.979	2 9 15.8	93.75	11	1 50 52.72	20.114	9 23 28.6	84.66
12	0 19 19.91	18.993	2 18 38.2	93.71	12	1 52 53.50	20.148	9 31 55.5	84.31
13	0 21 13.90	19.006	2 28 0.3	93.66	13	1 54 54.49	20.181	9 40 20.3	83.94
14	0 23 7.98	19.021	2 37 22.1	93.61	14	1 56 55.67	20.213	9 48 42.8	83.56
15	0 25 2.15	19.036	2 46 43.6	93.54	15	1 58 57.05	20.248	9 57 3.0	83.18
16	0 26 56.41	19.051	2 56 4.6	93.48	16	2 0 58.64	20.282	10 5 21.0	82.80
17	0 28 50.76	19.067	3 5 25.3	93.41	17	2 3 0.43	20.316	10 13 36.6	82.40
18	0 30 45.21	19.083	3 14 45.5	93.33	18	2 5 2.43	20.352	10 21 49.8	81.99
19	0 32 39.76	19.100	3 24 5.3	93.25	19	2 7 4.65	20.387	10 30 0.5	81.58
20	0 34 34.41	19.117	3 33 24.5	93.16	20	2 9 7.07	20.422	10 38 8.8	81.17
21	0 36 29.16	19.134	3 42 43.2	93.06	21	2 11 9.71	20.458	10 46 14.5	80.73
22	0 38 24.02	19.153	3 52 1.2	92.96	22	2 13 12.56	20.493	10 54 17.6	80.30
23	0 40 18.99	19.172	N. 4 1 18.7	92.86	23	2 15 15.62	20.528	N. 11 2 18.1	79.87
MONDAY 22.					WEDNESDAY 24.				
0	0 42 14.08	19.191	N. 4 10 35.5	92.74	0	2 17 18.90	20.565	N. 11 10 16.0	79.42
1	0 44 9.28	19.210	4 19 51.6	92.63	1	2 19 22.40	20.602	11 18 11.1	78.95
2	0 46 4.60	19.231	4 29 7.0	92.50	2	2 21 26.12	20.638	11 26 3.4	78.48
3	0 48 0.05	19.251	4 38 21.6	92.37	3	2 23 30.06	20.675	11 33 52.9	78.01
4	0 49 55.61	19.271	4 47 35.4	92.23	4	2 25 34.22	20.713	11 41 39.5	77.53
5	0 51 51.30	19.293	4 56 48.3	92.08	5	2 27 38.61	20.750	11 49 23.2	77.04
6	0 53 47.12	19.314	5 6 0.4	91.93	6	2 29 43.22	20.788	11 57 4.0	76.54
7	0 55 43.07	19.336	5 15 11.5	91.78	7	2 31 48.06	20.826	12 4 41.7	76.03
8	0 57 39.15	19.358	5 24 21.7	91.62	8	2 33 53.13	20.863	12 12 16.4	75.52
9	0 59 35.37	19.382	5 33 30.9	91.45	9	2 35 58.42	20.901	12 19 47.9	74.99
10	1 1 31.73	19.404	5 42 39.1	91.27	10	2 38 3.94	20.939	12 27 16.3	74.46
11	1 3 28.22	19.428	5 51 46.1	91.08	11	2 40 9.69	20.978	12 34 41.4	73.92
12	1 5 24.86	19.453	6 0 52.1	90.90	12	2 42 15.68	21.017	12 42 3.3	73.38
13	1 7 21.65	19.478	6 9 56.9	90.70	13	2 44 21.89	21.055	12 49 21.9	72.83
14	1 9 18.59	19.503	6 19 0.5	90.50	14	2 46 28.34	21.095	12 56 37.2	72.26
15	1 11 15.68	19.528	6 28 2.9	90.29	15	2 48 35.03	21.134	13 3 49.0	71.68
16	1 13 12.92	19.553	6 37 4.0	90.08	16	2 50 41.95	21.173	13 10 57.3	71.10
17	1 15 10.31	19.579	6 46 3.9	89.86	17	2 52 49.10	21.212	13 18 2.2	70.52
18	1 17 7.87	19.606	6 55 2.3	89.63	18	2 54 56.49	21.251	13 25 3.5	69.92
19	1 19 5.58	19.633	7 3 59.4	89.39	19	2 57 4.11	21.290	13 32 1.2	69.31
20	1 21 3.46	19.661	7 12 55.0	89.14	20	2 59 11.97	21.330	13 38 55.2	68.69
21	1 23 1.51	19.688	7 21 49.1	88.90	21	3 1 20.07	21.369	13 45 45.5	68.07
22	1 24 59.72	19.716	7 30 41.8	88.65	22	3 3 28.40	21.408	13 52 32.0	67.43
23	1 26 58.10	19.745	7 39 32.9	88.38	23	3 5 36.97	21.449	13 59 14.7	66.80
24	1 28 56.66	19.774	N. 7 48 22.3	88.11	24	3 7 45.79	21.489	N. 14 5 53.6	66.16

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
THURSDAY 25.					SATURDAY 27.				
	h m s	s	N. 14 5 53.6	66.16		h m s	s	N. 17 53 26.1	25.76
0	3 7 45.79	21.489	14 12 28.6	65.50	0	4 55 18.78	23.238	17 55 57.6	24.74
1	3 9 54.84	21.528	14 18 59.6	64.83	1	4 57 38.30	23.267	17 58 23.0	23.73
2	3 12 4.13	21.568	14 25 26.6	64.17	2	4 59 57.98	23.295	18 0 42.3	22.70
3	3 14 13.65	21.608	14 31 49.6	63.48	3	5 2 17.84	23.323	18 2 55.4	21.67
4	3 16 23.42	21.648	14 38 8.4	62.78	4	5 4 37.86	23.350	18 5 2.3	20.63
5	3 18 33.43	21.688	14 44 23.0	62.09	5	5 6 58.04	23.377	18 7 3.0	19.60
6	3 20 43.67	21.727	14 50 33.5	61.39	6	5 9 18.38	23.403	18 8 57.5	18.56
7	3 22 54.15	21.767	14 56 39.7	60.68	7	5 11 38.88	23.429	18 10 45.7	17.51
8	3 25 4.87	21.807	15 2 41.6	59.95	8	5 13 59.53	23.454	18 12 27.6	16.45
9	3 27 15.83	21.847	15 8 39.1	59.22	9	5 16 20.33	23.479	18 14 3.1	15.39
10	3 29 27.03	21.886	15 14 32.2	58.48	10	5 18 41.28	23.503	18 15 32.3	14.34
11	3 31 38.46	21.925	15 20 20.8	57.73	11	5 21 2.37	23.527	18 16 55.2	13.28
12	3 33 50.13	21.965	15 26 5.0	56.98	12	5 23 23.60	23.550	18 18 11.6	12.20
13	3 36 2.04	22.004	15 31 44.6	56.21	13	5 25 44.97	23.573	18 19 21.6	11.13
14	3 38 14.18	22.043	15 37 19.5	55.43	14	5 28 6.47	23.594	18 20 25.1	10.04
15	3 40 26.56	22.083	15 42 49.8	54.66	15	5 30 28.10	23.616	18 21 22.1	8.97
16	3 42 39.17	22.122	15 48 15.4	53.88	16	5 32 49.86	23.637	18 22 12.7	7.88
17	3 44 52.02	22.161	15 53 36.3	53.08	17	5 35 11.74	23.657	18 22 56.7	6.79
18	3 47 5.10	22.199	15 58 52.3	52.27	18	5 37 33.74	23.676	18 23 34.2	5.70
19	3 49 18.41	22.238	16 4 3.5	51.46	19	5 39 55.85	23.695	18 24 5.1	4.61
20	3 51 31.95	22.276	16 9 9.8	50.64	20	5 42 18.08	23.713	18 24 29.5	3.52
21	3 53 45.72	22.314	16 14 11.2	49.82	21	5 44 40.41	23.731	18 24 47.3	2.41
22	3 55 59.72	22.352	16 19 7.6	48.98	22	5 47 2.85	23.748	18 24 58.4	1.31
23	3 58 13.94	22.389			23	5 49 25.39	23.765		
FRIDAY 26.					SUNDAY 28.				
0	4 0 28.39	22.428	N. 16 23 58.9	48.13	0	5 51 48.03	23.782	N. 18 25 3.0	0.21
1	4 2 43.07	22.466	16 28 45.2	47.28	1	5 54 10.77	23.797	18 25 0.9	0.91
2	4 4 57.98	22.503	16 33 26.3	46.43	2	5 56 33.59	23.811	18 24 52.1	2.02
3	4 7 13.10	22.539	16 38 2.3	45.56	3	5 58 56.50	23.825	18 24 36.7	3.12
4	4 9 28.45	22.576	16 42 33.0	44.68	4	6 1 19.49	23.838	18 24 14.7	4.23
5	4 11 44.01	22.612	16 46 58.5	43.81	5	6 3 42.56	23.852	18 23 45.9	5.35
6	4 13 59.79	22.648	16 51 18.7	42.92	6	6 6 5.71	23.864	18 23 10.5	6.47
7	4 16 15.79	22.684	16 55 33.5	42.02	7	6 8 28.93	23.875	18 22 28.3	7.58
8	4 18 32.00	22.719	16 59 42.9	41.12	8	6 10 52.21	23.886	18 21 39.5	8.70
9	4 20 48.42	22.755	17 3 46.9	40.21	9	6 13 15.56	23.897	18 20 43.9	9.83
10	4 23 5.06	22.790	17 7 45.4	39.29	10	6 15 38.97	23.906	18 19 41.6	10.93
11	4 25 21.90	22.824	17 11 38.4	38.37	11	6 18 2.43	23.915	18 18 32.7	12.05
12	4 27 38.95	22.858	17 15 25.8	37.43	12	6 20 25.95	23.923	18 17 17.0	13.18
13	4 29 56.20	22.892	17 19 7.6	36.50	13	6 22 49.51	23.931	18 15 54.5	14.30
14	4 32 13.65	22.926	17 22 43.8	35.55	14	6 25 13.12	23.939	18 14 25.4	15.42
15	4 34 31.31	22.959	17 26 14.2	34.60	15	6 27 36.78	23.946	18 12 49.5	16.54
16	4 36 49.16	22.992	17 29 39.0	33.64	16	6 30 0.47	23.951	18 11 6.9	17.67
17	4 39 7.21	23.024	17 32 57.9	32.68	17	6 32 24.19	23.956	18 9 17.5	18.78
18	4 41 25.45	23.056	17 36 11.1	31.71	18	6 34 47.94	23.961	18 7 21.5	19.89
19	4 43 43.88	23.087	17 39 18.4	30.73	19	6 37 11.72	23.965	18 5 18.8	21.02
20	4 46 2.49	23.118	17 42 19.9	29.75	20	6 39 35.52	23.969	18 3 9.3	22.14
21	4 48 21.29	23.149	17 45 15.4	28.75	21	6 41 59.35	23.972	18 0 53.1	23.25
22	4 50 40.28	23.179	17 48 4.9	27.76	22	6 44 23.18	23.973	17 58 30.3	24.36
23	4 52 59.44	23.208	17 50 48.5	26.77	23	6 46 47.03	23.976	17 56 0.8	25.48
24	4 55 18.78	23.238	N. 17 53 26.1	25.76	24	6 49 10.89	23.977	N. 17 53 24.6	26.59

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
MONDAY 29.					WEDNESDAY 31.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	6 49 10.89	23.977	N.17 53 24.6	26.59	0	8 43 25.95	23.478	N.13 44 37.6	74.99
1	6 51 34.75	23.977	17 50 41.7	27.71	1	8 45 46.77	23.460	13 37 5.1	75.83
2	6 53 58.61	23.977	17 47 52.1	28.81	2	8 48 7.47	23.442	13 29 27.6	76.68
3	6 56 22.47	23.976	17 44 56.0	29.91	3	8 50 28.07	23.425	13 21 45.0	77.52
4	6 58 46.32	23.975	17 41 53.2	31.02	4	8 52 48.57	23.407	13 13 57.4	78.34
5	7 1 10.17	23.973	17 38 43.8	32.12	5	8 55 8.95	23.388	13 6 4.9	79.15
6	7 3 34.00	23.971	17 35 27.8	33.22	6	8 57 29.22	23.370	12 58 7.6	79.96
7	7 5 57.81	23.968	17 32 5.2	34.32	7	8 59 49.39	23.352	12 50 5.4	80.76
8	7 8 21.61	23.964	17 28 36.0	35.41	8	9 2 9.44	23.333	12 41 58.5	81.55
9	7 10 45.38	23.960	17 25 0.3	36.49	9	9 4 29.39	23.315	12 33 46.8	82.33
10	7 13 9.13	23.956	17 21 18.1	37.58	10	9 6 49.22	23.296	12 25 30.5	83.10
11	7 15 32.85	23.951	17 17 29.4	38.66	11	9 9 8.94	23.278	12 17 9.6	83.86
12	7 17 56.54	23.945	17 13 34.2	39.74	12	9 11 28.56	23.260	12 8 44.2	84.62
13	7 20 20.19	23.939	17 9 32.5	40.82	13	9 13 48.06	23.241	12 0 14.2	85.37
14	7 22 43.81	23.933	17 5 24.4	41.89	14	9 16 7.45	23.223	11 51 39.8	86.10
15	7 25 7.38	23.925	17 1 9.8	42.96	15	9 18 26.73	23.204	11 43 1.0	86.83
16	7 27 30.91	23.918	16 56 48.9	44.02	16	9 20 45.90	23.186	11 34 17.9	87.54
17	7 29 54.39	23.909	16 52 21.6	45.08	17	9 23 4.96	23.168	11 25 30.5	88.25
18	7 32 17.82	23.901	16 47 48.0	46.13	18	9 25 23.92	23.150	11 16 38.9	88.94
19	7 34 41.20	23.892	16 43 8.0	47.18	19	9 27 42.76	23.131	11 7 43.2	89.63
20	7 37 4.52	23.882	16 38 21.8	48.23	20	9 30 1.49	23.113	10 58 43.3	90.32
21	7 39 27.78	23.873	16 33 29.3	49.27	21	9 32 20.12	23.095	10 49 39.4	90.98
22	7 41 50.99	23.863	16 28 30.6	50.30	22	9 34 38.63	23.077	10 40 31.5	91.64
23	7 44 14.13	23.851	N.16 23 25.7	51.33	23	9 36 57.04	23.060	N.10 31 19.7	92.29
TUESDAY 30.					THURSDAY, JUNE 1.				
0	7 46 37.20	23.840	N.16 18 14.7	52.35	0	9 39 15.35	23.043	N.10 22 4.0	92.93
1	7 49 0.21	23.829	16 12 57.5	53.37					
2	7 51 23.15	23.817	16 7 34.2	54.38					
3	7 53 46.01	23.804	16 2 4.9	55.39					
4	7 56 8.80	23.792	15 56 29.5	56.40					
5	7 58 31.51	23.778	15 50 48.1	57.39					
6	8 0 54.14	23.765	15 45 0.8	58.38					
7	8 3 16.69	23.752	15 39 7.6	59.36					
8	8 5 39.16	23.738	15 33 8.5	60.33					
9	8 8 1.54	23.723	15 27 3.6	61.30					
10	8 10 23.83	23.708	15 20 52.9	62.27					
11	8 12 46.04	23.693	15 14 36.4	63.23					
12	8 15 8.15	23.678	15 8 14.2	64.18					
13	8 17 30.17	23.663	15 1 46.3	65.13					
14	8 19 52.10	23.648	14 55 12.7	66.06					
15	8 22 13.94	23.631	14 48 33.6	66.98					
16	8 24 35.67	23.614	14 41 49.0	67.90					
17	8 26 57.31	23.598	14 34 58.8	68.82					
18	8 29 18.85	23.582	14 28 3.2	69.72					
19	8 31 40.29	23.565	14 21 2.2	70.62					
20	8 34 1.63	23.548	14 13 55.8	71.51					
21	8 36 22.87	23.531	14 6 44.1	72.38					
22	8 38 44.00	23.513	13 59 27.2	73.26					
23	8 41 5.03	23.496	13 52 5.0	74.13					
24	8 43 25.95	23.478	N.13 44 37.6	74.99					

PHASES OF THE MOON.

	h	m
May 4	)	First Quarter - - 0 55.8
10	○	Full Moon - - 18 6.2
18	(	Last Quarter - - 6 16.9
26	●	New Moon - - 6 4.0

	h
May 7	(Perigee - - - 19.2
19	(Apogee - - - 16.5

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semidiameter passing the Meridian.*	Equation of Time, to be subtracted from		Var. in hour.
		Apparent Right Ascension.	Var. in hour.	Apparent Declination.	Var. in hour.		added to Apparent Time.		
		h m s	s	° ' "	"	m s	m s	s	
Thur.	1	4 34 15.56	10.224	N.21 59 2.9	20.90	I 8.33	2 28.67	0.367	
Frid.	2	4 38 21.13	10.240	22 7 13.1	19.94	I 8.38	2 19.68	0.383	
Sat.	3	4 42 27.08	10.255	22 15 0.2	18.98	I 8.44	2 10.31	0.398	
Sun.	4	4 46 33.38	10.270	22 22 24.0	18.00	I 8.49	2 0.59	0.412	
Mon.	5	4 50 40.02	10.284	22 29 24.2	17.02	I 8.54	1 50.54	0.426	
Tues.	6	4 54 46.99	10.297	22 36 0.9	16.03	I 8.58	1 40.16	0.439	
Wed.	7	4 58 54.26	10.309	22 42 13.8	15.04	I 8.63	1 29.47	0.451	
Thur.	8	5 3 1.82	10.321	22 48 2.8	14.04	I 8.67	1 18.49	0.463	
Frid.	9	5 7 9.66	10.332	22 53 27.7	13.04	I 8.71	1 7.24	0.474	
Sat.	10	5 11 17.77	10.343	22 58 28.5	12.03	I 8.74	0 55.73	0.485	
Sun.	11	5 15 26.12	10.353	23 3 5.1	11.02	I 8.77	0 43.97	0.495	
Mon.	12	5 19 34.69	10.362	23 7 17.4	10.00	I 8.80	0 31.98	0.504	
Tues.	13	5 23 43.48	10.370	23 11 5.2	8.98	I 8.83	0 19.78	0.512	
Wed.	14	5 27 52.45	10.378	23 14 28.5	7.96	I 8.85	0 7.40	0.519	
Thur.	15	5 32 1.60	10.384	23 17 27.3	6.94	I 8.87	0 5.15	0.526	
Frid.	16	5 36 10.89	10.390	23 20 1.4	5.91	I 8.89	0 17.85	0.532	
Sat.	17	5 40 20.30	10.394	23 22 10.8	4.88	I 8.90	0 30.68	0.536	
Sun.	18	5 44 29.82	10.398	23 23 55.5	3.85	I 8.91	0 43.60	0.540	
Mon.	19	5 48 39.42	10.401	23 25 15.4	2.81	I 8.92	0 56.61	0.543	
Tues.	20	5 52 49.07	10.403	23 26 10.5	1.78	I 8.92	1 9.67	0.545	
Wed.	21	5 56 58.75	10.403	23 26 40.8	0.75	I 8.92	1 22.75	0.545	
Thur.	22	6 1 8.43	10.403	23 26 46.4	0.29	I 8.92	1 35.84	0.545	
Frid.	23	6 5 18.09	10.401	23 26 27.1	1.32	I 8.91	1 48.91	0.544	
Sat.	24	6 9 27.70	10.399	23 25 43.0	2.35	I 8.90	2 1.93	0.541	
Sun.	25	6 13 37.23	10.395	23 24 34.2	3.38	I 8.89	2 14.87	0.537	
Mon.	26	6 17 46.66	10.390	23 23 0.7	4.41	I 8.87	2 27.70	0.532	
Tues.	27	6 21 55.95	10.384	23 21 2.5	5.44	I 8.85	2 40.40	0.526	
Wed.	28	6 26 5.07	10.376	23 18 39.7	6.46	I 8.83	2 52.93	0.518	
Thur.	29	6 30 14.00	10.367	23 15 52.4	7.48	I 8.80	3 5.27	0.510	
Frid.	30	6 34 22.71	10.358	23 12 40.6	8.50	I 8.77	3 17.39	0.500	
Sat.	31	6 38 31.19	10.348	N.23 9 4.4	9.51	I 8.74	3 29.28	0.490	

* Mean Time of the Semidiameter passing may be found by subtracting 0^s.19 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be subtracted from	Sidereal Time
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*	added to Apparent Time.	
		h m s	N. ° ' "	' "	m s	h m s
Thur.	1	4 34 15.98	N. 21 59 3.8	15 47.70	2 28.66	4 36 44.64
Frid.	2	4 38 21.53	22 7 13.9	15 47.57	2 19.67	4 40 41.19
Sat.	3	4 42 27.45	22 15 0.9	15 47.44	2 10.30	4 44 37.75
Sun.	4	4 46 33.73	22 22 24.6	15 47.31	2 0.58	4 48 34.31
Mon.	5	4 50 40.34	22 29 24.8	15 47.19	1 50.53	4 52 30.86
Tues.	6	4 54 47.27	22 36 1.3	15 47.08	1 40.15	4 56 27.42
Wed.	7	4 58 54.52	22 42 14.1	15 46.96	1 29.46	5 0 23.98
Thur.	8	5 3 2.05	22 48 3.1	15 46.85	1 18.48	5 4 20.53
Frid.	9	5 7 9.86	22 53 28.0	15 46.74	1 7.23	5 8 17.05
Sat.	10	5 11 17.93	22 58 28.7	15 46.64	0 55.72	5 12 13.65
Sun.	11	5 15 26.24	23 3 5.2	15 46.53	0 43.96	5 16 10.20
Mon.	12	5 19 34.78	23 7 17.4	15 46.43	0 31.98	5 20 6.76
Tues.	13	5 23 43.53	23 11 5.2	15 46.33	0 19.78	5 24 3.32
Wed.	14	5 27 52.47	23 14 28.5	15 46.24	0 7.40	5 27 59.87
Thur.	15	5 32 1.58	23 17 27.2	15 46.15	0 5.15	5 31 56.43
Frid.	16	5 36 10.83	23 20 1.3	15 46.07	0 17.85	5 35 52.99
Sat.	17	5 40 20.21	23 22 10.7	15 45.98	0 30.67	5 39 49.54
Sun.	18	5 44 29.69	23 23 55.4	15 45.91	0 43.59	5 43 46.10
Mon.	19	5 48 39.25	23 25 15.3	15 45.83	0 56.60	5 47 42.66
Tues.	20	5 52 48.87	23 26 10.5	15 45.77	1 9.65	5 51 39.21
Wed.	21	5 56 58.51	23 26 40.8	15 45.70	1 22.74	5 55 35.77
Thur.	22	6 1 8.16	23 26 46.4	15 45.64	1 35.83	5 59 32.33
Frid.	23	6 5 17.78	23 26 27.2	15 45.59	1 48.90	6 3 28.88
Sat.	24	6 9 27.35	23 25 43.1	15 45.54	2 1.91	6 7 25.44
Sun.	25	6 13 36.84	23 24 34.3	15 45.50	2 14.85	6 11 22.00
Mon.	26	6 17 46.23	23 23 0.9	15 45.47	2 27.68	6 15 18.56
Tues.	27	6 21 55.48	23 21 2.8	15 45.44	2 40.37	6 19 15.11
Wed.	28	6 26 4.57	23 18 40.0	15 45.41	2 52.90	6 23 11.67
Thur.	29	6 30 13.47	23 15 52.8	15 45.39	3 5.24	6 27 8.22
Frid.	30	6 34 22.15	23 12 41.0	15 45.38	3 17.36	6 31 4.78
Sat.	31	6 38 30.59	N. 23 9 4.9	15 45.37	3 29.25	6 35 1.34

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	<i>Noon.</i>	<i>Noon.</i>			<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
1	70° 11' 35.7	S. 0.56	0.0061348	h m s 19 20 4.79	16° 7.98	16° 9.36	59° 6.46	59° 11.49
2	71 9 4.5	0.45	0.0061952	19 16 8.88	16 10.41	16 11.15	59 15.36	59 18.05
3	72 6 32.0	0.32	0.0062538	19 12 12.97	16 11.54	16 11.58	59 19.50	59 19.64
4	73 3 58.2	0.19	0.0063106	19 8 17.06	16 11.24	16 10.49	59 18.38	59 15.64
5	74 1 23.2	S. 0.05	0.0063659	19 4 21.15	16 9.32	16 7.70	59 11.36	59 5.41
6	74 58 47.1	N. 0.08	0.0064197	19 0 25.24	16 5.61	16 3.05	58 57.76	58 48.37
7	75 56 9.9	0.18	0.0064721	18 56 29.33	16 0.00	15 56.51	58 37.23	58 24.43
8	76 53 31.7	0.27	0.0065233	18 52 33.42	15 52.59	15 48.28	58 10.06	57 54.26
9	77 50 52.6	0.34	0.0065732	18 48 37.51	15 43.64	15 38.74	57 37.26	57 19.30
10	78 48 12.7	0.37	0.0066218	18 44 41.60	15 33.64	15 28.45	57 0.64	56 41.63
11	79 45 32.1	0.37	0.0066691	18 40 45.68	15 23.25	15 18.14	56 22.58	56 3.83
12	80 42 50.9	0.35	0.0067150	18 36 49.77	15 13.19	15 8.51	55 45.69	55 28.53
13	81 40 9.2	0.30	0.0067595	18 32 53.86	15 4.15	15 0.22	55 12.58	54 58.17
14	82 37 27.0	0.22	0.0068024	18 28 57.95	14 56.78	14 53.87	54 45.55	54 34.92
15	83 34 44.4	0.14	0.0068436	18 25 2.04	14 51.57	14 49.90	54 26.48	54 20.35
16	84 32 1.4	N. 0.03	0.0068831	18 21 6.13	14 48.90	14 48.59	54 16.69	54 15.56
17	85 29 18.1	S. 0.09	0.0069208	18 17 10.22	14 48.98	14 50.08	54 17.00	54 21.01
18	86 26 34.5	0.21	0.0069564	18 13 14.31	14 51.87	14 54.34	54 27.60	54 36.64
19	87 23 50.7	0.33	0.0069900	18 9 18.40	14 57.46	15 1.18	54 48.07	55 1.69
20	88 21 6.7	0.44	0.0070214	18 5 22.49	15 5.46	15 10.22	55 17.37	55 34.80
21	89 18 22.4	0.54	0.0070505	18 1 26.58	15 15.39	15 20.89	55 53.75	56 13.91
22	90 15 37.9	0.61	0.0070772	17 57 30.66	15 26.62	15 32.47	56 34.91	56 56.34
23	91 12 53.2	0.67	0.0071014	17 53 34.75	15 38.34	15 44.11	57 17.84	57 38.97
24	92 10 8.3	0.71	0.0071230	17 49 38.84	15 49.66	15 54.89	57 59.32	58 18.49
25	93 7 23.1	0.72	0.0071420	17 45 42.93	15 59.70	16 4.00	58 36.11	58 51.88
26	94 4 37.6	0.69	0.0071583	17 41 47.02	16 7.73	16 10.83	59 5.54	59 16.89
27	95 1 51.7	0.63	0.0071720	17 37 51.11	16 13.27	16 15.03	59 25.82	59 32.28
28	95 59 5.5	0.54	0.0071830	17 33 55.20	16 16.14	16 16.60	59 36.34	59 38.04
29	96 56 18.9	0.43	0.0071916	17 29 59.29	16 16.48	16 15.79	59 37.57	59 35.07
30	97 53 31.8	0.31	0.0071978	17 26 3.38	16 14.62	16 13.02	59 30.77	59 24.90
31	98 50 44.3	S. 0.18	0.0072017	17 22 7.47	16 11.03	16 8.72	59 17.63	59 9.15

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.		Noon.	Upper.	Lower.
	° ′ ″	° ′ ″	° ′ ″	° ′ ″	d	h m	h m
1	143 39 0.7	150 42 10.4	S. 3 27 52.4	S. 2 58 51.0	5.75	5 13.7	17 40.1
2	157 45 53.2	164 49 59.4	2 27 2.7	1 52 57.0	6.75	6 6.2	18 32.2
3	171 54 20.8	178 58 48.8	1 17 5.9	S. 0 40 3.4	7.75	6 58.1	19 24.0
4	186 3 14.4	193 7 27.0	S. 0 2 25.1	N. 0 35 13.0	8.75	7 50.0	20 16.0
5	200 11 13.7	207 14 19.3	N. 1 12 14.5	1 48 3.6	9.75	8 42.3	21 8.7
6	214 16 25.6	221 17 11.6	2 22 6.4	2 53 50.8	10.75	9 35.5	22 2.4
7	228 16 13.6	235 13 6.3	3 22 47.9	3 48 32.7	11.75	10 29.6	22 57.0
8	242 7 23.3	248 58 38.1	4 10 44.3	4 29 6.6	12.75	11 24.3	23 51.7
9	255 46 25.1	262 30 21.8	4 43 28.4	4 53 43.4	13.75	12 19.0	* *
10	269 10 8.2	275 45 28.7	4 59 50.3	5 1 51.6	14.75	13 12.5	0 45.9
11	282 16 13.5	288 42 17.4	4 59 54.2	4 54 7.9	15.75	14 4.3	1 38.7
12	295 3 41.7	301 20 33.1	4 44 44.9	4 32 0.0	16.75	14 53.7	2 29.3
13	307 33 4.3	313 41 33.4	4 16 8.6	3 57 27.5	17.75	15 40.8	3 17.6
14	319 46 23.0	325 48 0.4	3 36 13.5	3 12 43.8	18.75	16 25.8	4 3.5
15	331 46 56.8	337 43 46.2	2 47 15.6	2 20 5.5	19.75	17 9.2	4 47.6
16	343 39 5.6	349 33 33.7	1 51 30.3	1 21 46.4	20.75	17 51.7	5 30.5
17	355 27 50.6	1 22 37.5	N. 0 51 10.2	N. 0 19 58.3	21.75	18 34.0	6 12.8
18	7 18 35.5	13 16 25.1	S. 0 11 32.5	S. 0 43 4.9	22.75	19 17.0	6 55.4
19	19 16 46.1	25 20 16.2	1 14 20.7	1 45 1.2	23.75	20 1.4	7 39.0
20	31 27 30.7	37 39 1.2	2 14 46.3	2 43 15.1	24.75	20 47.9	8 24.4
21	43 55 15.3	50 16 35.5	3 10 5.7	3 34 55.0	25.75	21 37.1	9 12.2
22	56 43 18.3	63 15 33.2	3 57 19.7	4 16 55.9	26.75	22 29.1	10 2.7
23	69 53 22.9	76 36 42.2	4 33 20.6	4 46 11.7	27.75	23 23.6	10 56.0
24	83 25 17.8	90 18 48.8	4 55 9.1	4 59 55.9	28.75	* *	11 51.6
25	97 16 47.5	104 18 40.5	5 0 19.0	4 56 10.2	0.32	0 19.9	12 48.5
26	111 23 49.2	118 31 32.6	4 47 26.4	4 34 10.9	1.32	1 17.0	13 45.4
27	125 41 8.2	132 51 54.2	4 16 33.0	3 54 47.7	2.32	2 13.6	14 41.5
28	140 3 10.8	147 14 22.5	3 29 15.9	3 0 23.3	3.32	3 9.1	15 36.3
29	154 24 57.7	161 34 30.3	2 28 39.7	1 54 38.0	4.32	4 3.1	16 29.5
30	168 42 39.4	175 49 9.3	1 18 53.2	S. 0 42 1.4	5.32	4 55.7	17 21.7
31	182 53 49.1	189 56 30.9	S. 0 4 39.3	N. 0 32 37.3	6.32	5 47.5	18 13.3

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
THURSDAY 1.					SATURDAY 3.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	9 39 15.35	23.043	N. 10 22 4.0	92.93	0	11 28 14.17	22.480	N. 2 1 50.9	111.40
1	9 41 33.54	23.024	10 12 44.5	93.57	1	11 30 29.04	22.476	1 50 42.1	111.52
2	9 43 51.64	23.007	10 3 21.2	94.18	2	11 32 43.88	22.473	1 39 32.7	111.63
3	9 46 9.63	22.989	9 53 54.3	94.79	3	11 34 58.71	22.470	1 28 22.6	111.72
4	9 48 27.51	22.973	9 44 23.7	95.39	4	11 37 13.52	22.468	1 17 12.0	111.80
5	9 50 45.30	22.956	9 34 49.6	95.98	5	11 39 28.32	22.466	1 6 1.0	111.88
6	9 53 2.98	22.938	9 25 12.0	96.56	6	11 41 43.11	22.464	0 54 49.5	111.94
7	9 55 20.56	22.922	9 15 30.9	97.13	7	11 43 57.89	22.463	0 43 37.7	112.00
8	9 57 38.05	22.907	9 5 46.4	97.69	8	11 46 12.66	22.461	0 32 25.5	112.04
9	9 59 55.44	22.890	8 55 58.6	98.24	9	11 48 27.42	22.461	0 21 13.2	112.07
10	10 2 12.73	22.873	8 46 7.5	98.78	10	11 50 42.19	22.461	N. 0 10 0.7	112.08
11	10 4 29.92	22.858	8 36 13.2	99.32	11	11 52 56.95	22.461	S. 0 1 11.8	112.09
12	10 6 47.02	22.843	8 26 15.7	99.83	12	11 55 11.72	22.462	0 12 24.4	112.09
13	10 9 4.03	22.828	8 16 15.2	100.33	13	11 57 26.49	22.462	0 23 36.9	112.08
14	10 11 20.95	22.813	8 6 11.7	100.83	14	11 59 41.26	22.463	0 34 49.3	112.05
15	10 13 37.78	22.798	7 56 5.2	101.32	15	12 1 56.05	22.466	0 46 1.5	112.01
16	10 15 54.52	22.783	7 45 55.8	101.80	16	12 4 10.85	22.468	0 57 13.4	111.96
17	10 18 11.17	22.768	7 35 43.6	102.27	17	12 6 25.67	22.471	1 8 25.0	111.90
18	10 20 27.74	22.755	7 25 28.6	102.73	18	12 8 40.50	22.473	1 19 36.2	111.83
19	10 22 44.23	22.741	7 15 10.9	103.17	19	12 10 55.34	22.476	1 30 47.0	111.75
20	10 25 0.63	22.727	7 4 50.6	103.60	20	12 13 10.21	22.480	1 41 57.2	111.65
21	10 27 16.95	22.713	6 54 27.7	104.03	21	12 15 25.10	22.484	1 53 6.8	111.55
22	10 29 33.19	22.701	6 44 2.3	104.44	22	12 17 40.02	22.489	2 4 15.8	111.44
23	10 31 49.36	22.688	N. 6 33 34.4	104.84	23	12 19 54.97	22.493	S. 2 15 24.1	111.31
FRIDAY 2.					SUNDAY 4.				
0	10 34 5.45	22.676	N. 6 23 4.2	105.23	0	12 22 9.94	22.498	S. 2 26 31.5	111.17
1	10 36 21.47	22.663	6 12 31.6	105.62	1	12 24 24.94	22.503	2 37 38.1	111.02
2	10 38 37.41	22.652	6 1 56.8	105.98	2	12 26 39.98	22.510	2 48 43.8	110.86
3	10 40 53.29	22.641	5 51 19.8	106.35	3	12 28 55.06	22.516	2 59 48.4	110.68
4	10 43 9.10	22.629	5 40 40.6	106.70	4	12 31 10.17	22.522	3 10 52.0	110.51
5	10 45 24.84	22.618	5 29 59.4	107.03	5	12 33 25.32	22.528	3 21 54.5	110.31
6	10 47 40.51	22.608	5 19 16.2	107.37	6	12 35 40.51	22.536	3 32 55.7	110.10
7	10 49 56.13	22.598	5 8 31.0	107.68	7	12 37 55.75	22.544	3 43 55.7	109.88
8	10 52 11.68	22.588	4 57 44.0	107.98	8	12 40 11.04	22.552	3 54 54.3	109.66
9	10 54 27.18	22.578	4 46 55.2	108.28	9	12 42 26.37	22.559	4 5 51.6	109.42
10	10 56 42.62	22.569	4 36 4.6	108.57	10	12 44 41.75	22.568	4 16 47.4	109.17
11	10 58 58.01	22.561	4 25 12.3	108.84	11	12 46 57.18	22.577	4 27 41.6	108.90
12	11 1 13.35	22.553	4 14 18.5	109.10	12	12 49 12.67	22.586	4 38 34.2	108.63
13	11 3 28.64	22.544	4 3 23.1	109.36	13	12 51 28.21	22.595	4 49 25.2	108.35
14	11 5 43.88	22.537	3 52 26.2	109.59	14	12 53 43.81	22.605	5 0 14.4	108.05
15	11 7 59.08	22.529	3 41 28.0	109.83	15	12 55 59.47	22.614	5 11 1.8	107.74
16	11 10 14.23	22.522	3 30 28.3	110.05	16	12 58 15.18	22.624	5 21 47.3	107.43
17	11 12 29.34	22.515	3 19 27.4	110.25	17	13 0 30.96	22.636	5 32 30.9	107.10
18	11 14 44.41	22.509	3 8 25.3	110.44	18	13 2 46.81	22.647	5 43 12.5	106.76
19	11 16 59.45	22.503	2 57 22.1	110.63	19	13 5 2.72	22.658	5 53 52.0	106.41
20	11 19 14.45	22.498	2 46 17.7	110.81	20	13 7 18.70	22.668	6 4 29.4	106.05
21	11 21 29.43	22.493	2 35 12.4	110.97	21	13 9 34.74	22.680	6 15 4.6	105.68
22	11 23 44.37	22.488	2 24 6.1	111.13	22	13 11 50.86	22.692	6 25 37.5	105.29
23	11 25 59.28	22.483	2 12 58.9	111.27	23	13 14 7.05	22.704	6 36 8.1	104.90
24	11 28 14.17	22.480	N. 2 1 50.9	111.40	24	13 16 23.31	22.717	S. 6 46 36.3	104.49

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
MONDAY 5.					WEDNESDAY 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	13 16 23.31	22.717	S. 6 46 30.3	104.49	0	15 7 5.85	23.417	S. 14 1 29.2	72.95
1	13 18 39.65	22.729	6 57 2.0	104.07	1	15 9 26.39	23.429	14 8 44.2	72.07
2	13 20 56.06	22.742	7 7 25.1	103.64	2	15 11 47.00	23.442	14 15 54.0	71.18
3	13 23 12.55	22.755	7 17 45.7	103.21	3	15 14 7.69	23.454	14 22 58.4	70.28
4	13 25 29.12	22.768	7 28 3.6	102.76	4	15 16 28.45	23.466	14 29 57.4	69.38
5	13 27 45.77	22.782	7 38 18.8	102.30	5	15 18 49.28	23.478	14 36 51.0	68.47
6	13 30 2.50	22.795	7 48 31.2	101.83	6	15 21 10.18	23.489	14 43 39.1	67.55
7	13 32 19.31	22.809	7 58 40.7	101.34	7	15 23 31.15	23.501	14 50 21.6	66.63
8	13 34 36.21	22.823	8 8 47.3	100.85	8	15 25 52.19	23.511	14 56 58.6	65.70
9	13 36 53.19	22.837	8 18 50.9	100.35	9	15 28 13.28	23.521	15 3 30.0	64.76
10	13 39 10.25	22.851	8 28 51.5	99.83	10	15 30 34.44	23.532	15 9 55.7	63.81
11	13 41 27.40	22.866	8 38 48.9	99.31	11	15 32 55.66	23.542	15 16 15.7	62.86
12	13 43 44.64	22.881	8 48 43.2	98.78	12	15 35 16.94	23.551	15 22 30.0	61.91
13	13 46 1.97	22.895	8 58 34.2	98.23	13	15 37 38.27	23.559	15 28 38.6	60.94
14	13 48 19.38	22.909	9 8 21.9	97.68	14	15 39 59.65	23.568	15 34 41.3	59.97
15	13 50 36.88	22.925	9 18 6.3	97.11	15	15 42 21.08	23.576	15 40 38.2	58.99
16	13 52 54.48	22.940	9 27 47.2	96.53	16	15 44 42.56	23.584	15 46 29.2	58.01
17	13 55 12.16	22.955	9 37 24.6	95.94	17	15 47 4.09	23.592	15 52 14.3	57.03
18	13 57 29.94	22.971	9 46 58.5	95.34	18	15 49 25.66	23.598	15 57 53.5	56.03
19	13 59 47.81	22.986	9 56 28.7	94.73	19	15 51 47.27	23.605	16 3 26.7	55.03
20	14 2 5.77	23.001	10 5 55.3	94.11	20	15 54 8.92	23.611	16 8 53.8	54.03
21	14 4 23.82	23.017	10 15 18.1	93.48	21	15 56 30.60	23.617	16 14 15.0	53.02
22	14 6 41.97	23.033	10 24 37.1	92.85	22	15 58 52.32	23.623	16 19 30.1	52.00
23	14 9 0.21	23.048	S. 10 33 52.3	92.21	23	16 1 14.07	23.627	S. 16 24 39.0	50.98
TUESDAY 6.					THURSDAY 8.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	14 11 18.54	23.063	S. 10 43 3.6	91.54	0	16 3 35.84	23.631	S. 16 29 41.9	49.97
1	14 13 36.96	23.078	10 52 10.8	90.88	1	16 5 57.64	23.635	16 34 38.6	48.93
2	14 15 55.48	23.094	11 1 14.1	90.21	2	16 8 19.46	23.638	16 39 29.1	47.90
3	14 18 14.09	23.110	11 10 13.2	89.51	3	16 10 41.30	23.642	16 44 13.4	46.87
4	14 20 32.80	23.126	11 19 8.2	88.81	4	16 13 3.16	23.644	16 48 51.5	45.83
5	14 22 51.60	23.141	11 27 58.9	88.10	5	16 15 25.03	23.646	16 53 23.3	44.78
6	14 25 10.49	23.156	11 36 45.4	87.39	6	16 17 46.91	23.647	16 57 48.9	43.74
7	14 27 29.47	23.172	11 45 27.6	86.67	7	16 20 8.79	23.648	17 2 8.2	42.68
8	14 29 48.55	23.188	11 54 5.4	85.93	8	16 22 30.68	23.648	17 6 21.1	41.63
9	14 32 7.72	23.203	12 2 38.7	85.18	9	16 24 52.57	23.648	17 10 27.7	40.58
10	14 34 26.98	23.218	12 11 7.5	84.43	10	16 27 14.46	23.648	17 14 28.0	39.52
11	14 36 46.33	23.233	12 19 31.8	83.67	11	16 29 36.34	23.646	17 18 21.9	38.45
12	14 39 5.77	23.248	12 27 51.5	82.89	12	16 31 58.21	23.644	17 22 9.4	37.38
13	14 41 25.31	23.263	12 36 6.5	82.11	13	16 34 20.07	23.642	17 25 50.5	36.32
14	14 43 44.93	23.278	12 44 16.8	81.32	14	16 36 41.91	23.638	17 29 25.2	35.25
15	14 46 4.64	23.293	12 52 22.3	80.52	15	16 39 3.73	23.635	17 32 53.5	34.18
16	14 48 24.44	23.307	13 0 23.0	79.72	16	16 41 25.53	23.631	17 36 15.3	33.10
17	14 50 44.32	23.321	13 8 18.9	78.90	17	16 43 47.30	23.627	17 39 30.7	32.03
18	14 53 4.29	23.335	13 16 9.8	78.08	18	16 46 9.05	23.622	17 42 39.6	30.94
19	14 55 24.34	23.349	13 23 55.8	77.24	19	16 48 30.76	23.615	17 45 42.0	29.86
20	14 57 44.48	23.363	13 31 36.7	76.39	20	16 50 52.43	23.609	17 48 37.9	28.78
21	15 0 4.70	23.378	13 39 12.5	75.54	21	16 53 14.07	23.603	17 51 27.4	27.71
22	15 2 25.01	23.391	13 46 43.2	74.69	22	16 55 35.66	23.595	17 54 10.4	26.62
23	15 4 45.39	23.403	13 54 8.8	73.83	23	16 57 57.21	23.587	17 56 46.8	25.53
24	15 7 5.85	23.417	S. 14 1 29.2	72.95	24	17 0 18.71	23.578	S. 17 59 16.8	24.45

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 9.					SUNDAY 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	17 0 18.71	23.578	S. 17 59 16.8	24.45	0	18 51 25.28	22.521	S. 17 54 7.9	25.43
1	17 2 40.15	23.569	18 1 40.2	23.36	1	18 53 40.30	22.488	17 51 32.5	26.36
2	17 5 1.54	23.559	18 3 57.1	22.28	2	18 55 55.13	22.454	17 48 51.6	27.28
3	17 7 22.86	23.548	18 6 7.5	21.19	3	18 58 9.75	22.420	17 46 5.1	28.22
4	17 9 44.12	23.538	18 8 11.4	20.11	4	19 0 24.17	22.387	17 43 13.0	29.14
5	17 12 5.32	23.527	18 10 8.8	19.02	5	19 2 38.39	22.352	17 40 15.4	30.06
6	17 14 26.44	23.514	18 11 59.7	17.93	6	19 4 52.39	22.317	17 37 12.3	30.97
7	17 16 47.49	23.502	18 13 44.0	16.85	7	19 7 6.19	22.283	17 34 3.8	31.87
8	17 19 8.46	23.488	18 15 21.9	15.77	8	19 9 19.78	22.248	17 30 49.9	32.77
9	17 21 29.35	23.474	18 16 53.2	14.68	9	19 11 33.16	22.212	17 27 30.6	33.65
10	17 23 50.15	23.460	18 18 18.0	13.60	10	19 13 46.32	22.176	17 24 6.1	34.53
11	17 26 10.87	23.445	18 19 36.4	12.52	11	19 15 59.27	22.140	17 20 36.2	35.42
12	17 28 31.49	23.429	18 20 48.3	11.44	12	19 18 12.00	22.104	17 17 1.1	36.29
13	17 30 52.02	23.413	18 21 53.7	10.36	13	19 20 24.52	22.068	17 13 20.7	37.16
14	17 33 12.45	23.396	18 22 52.6	9.28	14	19 22 36.82	22.031	17 9 35.2	38.01
15	17 35 32.77	23.378	18 23 45.0	8.20	15	19 24 48.89	21.994	17 5 44.6	38.86
16	17 37 52.99	23.361	18 24 31.0	7.13	16	19 27 0.75	21.958	17 1 48.9	39.70
17	17 40 13.10	23.343	18 25 10.6	6.07	17	19 29 12.39	21.921	16 57 48.2	40.54
18	17 42 33.10	23.323	18 25 43.8	4.99	18	19 31 23.80	21.883	16 53 42.4	41.38
19	17 44 52.98	23.303	18 26 10.5	3.93	19	19 33 34.99	21.847	16 49 31.7	42.20
20	17 47 12.74	23.283	18 26 30.9	2.86	20	19 35 45.96	21.809	16 45 16.0	43.02
21	17 49 32.38	23.263	18 26 44.8	1.79	21	19 37 56.70	21.771	16 40 55.5	43.83
22	17 51 51.90	23.242	18 26 52.4	0.74	22	19 40 7.21	21.733	16 36 30.1	44.63
23	17 54 11.28	23.220	S. 18 26 53.7	0.32	23	19 42 17.50	21.697	S. 16 31 59.9	45.43
SATURDAY 10.					MONDAY 12.				
0	17 56 30.54	23.198	S. 18 26 48.6	1.37	0	19 44 27.57	21.658	S. 16 27 25.0	46.22
1	17 58 49.66	23.174	18 26 37.3	2.42	1	19 46 37.40	21.620	16 22 45.3	47.00
2	18 1 8.63	23.151	18 26 19.6	3.48	2	19 48 47.01	21.583	16 18 1.0	47.78
3	18 3 27.47	23.128	18 25 55.6	4.52	3	19 50 56.39	21.544	16 13 12.0	48.55
4	18 5 46.16	23.103	18 25 25.4	5.55	4	19 53 5.54	21.506	16 8 18.4	49.31
5	18 8 4.71	23.078	18 24 49.0	6.58	5	19 55 14.46	21.468	16 3 20.3	50.06
6	18 10 23.10	23.053	18 24 6.4	7.62	6	19 57 23.16	21.430	15 58 17.7	50.81
7	18 12 41.34	23.027	18 23 17.6	8.64	7	19 59 31.62	21.392	15 53 10.6	51.55
8	18 14 59.42	23.000	18 22 22.7	9.67	8	20 1 39.86	21.354	15 47 59.1	52.28
9	18 17 17.34	22.973	18 21 21.6	10.69	9	20 3 47.87	21.315	15 42 43.2	53.02
10	18 19 35.10	22.947	18 20 14.4	11.71	10	20 5 55.64	21.277	15 37 22.9	53.73
11	18 21 52.70	22.918	18 19 1.1	12.72	11	20 8 3.19	21.240	15 31 58.4	54.43
12	18 24 10.12	22.890	18 17 41.7	13.73	12	20 10 10.52	21.202	15 26 29.7	55.14
13	18 26 27.38	22.862	18 16 16.4	14.73	13	20 12 17.61	21.163	15 20 56.7	55.85
14	18 28 44.47	22.833	18 14 45.0	15.73	14	20 14 24.47	21.125	15 15 19.5	56.54
15	18 31 1.38	22.803	18 13 7.6	16.72	15	20 16 31.11	21.088	15 9 38.2	57.22
16	18 33 18.11	22.773	18 11 24.4	17.70	16	20 18 37.52	21.049	15 3 52.9	57.89
17	18 35 34.66	22.743	18 9 35.2	18.69	17	20 20 43.70	21.011	14 58 3.5	58.57
18	18 37 51.03	22.713	18 7 40.1	19.67	18	20 22 49.65	20.973	14 52 10.1	59.23
19	18 40 7.21	22.682	18 5 39.1	20.64	19	20 24 55.38	20.937	14 46 12.7	59.88
20	18 42 23.21	22.651	18 3 32.4	21.60	20	20 27 0.89	20.899	14 40 11.5	60.53
21	18 44 39.02	22.618	18 1 19.9	22.57	21	20 29 6.17	20.862	14 34 6.4	61.18
22	18 46 54.63	22.586	17 59 1.6	23.53	22	20 31 11.23	20.824	14 27 57.4	61.81
23	18 49 10.05	22.554	17 56 37.6	24.48	23	20 33 16.06	20.788	14 21 44.7	62.43
24	18 51 25.28	22.521	S. 17 54 7.9	25.43	24	20 35 20.68	20.751	S. 14 15 28.2	63.06

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 13.					THURSDAY 15.				
	h m s	s	' "	"		h m s	s	' "	"
0	20 35 20	68	20 75 1	S. 14 15 28	2	22 11 8	29	19 283	S. 8 14 18
1	20 37 25	07	20 713	14 9 8	0	22 11 8	29	19 283	8 14 18
2	20 39 29	24	20 677	14 2 44	1	22 13 3	92	19 262	8 5 47
3	20 41 33	19	20 641	13 56 16	2	22 14 59	43	19 241	7 57 15
4	20 43 36	93	20 604	13 49 45	3	22 16 54	81	19 219	7 48 40
5	20 45 40	44	20 568	13 43 11	4	22 18 50	06	19 198	7 40 4
6	20 47 43	74	20 533	13 36 33	5	22 20 45	19	19 178	7 31 27
7	20 49 46	83	20 497	13 29 51	6	22 22 40	20	19 159	7 22 47
8	20 51 49	70	20 461	13 23 6	7	22 24 35	10	19 140	7 14 6
9	20 53 52	36	20 426	13 16 18	8	22 26 29	88	19 121	7 5 24
10	20 55 54	81	20 391	13 9 27	9	22 28 24	55	19 103	6 56 40
11	20 57 57	05	20 356	12 52 32	10	22 30 19	11	19 085	6 47 54
12	20 59 59	08	20 321	12 45 34	11	22 32 13	57	19 067	6 39 7
13	21 2 0	090	20 287	12 38 32	12	22 34 7	92	19 050	6 30 18
14	21 4 2	52	20 253	12 31 28	13	22 36 2	17	19 033	6 21 28
15	21 6 3	94	20 219	12 24 20	14	22 37 56	32	19 017	6 12 37
16	21 8 5	15	20 185	12 17 10	15	22 39 50	38	19 002	6 3 44
17	21 10 6	16	20 152	12 10 5	16	22 41 44	34	18 987	5 54 49
18	21 12 6	97	20 118	12 4 39	17	22 43 38	22	18 973	5 45 54
19	21 14 7	58	20 086	11 57 57	18	22 45 32	01	18 958	5 36 57
20	21 16 8	00	20 054	11 50 32	19	22 47 25	72	18 944	5 27 59
21	21 18 8	23	20 022	11 43 3	20	22 49 19	34	18 930	5 19 0
22	21 20 8	26	19 989	11 35 32	21	22 51 12	88	18 918	5 9 59
23	21 22 8	10	19 958	11 28 32	22	22 53 6	35	18 906	5 0 58
					23	22 54 59	75	18 894	S. 4 51 55
WEDNESDAY 14.					FRIDAY 16.				
0	21 24 7	75	19 927	S. 11 27 59	0	22 56 53	08	18 883	S. 4 42 51
1	21 26 7	22	19 896	11 20 22	1	22 58 46	34	18 872	4 33 46
2	21 28 6	50	19 865	11 12 43	2	23 0 39	54	18 862	4 24 40
3	21 30 5	60	19 835	11 5 14	3	23 2 32	68	18 852	4 15 34
4	21 32 4	52	19 805	10 57 17	4	23 4 25	76	18 842	4 6 26
5	21 34 3	26	19 775	10 49 30	5	23 6 18	78	18 833	3 57 17
6	21 36 1	82	19 746	10 41 40	6	23 8 11	75	18 824	3 48 7
7	21 38 0	21	19 718	10 33 48	7	23 10 4	67	18 817	3 38 57
8	21 39 58	43	19 689	10 25 53	8	23 11 57	55	18 809	3 29 45
9	21 41 56	48	19 661	10 17 56	9	23 13 50	38	18 802	3 20 33
10	21 43 54	36	19 633	10 9 57	10	23 15 43	17	18 796	3 11 20
11	21 45 52	07	19 605	10 1 56	11	23 17 35	93	18 790	3 2 6
12	21 47 49	62	19 578	9 53 52	12	23 19 28	65	18 784	2 52 52
13	21 49 47	00	19 551	9 45 45	13	23 21 21	34	18 779	2 43 37
14	21 51 44	23	19 525	9 37 37	14	23 23 14	00	18 774	2 34 21
15	21 53 41	30	19 499	9 29 26	15	23 25 6	63	18 770	2 25 4
16	21 55 38	22	19 474	9 21 13	16	23 26 59	24	18 767	2 15 47
17	21 57 34	99	19 448	9 12 59	17	23 28 51	83	18 764	2 6 30
18	21 59 31	60	19 423	9 4 42	18	23 30 44	41	18 762	1 57 11
19	22 1 28	07	19 399	8 56 22	19	23 32 36	97	18 759	1 47 53
20	22 3 24	39	19 375	8 48 1	20	23 34 29	52	18 758	1 38 34
21	22 5 20	57	19 352	8 39 38	21	23 36 22	07	18 757	1 29 14
22	22 7 16	62	19 329	8 31 13	22	23 38 14	61	18 757	1 19 54
23	22 9 12	52	19 306	8 22 46	23	23 40 7	15	18 757	1 10 34
24	22 11 8	29	19 283	S. 8 14 18	24	23 41 59	69	18 757	S. 1 1 13

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 17.					MONDAY 19.				
	h m s	s	° ' " S.	"		h m s	s	° ' " N.	"
0	23 41 59.69	18.757	S. 0 13 5	93.48	0	1 13 3.45	19.379	N. 6 24 7.7	89.99
1	23 43 52.24	18.758	0 51 52.5	93.53	1	1 14 59.80	19.403	6 33 7.0	89.78
2	23 45 44.79	18.760	0 42 31.1	93.58	2	1 16 56.29	19.428	6 42 5.0	89.56
3	23 47 37.36	18.762	0 33 9.5	93.62	3	1 18 52.94	19.455	6 51 1.7	89.34
4	23 49 29.94	18.764	0 23 47.7	93.66	4	1 20 49.75	19.482	6 59 57.1	89.12
5	23 51 22.53	18.768	0 14 25.6	93.69	5	1 22 46.72	19.508	7 8 51.1	88.88
6	23 53 15.15	18.772	S. 0 5 3.4	93.72	6	1 24 43.85	19.536	7 17 43.6	88.63
7	23 55 7.79	18.775	N. 0 4 19.0	93.73	7	1 26 41.15	19.563	7 26 34.6	88.38
8	23 57 0.45	18.780	0 13 41.4	93.75	8	1 28 38.61	19.591	7 35 24.1	88.13
9	23 58 53.15	18.786	0 23 4.0	93.77	9	1 30 36.24	19.620	7 44 12.1	87.87
10	0 0 45.88	18.791	0 32 26.6	93.77	10	1 32 34.05	19.649	7 52 58.5	87.60
11	0 2 38.64	18.797	0 41 49.2	93.77	11	1 34 32.03	19.679	8 1 43.3	87.32
12	0 4 31.44	18.803	0 51 11.8	93.77	12	1 36 30.20	19.709	8 10 26.3	87.03
13	0 6 24.28	18.811	1 0 34.4	93.75	13	1 38 28.54	19.739	8 19 7.7	86.75
14	0 8 17.17	18.819	1 9 56.8	93.73	14	1 40 27.07	19.770	8 27 47.3	86.45
15	0 10 10.11	18.827	1 19 19.2	93.72	15	1 42 25.78	19.802	8 36 25.1	86.15
16	0 12 3.09	18.835	1 28 41.5	93.69	16	1 44 24.69	19.833	8 45 1.1	85.84
17	0 13 56.13	18.844	1 38 3.5	93.66	17	1 46 23.78	19.865	8 53 35.2	85.53
18	0 15 49.22	18.854	1 47 25.4	93.63	18	1 48 23.07	19.898	9 2 7.4	85.20
19	0 17 42.38	18.865	1 56 47.1	93.59	19	1 50 22.56	19.932	9 10 37.6	84.87
20	0 19 35.60	18.875	2 6 8.5	93.54	20	1 52 22.25	19.964	9 19 5.8	84.53
21	0 21 28.88	18.886	2 15 29.6	93.48	21	1 54 22.13	19.998	9 27 32.0	84.19
22	0 23 22.23	18.898	2 24 50.3	93.43	22	1 56 22.22	20.033	9 35 56.1	83.84
23	0 25 15.65	18.910	N. 2 34 10.7	93.37	23	1 58 22.52	20.068	N. 9 44 18.1	83.48
SUNDAY 18.					TUESDAY 20.				
	h m s	s	° ' " N.	"		h m s	s	° ' " N.	"
0	0 27 9.15	18.923	N. 2 43 30.7	93.30	0	2 0 23.03	20.102	N. 9 52 37.9	83.12
1	0 29 2.73	18.937	2 52 50.3	93.23	1	2 2 23.74	20.137	10 0 55.5	82.74
2	0 30 56.39	18.950	3 2 9.5	93.15	2	2 4 24.67	20.173	10 9 10.8	82.37
3	0 32 50.13	18.964	3 11 28.1	93.06	3	2 6 25.82	20.209	10 17 23.9	81.98
4	0 34 43.96	18.979	3 20 46.2	92.98	4	2 8 27.18	20.245	10 25 34.6	81.58
5	0 36 37.88	18.994	3 30 3.8	92.88	5	2 10 28.76	20.283	10 33 42.8	81.18
6	0 38 31.89	19.010	3 39 20.8	92.78	6	2 12 30.57	20.320	10 41 48.7	80.77
7	0 40 26.00	19.027	3 48 37.2	92.68	7	2 14 32.60	20.357	10 49 52.1	80.35
8	0 42 20.51	19.043	3 57 52.9	92.56	8	2 16 34.85	20.394	10 57 52.9	79.93
9	0 44 14.52	19.060	4 7 7.9	92.44	9	2 18 37.33	20.433	11 5 51.2	79.49
10	0 46 8.93	19.078	4 16 22.2	92.33	10	2 20 40.05	20.472	11 13 46.8	79.05
11	0 48 3.46	19.097	4 25 35.8	92.20	11	2 22 42.99	20.510	11 21 39.8	78.61
12	0 49 58.09	19.115	4 34 48.6	92.06	12	2 24 46.17	20.549	11 29 30.1	78.15
13	0 51 52.84	19.135	4 44 0.5	91.92	13	2 26 49.58	20.588	11 37 17.6	77.68
14	0 53 47.71	19.155	4 53 11.6	91.78	14	2 28 53.23	20.628	11 45 2.3	77.22
15	0 55 42.70	19.175	5 2 21.8	91.63	15	2 30 57.12	20.669	11 52 44.2	76.74
16	0 57 37.81	19.195	5 11 31.1	91.47	16	2 33 1.26	20.709	12 0 23.2	76.25
17	0 59 33.04	19.216	5 20 39.4	91.30	17	2 35 5.63	20.749	12 7 59.2	75.75
18	1 1 28.40	19.238	5 29 46.7	91.13	18	2 37 10.25	20.791	12 15 32.2	75.25
19	1 3 23.90	19.261	5 38 53.0	90.96	19	2 39 15.12	20.832	12 23 2.2	74.73
20	1 5 19.53	19.283	5 47 58.2	90.78	20	2 41 20.23	20.873	12 30 29.0	74.22
21	1 7 15.30	19.306	5 57 2.3	90.59	21	2 43 25.60	20.915	12 37 52.8	73.70
22	1 9 11.20	19.329	6 6 5.3	90.40	22	2 45 31.21	20.957	12 45 13.4	73.16
23	1 11 7.25	19.354	6 15 7.1	90.20	23	2 47 37.08	20.999	12 52 30.7	72.61
24	1 13 3.45	19.379	N. 6 24 7.7	89.99	24	2 49 43.20	21.041	N. 12 59 44.7	72.06

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 21.					FRIDAY 23.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	2 49 43.20	21.041	N. 12 59 44.7	72.06	0	4 35 47.12	23.136	N. 17 25 57.8	35.60
1	2 51 49.57	21.083	13 6 55.4	71.50	1	4 38 6.06	23.176	17 29 28.5	34.63
2	2 53 56.20	21.127	13 14 2.7	70.93	2	4 40 25.23	23.215	17 32 53.4	33.67
3	2 56 3.09	21.170	13 21 6.6	70.36	3	4 42 44.64	23.254	17 36 12.5	32.69
4	2 58 10.24	21.212	13 28 7.0	69.78	4	4 45 4.28	23.293	17 39 25.7	31.71
5	3 0 17.64	21.256	13 35 3.9	69.18	5	4 47 24.16	23.332	17 42 33.0	30.72
6	3 2 25.31	21.300	13 41 57.2	68.58	6	4 49 44.27	23.370	17 45 34.3	29.72
7	3 4 33.24	21.343	13 48 46.9	67.97	7	4 52 4.60	23.407	17 48 29.6	28.72
8	3 6 41.43	21.388	13 55 32.8	67.34	8	4 54 25.15	23.444	17 51 18.9	27.70
9	3 8 49.89	21.432	14 2 15.0	66.72	9	4 56 45.93	23.482	17 54 2.0	26.68
10	3 10 58.61	21.475	14 8 53.5	66.09	10	4 59 6.93	23.518	17 56 39.0	25.65
11	3 13 7.59	21.520	14 15 28.1	65.44	11	5 1 28.14	23.553	17 59 9.8	24.62
12	3 15 16.85	21.565	14 21 58.8	64.78	12	5 3 49.57	23.589	18 1 34.4	23.58
13	3 17 26.37	21.608	14 28 25.5	64.13	13	5 6 11.21	23.623	18 3 52.8	22.54
14	3 19 36.15	21.653	14 34 48.3	63.46	14	5 8 33.05	23.658	18 6 4.9	21.48
15	3 21 46.20	21.698	14 41 7.0	62.78	15	5 10 55.10	23.692	18 8 10.6	20.42
16	3 23 56.52	21.743	14 47 21.6	62.09	16	5 12 17.35	23.725	18 10 9.9	19.36
17	3 26 7.11	21.788	14 53 32.1	61.40	17	5 15 39.80	23.758	18 12 2.9	18.29
18	3 28 17.97	21.833	14 59 38.4	60.69	18	5 18 2.44	23.789	18 13 49.4	17.21
19	3 30 29.10	21.877	15 5 40.4	59.98	19	5 20 25.27	23.821	18 15 29.4	16.13
20	3 32 40.49	21.922	15 11 38.1	59.25	20	5 22 48.29	23.852	18 17 3.0	15.05
21	3 34 52.16	21.967	15 17 31.4	58.52	21	5 25 11.49	23.883	18 18 30.0	13.95
22	3 37 4.09	22.012	15 23 20.3	57.78	22	5 27 34.88	23.913	18 19 50.4	12.85
23	3 39 16.30	22.057	N. 15 29 4.8	57.04	23	5 29 58.44	23.941	N. 18 21 4.2	11.75
THURSDAY 22.					SATURDAY 24.				
0	3 41 28.77	22.100	N. 15 34 44.8	56.28	0	5 32 22.17	23.969	N. 18 22 11.4	10.64
1	3 43 41.50	22.145	15 40 20.2	55.52	1	5 34 46.07	23.997	18 23 11.9	9.53
2	3 45 54.51	22.191	15 45 51.0	54.74	2	5 37 10.14	24.024	18 24 5.7	8.41
3	3 48 7.79	22.236	15 51 17.1	53.96	3	5 39 34.36	24.051	18 24 52.8	7.29
4	3 50 21.34	22.280	15 56 38.5	53.17	4	5 41 58.75	24.078	18 25 33.2	6.17
5	3 52 35.15	22.323	16 1 55.1	52.37	5	5 44 23.29	24.103	18 26 6.8	5.03
6	3 54 49.22	22.368	16 7 6.9	51.57	6	5 46 47.98	24.127	18 26 33.6	3.90
7	3 57 3.57	22.413	16 12 13.9	50.75	7	5 49 12.81	24.151	18 26 53.6	2.76
8	3 59 18.18	22.457	16 17 15.9	49.92	8	5 51 37.79	24.174	18 27 6.7	1.62
9	4 1 33.05	22.500	16 22 12.9	49.08	9	5 54 2.90	24.197	18 27 13.0	0.48
10	4 3 48.18	22.544	16 27 4.9	48.25	10	5 56 28.15	24.218	18 27 12.5	0.67
11	4 6 3.58	22.589	16 31 51.9	47.40	11	5 58 53.52	24.239	18 27 5.0	1.82
12	4 8 19.25	22.633	16 36 33.7	46.53	12	6 1 19.02	24.261	18 26 50.7	2.97
13	4 10 35.17	22.675	16 41 10.3	45.67	13	6 3 44.65	24.281	18 26 29.4	4.13
14	4 12 51.35	22.718	16 45 41.7	44.80	14	6 6 10.39	24.298	18 26 1.2	5.28
15	4 15 7.79	22.762	16 50 7.9	43.92	15	6 8 36.23	24.317	18 25 26.0	6.45
16	4 17 24.49	22.804	16 54 28.7	43.03	16	6 11 2.19	24.335	18 24 43.8	7.61
17	4 19 41.44	22.847	16 58 44.2	42.13	17	6 13 28.25	24.352	18 23 54.7	8.77
18	4 21 58.65	22.889	17 2 54.2	41.21	18	6 15 54.41	24.368	18 22 58.6	9.93
19	4 24 16.11	22.930	17 6 58.7	40.29	19	6 18 20.66	24.383	18 21 55.5	11.11
20	4 26 33.81	22.972	17 10 57.7	39.38	20	6 20 47.00	24.398	18 20 45.3	12.28
21	4 28 51.77	23.014	17 14 51.2	38.45	21	6 23 13.43	24.412	18 19 28.2	13.44
22	4 31 9.98	23.055	17 18 39.1	37.51	22	6 25 39.94	24.424	18 18 4.0	14.62
23	4 33 28.43	23.095	17 22 21.3	36.56	23	6 28 6.52	24.437	18 16 32.8	15.78
24	4 35 47.12	23.136	N. 17 25 57.8	35.60	24	6 30 33.18	24.448	N. 18 14 54.6	16.96

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 25.					TUESDAY 27.				
	h m s	s	N. 18° 14' 54".6	16".96		h m s	s	N. 14° 42' 26".2	69".84
0	6 30 33.18	24.448	18 13 9.3	18.13	0	8 27 53.18	24.198	14 35 24.3	70.78
1	6 32 59.90	24.458	18 11 17.0	19.31	1	8 30 18.31	24.179	14 28 16.8	71.73
2	6 35 26.68	24.469	18 9 17.6	20.48	2	8 32 43.33	24.161	14 21 3.5	72.67
3	6 37 53.53	24.479	18 7 11.2	21.65	3	8 35 8.24	24.142	14 13 44.7	73.59
4	6 40 20.43	24.487	18 4 57.8	22.82	4	8 37 33.03	24.121	14 6 20.4	74.51
5	6 42 47.37	24.494	18 2 37.4	23.99	5	8 39 57.69	24.101	13 58 50.6	75.43
6	6 45 14.36	24.502	17 57 35.4	26.33	6	8 42 22.24	24.081	13 51 15.3	76.33
7	6 47 41.40	24.509	17 54 54.0	27.49	7	8 44 46.66	24.060	13 43 34.7	77.21
8	6 50 8.47	24.514	17 52 5.5	28.67	8	8 47 10.96	24.039	13 35 48.8	78.09
9	6 52 35.57	24.518	17 49 10.0	29.83	9	8 49 35.13	24.018	13 27 57.6	78.97
10	6 55 2.69	24.523	17 46 7.6	30.98	10	8 51 59.17	23.997	13 20 1.2	79.83
11	6 57 29.84	24.527	17 42 58.2	32.15	11	8 54 23.09	23.975	13 11 59.7	80.68
12	6 59 57.01	24.529	17 39 41.8	33.31	12	8 56 46.87	23.952	13 3 53.1	81.52
13	7 2 24.19	24.531	17 36 18.5	34.46	13	8 59 10.51	23.930	12 55 41.5	82.34
14	7 4 51.38	24.533	17 32 48.3	35.62	14	9 1 34.03	23.908	12 47 25.0	83.17
15	7 7 18.58	24.533	17 29 11.1	36.77	15	9 3 57.41	23.885	12 39 3.5	83.98
16	7 9 45.77	24.533	17 25 27.1	37.90	16	9 6 20.65	23.863	12 30 37.2	84.78
17	7 12 12.97	24.532	17 21 36.3	39.04	17	9 8 43.76	23.840	12 22 6.2	85.56
18	7 14 40.15	24.529	17 17 38.6	40.19	18	9 11 6.73	23.817	12 13 30.5	86.34
19	7 17 7.32	24.527	17 13 34.0	41.33	19	9 13 29.56	23.793	12 4 50.1	87.11
20	7 19 34.48	24.525	17 9 22.7	42.45	20	9 15 52.25	23.770	11 56 5.2	87.87
21	7 22 1.62	24.521	16 54 7.6	43.58	21	9 18 14.80	23.748	11 47 15.7	88.62
22	7 24 28.73	24.517	16 50 39.8	44.70	22	9 20 37.22	23.724	11 38 21.8	89.35
23	7 26 55.82	24.512	16 46 45.0	45.82	23	9 22 59.49	23.699	11 29 23.5	90.07
MONDAY 26.					WEDNESDAY 28.				
0	7 29 22.87	24.506	16 42 58.2	46.93	0	9 25 21.61	23.676	11 20 20.9	90.78
1	7 31 49.89	24.499	16 40 45.0	48.04	1	9 27 43.60	23.653	11 11 14.1	91.48
2	7 34 16.86	24.492	16 36 55.3	49.14	2	9 30 5.44	23.628	10 52 47.9	92.87
3	7 36 43.79	24.485	16 33 10.1	50.23	3	9 32 27.14	23.605	10 43 28.7	93.53
4	7 39 10.68	24.477	16 29 39.3	51.33	4	9 34 48.70	23.582	10 34 5.6	94.18
5	7 41 37.51	24.468	16 26 39.3	52.42	5	9 37 10.12	23.558	10 24 38.5	94.83
6	7 44 4.29	24.458	16 21 21.5	53.50	6	9 39 31.40	23.534	10 15 7.6	95.47
7	7 46 31.01	24.448	16 15 57.3	54.57	7	9 41 52.53	23.510	10 5 32.9	96.09
8	7 48 57.67	24.438	16 10 26.7	55.64	8	9 44 13.52	23.487	9 55 54.5	96.70
9	7 51 24.27	24.427	16 4 49.6	56.71	9	9 46 34.37	23.463	9 46 12.5	97.30
10	7 53 50.79	24.414	15 59 6.2	57.75	10	9 48 55.07	23.439	9 36 26.9	97.89
11	7 56 17.24	24.403	15 53 16.6	58.80	11	9 51 15.64	23.416	9 26 37.8	98.47
12	7 58 43.62	24.390	15 47 20.6	59.85	12	9 53 36.06	23.392	9 16 45.3	99.03
13	8 1 9.92	24.377	15 41 18.4	60.88	13	9 55 56.34	23.368	9 6 49.4	99.58
14	8 3 36.14	24.363	15 35 10.1	61.90	14	9 58 16.48	23.346	8 56 50.3	100.13
15	8 6 2.27	24.348	15 28 55.6	62.92	15	10 0 36.49	23.322	8 46 47.9	100.66
16	8 8 28.31	24.333	15 22 35.0	63.93	16	10 2 56.35	23.298	8 36 42.4	101.18
17	8 10 54.27	24.318	15 16 8.4	64.93	17	10 5 16.07	23.276	8 26 33.8	101.68
18	8 13 20.13	24.302	15 9 35.8	65.93	18	10 7 35.66	23.253	8 16 22.2	102.18
19	8 15 45.89	24.286	15 2 57.2	66.92	19	10 9 55.11	23.231	8 6 7.7	102.66
20	8 18 11.56	24.269	14 56 12.7	67.90	20	10 12 14.43	23.208	7 55 50.3	103.13
21	8 20 37.12	24.252	14 49 22.4	68.88	21	10 14 33.61	23.186	7 45 30.1	103.59
22	8 23 2.58	24.235	14 42 26.2	69.84	22	10 16 52.66	23.163	7 35 7.2	104.03
23	8 25 27.94	24.217	14 35 10.1	70.88	23	10 19 11.57	23.141	7 25 50.3	104.59
24	8 27 53.18	24.198	14 27 53.1	71.92	24	10 21 30.35	23.120	7 15 40.3	105.13

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
THURSDAY 29.					FRIDAY 30.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	10 21 30.35	23.120	N. 7 35 7.2	104.03	0	11 16 25.57	22.675	N. 3 15 26.4	111.23
1	10 23 49.01	23.098	7 24 41.7	104.47	1	11 18 41.58	22.661	3 4 18.6	111.38
2	10 26 7.53	23.076	7 14 13.5	104.90	2	11 20 57.50	22.647	2 53 9.9	111.52
3	10 28 25.92	23.055	7 3 42.9	105.31	3	11 23 13.34	22.633	2 42 0.4	111.65
4	10 30 44.19	23.035	6 53 9.8	105.71	4	11 25 29.10	22.619	2 30 50.1	111.77
5	10 33 2.34	23.014	6 42 34.4	106.10	5	11 27 44.77	22.606	2 19 39.2	111.87
6	10 35 20.36	22.993	6 31 56.6	106.47	6	11 30 0.37	22.594	2 8 27.7	111.96
7	10 37 38.26	22.973	6 21 16.7	106.83	7	11 32 15.90	22.582	1 57 15.7	112.04
8	10 39 56.04	22.953	6 10 34.6	107.19	8	11 34 31.35	22.569	1 46 3.2	112.12
9	10 42 13.70	22.934	5 59 50.4	107.53	9	11 36 46.73	22.558	1 34 50.3	112.18
10	10 44 31.25	22.915	5 49 4.2	107.86	10	11 39 2.04	22.547	1 23 37.0	112.23
11	10 46 48.68	22.895	5 38 16.1	108.18	11	11 41 17.29	22.536	1 12 23.5	112.27
12	10 49 5.99	22.876	5 27 26.1	108.48	12	11 43 32.47	22.525	1 1 9.8	112.29
13	10 51 23.19	22.858	5 16 34.3	108.78	13	11 45 47.59	22.515	0 49 56.0	112.30
14	10 53 40.29	22.840	5 5 40.8	109.06	14	11 48 2.65	22.506	0 38 42.2	112.31
15	10 55 57.27	22.822	4 54 45.6	109.33	15	11 50 17.66	22.497	0 27 28.3	112.30
16	10 58 14.15	22.804	4 43 48.9	109.58	16	11 52 32.61	22.488	0 16 14.6	112.28
17	11 0 30.92	22.787	4 32 50.6	109.83	17	11 54 47.51	22.479	N. 0 5 1.0	112.25
18	11 2 47.59	22.770	4 21 50.9	110.07	18	11 57 2.36	22.471	S. 0 6 12.4	112.21
19	11 5 4.16	22.753	4 10 49.8	110.28	19	11 59 17.16	22.463	0 17 25.5	112.16
20	11 7 20.63	22.738	3 59 47.5	110.49	20	12 1 31.92	22.456	0 28 38.3	112.09
21	11 9 37.01	22.722	3 48 43.9	110.70	21	12 3 46.63	22.448	0 39 50.6	112.02
22	11 11 53.29	22.706	3 37 39.1	110.88	22	12 6 1.30	22.442	0 51 2.5	111.93
23	11 14 9.48	22.690	3 26 33.3	111.06	23	12 8 15.94	22.438	1 2 13.8	111.83
24	11 16 25.57	22.675	N. 3 15 26.4	111.23	24	12 10 30.55	22.432	S. 1 13 24.4	111.72

PHASES OF THE MOON.

June	Phase	h m
2	) First Quarter	6 10.1
9	○ Full Moon	3 57.9
17	(Last Quarter	0 3.2
24	● New Moon	16 19.7

June	Phase	h
3	(Perigee	7.2
16	(Apogee	11.3
28	(Perigee	15.4

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semidiameter passing the Meridian.*	Equation of Time, to be added to		Var. in 1 hour.
		Apparent Right Ascension.	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.		Apparent Time.	Var. in 1 hour.	
		h m s	s	° ' "	"	m s	m s	s	
Sat.	1	6 38 31·19	10·348	N.23 9 4·4	9·51	I 8·74	3 29·28	0·490	
Sun.	2	6 42 39·40	10·336	23 5 3·9	10·53	I 8·71	3 40·90	0·478	
Mon.	3	6 46 47·32	10·324	23 0 39·2	11·53	I 8·67	3 52·23	0·466	
Tues.	4	6 50 54·93	10·310	22 55 50·5	12·53	I 8·63	4 3·26	0·453	
Wed.	5	6 55 2·22	10·297	22 50 37·8	13·53	I 8·59	4 13·96	0·439	
Thur.	6	6 59 9·17	10·282	22 45 1·2	14·52	I 8·54	4 24·33	0·425	
Frid.	7	7 3 15·77	10·267	22 39 0·9	15·50	I 8·49	4 34·34	0·409	
Sat.	8	7 7 21·99	10·251	22 32 37·1	16·48	I 8·44	4 43·98	0·394	
Sun.	9	7 11 27·83	10·235	22 25 49·9	17·45	I 8·38	4 53·23	0·377	
Mon.	10	7 15 33·26	10·218	22 18 39·4	18·42	I 8·33	5 2·09	0·360	
Tues.	11	7 19 38·29	10·201	22 11 5·7	19·38	I 8·27	5 10·53	0·343	
Wed.	12	7 23 42·89	10·182	22 3 9·2	20·33	I 8·20	5 18·55	0·325	
Thur.	13	7 27 47·04	10·164	21 54 49·9	21·27	I 8·14	5 26·14	0·307	
Frid.	14	7 31 50·75	10·145	21 46 8·1	22·21	I 8·07	5 33·27	0·287	
Sat.	15	7 35 53·99	10·125	21 37 3·9	23·14	I 8·00	5 39·93	0·268	
Sun.	16	7 39 56·76	10·105	21 27 37·6	24·05	I 7·93	5 46·13	0·248	
Mon.	17	7 43 59·03	10·084	21 17 49·3	24·96	I 7·86	5 51·83	0·227	
Tues.	18	7 48 0·80	10·063	21 7 39·3	25·86	I 7·79	5 57·03	0·206	
Wed.	19	7 52 2·07	10·042	20 57 7·8	26·76	I 7·71	6 1·73	0·185	
Thur.	20	7 56 2·81	10·020	20 46 15·0	27·64	I 7·63	6 5·90	0·163	
Frid.	21	8 0 3·01	9·997	20 35 1·2	28·51	I 7·55	6 9·54	0·140	
Sat.	22	8 4 2·66	9·974	20 23 26·6	29·37	I 7·47	6 12·63	0·117	
Sun.	23	8 8 1·76	9·951	20 11 31·4	30·22	I 7·39	6 15·16	0·094	
Mon.	24	8 12 0·29	9·926	19 59 16·0	31·06	I 7·31	6 17·13	0·070	
Tues.	25	8 15 58·23	9·902	19 46 40·7	31·88	I 7·23	6 18·51	0·045	
Wed.	26	8 19 55·58	9·877	19 33 45·6	32·70	I 7·14	6 19·30	0·020	
Thur.	27	8 23 52·33	9·852	19 20 31·0	33·51	I 7·06	6 19·49	0·005	
Frid.	28	8 27 48·46	9·826	19 6 57·3	34·30	I 6·98	6 19·07	0·030	
Sat.	29	8 31 43·97	9·800	18 53 4·7	35·08	I 6·89	6 18·03	0·056	
Sun.	30	8 35 38·86	9·774	18 38 53·5	35·85	I 6·80	6 16·37	0·082	
Mon.	31	8 39 33·12	9·748	18 24 24·0	36·60	I 6·72	6 14·08	0·108	
Tues.	32	8 43 26·76	9·722	N.18 9 36·5	37·35	I 6·63	6 11·17	0·134	

* Mean Time of the Semidiameter passing may be found by subtracting 0·19 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*		
		h m s	N. ° ' "	' "	m s	h m s
Sat.	1	6 38 30.59	N. 23 9 4.9	15 45.37	3 29.25	6 35 1.34
Sun.	2	6 42 38.76	23 5 4.5	15 45.37	3 40.87	6 38 57.90
Mon.	3	6 46 46.65	23 0 40.0	15 45.37	3 52.20	6 42 54.45
Tues.	4	6 50 54.24	22 55 51.3	15 45.37	4 3.23	6 46 51.01
Wed.	5	6 55 1.50	22 50 38.7	15 45.38	4 13.93	6 50 47.56
Thur.	6	6 59 8.42	22 45 2.3	15 45.39	4 24.30	6 54 44.12
Frid.	7	7 3 14.99	22 39 2.1	15 45.41	4 34.31	6 58 40.68
Sat.	8	7 7 21.18	22 32 38.4	15 45.43	4 43.95	7 2 37.23
Sun.	9	7 11 26.99	22 25 51.3	15 45.45	4 53.20	7 6 33.79
Mon.	10	7 15 32.41	22 18 40.9	15 45.47	5 2.06	7 10 30.35
Tues.	11	7 19 37.41	22 11 7.4	15 45.50	5 10.51	7 14 26.90
Wed.	12	7 23 41.98	22 3 11.0	15 45.53	5 18.53	7 18 23.46
Thur.	13	7 27 46.12	21 54 51.9	15 45.57	5 26.11	7 22 20.02
Frid.	14	7 31 49.81	21 46 10.2	15 45.61	5 33.24	7 26 16.57
Sat.	15	7 35 53.04	21 37 6.1	15 45.65	5 39.91	7 30 13.13
Sun.	16	7 39 55.79	21 27 39.9	15 45.69	5 46.10	7 34 9.68
Mon.	17	7 43 58.05	21 17 51.7	15 45.74	5 51.81	7 38 6.24
Tues.	18	7 47 59.81	21 7 41.8	15 45.80	5 57.01	7 42 2.80
Wed.	19	7 52 1.06	20 57 10.4	15 45.86	6 1.71	7 45 59.35
Thur.	20	7 56 1.79	20 46 17.8	15 45.92	6 5.88	7 49 55.91
Frid.	21	8 0 1.98	20 35 4.1	15 45.99	6 9.52	7 53 52.46
Sat.	22	8 4 1.63	20 23 29.6	15 46.07	6 12.61	7 57 49.02
Sun.	23	8 8 0.73	20 11 34.6	15 46.15	6 15.15	8 1 45.57
Mon.	24	8 11 59.25	19 59 19.3	15 46.23	6 17.12	8 5 42.13
Tues.	25	8 15 57.19	19 46 44.0	15 46.32	6 18.51	8 9 38.68
Wed.	26	8 19 54.54	19 33 49.0	15 46.42	6 19.30	8 13 35.24
Thur.	27	8 23 51.29	19 20 34.5	15 46.52	6 19.49	8 17 31.80
Frid.	28	8 27 47.42	19 7 0.9	15 46.63	6 19.07	8 21 28.35
Sat.	29	8 31 42.94	18 53 8.4	15 46.74	6 18.04	8 25 24.90
Sun.	30	8 35 37.84	18 38 57.3	15 46.86	6 16.38	8 29 21.46
Mon.	31	8 39 32.11	18 24 27.8	15 46.98	6 14.09	8 33 18.02
Tues.	32	8 43 25.75	N. 18 9 40.3	15 47.11	6 11.18	8 37 14.57

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	Noon.	Noon.			Noon.	Midnight.	Noon.	Midnight.
				h m s				
1	98° 50' 44".3	S. 0°.18	0.0072017	17 22 7.47	16 11.03	16 8.72	59 17.63	59 9.15
2	99 47 56.4	S. 0.04	.0072035	17 18 11.56	16 6.12	16 3.29	58 59.65	58 49.26
3	100 45 8.1	N. 0.09	.0072033	17 14 15.65	16 0.24	15 57.01	58 38.10	58 26.26
4	101 42 19.6	0.21	0.0072013	17 10 19.73	15 53.61	15 50.06	58 13.80	58 0.77
5	102 39 30.8	0.30	.0071976	17 6 23.82	15 46.36	15 42.54	57 47.23	57 33.22
6	103 36 41.8	0.37	.0071923	17 2 27.91	15 38.60	15 34.55	57 18.78	57 3.96
7	104 33 52.7	0.41	0.0071855	16 58 32.00	15 30.43	15 26.25	56 48.85	56 33.54
8	105 31 3.7	0.42	.0071771	16 54 36.09	15 22.04	15 17.85	56 18.12	56 2.77
9	106 28 14.7	0.40	.0071673	16 50 40.18	15 13.73	15 9.70	55 47.64	55 32.89
10	107 25 25.9	0.35	0.0071561	16 46 44.27	15 5.84	15 2.19	55 18.74	55 5.38
11	108 22 37.5	0.28	.0071433	16 42 48.36	14 58.81	14 55.77	54 53.01	54 41.87
12	109 19 49.3	0.19	.0071290	16 38 52.45	14 53.12	14 50.91	54 32.15	54 24.05
13	110 17 1.6	N. 0.08	0.0071131	16 34 56.54	14 49.19	14 48.02	54 17.76	54 13.47
14	111 14 14.4	S. 0.03	.0070955	16 31 0.63	14 47.43	14 47.46	54 11.31	54 11.43
15	112 11 27.7	0.15	.0070761	16 27 4.72	14 48.15	14 49.51	54 13.94	54 18.92
16	113 8 41.7	0.27	0.0070549	16 23 8.81	14 51.55	14 54.28	54 26.40	54 36.42
17	114 5 56.3	0.38	.0070317	16 19 12.90	14 57.70	15 1.79	54 48.95	55 3.91
18	115 3 11.5	0.48	.0070066	16 15 16.99	15 6.50	15 11.80	55 21.17	55 40.59
19	116 0 27.5	0.56	0.0069793	16 11 21.08	15 17.62	15 23.90	56 1.95	56 24.93
20	116 57 44.2	0.62	.0069497	16 7 25.17	15 30.52	15 37.40	56 49.19	57 14.38
21	117 55 1.7	0.66	.0069179	16 3 29.26	15 44.39	15 51.35	57 39.99	58 5.50
22	118 52 20.0	0.67	0.0068836	15 59 33.35	15 58.14	16 4.62	58 30.40	58 54.13
23	119 49 38.9	0.64	.0068467	15 55 37.44	16 10.61	16 15.99	59 16.09	59 35.77
24	120 46 58.5	0.59	.0068073	15 51 41.53	16 20.59	16 24.33	59 52.67	60 6.39
25	121 44 18.8	0.51	0.0067653	15 47 45.62	16 27.14	16 28.94	60 16.67	60 23.27
26	122 41 39.7	0.39	.0067207	15 43 49.71	16 29.73	16 29.52	60 26.16	60 25.40
27	123 39 1.1	0.27	.0066735	15 39 53.80	16 28.37	16 26.36	60 21.19	60 13.80
28	124 36 23.1	S. 0.13	0.0066240	15 35 57.89	16 23.56	16 20.12	60 3.56	59 50.94
29	125 33 45.6	N. 0.02	.0065722	15 32 1.99	16 16.13	16 11.72	59 36.31	59 20.13
30	126 31 8.5	0.15	.0065182	15 28 6.08	16 6.99	16 2.05	59 2.81	58 44.74
31	127 28 32.0	0.27	.0064623	15 24 10.17	15 57.00	15 51.91	58 26.22	58 7.58
32	128 25 56.0	N. 0.38	0.0064046	15 20 14.26	15 46.86	15 41.86	57 49.03	57 30.74

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.	Noon.	Upper.	Lower.
1	182° 53' 49"·1	189° 56' 30"·9	S. 0° 4' 39"·3	N. 0° 32' 37"·3	d 6·32	h m 5 47·5	h m 18 13·3
2	196 57 10·0	203 55 43·5	N. 1 9 13·1	1 44 35·1	7·32	6 39·1	19 5·0
3	210 52 9·3	217 46 24·8	2 18 12·1	2 49 35·4	8·32	7 31·1	19 57·3
4	224 38 27·1	231 28 11·7	3 18 19·2	3 44 1·0	9·32	8 23·7	20 50·3
5	238 15 32·9	245 0 22·6	4 6 21·6	4 25 5·6	10·32	9 17·0	21 43·8
6	251 42 32·1	258 21 51·1	4 40 1·3	4 51 0·7	11·32	10 10·5	22 37·2
7	264 58 9·0	271 31 14·8	4 57 59·9	5 0 59·1	12·32	11 3·8	23 30·0
8	278 0 58·9	284 27 13·3	5 0 1·3	4 55 13·6	13·32	11 55·8	* *
9	290 49 51·9	297 8 51·8	4 46 45·4	4 34 49·3	14·32	12 46·1	0 21·2
10	303 24 13·5	309 36 1·3	4 19 39·4	4 1 31·5	15·32	13 34·3	1 10·5
11	315 44 23·6	321 49 32·7	3 40 42·9	3 17 31·2	16·32	14 20·3	1 57·5
12	327 51 45·4	333 51 22·4	2 52 14·9	2 25 12·0	17·32	15 4·5	2 42·6
13	339 48 47·9	345 44 30·2	1 56 41·1	1 26 59·9	18·32	15 47·5	3 26·1
14	351 38 59·9	357 32 51·5	N. 0 56 26·3	N. 0 25 17·7	19·32	16 29·8	4 8·7
15	3 26 41·1	9 21 6·9	S. 0 6 8·5	S. 0 37 35·1	20·32	17 12·1	4 50·9
16	15 16 48·7	21 14 26·8	1 8 44·8	1 39 20·0	21·32	17 55·3	5 33·6
17	27 14 42·4	33 18 15·5	2 9 2·8	2 37 34·4	22·32	18 40·1	6 17·5
18	39 25 45·3	45 37 48·9	3 4 35·6	3 29 46·1	23·32	19 27·2	7 3·4
19	51 55 0·3	58 17 49·3	3 52 44·9	4 13 10·4	24·32	20 17·1	7 51·8
20	64 46 40·3	71 21 51·1	4 30 40·3	4 44 52·7	25·32	21 9·9	8 43·1
21	78 3 32·0	84 51 44·4	4 55 26·1	5 2 0·3	26·32	22 5·3	9 37·3
22	91 46 20·4	98 47 1·8	5 4 17·9	5 2 4·8	27·32	23 2·5	10 33·7
23	105 53 20·6	113 4 39·6	4 55 11·5	4 43 34·3	28·32	* *	11 31·5
24	120 20 13·3	127 39 9·5	4 27 16·2	4 6 27·2	29·32	0 0·5	12 29·4
25	135 0 31·7	142 23 21·3	3 41 24·8	3 12 33·4	0·97	0 58·0	13 26·4
26	149 46 40·1	157 9 32·6	2 40 23·8	2 5 32·1	1·97	1 54·4	14 22·0
27	164 31 7·9	171 50 41·6	1 28 37·9	S. 0 50 23·1	2·97	2 49·3	15 16·3
28	179 7 36·0	186 21 21·7	S. 0 11 30·2	N. 0 27 19·1	3·97	3 43·0	16 9·5
29	193 31 36·1	200 38 4·1	N. 1 5 24·9	1 42 10·4	4·97	4 35·8	17 2·1
30	207 40 36·6	214 39 9·7	2 17 2·5	2 49 31·6	5·97	5 28·3	17 54·5
31	221 33 43·7	228 24 21·6	3 19 12·6	3 45 44·1	6·97	6 20·8	18 47·2
32	235 11 8·7	241 54 11·7	N. 4 8 49·0	N. 4 28 14·1	7·97	7 13·6	19 40·0

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in ro ^m .	Declination.	Var. in ro ^m .	Hour.	Right Ascension.	Var. in ro ^m .	Declination.	Var. in ro ^m .
SATURDAY 1.					MONDAY 3.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	12 10 30.55	22.432	S. 1 13 24.4	111.72	0	13 58 13.28	22.573	S. 9 37 12.5	94.33
1	12 12 45.12	22.425	1 24 34.4	111.61	1	14 0 28.75	22.583	9 46 36.7	93.73
2	12 14 59.65	22.420	1 35 43.7	111.48	2	14 2 44.28	22.593	9 55 57.3	93.13
3	12 17 14.16	22.417	1 46 52.1	111.33	3	14 4 59.87	22.603	10 5 14.2	92.51
4	12 19 28.65	22.413	1 57 59.7	111.18	4	14 7 15.52	22.613	10 14 27.4	91.88
5	12 21 43.11	22.408	2 9 6.3	111.02	5	14 9 31.23	22.623	10 23 36.8	91.24
6	12 23 57.55	22.405	2 20 11.9	110.85	6	14 11 47.00	22.634	10 32 42.3	90.60
7	12 26 11.97	22.402	2 31 16.5	110.67	7	14 14 2.84	22.645	10 41 44.0	89.95
8	12 28 26.37	22.399	2 42 19.9	110.47	8	14 16 18.74	22.656	10 50 41.7	89.29
9	12 30 40.76	22.398	2 53 22.1	110.26	9	14 18 34.71	22.668	10 59 35.5	88.62
10	12 32 55.14	22.395	3 4 23.0	110.04	10	14 20 50.75	22.678	11 8 25.2	87.94
11	12 35 9.50	22.393	3 15 22.6	109.82	11	14 23 6.85	22.689	11 17 10.8	87.26
12	12 37 23.86	22.393	3 26 20.8	109.58	12	14 25 23.02	22.700	11 25 52.3	86.57
13	12 39 38.22	22.393	3 37 17.6	109.33	13	14 27 39.25	22.712	11 34 29.6	85.86
14	12 41 52.57	22.392	3 48 12.8	109.08	14	14 29 55.56	22.723	11 43 2.6	85.15
15	12 44 6.92	22.392	3 59 6.5	108.81	15	14 32 11.93	22.734	11 51 31.4	84.43
16	12 46 21.27	22.393	4 9 58.5	108.53	16	14 34 28.37	22.746	11 59 55.8	83.71
17	12 48 35.63	22.394	4 20 48.8	108.24	17	14 36 44.88	22.758	12 8 15.9	82.98
18	12 50 50.00	22.395	4 31 37.4	107.94	18	14 39 1.46	22.769	12 16 31.5	82.23
19	12 53 4.37	22.396	4 42 24.1	107.63	19	14 41 18.11	22.781	12 24 42.6	81.48
20	12 55 18.75	22.398	4 53 8.9	107.30	20	14 43 34.83	22.793	12 32 49.2	80.72
21	12 57 33.14	22.400	5 3 51.7	106.98	21	14 45 51.62	22.804	12 40 51.2	79.96
22	12 59 47.55	22.403	5 14 32.6	106.64	22	14 48 8.48	22.816	12 48 48.7	79.18
23	13 2 1.97	22.405	S. 5 25 11.4	106.28	23	14 50 25.41	22.828	S. 12 56 41.4	78.40
SUNDAY 2.					TUESDAY 4.				
0	13 4 16.41	22.408	S. 5 35 48.0	105.92	0	14 52 42.41	22.839	S. 13 4 29.5	77.62
1	13 6 30.87	22.412	5 46 22.4	105.55	1	14 54 59.48	22.850	13 12 12.8	76.82
2	13 8 45.35	22.416	5 56 54.6	105.17	2	14 57 16.61	22.862	13 19 51.3	76.01
3	13 10 59.86	22.421	6 7 24.5	104.78	3	14 59 33.82	22.873	13 27 24.9	75.20
4	13 13 14.40	22.425	6 17 52.0	104.38	4	15 1 51.09	22.884	13 34 53.7	74.39
5	13 15 28.96	22.430	6 28 17.0	103.96	5	15 4 8.43	22.896	13 42 17.6	73.56
6	13 17 43.56	22.435	6 38 39.5	103.54	6	15 6 25.84	22.908	13 49 36.4	72.73
7	13 19 58.18	22.440	6 48 59.5	103.12	7	15 8 43.32	22.918	13 56 50.3	71.90
8	13 22 12.84	22.446	6 59 16.9	102.68	8	15 11 0.86	22.928	14 3 59.2	71.05
9	13 24 27.53	22.452	7 9 31.6	102.23	9	15 13 18.46	22.939	14 11 2.9	70.19
10	13 26 42.26	22.458	7 19 43.6	101.77	10	15 15 36.13	22.951	14 18 1.5	69.34
11	13 28 57.03	22.465	7 29 52.8	101.29	11	15 17 53.87	22.962	14 24 55.0	68.48
12	13 31 11.84	22.472	7 39 59.1	100.82	12	15 20 11.67	22.972	14 31 43.2	67.60
13	13 33 26.69	22.479	7 50 2.6	100.33	13	15 22 29.53	22.983	14 38 26.2	66.73
14	13 35 41.59	22.487	8 0 3.0	99.83	14	15 24 47.46	22.993	14 45 3.9	65.84
15	13 37 56.53	22.494	8 10 0.5	99.32	15	15 27 5.44	23.003	14 51 36.3	64.95
16	13 40 11.52	22.503	8 19 54.9	98.80	16	15 29 23.49	23.013	14 58 3.3	64.06
17	13 42 26.56	22.511	8 29 46.1	98.28	17	15 31 41.59	23.022	15 4 25.0	63.16
18	13 44 41.65	22.519	8 39 34.2	97.74	18	15 33 59.75	23.032	15 10 41.2	62.24
19	13 46 56.79	22.528	8 49 19.0	97.19	19	15 36 17.97	23.041	15 16 51.9	61.33
20	13 49 11.98	22.536	8 59 0.5	96.64	20	15 38 36.24	23.049	15 22 57.2	60.42
21	13 51 27.22	22.545	9 8 38.7	96.08	21	15 40 54.56	23.058	15 28 56.9	59.49
22	13 53 42.52	22.554	9 18 13.4	95.50	22	15 43 12.93	23.067	15 34 51.1	58.57
23	13 55 57.87	22.563	9 27 44.7	94.92	23	15 45 31.36	23.075	15 40 39.7	57.63
24	13 58 13.28	22.573	S. 9 37 12.5	94.33	24	15 47 49.83	23.083	S. 15 46 22.6	56.68

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 5.					FRIDAY 7.				
	h m s	s				h m s	s		
0	15 47 49.83	23.083	S. 15 46 22.0	56.68	0	17 38 52.25	23.018	S. 18 23 16.0	7.90
1	15 50 8.35	23.091	15 51 59.9	55.74	1	17 41 10.31	23.004	18 24 0.3	6.87
2	15 52 26.92	23.098	15 57 31.5	54.79	2	17 43 28.30	22.992	18 24 38.4	5.83
3	15 54 45.53	23.105	16 2 57.4	53.83	3	17 45 46.21	22.978	18 25 10.2	4.78
4	15 57 4.18	23.113	16 8 17.5	52.88	4	17 48 4.03	22.963	18 25 35.8	3.75
5	15 59 22.88	23.119	16 13 31.9	51.92	5	17 50 21.77	22.948	18 25 55.2	2.73
6	16 1 41.61	23.125	16 18 40.5	50.94	6	17 52 39.41	22.933	18 26 8.5	1.69
7	16 4 0.38	23.131	16 23 43.2	49.97	7	17 54 56.96	22.918	18 26 15.5	0.66
8	16 6 19.18	23.136	16 28 40.1	48.99	8	17 57 14.42	22.902	18 26 16.4	0.37
9	16 8 38.01	23.142	16 33 31.1	48.02	9	17 59 31.78	22.885	18 26 11.1	1.39
10	16 10 56.88	23.147	16 38 16.3	47.03	10	18 1 49.04	22.868	18 25 59.7	2.41
11	16 13 15.77	23.151	16 42 55.5	46.03	11	18 4 6.19	22.849	18 25 42.2	3.43
12	16 15 34.69	23.156	16 47 28.7	45.04	12	18 6 23.23	22.831	18 25 18.5	4.45
13	16 17 53.64	23.160	16 51 56.0	44.05	13	18 8 40.16	22.813	18 24 48.8	5.46
14	16 20 12.61	23.163	16 56 17.3	43.05	14	18 10 56.98	22.794	18 24 13.0	6.48
15	16 22 31.60	23.166	17 0 32.6	42.04	15	18 13 13.69	22.774	18 23 31.1	7.48
16	16 24 50.60	23.168	17 4 41.8	41.03	16	18 15 30.27	22.754	18 22 43.2	8.48
17	16 27 9.62	23.171	17 8 45.0	40.03	17	18 17 46.74	22.734	18 21 49.3	9.48
18	16 29 28.65	23.173	17 12 42.2	39.02	18	18 20 3.08	22.713	18 20 49.4	10.48
19	16 31 47.69	23.174	17 16 33.2	38.00	19	18 22 19.29	22.691	18 19 43.5	11.48
20	16 34 6.74	23.176	17 20 18.2	36.98	20	18 24 35.37	22.669	18 18 31.6	12.48
21	16 36 25.80	23.177	17 23 57.0	35.96	21	18 26 51.32	22.647	18 17 13.8	13.46
22	16 38 44.86	23.176	17 27 29.7	34.93	22	18 29 7.14	22.624	18 15 50.1	14.44
23	16 41 3.91	23.176	S. 17 30 56.2	33.91	23	18 31 22.81	22.601	S. 18 14 20.5	15.43
THURSDAY 6.					SATURDAY 8.				
0	16 43 22.97	23.176	S. 17 34 16.6	32.88	0	18 33 38.35	22.578	S. 18 12 45.0	16.40
1	16 45 42.02	23.174	17 37 30.8	31.85	1	18 35 53.74	22.553	18 11 3.7	17.38
2	16 48 1.06	23.173	17 40 38.8	30.82	2	18 38 8.99	22.530	18 9 16.5	18.34
3	16 50 20.09	23.171	17 43 40.6	29.78	3	18 40 24.10	22.505	18 7 23.6	19.30
4	16 52 39.11	23.168	17 46 36.2	28.75	4	18 42 39.05	22.479	18 5 24.9	20.27
5	16 54 58.11	23.166	17 49 25.6	27.72	5	18 44 53.85	22.453	18 3 20.4	21.22
6	16 57 17.10	23.163	17 52 8.8	26.67	6	18 47 8.49	22.428	18 1 10.3	22.17
7	16 59 36.06	23.158	17 54 45.7	25.63	7	18 49 22.98	22.402	17 58 54.4	23.12
8	17 1 54.99	23.153	17 57 16.4	24.60	8	18 51 37.31	22.375	17 56 32.9	24.05
9	17 4 13.90	23.149	17 59 40.9	23.55	9	18 53 51.48	22.348	17 54 5.8	24.99
10	17 6 32.78	23.144	18 1 59.0	22.51	10	18 56 5.49	22.321	17 51 33.0	25.92
11	17 8 51.63	23.138	18 4 11.0	21.48	11	18 58 19.33	22.293	17 48 54.7	26.84
12	17 11 10.44	23.132	18 6 16.7	20.43	12	19 0 33.00	22.264	17 46 10.9	27.77
13	17 13 29.21	23.125	18 8 16.1	19.38	13	19 2 46.50	22.236	17 43 21.5	28.68
14	17 15 47.94	23.118	18 10 9.2	18.33	14	19 4 59.83	22.208	17 40 26.7	29.58
15	17 18 6.62	23.110	18 11 56.1	17.29	15	19 7 12.99	22.178	17 37 26.5	30.49
16	17 20 25.26	23.102	18 13 36.7	16.24	16	19 9 25.97	22.149	17 34 20.8	31.40
17	17 22 43.84	23.093	18 15 11.0	15.20	17	19 11 38.78	22.119	17 31 9.7	32.29
18	17 25 2.37	23.083	18 16 39.1	14.16	18	19 13 51.40	22.089	17 27 53.3	33.18
19	17 27 20.84	23.074	18 18 0.9	13.11	19	19 16 3.85	22.060	17 24 31.6	34.05
20	17 29 39.26	23.064	18 19 16.4	12.07	20	19 18 16.12	22.029	17 21 4.7	34.93
21	17 31 57.61	23.053	18 20 25.7	11.03	21	19 20 28.20	21.998	17 17 32.5	35.81
22	17 34 15.89	23.041	18 21 28.7	9.98	22	19 22 40.09	21.967	17 13 55.0	36.68
23	17 36 34.10	23.030	18 22 25.5	8.94	23	19 24 51.80	21.936	17 10 12.4	37.53
24	17 38 52.25	23.018	S. 18 23 16.0	7.90	24	19 27 3.32	21.904	S. 17 6 24.7	38.38

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 9.					TUESDAY 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	19 27 3.32	21.904	S. 17 6 24.7	38.38	0	21 8 20.32	20.292	S. 12 36 25.5	71.48
1	19 29 14.65	21.873	17 2 31.9	39.23	1	21 10 21.97	20.260	12 29 15.0	72.00
2	19 31 25.79	21.841	16 58 34.0	40.07	2	21 12 23.44	20.228	12 22 1.5	72.50
3	19 33 36.74	21.808	16 54 31.1	40.90	3	21 14 24.71	20.197	12 14 45.0	73.01
4	19 35 47.49	21.776	16 50 23.2	41.73	4	21 16 25.80	20.165	12 7 25.4	73.52
5	19 37 58.05	21.744	16 46 10.3	42.55	5	21 18 26.69	20.133	12 0 2.8	74.01
6	19 40 8.42	21.712	16 41 52.6	43.37	6	21 20 27.40	20.103	11 52 37.3	74.48
7	19 42 18.59	21.678	16 37 29.9	44.18	7	21 22 27.92	20.071	11 45 9.0	74.96
8	19 44 28.55	21.644	16 33 2.5	44.98	8	21 24 28.25	20.040	11 37 37.8	75.44
9	19 46 38.32	21.612	16 28 30.2	45.78	9	21 26 28.40	20.010	11 30 3.7	75.91
10	19 48 47.90	21.579	16 23 53.2	46.57	10	21 28 28.37	19.980	11 22 26.9	76.36
11	19 50 57.27	21.545	16 19 11.4	47.35	11	21 30 28.16	19.950	11 14 47.4	76.81
12	19 53 6.44	21.512	16 14 25.0	48.12	12	21 32 27.77	19.920	11 7 5.2	77.26
13	19 55 15.41	21.478	16 9 34.0	48.89	13	21 34 27.20	19.891	10 59 20.3	77.70
14	19 57 24.17	21.443	16 4 38.3	49.66	14	21 36 26.46	19.862	10 51 32.8	78.13
15	19 59 32.73	21.410	15 59 38.1	50.41	15	21 38 25.54	19.833	10 43 42.8	78.55
16	20 1 41.09	21.376	15 54 33.4	51.16	16	21 40 24.45	19.803	10 35 50.2	78.97
17	20 3 49.24	21.342	15 49 24.2	51.91	17	21 42 23.18	19.775	10 27 55.2	79.38
18	20 5 57.19	21.308	15 44 10.5	52.64	18	21 44 21.75	19.748	10 19 57.7	79.78
19	20 8 4.93	21.273	15 38 52.5	53.37	19	21 46 20.15	19.720	10 11 57.8	80.18
20	20 10 12.47	21.239	15 33 30.1	54.09	20	21 48 18.39	19.692	10 3 55.5	80.58
21	20 12 19.80	21.205	15 28 3.4	54.81	21	21 50 16.46	19.664	9 55 50.9	80.96
22	20 14 26.93	21.171	15 22 32.4	55.52	22	21 52 14.36	19.638	9 47 44.0	81.34
23	20 16 33.85	21.136	S. 15 16 57.2	56.22	23	21 54 12.11	19.612	S. 9 39 34.8	81.71
MONDAY 10.					WEDNESDAY 12.				
0	20 18 40.56	21.102	S. 15 11 17.8	56.91	0	21 56 9.70	19.585	S. 9 31 23.5	82.08
1	20 20 47.07	21.068	15 5 34.3	57.59	1	21 58 7.13	19.558	9 23 9.9	82.43
2	20 22 53.37	21.033	14 59 46.7	58.28	2	22 0 4.40	19.533	9 14 54.3	82.78
3	20 24 59.47	20.998	14 53 55.0	58.95	3	22 2 1.53	19.508	9 6 36.5	83.13
4	20 27 5.35	20.964	14 47 59.3	59.62	4	22 3 58.50	19.483	8 58 16.7	83.48
5	20 29 11.04	20.930	14 41 59.6	60.28	5	22 5 55.32	19.458	8 49 54.8	83.81
6	20 31 16.51	20.895	14 35 56.0	60.93	6	22 7 52.00	19.434	8 41 31.0	84.13
7	20 33 21.78	20.862	14 29 48.5	61.58	7	22 9 48.53	19.410	8 33 5.2	84.46
8	20 35 26.85	20.827	14 23 37.1	62.22	8	22 11 44.92	19.387	8 24 37.5	84.78
9	20 37 31.70	20.793	14 17 21.9	62.84	9	22 13 41.17	19.363	8 16 7.9	85.08
10	20 39 36.36	20.759	14 11 3.0	63.47	10	22 15 37.28	19.341	8 7 36.5	85.38
11	20 41 40.81	20.724	14 4 40.3	64.08	11	22 17 33.26	19.318	7 59 3.3	85.68
12	20 43 45.05	20.690	13 58 14.0	64.70	12	22 19 29.10	19.295	7 50 28.4	85.97
13	20 45 49.09	20.657	13 51 43.9	65.31	13	22 21 24.80	19.273	7 41 51.7	86.26
14	20 47 52.93	20.623	13 45 10.3	65.89	14	22 23 20.38	19.253	7 33 13.3	86.53
15	20 49 56.57	20.589	13 38 33.2	66.48	15	22 25 15.83	19.232	7 24 33.3	86.81
16	20 52 0.00	20.556	13 31 52.5	67.07	16	22 27 11.16	19.211	7 15 51.6	87.08
17	20 54 3.24	20.522	13 25 8.3	67.65	17	22 29 6.36	19.191	7 7 8.4	87.33
18	20 56 6.27	20.488	13 18 20.7	68.22	18	22 31 1.45	19.171	6 58 23.6	87.58
19	20 58 9.10	20.456	13 11 29.7	68.78	19	22 32 56.41	19.151	6 49 37.4	87.83
20	21 0 11.74	20.423	13 4 35.4	69.33	20	22 34 51.26	19.133	6 40 49.6	88.08
21	21 2 14.18	20.390	12 57 37.8	69.88	21	22 36 46.00	19.113	6 32 0.4	88.32
22	21 4 16.42	20.358	12 50 36.9	70.42	22	22 38 40.62	19.095	6 23 9.8	88.55
23	21 6 18.47	20.325	12 43 32.8	70.95	23	22 40 35.14	19.078	6 14 17.8	88.78
24	21 8 20.32	20.292	S. 12 36 25.5	71.48	24	22 42 29.55	19.060	S. 6 5 24.5	88.99

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	
THURSDAY 13.					SATURDAY 15.					
	h m s	s	S. ° ' "	88° 99'		h m s	s	N. ° ' "	93° 13'	
0	22 42 29	55	19.060	S. 6 5 24.5	88.99	0 12 48	38	18.749	N. 1 16 33.7	93.13
1	22 44 23	86	19.043	5 56 29.9	89.20	1 0 14	40.89	18.754	1 25 52.3	93.08
2	22 46 18	07	19.027	5 47 34.1	89.41	2 0 16	33.43	18.759	1 35 10.6	93.03
3	22 48 12	18	19.010	5 38 37.0	89.62	3 0 18	26.00	18.766	1 44 28.7	92.98
4	22 50 6	19	18.994	5 29 38.7	89.82	4 0 20	18.62	18.773	1 53 46.4	92.92
5	22 52 0	11	18.979	5 20 39.2	90.01	5 0 22	11.27	18.779	2 3 3.7	92.86
6	22 53 53	94	18.964	5 11 38.6	90.19	6 0 24	3.97	18.788	2 12 20.7	92.79
7	22 55 47	68	18.950	5 2 36.9	90.37	7 0 25	56.72	18.795	2 21 37.2	92.72
8	22 57 41	34	18.936	4 53 34.2	90.54	8 0 27	49.51	18.803	2 30 53.3	92.64
9	22 59 34	91	18.922	4 44 30.4	90.71	9 0 29	42.36	18.813	2 40 8.9	92.56
10	23 1 28	40	18.909	4 35 25.7	90.88	10 0 31	35.27	18.823	2 49 24.0	92.47
11	23 3 21	82	18.896	4 26 19.9	91.03	11 0 33	28.23	18.833	2 58 38.5	92.38
12	23 5 15	15	18.883	4 17 13.3	91.18	12 0 35	21.26	18.843	3 7 52.5	92.28
13	23 7 8	42	18.872	4 8 5.7	91.33	13 0 37	14.35	18.854	3 17 5.8	92.17
14	23 9 1	61	18.860	3 58 57.3	91.47	14 0 39	7.51	18.866	3 26 18.5	92.06
15	23 10 54	74	18.849	3 49 48.1	91.60	15 0 41	0.74	18.878	3 35 30.5	91.94
16	23 12 47	80	18.838	3 40 38.1	91.73	16 0 42	54.05	18.891	3 44 41.8	91.83
17	23 14 40	80	18.829	3 31 27.3	91.87	17 0 44	47.43	18.903	3 53 52.4	91.71
18	23 16 33	75	18.819	3 22 15.7	91.98	18 0 46	40.89	18.918	4 3 2.3	91.58
19	23 18 26	63	18.809	3 13 3.5	92.09	19 0 48	34.44	18.932	4 12 11.3	91.43
20	23 20 19	46	18.801	3 3 50.6	92.20	20 0 50	28.07	18.946	4 21 19.5	91.29
21	23 22 12	24	18.793	2 54 37.1	92.31	21 0 52	21.79	18.961	4 30 26.8	91.14
22	23 24 4	98	18.786	2 45 22.9	92.41	22 0 54	15.60	18.976	4 39 33.2	90.99
23	23 25 57	67	18.778	S. 2 36 8.2	92.49	23 0 56	9.50	18.993	N. 4 48 38.7	90.83
FRIDAY 14.					SUNDAY 16.					
	h m s	s	S. ° ' "	92° 58'		h m s	s	N. ° ' "	90° 67'	
0	23 27 50	31	18.770	S. 2 26 53.0	92.58	0 0 58	3.51	19.009	N. 4 57 43.2	90.67
1	23 29 42	91	18.764	2 17 37.2	92.67	1 0 59	57.61	19.026	5 6 46.7	90.50
2	23 31 35	48	18.759	2 8 21.0	92.74	2 1 1	51.82	19.043	5 15 49.2	90.33
3	23 33 28	02	18.753	1 59 4.3	92.82	3 1 3	46.13	19.061	5 24 50.7	90.15
4	23 35 20	52	18.748	1 49 47.2	92.88	4 1 5	40.55	19.080	5 33 51.0	89.96
5	23 37 12	99	18.743	1 40 29.7	92.94	5 1 7	35.09	19.099	5 42 50.2	89.78
6	23 39 5	44	18.739	1 31 11.9	92.99	6 1 9	29.74	19.118	5 51 48.3	89.58
7	23 40 57	86	18.736	1 21 53.8	93.05	7 1 11	24.51	19.138	6 0 45.1	89.38
8	23 42 50	27	18.733	1 12 35.3	93.10	8 1 13	19.40	19.158	6 9 40.8	89.17
9	23 44 42	66	18.730	1 3 16.6	93.13	9 1 15	14.41	19.179	6 18 35.1	88.95
10	23 46 35	03	18.728	0 53 57.7	93.17	10 1 17	9.55	19.201	6 27 28.2	88.74
11	23 48 27	39	18.727	0 44 38.6	93.20	11 1 19	4.82	19.223	6 36 20.0	88.51
12	23 50 19	75	18.726	0 35 19.3	93.23	12 1 21	0.23	19.246	6 45 10.3	88.28
13	23 52 12	10	18.724	0 25 59.9	93.24	13 1 22	55.77	19.268	6 53 59.3	88.05
14	23 54 4	44	18.723	0 16 40.4	93.26	14 1 24	51.45	19.292	7 2 46.9	87.80
15	23 55 56	78	18.724	S. 0 7 20.8	93.27	15 1 26	47.27	19.315	7 11 32.9	87.55
16	23 57 49	13	18.726	N. 0 1 58.8	93.28	16 1 28	43.23	19.339	7 20 17.5	87.31
17	23 59 41	49	18.727	0 11 18.5	93.28	17 1 30	39.34	19.364	7 29 0.6	87.04
18	0 1 33	85	18.728	0 20 38.1	93.27	18 1 32	35.60	19.390	7 37 42.0	86.78
19	0 3 26	23	18.731	0 29 57.7	93.26	19 1 34	32.02	19.416	7 46 21.9	86.51
20	0 5 18	62	18.733	0 39 17.2	93.23	20 1 36	28.59	19.442	7 55 0.1	86.23
21	0 7 11	02	18.736	0 48 36.5	93.22	21 1 38	25.32	19.468	8 3 36.6	85.94
22	0 9 3	45	18.740	0 57 55.8	93.19	22 1 40	22.21	19.495	8 12 11.4	85.65
23	0 10 55	90	18.744	1 7 14.8	93.16	23 1 42	19.26	19.523	8 20 44.4	85.36
24	0 12 48	38	18.749	N. 1 16 33.7	93.13	24 1 44	16.48	19.551	N. 8 29 15.7	85.06

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
MONDAY 17.					WEDNESDAY 19.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	1 44 16.48	19.551	N. 8 29 15.7	85.06	0	3 22 7.74	21.358	N. 14 30 5.6	62.53
1	1 46 13.87	19.579	8 37 45.1	84.75	1	3 24 16.02	21.403	14 36 18.8	61.88
2	1 48 11.43	19.608	8 46 12.7	84.43	2	3 26 24.58	21.448	14 42 28.1	61.22
3	1 50 9.16	19.638	8 54 38.3	84.11	3	3 28 33.40	21.493	14 48 33.4	60.55
4	1 52 7.08	19.668	9 3 2.0	83.79	4	3 30 42.50	21.539	14 54 34.7	59.87
5	1 54 5.17	19.698	9 11 23.8	83.46	5	3 32 51.87	21.585	15 0 31.8	59.18
6	1 56 3.45	19.728	9 19 43.5	83.11	6	3 35 1.52	21.631	15 6 24.9	58.49
7	1 58 1.91	19.759	9 28 1.1	82.77	7	3 37 11.44	21.676	15 12 13.7	57.78
8	2 0 0.56	19.791	9 36 16.7	82.42	8	3 39 21.63	21.722	15 17 58.3	57.08
9	2 1 59.40	19.823	9 44 30.1	82.05	9	3 41 32.10	21.768	15 23 38.6	56.36
10	2 3 58.43	19.855	9 52 41.3	81.69	10	3 43 42.85	21.815	15 29 14.6	55.63
11	2 5 57.66	19.888	10 0 50.4	81.32	11	3 45 53.88	21.861	15 34 46.2	54.89
12	2 7 57.09	19.922	10 8 57.2	80.93	12	3 48 5.18	21.908	15 40 13.3	54.15
13	2 9 56.72	19.955	10 17 1.6	80.55	13	3 50 16.77	21.954	15 45 36.0	53.40
14	2 11 56.55	19.989	10 25 3.8	80.17	14	3 52 28.63	22.000	15 50 54.1	52.64
15	2 13 56.59	20.024	10 33 3.6	79.77	15	3 54 40.77	22.047	15 56 7.7	51.87
16	2 15 56.84	20.059	10 41 1.0	79.36	16	3 56 53.19	22.093	16 1 16.6	51.09
17	2 17 57.30	20.094	10 48 55.9	78.94	17	3 59 5.89	22.140	16 6 20.8	50.31
18	2 19 57.97	20.129	10 56 48.3	78.53	18	4 1 18.87	22.187	16 11 20.3	49.52
19	2 21 58.85	20.166	11 4 38.2	78.10	19	4 3 32.13	22.233	16 16 15.0	48.71
20	2 23 59.96	20.203	11 12 25.5	77.67	20	4 5 45.67	22.280	16 21 4.8	47.90
21	2 26 1.28	20.239	11 20 10.2	77.23	21	4 7 59.49	22.327	16 25 49.8	47.08
22	2 28 2.83	20.277	11 27 52.2	76.78	22	4 10 13.59	22.373	16 30 29.8	46.26
23	2 30 4.60	20.314	N. 11 35 31.5	76.33	23	4 12 27.96	22.419	N. 16 35 4.9	45.43
TUESDAY 18.					THURSDAY 20.				
0	2 32 6.60	20.352	N. 11 43 8.1	75.86	0	4 14 42.62	22.467	N. 16 39 34.9	44.58
1	2 34 8.82	20.390	11 50 41.8	75.39	1	4 16 57.56	22.513	16 43 59.8	43.73
2	2 36 11.28	20.429	11 58 12.8	74.92	2	4 19 12.77	22.558	16 48 19.6	42.87
3	2 38 13.97	20.468	12 5 40.8	74.43	3	4 21 28.25	22.604	16 52 34.2	42.00
4	2 40 16.90	20.508	12 13 6.0	73.95	4	4 23 44.02	22.651	16 56 43.6	41.13
5	2 42 20.06	20.548	12 20 28.2	73.44	5	4 26 0.06	22.696	17 0 47.7	40.24
6	2 44 23.47	20.588	12 27 47.3	72.93	6	4 28 16.37	22.742	17 4 46.5	39.35
7	2 46 27.11	20.628	12 35 3.4	72.43	7	4 30 32.96	22.788	17 8 39.9	38.44
8	2 48 31.00	20.669	12 42 16.4	71.91	8	4 32 49.82	22.833	17 12 27.8	37.53
9	2 50 35.14	20.710	12 49 26.3	71.38	9	4 35 6.95	22.878	17 16 10.3	36.62
10	2 52 39.52	20.751	12 56 33.0	70.84	10	4 37 24.35	22.923	17 19 47.3	35.69
11	2 54 44.15	20.793	13 3 36.4	70.30	11	4 39 42.02	22.968	17 23 18.6	34.76
12	2 56 49.03	20.834	13 10 36.6	69.75	12	4 41 59.96	23.012	17 26 44.4	33.83
13	2 58 54.16	20.877	13 17 33.4	69.19	13	4 44 18.16	23.056	17 30 4.5	32.88
14	3 0 59.55	20.919	13 24 26.9	68.63	14	4 46 36.63	23.101	17 33 18.9	31.92
15	3 3 5.19	20.962	13 31 16.9	68.05	15	4 48 55.37	23.144	17 36 27.5	30.96
16	3 5 11.09	21.005	13 38 3.5	67.47	16	4 51 14.36	23.188	17 39 30.4	29.99
17	3 7 17.25	21.048	13 44 46.5	66.88	17	4 53 33.62	23.231	17 42 27.4	29.00
18	3 9 23.67	21.093	13 51 26.0	66.28	18	4 55 53.13	23.273	17 45 18.4	28.02
19	3 11 30.36	21.136	13 58 1.9	65.68	19	4 58 12.90	23.316	17 48 3.6	27.03
20	3 13 37.30	21.179	14 4 34.1	65.07	20	5 0 32.92	23.358	17 50 42.8	26.03
21	3 15 44.51	21.224	14 11 2.7	64.45	21	5 2 53.20	23.400	17 53 15.9	25.02
22	3 17 51.99	21.268	14 17 27.5	63.81	22	5 5 13.72	23.442	17 55 43.0	24.00
23	3 19 59.73	21.313	14 23 48.4	63.18	23	5 7 34.50	23.483	17 58 3.9	22.98
24	3 22 7.74	21.358	N. 14 30 5.6	62.53	24	5 9 55.52	23.523	N. 18 0 18.7	21.95

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 21.					SUNDAY 23.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	5 9 55.52	23.523	18 0 18.7	21.95	0	7 6 31.12	24.808	17 36 50.5	33.04
1	5 12 16.78	23.563	18 2 27.3	20.92	1	7 9 0.00	24.818	17 33 28.6	34.23
2	5 14 38.28	23.604	18 4 29.7	19.88	2	7 11 28.93	24.826	17 29 59.7	35.42
3	5 17 0.03	23.644	18 6 25.8	18.83	3	7 13 57.91	24.834	17 26 23.6	36.62
4	5 19 22.01	23.683	18 8 15.6	17.77	4	7 16 26.94	24.842	17 22 40.3	37.80
5	5 21 44.22	23.721	18 9 59.0	16.70	5	7 18 56.01	24.848	17 18 50.0	38.98
6	5 24 6.66	23.759	18 11 36.0	15.63	6	7 21 25.12	24.855	17 14 52.6	40.16
7	5 26 29.33	23.797	18 13 6.6	14.56	7	7 23 54.27	24.860	17 10 48.1	41.33
8	5 28 52.22	23.834	18 14 30.7	13.48	8	7 26 23.44	24.863	17 6 36.6	42.51
9	5 31 15.34	23.871	18 15 48.3	12.39	9	7 28 52.63	24.868	17 2 18.0	43.68
10	5 33 38.67	23.907	18 16 59.4	11.30	10	7 31 21.85	24.871	16 57 52.4	44.85
11	5 36 2.22	23.943	18 18 3.9	10.19	11	7 33 51.08	24.873	16 53 19.8	46.02
12	5 38 25.98	23.978	18 19 1.7	9.08	12	7 36 20.32	24.874	16 48 40.2	47.18
13	5 40 49.95	24.013	18 19 52.9	7.98	13	7 38 49.57	24.875	16 43 53.7	48.33
14	5 43 14.13	24.047	18 20 37.5	6.87	14	7 41 18.82	24.875	16 39 0.2	49.48
15	5 45 38.51	24.080	18 21 15.3	5.74	15	7 43 48.07	24.875	16 33 59.9	50.63
16	5 48 3.09	24.113	18 21 46.4	4.62	16	7 46 17.32	24.873	16 28 52.7	51.78
17	5 50 27.86	24.145	18 22 10.7	3.48	17	7 48 46.55	24.871	16 23 38.6	52.92
18	5 52 52.83	24.177	18 22 28.2	2.35	18	7 51 15.77	24.868	16 18 17.7	54.04
19	5 55 17.98	24.208	18 22 38.9	1.22	19	7 53 44.97	24.865	16 12 50.1	55.17
20	5 57 43.32	24.238	18 22 42.8	0.07	20	7 56 14.15	24.862	16 7 15.7	56.29
21	6 0 8.83	24.268	18 22 39.7	1.08	21	7 58 43.31	24.857	16 1 34.6	57.41
22	6 2 34.53	24.297	18 22 29.8	2.23	22	8 1 12.43	24.851	15 55 46.8	58.52
23	6 5 0.46	24.325	N. 18 22 12.9	3.40	23	8 3 41.52	24.846	N. 15 49 52.4	59.62
SATURDAY 22.					MONDAY 24.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	6 7 26.43	24.353	N. 18 21 49.0	4.56	0	8 6 10.58	24.839	N. 15 43 51.4	60.72
1	6 9 52.63	24.381	18 21 18.2	5.72	1	8 8 39.59	24.832	15 37 43.8	61.81
2	6 12 19.00	24.408	18 20 40.4	6.89	2	8 11 8.56	24.823	15 31 29.7	62.89
3	6 14 45.52	24.433	18 19 55.5	8.06	3	8 13 37.47	24.815	15 25 9.1	63.97
4	6 17 12.19	24.458	18 19 3.7	9.23	4	8 16 6.34	24.807	15 18 42.1	65.03
5	6 19 39.01	24.483	18 18 4.7	10.42	5	8 18 35.15	24.796	15 12 8.7	66.10
6	6 22 5.98	24.506	18 16 58.7	11.58	6	8 21 3.89	24.786	15 5 28.9	67.15
7	6 24 33.08	24.528	18 15 45.7	12.77	7	8 23 32.58	24.776	14 58 42.9	68.19
8	6 27 0.32	24.552	18 14 25.5	13.96	8	8 26 1.20	24.764	14 51 50.6	69.23
9	6 29 27.70	24.573	18 12 58.2	15.14	9	8 28 29.75	24.753	14 44 52.1	70.26
10	6 31 55.20	24.594	18 11 23.8	16.33	10	8 30 58.23	24.740	14 37 47.5	71.28
11	6 34 22.83	24.614	18 9 42.2	17.53	11	8 33 26.63	24.728	14 30 36.7	72.29
12	6 36 50.57	24.633	18 7 53.5	18.71	12	8 35 54.96	24.714	14 23 20.0	73.29
13	6 39 18.43	24.652	18 5 57.7	19.90	13	8 38 23.20	24.700	14 15 57.2	74.29
14	6 41 46.40	24.670	18 3 54.7	21.10	14	8 40 51.36	24.686	14 8 28.5	75.28
15	6 44 14.47	24.688	18 1 44.5	22.29	15	8 43 19.43	24.671	14 0 53.9	76.25
16	6 46 42.65	24.704	17 59 27.2	23.48	16	8 45 47.41	24.656	13 53 13.5	77.21
17	6 49 10.92	24.719	17 57 2.7	24.68	17	8 48 15.30	24.641	13 45 27.4	78.17
18	6 51 39.28	24.734	17 54 31.0	25.88	18	8 50 43.10	24.624	13 37 35.5	79.12
19	6 54 7.73	24.748	17 51 52.2	27.07	19	8 53 10.79	24.608	13 29 38.0	80.05
20	6 56 36.26	24.762	17 49 6.2	28.27	20	8 55 38.39	24.591	13 21 34.9	80.97
21	6 59 4.87	24.774	17 46 13.0	29.47	21	8 58 5.88	24.573	13 13 26.3	81.88
22	7 1 33.55	24.786	17 43 12.6	30.66	22	9 0 33.27	24.556	13 5 12.3	82.79
23	7 4 2.30	24.798	17 40 5.1	31.84	23	9 3 0.55	24.538	12 56 52.8	83.69
24	7 6 31.12	24.808	N. 17 36 50.5	33.04	24	9 5 27.72	24.519	N. 12 48 28.0	84.57

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 25.					THURSDAY 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	9 5 27.72	24.519	N. 12 48 28.0	84.57	0	11 0 41.11	23.476	N. 4 44 0.6	112.26
1	9 7 54.78	24.501	12 39 57.9	85.44	1	11 3 1.90	23.456	4 32 46.3	112.51
2	9 10 21.73	24.482	12 31 22.7	86.30	2	11 5 22.58	23.436	4 21 30.5	112.75
3	9 12 48.56	24.463	12 22 42.3	87.15	3	11 7 43.13	23.415	4 10 13.3	112.97
4	9 15 15.28	24.443	12 13 56.9	87.99	4	11 10 3.56	23.396	3 58 54.9	113.18
5	9 17 41.87	24.423	12 5 6.4	88.82	5	11 12 23.88	23.377	3 47 35.2	113.38
6	9 20 8.35	24.403	11 56 11.0	89.63	6	11 14 44.08	23.357	3 36 14.4	113.56
7	9 22 34.70	24.382	11 47 10.8	90.43	7	11 17 4.16	23.337	3 24 52.5	113.73
8	9 25 0.93	24.362	11 38 5.8	91.22	8	11 19 24.12	23.318	3 13 29.7	113.88
9	9 27 27.04	24.341	11 28 56.1	92.00	9	11 21 43.98	23.300	3 2 6.0	114.02
10	9 29 53.02	24.319	11 19 41.8	92.77	10	11 24 3.72	23.282	2 50 41.5	114.15
11	9 32 18.87	24.298	11 10 22.9	93.53	11	11 26 23.36	23.264	2 39 16.2	114.27
12	9 34 44.59	24.277	11 0 59.5	94.28	12	11 28 42.89	23.246	2 27 50.3	114.36
13	9 37 10.19	24.255	10 51 31.6	95.01	13	11 31 2.31	23.228	2 16 23.9	114.45
14	9 39 35.65	24.233	10 41 59.4	95.72	14	11 33 21.62	23.210	2 4 56.9	114.52
15	9 42 0.98	24.211	10 32 23.0	96.42	15	11 35 40.83	23.194	1 53 29.6	114.58
16	9 44 26.18	24.189	10 22 42.4	97.12	16	11 37 59.95	23.178	1 42 1.9	114.64
17	9 46 51.25	24.167	10 12 57.6	97.80	17	11 40 18.96	23.160	1 30 33.9	114.68
18	9 49 16.18	24.143	10 3 8.8	98.46	18	11 42 37.87	23.144	1 19 5.8	114.69
19	9 51 40.97	24.121	9 53 16.1	99.11	19	11 44 56.69	23.128	1 7 37.6	114.70
20	9 54 5.63	24.099	9 43 19.5	99.76	20	11 47 15.41	23.113	0 56 9.4	114.70
21	9 56 30.16	24.077	9 33 19.0	100.39	21	11 49 34.04	23.098	0 44 41.2	114.69
22	9 58 54.55	24.053	9 23 14.8	101.00	22	11 51 52.58	23.083	0 33 13.1	114.66
23	10 1 18.80	24.031	N. 9 13 7.0	101.60	23	11 54 11.04	23.068	N. 0 21 45.3	114.62
WEDNESDAY 26.					FRIDAY 28.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	10 3 42.92	24.008	N. 9 2 55.6	102.19	0	11 56 29.40	23.053	N. 0 10 17.7	114.57
1	10 6 6.90	23.985	8 52 40.7	102.77	1	11 58 47.68	23.040	S. 0 1 9.5	114.49
2	10 8 30.74	23.963	8 42 22.4	103.33	2	12 1 5.88	23.026	0 12 36.2	114.42
3	10 10 54.45	23.939	8 32 0.8	103.88	3	12 3 23.99	23.013	0 24 2.5	114.33
4	10 13 18.01	23.916	8 21 35.9	104.42	4	12 5 42.03	23.000	0 35 28.1	114.22
5	10 15 41.44	23.894	8 11 7.8	104.93	5	12 7 59.99	22.987	0 46 53.1	114.11
6	10 18 4.74	23.871	8 0 36.7	105.44	6	12 10 17.87	22.974	0 58 17.4	113.98
7	10 20 27.89	23.848	7 50 2.5	105.94	7	12 12 35.68	22.963	1 9 40.9	113.84
8	10 22 50.91	23.826	7 39 25.4	106.42	8	12 14 53.42	22.950	1 21 3.5	113.68
9	10 25 13.80	23.803	7 28 45.5	106.88	9	12 17 11.08	22.938	1 32 25.1	113.52
10	10 27 36.55	23.780	7 18 2.8	107.34	10	12 19 28.68	22.928	1 43 45.7	113.34
11	10 29 59.16	23.758	7 7 17.4	107.78	11	12 21 46.21	22.917	1 55 5.2	113.16
12	10 32 21.64	23.735	6 56 29.4	108.21	12	12 24 3.68	22.907	2 6 23.6	112.96
13	10 34 43.98	23.713	6 45 38.9	108.62	13	12 26 21.09	22.896	2 17 40.7	112.74
14	10 37 6.19	23.691	6 34 46.0	109.02	14	12 28 38.43	22.886	2 28 56.5	112.52
15	10 39 28.27	23.668	6 23 50.7	109.41	15	12 30 55.72	22.877	2 40 10.9	112.28
16	10 41 50.21	23.646	6 12 53.1	109.78	16	12 33 12.95	22.868	2 51 23.9	112.03
17	10 44 12.02	23.625	6 1 53.4	110.13	17	12 35 30.13	22.859	3 2 35.3	111.78
18	10 46 33.71	23.603	5 50 51.5	110.48	18	12 37 47.26	22.850	3 13 45.2	111.51
19	10 48 55.26	23.582	5 39 47.6	110.81	19	12 40 4.33	22.842	3 24 53.4	111.23
20	10 51 16.68	23.560	5 28 41.8	111.13	20	12 42 21.36	22.834	3 35 59.9	110.93
21	10 53 37.98	23.539	5 17 34.1	111.43	21	12 44 38.34	22.826	3 47 4.6	110.63
22	10 55 59.15	23.518	5 6 24.6	111.72	22	12 46 55.27	22.819	3 58 7.5	110.32
23	10 58 20.19	23.497	4 55 13.4	112.00	23	12 49 12.17	22.813	4 9 8.4	109.98
24	11 0 41.11	23.476	N. 4 44 0.6	112.26	24	12 51 29.02	22.805	S. 4 20 7.3	109.65

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .		
SATURDAY 29.					MONDAY 31.						
	h m s	s	° ′ ″	″		h m s	s	° ′ ″	″		
0	12 51 29	02	22.805	S. 4 20 7.3	109.65	0	14 40 41	85	22.783	S. 12 8 45.0	82.18
1	12 53 45	83	22.798	4 31 4.2	109.31	1	14 42 58	55	22.786	12 16 55.8	81.41
2	12 56 2	60	22.793	4 41 59.0	108.95	2	14 45 15	28	22.790	12 25 1.9	80.63
3	12 58 19	34	22.788	4 52 51.6	108.58	3	14 47 32	03	22.793	12 33 3.3	79.84
4	13 0 36	05	22.782	5 3 41.9	108.19	4	14 49 48	80	22.797	12 41 0.0	79.04
5	13 2 52	72	22.777	5 14 29.9	107.81	5	14 52 5	59	22.801	12 48 51.8	78.24
6	13 5 9	37	22.773	5 25 15.6	107.41	6	14 54 22	41	22.805	12 56 38.9	77.44
7	13 7 25	99	22.768	5 35 58.8	106.99	7	14 56 39	25	22.808	13 4 21.1	76.63
8	13 9 42	58	22.763	5 46 39.5	106.57	8	14 58 56	11	22.812	13 11 58.4	75.81
9	13 11 59	14	22.759	5 57 17.7	106.14	9	15 1 12	99	22.815	13 19 30.8	74.98
10	13 14 15	69	22.756	6 7 53.2	105.69	10	15 3 29	89	22.819	13 26 58.2	74.14
11	13 16 32	21	22.752	6 18 26.0	105.24	11	15 5 46	82	22.823	13 34 20.5	73.31
12	13 18 48	71	22.748	6 28 56.1	104.78	12	15 8 3	77	22.828	13 41 37.9	72.48
13	13 21 5	19	22.746	6 39 23.4	104.32	13	15 10 20	75	22.831	13 48 50.2	71.62
14	13 23 21	66	22.744	6 49 47.9	103.83	14	15 12 37	74	22.834	13 55 57.3	70.76
15	13 25 38	12	22.742	7 0 9.4	103.33	15	15 14 54	76	22.838	14 2 59.3	69.91
16	13 27 54	56	22.739	7 10 27.9	102.83	16	15 17 11	80	22.842	14 9 56.2	69.04
17	13 30 10	99	22.738	7 20 43.3	102.33	17	15 19 28	86	22.845	14 16 47.8	68.17
18	13 32 27	41	22.736	7 30 55.8	101.81	18	15 21 45	94	22.848	14 23 34.2	67.29
19	13 34 43	82	22.735	7 41 5.1	101.28	19	15 24 3	04	22.852	14 30 15.3	66.40
20	13 37 0	23	22.734	7 51 11.1	100.73	20	15 26 20	16	22.855	14 36 51.0	65.52
21	13 39 16	63	22.733	8 1 13.9	100.18	21	15 28 37	30	22.858	14 43 21.5	64.63
22	13 41 33	02	22.733	8 11 13.3	99.63	22	15 30 54	46	22.862	14 49 46.6	63.73
23	13 43 49	42	22.733	S. 8 21 9.4	99.07	23	15 33 11	64	22.864	S. 14 56 6.3	62.83
SUNDAY 30.					TUESDAY, AUG. 1.						
0	13 46 5	81	22.732	S. 8 31 2.1	98.49	0	15 35 28	83	22.867	S. 15 2 20.5	61.92
1	13 48 22	20	22.733	8 40 51.3	97.90						
2	13 50 38	60	22.733	8 50 36.9	97.31						
3	13 52 54	99	22.733	9 0 19.0	96.71						
4	13 55 11	39	22.734	9 9 57.4	96.09						
5	13 57 27	80	22.735	9 19 32.1	95.48						
6	13 59 44	21	22.736	9 29 3.1	94.85						
7	14 2 0	63	22.738	9 38 30.3	94.21						
8	14 4 17	06	22.739	9 47 53.6	93.56						
9	14 6 33	50	22.741	9 57 13.0	92.91						
10	14 8 49	95	22.743	10 6 28.5	92.25						
11	14 11 6	41	22.744	10 15 40.0	91.58						
12	14 13 22	88	22.747	10 24 47.5	90.91						
13	14 15 39	37	22.749	10 33 50.9	90.22						
14	14 17 55	87	22.752	10 42 50.1	89.53						
15	14 20 12	39	22.754	10 51 45.2	88.83						
16	14 22 28	92	22.757	11 0 36.0	88.12						
17	14 24 45	47	22.760	11 9 22.6	87.40						
18	14 27 2	04	22.763	11 18 4.8	86.68						
19	14 29 18	63	22.766	11 26 42.7	85.94						
20	14 31 35	23	22.768	11 35 16.1	85.20						
21	14 33 51	85	22.772	11 43 45.1	84.46						
22	14 36 8	50	22.776	11 52 9.6	83.71						
23	14 38 25	16	22.779	12 0 29.6	82.95						
24	14 40 41	85	22.783	S. 12 8 45.0	82.18						

PHASES OF THE MOON.

		h	m
July 1	) First Quarter	10	51.9
8	○ Full Moon	15	7.3
16	(Last Quarter	17	11.0
24	● New Moon	0	47.1
30	) First Quarter	16	21.6
h			
July 14	(Apogee	5	4
26	(Perigee	3	5

AT APPARENT NOON.

		THE SUN'S				Sidereal Time of the Semidiameter passing the Meridian.*	Equation of Time, to be added to Apparent Time.	Var. in hour.
Date.		Apparent Right Ascension.	Var. in hour.	Apparent Declination.	Var. in hour.			
Tues.	1	h m s	s	N. 18° 9' 36".5	37".35	m s	m s	s
Wed.	2	8 43 26.76	9.722	17 54 31.1	38.09	6 6.63	6 11.17	0.134
Thur.	3	8 47 19.76	9.696	17 39 8.3	38.81	6 6.55	6 7.63	0.160
		8 51 12.15	9.670			6 6.46	6 3.47	0.186
Frid.	4	8 55 3.91	9.644	17 23 28.3	39.52	6 6.37	5 58.69	0.212
Sat.	5	8 58 55.06	9.619	17 7 31.4	40.22	6 6.28	5 53.30	0.237
Sun.	6	9 2 45.60	9.593	16 51 17.9	40.90	6 6.20	5 47.30	0.262
Mon.	7	9 6 35.54	9.568	16 34 48.0	41.58	6 6.11	5 40.71	0.287
Tues.	8	9 10 24.88	9.544	16 18 2.1	42.24	6 6.03	5 33.52	0.312
Wed.	9	9 14 13.64	9.520	16 1 0.4	42.89	6 5.94	5 25.74	0.336
Thur.	10	9 18 1.82	9.496	15 43 43.3	43.53	6 5.86	5 17.39	0.360
Frid.	11	9 21 49.44	9.472	15 26 11.0	44.16	6 5.78	5 8.48	0.383
Sat.	12	9 25 36.50	9.449	15 8 23.8	44.77	6 5.69	4 59.01	0.406
Sun.	13	9 29 23.00	9.426	14 50 22.0	45.37	6 5.61	4 48.99	0.429
Mon.	14	9 33 8.97	9.404	14 32 6.0	45.96	6 5.53	4 38.43	0.451
Tues.	15	9 36 54.41	9.382	14 13 36.1	46.53	6 5.45	4 27.35	0.473
Wed.	16	9 40 39.33	9.361	13 54 52.5	47.10	6 5.38	4 15.75	0.494
Thur.	17	9 44 23.74	9.340	13 35 55.5	47.65	6 5.30	4 3.64	0.515
Frid.	18	9 48 7.66	9.320	13 16 45.5	48.18	6 5.22	3 51.04	0.535
Sat.	19	9 51 51.09	9.299	12 57 22.9	48.70	6 5.15	3 37.95	0.555
Sun.	20	9 55 34.03	9.280	12 37 47.8	49.21	6 5.08	3 24.38	0.575
Mon.	21	9 59 16.51	9.260	12 18 0.8	49.70	6 5.01	3 10.34	0.595
Tues.	22	10 2 58.52	9.241	11 58 2.0	50.19	6 4.94	2 55.83	0.614
Wed.	23	10 6 40.08	9.222	11 37 51.8	50.65	6 4.87	2 40.88	0.632
Thur.	24	10 10 21.19	9.204	11 17 30.6	51.11	6 4.81	2 25.48	0.651
Frid.	25	10 14 1.86	9.186	10 56 58.7	51.55	6 4.75	2 9.64	0.669
Sat.	26	10 17 42.10	9.168	10 36 16.4	51.97	6 4.69	1 53.37	0.686
Sun.	27	10 21 21.92	9.151	10 15 24.2	52.38	6 4.63	1 36.69	0.704
Mon.	28	10 25 1.34	9.134	9 54 22.2	52.78	6 4.57	1 19.60	0.720
Tues.	29	10 28 40.36	9.118	9 33 10.9	53.16	6 4.52	1 2.12	0.736
Wed.	30	10 32 19.01	9.103	9 11 50.5	53.53	6 4.47	0 44.27	0.751
Thur.	31	10 35 57.31	9.089	8 50 21.4	53.89	6 4.42	0 26.06	0.766
Frid.	32	10 39 35.26	9.075	N. 8 28 43.9	54.23	6 4.37	0 7.51	0.780

* Mean time of the Semidiameter passing may be found by subtracting 0".18 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*		
Tues.	1	h m s 8 43 25.75	N. 18° 9' 40".3	15 47.11	m s 6 11.18	h m s 8 37 14.57
Wed.	2	8 47 18.77	17 54 35.0	15 47.24	6 7.65	8 41 11.12
Thur.	3	8 51 11.17	17 39 12.2	15 47.37	6 3.49	8 45 7.68
Frid.	4	8 55 2.95	17 23 32.3	15 47.51	5 58.71	8 49 4.23
Sat.	5	8 58 54.12	17 7 35.4	15 47.65	5 53.33	8 53 0.79
Sun.	6	9 2 44.67	16 51 21.9	15 47.79	5 47.33	8 56 57.34
Mon.	7	9 6 34.63	16 34 52.0	15 47.93	5 40.73	9 0 53.90
Tues.	8	9 10 24.00	16 18 6.0	15 48.08	5 33.54	9 4 50.45
Wed.	9	9 14 12.78	16 1 4.3	15 48.23	5 25.77	9 8 47.01
Thur.	10	9 18 0.99	15 43 47.1	15 48.38	5 17.42	9 12 43.56
Frid.	11	9 21 48.63	15 26 14.7	15 48.54	5 8.51	9 16 40.12
Sat.	12	9 25 35.71	15 8 27.5	15 48.70	4 59.04	9 20 36.67
Sun.	13	9 29 22.25	14 50 25.7	15 48.86	4 49.02	9 24 33.22
Mon.	14	9 33 8.25	14 32 9.6	15 49.02	4 38.47	9 28 29.78
Tues.	15	9 36 53.72	14 13 39.5	15 49.19	4 27.39	9 32 26.33
Wed.	16	9 40 38.67	13 54 55.8	15 49.36	4 15.78	9 36 22.88
Thur.	17	9 44 23.11	13 35 58.7	15 49.53	4 3.67	9 40 19.44
Frid.	18	9 48 7.06	13 16 48.6	15 49.71	3 51.07	9 44 15.99
Sat.	19	9 51 50.52	12 57 25.8	15 49.89	3 37.98	9 48 12.54
Sun.	20	9 55 33.51	12 37 50.6	15 50.08	3 24.41	9 52 9.10
Mon.	21	9 59 16.02	12 18 3.4	15 50.27	3 10.37	9 56 5.65
Tues.	22	10 2 58.07	11 58 4.4	15 50.46	2 55.86	10 0 2.20
Wed.	23	10 6 39.66	11 37 54.0	15 50.67	2 40.91	10 3 58.76
Thur.	24	10 10 20.81	11 17 32.6	15 50.87	2 25.50	10 7 55.31
Frid.	25	10 14 1.52	10 57 0.5	15 51.08	2 9.66	10 11 51.86
Sat.	26	10 17 41.81	10 36 18.1	15 51.29	1 53.39	10 15 48.42
Sun.	27	10 21 21.68	10 15 25.6	15 51.51	1 36.71	10 19 44.97
Mon.	28	10 25 1.14	9 54 23.4	15 51.73	1 19.61	10 23 41.52
Tues.	29	10 28 40.21	9 33 11.8	15 51.95	1 2.13	10 27 38.07
Wed.	30	10 32 18.90	9 11 51.2	15 52.18	0 44.28	10 31 34.63
Thur.	31	10 35 57.24	8 50 21.8	15 52.41	0 26.06	10 35 31.18
Frid.	32	10 39 35.24	N. 8 28 44.0	15 52.64	0 7.51	10 39 27.73

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	<i>Noon.</i>	<i>Noon.</i>			<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
1	128° 25' 56".0	N. 0°.38	0.0064046	^{h m s} 15 20 14.26	15' 46".86	15' 41".86	57' 49".03	57' 30".74
2	129 23 20.7	0.45	.0063452	15 16 18.35	15 36.99	15 32.25	57 12.88	56 55.53
3	130 20 46.0	0.49	.0062842	15 12 22.44	15 27.68	15 23.27	56 38.78	56 22.65
4	131 18 12.0	0.50	0.0062219	15 8 26.53	15 19.04	15 15.01	56 7.16	55 52.35
5	132 15 38.8	0.49	.0061582	15 4 30.62	15 11.16	15 7.50	55 38.25	55 24.85
6	133 13 6.5	0.45	.0060933	15 0 34.71	15 4.05	15 0.81	55 12.18	55 0.33
7	134 10 35.2	0.37	0.0060271	14 56 38.80	14 57.80	14 55.04	54 49.32	54 39.21
8	135 8 4.9	0.27	.0059597	14 52 42.90	14 52.57	14 50.40	54 30.15	54 22.18
9	136 5 35.8	0.17	.0058912	14 48 46.99	14 48.56	14 47.09	54 15.45	54 10.09
10	137 3 7.8	N. 0.06	0.0058214	14 44 51.08	14 46.04	14 45.43	54 6.23	54 4.00
11	138 0 41.1	S. 0.06	.0057504	14 40 55.17	14 45.30	14 45.70	54 3.53	54 4.97
12	138 58 15.8	0.18	.0056781	14 36 59.26	14 46.65	14 48.19	54 8.46	54 14.09
13	139 55 51.9	0.30	0.0056044	14 33 3.36	14 50.34	14 53.13	54 21.97	54 32.19
14	140 53 29.4	0.41	.0055294	14 29 7.45	14 56.56	15 0.65	54 44.77	54 59.73
15	141 51 8.4	0.49	.0054529	14 25 11.54	15 5.37	15 10.73	55 17.05	55 36.66
16	142 48 49.0	0.56	0.0053749	14 21 15.63	15 16.66	15 23.14	55 58.42	56 22.15
17	143 46 31.1	0.61	.0052952	14 17 19.73	15 30.08	15 37.41	56 47.60	57 14.44
18	144 44 14.9	0.63	.0052138	14 13 23.82	15 45.00	15 52.71	57 42.24	58 10.52
19	145 42 0.2	0.61	0.0051306	14 9 27.91	16 0.42	16 7.94	58 38.74	59 6.29
20	146 39 47.2	0.55	.0050454	14 5 32.00	16 15.08	16 21.66	59 32.47	59 56.61
21	147 37 35.7	0.47	.0049581	14 1 36.10	16 27.52	16 32.46	60 18.05	60 36.14
22	148 35 25.7	0.37	0.0048688	13 57 40.19	16 36.34	16 39.05	60 50.38	61 0.30
23	149 33 17.2	0.25	.0047774	13 53 44.28	16 40.51	16 40.69	61 5.65	61 6.30
24	150 31 10.2	S. 0.12	.0046838	13 49 48.38	16 39.61	16 37.33	61 2.35	60 54.01
25	151 29 4.5	N. 0.03	0.0045883	13 45 52.47	16 33.96	16 29.63	60 41.66	60 25.78
26	152 27 0.2	0.17	.0044908	13 41 56.56	16 24.49	16 18.72	60 6.96	59 45.80
27	153 24 57.1	0.30	.0043916	13 38 0.65	16 12.48	16 5.92	59 22.92	58 58.90
28	154 22 55.2	0.41	0.0042908	13 34 4.75	15 59.21	15 52.47	58 34.32	58 9.65
29	155 20 54.7	0.49	.0041885	13 30 8.84	15 45.84	15 39.38	57 45.32	57 21.65
30	156 18 55.4	0.55	.0040850	13 26 12.93	15 33.18	15 27.29	56 58.92	56 37.37
31	157 16 57.5	0.57	0.0039805	13 22 17.03	15 21.76	15 16.61	56 17.11	55 58.24
32	158 15 1.0	N. 0.56	0.0038749	13 18 21.12	15 11.86	15 7.51	55 40.82	55 24.88

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.	Noon.	Upper.	Lower.
					d	h m	h m
1	235 11 8.7	241 54 11.7	N. 4 8 49.0	N. 4 28 14.1	7.97	7 13.6	19 40.0
2	248 33 37.2	255 9 32.0	4 43 49.5	4 55 29.2	8.97	8 6.4	20 32.8
3	261 42 2.5	268 11 14.5	5 3 10.0	5 6 52.2	9.97	8 59.0	21 24.9
4	274 37 13.0	281 0 2.1	5 6 38.8	5 2 35.4	10.97	9 50.6	22 16.0
5	287 19 46.3	293 36 29.2	4 54 50.3	4 43 34.0	11.97	10 40.9	23 5.4
6	299 50 15.1	306 1 9.2	4 28 58.8	4 11 19.2	12.97	11 29.4	23 52.9
7	312 9 17.2	318 14 46.9	3 50 51.0	3 27 51.1	13.97	12 16.0	* *
8	324 17 47.5	330 18 30.3	3 2 37.4	2 35 28.5	14.97	13 0.8	0 38.6
9	336 17 9.3	342 14 1.0	2 6 43.5	1 36 41.4	15.97	13 44.3	1 22.7
10	348 9 23.9	354 3 40.0	1 5 41.2	N. 0 34 2.0	16.97	14 26.8	2 5.6
11	359 57 13.4	5 50 31.2	N. 0 2 2.6	S. 0 29 58.9	17.97	15 9.0	2 47.9
12	11 44 2.5	17 38 19.4	S. 1 1 44.1	1 32 55.0	18.97	15 51.5	3 30.2
13	23 33 55.0	29 31 25.1	2 3 13.9	2 32 22.9	19.97	16 35.1	4 13.2
14	35 31 26.1	41 34 35.5	3 0 4.2	3 25 59.6	20.97	17 20.4	4 57.5
15	47 41 30.8	53 52 49.2	3 49 50.5	4 11 18.2	21.97	18 7.9	5 43.8
16	60 9 5.9	66 30 54.5	4 30 3.3	4 45 46.4	22.97	18 58.0	6 32.6
17	72 58 44.5	79 33 1.0	4 58 7.9	5 6 48.5	23.97	19 50.9	7 24.1
18	86 14 2.8	93 2 1.2	5 11 30.1	5 11 56.1	24.97	20 46.2	8 18.3
19	99 56 59.3	106 58 49.4	5 7 52.5	4 59 9.1	25.97	21 43.2	9 14.5
20	114 7 14.2	121 21 44.7	4 45 40.6	4 27 27.8	26.97	22 40.9	10 12.0
21	128 41 41.6	136 6 15.2	4 4 38.5	3 37 28.3	27.97	23 38.6	11 9.8
22	143 34 27.9	151 5 15.5	3 6 20.8	2 31 47.5	28.97	* *	12 7.1
23	158 37 29.9	166 10 1.8	1 54 26.6	S. 1 15 1.9	0.64	0 35.5	13 3.6
24	173 41 43.7	181 11 32.1	S. 0 34 20.8	N. 0 6 48.0	1.64	1 31.4	13 59.1
25	188 38 29.6	196 1 46.7	N. 0 47 35.8	1 27 16.8	2.64	2 26.5	14 53.8
26	203 20 42.7	210 34 46.2	2 5 8.8	2 40 35.2	3.64	3 21.0	15 48.1
27	217 43 34.6	224 46 54.3	3 13 4.7	3 42 12.2	4.64	4 15.2	16 42.2
28	231 44 39.1	238 36 49.5	4 7 38.2	4 29 8.9	5.64	5 9.2	17 36.0
29	245 23 31.4	252 4 55.2	4 46 35.3	4 59 53.0	6.64	6 2.8	18 29.3
30	258 41 14.8	265 12 46.1	5 9 0.8	5 14 0.9	7.64	6 55.7	19 21.8
31	271 39 46.8	278 2 35.3	5 14 58.6	5 12 0.8	8.64	7 47.6	20 13.0
32	284 21 30.2	290 36 50.5	N. 5 5 16.9	N. 4 54 57.6	9.64	8 37.9	21 2.5

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
TUESDAY 1.					THURSDAY 3.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	15 35 28.83	22.867	S. 15 2 20.5	61.92	0	17 25 11.37	22.739	S. 18 8 36.7	14.88
1	15 37 46.04	22.870	15 8 29.3	61.02	1	17 27 27.77	22.728	18 10 3.0	13.87
2	15 40 3.27	22.873	15 14 32.7	60.10	2	17 29 44.11	22.718	18 11 23.1	12.85
3	15 42 20.51	22.875	15 20 30.5	59.18	3	17 32 0.39	22.708	18 12 37.2	11.85
4	15 44 37.77	22.878	15 26 22.8	58.25	4	17 34 16.60	22.695	18 13 45.3	10.85
5	15 46 55.04	22.879	15 32 9.5	57.32	5	17 36 32.73	22.683	18 14 47.4	9.84
6	15 49 12.32	22.882	15 37 50.6	56.38	6	17 38 48.80	22.672	18 15 43.4	8.83
7	15 51 29.62	22.883	15 43 26.1	55.45	7	17 41 4.79	22.659	18 16 33.3	7.83
8	15 53 46.92	22.885	15 48 56.0	54.52	8	17 43 20.71	22.646	18 17 17.3	6.83
9	15 56 4.24	22.887	15 54 20.3	53.57	9	17 45 36.54	22.633	18 17 55.2	5.82
10	15 58 21.56	22.888	15 59 38.8	52.62	10	17 47 52.30	22.619	18 18 27.1	4.82
11	16 0 38.89	22.889	16 4 51.7	51.67	11	17 50 7.97	22.605	18 18 53.0	3.83
12	16 2 56.23	22.890	16 9 58.8	50.71	12	17 52 23.56	22.591	18 19 13.0	2.83
13	16 5 13.57	22.891	16 15 0.2	49.75	13	17 54 39.06	22.576	18 19 26.9	1.83
14	16 7 30.92	22.892	16 19 55.8	48.79	14	17 56 54.47	22.561	18 19 34.9	0.84
15	16 9 48.27	22.892	16 24 45.7	47.83	15	17 59 9.79	22.545	18 19 37.0	0.15
16	16 12 5.62	22.891	16 29 29.7	46.85	16	18 1 25.01	22.528	18 19 33.1	1.14
17	16 14 22.96	22.891	16 34 7.9	45.88	17	18 3 40.13	22.513	18 19 23.3	2.13
18	16 16 40.31	22.892	16 38 40.3	44.92	18	18 5 55.16	22.497	18 19 7.5	3.12
19	16 18 57.66	22.891	16 43 6.9	43.93	19	18 8 10.09	22.479	18 18 45.9	4.09
20	16 21 15.00	22.889	16 47 27.5	42.95	20	18 10 24.91	22.462	18 18 18.4	5.08
21	16 23 32.33	22.888	16 51 42.3	41.97	21	18 12 39.63	22.444	18 17 45.0	6.06
22	16 25 49.66	22.887	16 55 51.2	40.98	22	18 14 54.24	22.427	18 17 5.7	7.03
23	16 28 6.97	22.885	S. 16 59 54.1	40.00	23	18 17 8.75	22.408	S. 18 16 20.6	8.00
WEDNESDAY 2.					FRIDAY 4.				
0	16 30 24.28	22.883	S. 17 3 51.2	39.02	0	18 19 23.14	22.388	S. 18 15 29.7	8.97
1	16 32 41.57	22.881	17 7 42.3	38.02	1	18 21 37.41	22.368	18 14 33.0	9.93
2	16 34 58.85	22.878	17 11 27.4	37.02	2	18 23 51.57	22.350	18 13 30.5	10.89
3	16 37 16.11	22.875	17 15 6.5	36.03	3	18 26 5.61	22.331	18 12 22.3	11.85
4	16 39 33.35	22.872	17 18 39.7	35.03	4	18 28 19.54	22.311	18 11 8.3	12.82
5	16 41 50.57	22.868	17 22 6.9	34.03	5	18 30 33.34	22.289	18 9 48.5	13.77
6	16 44 7.77	22.864	17 25 28.1	33.03	6	18 32 47.01	22.268	18 8 23.1	14.71
7	16 46 24.94	22.860	17 28 43.3	32.03	7	18 35 0.56	22.248	18 6 52.0	15.66
8	16 48 42.09	22.857	17 31 52.5	31.03	8	18 37 13.99	22.227	18 5 15.2	16.61
9	16 50 59.22	22.852	17 34 55.6	30.02	9	18 39 27.28	22.204	18 3 32.7	17.54
10	16 53 16.31	22.846	17 37 52.7	29.02	10	18 41 40.44	22.183	18 1 44.7	18.48
11	16 55 33.37	22.841	17 40 43.8	28.02	11	18 43 53.47	22.161	17 59 51.0	19.41
12	16 57 50.40	22.835	17 43 28.9	27.01	12	18 46 6.37	22.138	17 57 51.8	20.33
13	17 0 7.39	22.828	17 46 7.9	25.99	13	18 48 19.13	22.115	17 55 47.0	21.26
14	17 2 24.34	22.823	17 48 40.8	24.98	14	18 50 31.75	22.092	17 53 36.7	22.18
15	17 4 41.26	22.816	17 51 7.7	23.98	15	18 52 44.23	22.068	17 51 20.9	23.09
16	17 6 58.13	22.808	17 53 28.5	22.97	16	18 54 56.56	22.043	17 48 59.6	24.00
17	17 9 14.96	22.802	17 55 43.3	21.96	17	18 57 8.75	22.020	17 46 32.9	24.91
18	17 11 31.75	22.793	17 57 52.0	20.94	18	18 59 20.80	21.996	17 44 0.7	25.81
19	17 13 48.48	22.785	17 59 54.6	19.93	19	19 1 32.70	21.971	17 41 23.2	26.71
20	17 16 5.17	22.777	18 1 51.1	18.92	20	19 3 44.45	21.946	17 38 40.2	27.60
21	17 18 21.80	22.768	18 3 41.6	17.92	21	19 5 56.05	21.921	17 35 52.0	28.48
22	17 20 38.38	22.758	18 5 26.1	16.90	22	19 8 7.50	21.895	17 32 58.4	29.37
23	17 22 54.90	22.749	18 7 4.4	15.88	23	19 10 18.79	21.869	17 29 59.5	30.25
24	17 25 11.37	22.739	S. 18 8 36.7	14.88	24	19 12 29.93	21.843	S. 17 26 55.4	31.12

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
SATURDAY 5.					MONDAY 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	19 12 29.93	21.843	S. 17 26 55.4	31.12	0	20 54 3.37	20.444	S. 13 27 32.4	66.28
1	19 14 40.91	21.818	17 23 46.1	31.98	1	20 56 5.95	20.414	13 20 53.0	66.86
2	19 16 51.74	21.792	17 20 31.6	32.85	2	20 58 8.34	20.384	13 14 10.1	67.43
3	19 19 2.41	21.764	17 17 11.9	33.72	3	21 0 10.56	20.355	13 7 23.8	68.00
4	19 21 12.91	21.738	17 13 47.0	34.57	4	21 2 12.60	20.326	13 0 34.1	68.56
5	19 23 23.26	21.711	17 10 17.1	35.41	5	21 4 14.47	20.298	12 53 41.1	69.11
6	19 25 33.44	21.683	17 6 42.1	36.26	6	21 6 16.17	20.268	12 46 44.8	69.65
7	19 27 43.45	21.655	17 3 2.0	37.09	7	21 8 17.69	20.238	12 39 45.3	70.18
8	19 29 53.30	21.628	16 59 17.0	37.92	8	21 10 19.03	20.209	12 32 42.6	70.72
9	19 32 2.98	21.600	16 55 27.0	38.75	9	21 12 20.20	20.182	12 25 36.7	71.24
10	19 34 12.50	21.572	16 51 32.0	39.57	10	21 14 21.21	20.153	12 18 27.7	71.76
11	19 36 21.85	21.543	16 47 32.1	40.38	11	21 16 22.04	20.124	12 11 15.6	72.28
12	19 38 31.02	21.515	16 43 27.4	41.19	12	21 18 22.70	20.096	12 4 0.4	72.78
13	19 40 40.03	21.487	16 39 17.8	42.00	13	21 20 23.19	20.068	11 56 42.3	73.27
14	19 42 48.87	21.458	16 35 3.4	42.80	14	21 22 23.52	20.041	11 49 21.2	73.77
15	19 44 57.53	21.429	16 30 44.2	43.59	15	21 24 23.68	20.013	11 41 57.1	74.25
16	19 47 6.02	21.401	16 26 20.3	44.38	16	21 26 23.67	19.985	11 34 30.2	74.73
17	19 49 14.34	21.372	16 21 51.7	45.16	17	21 28 23.50	19.958	11 27 0.4	75.20
18	19 51 22.48	21.342	16 17 18.4	45.93	18	21 30 23.16	19.930	11 19 27.8	75.66
19	19 53 30.44	21.313	16 12 40.5	46.70	19	21 32 22.66	19.904	11 11 52.5	76.12
20	19 55 38.23	21.283	16 7 58.0	47.47	20	21 34 22.01	19.878	11 4 14.4	76.58
21	19 57 45.84	21.254	16 3 10.9	48.23	21	21 36 21.19	19.850	10 56 33.6	77.02
22	19 59 53.28	21.225	15 58 19.3	48.97	22	21 38 20.21	19.823	10 48 50.2	77.45
23	20 2 0.54	21.195	S. 15 53 23.2	49.72	23	21 40 19.07	19.798	S. 10 41 4.2	77.88
SUNDAY 6.					TUESDAY 8.				
0	20 4 7.62	21.165	S. 15 48 22.7	50.46	0	21 42 17.78	19.772	S. 10 33 15.6	78.31
1	20 6 14.52	21.135	15 43 17.7	51.19	1	21 44 16.33	19.746	10 25 24.5	78.73
2	20 8 21.24	21.105	15 38 8.4	51.92	2	21 46 14.73	19.720	10 17 30.9	79.14
3	20 10 27.78	21.075	15 32 54.7	52.64	3	21 48 12.97	19.695	10 9 34.8	79.55
4	20 12 34.14	21.045	15 27 36.7	53.35	4	21 50 11.07	19.671	10 1 36.3	79.94
5	20 14 40.32	21.015	15 22 14.5	54.06	5	21 52 9.02	19.645	9 53 35.5	80.33
6	20 16 46.32	20.985	15 16 48.0	54.77	6	21 54 6.81	19.620	9 45 32.3	80.72
7	20 18 52.14	20.955	15 11 17.3	55.46	7	21 56 4.46	19.597	9 37 26.8	81.10
8	20 20 57.78	20.924	15 5 42.5	56.14	8	21 58 1.97	19.573	9 29 19.1	81.48
9	20 23 3.23	20.894	15 0 3.6	56.83	9	21 59 59.33	19.548	9 21 9.1	81.84
10	20 25 8.51	20.864	14 54 20.6	57.51	10	22 1 56.55	19.526	9 12 57.0	82.19
11	20 27 13.60	20.834	14 48 33.5	58.18	11	22 3 53.64	19.502	9 4 42.8	82.55
12	20 29 18.52	20.804	14 42 42.5	58.83	12	22 5 50.58	19.478	8 56 26.4	82.90
13	20 31 23.25	20.773	14 36 47.5	59.49	13	22 7 47.38	19.456	8 48 8.0	83.24
14	20 33 27.79	20.743	14 30 48.6	60.14	14	22 9 44.05	19.434	8 39 47.5	83.58
15	20 35 32.16	20.713	14 24 45.8	60.79	15	22 11 40.59	19.412	8 31 25.1	83.90
16	20 37 36.35	20.683	14 18 39.1	61.43	16	22 13 36.99	19.389	8 23 0.7	84.22
17	20 39 40.36	20.653	14 12 28.7	62.05	17	22 15 33.26	19.368	8 14 34.4	84.53
18	20 41 44.18	20.623	14 6 14.5	62.68	18	22 17 29.41	19.348	8 6 6.3	84.84
19	20 43 47.83	20.593	13 59 56.5	63.30	19	22 19 25.43	19.326	7 57 36.3	85.15
20	20 45 51.30	20.563	13 53 34.9	63.90	20	22 21 21.32	19.305	7 49 4.5	85.45
21	20 47 54.58	20.533	13 47 9.7	64.51	21	22 23 17.09	19.285	7 40 30.9	85.73
22	20 49 57.69	20.503	13 40 40.8	65.11	22	22 25 12.74	19.265	7 31 55.7	86.02
23	20 52 0.62	20.473	13 34 8.4	65.70	23	22 27 8.27	19.245	7 23 18.7	86.30
24	20 54 3.37	20.444	S. 13 27 32.4	66.28	24	22 29 3.68	19.226	S. 7 14 40.1	86.57

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 9.					FRIDAY 11.				
	h m s	s	° ' " "	"		h m s	s	° ' " "	"
0	22 29 3.68	19.226	S. 7 14 40.1	86.57	0	23 59 46.56	18.718	N. 0 0 46.2	92.66
1	22 30 58.98	19.207	7 5 59.9	86.83	1	0 1 38.86	18.718	0 10 2.1	92.64
2	22 32 54.16	19.188	6 57 18.1	87.09	2	0 3 31.17	18.718	0 19 17.9	92.63
3	22 34 49.24	19.170	6 48 34.8	87.34	3	0 5 23.47	18.717	0 28 33.6	92.60
4	22 36 44.20	19.151	6 39 50.0	87.59	4	0 7 15.77	18.718	0 37 49.1	92.58
5	22 38 39.05	19.133	6 31 3.7	87.83	5	0 9 8.08	18.718	0 47 4.5	92.54
6	22 40 33.80	19.117	6 22 16.0	88.07	6	0 11 0.39	18.719	0 56 19.6	92.50
7	22 42 28.45	19.099	6 13 26.9	88.30	7	0 12 52.71	18.721	1 5 34.5	92.47
8	22 44 22.99	19.082	6 4 36.4	88.52	8	0 14 45.04	18.723	1 14 49.2	92.42
9	22 46 17.43	19.066	5 55 44.7	88.73	9	0 16 37.39	18.727	1 24 3.5	92.36
10	22 48 11.78	19.050	5 46 51.6	88.95	10	0 18 29.76	18.729	1 33 17.5	92.30
11	22 50 6.03	19.034	5 37 57.3	89.15	11	0 20 22.14	18.733	1 42 31.1	92.23
12	22 52 0.19	19.018	5 29 1.8	89.34	12	0 22 14.55	18.737	1 51 44.3	92.16
13	22 53 54.25	19.003	5 20 5.2	89.53	13	0 24 6.98	18.740	2 0 57.0	92.08
14	22 55 48.23	18.989	5 11 7.4	89.73	14	0 25 59.43	18.745	2 10 9.3	92.01
15	22 57 42.12	18.974	5 2 8.5	89.91	15	0 27 51.92	18.751	2 19 21.1	91.93
16	22 59 35.92	18.960	4 53 8.5	90.08	16	0 29 44.44	18.756	2 28 32.4	91.83
17	23 1 29.64	18.947	4 44 7.5	90.25	17	0 31 36.99	18.762	2 37 43.1	91.73
18	23 3 23.28	18.933	4 35 5.5	90.41	18	0 33 29.58	18.768	2 46 53.2	91.63
19	23 5 16.84	18.921	4 26 2.6	90.58	19	0 35 22.21	18.775	2 56 2.7	91.53
20	23 7 10.33	18.909	4 16 58.7	90.73	20	0 37 14.88	18.783	3 5 11.5	91.41
21	23 9 3.75	18.897	4 7 53.9	90.87	21	0 39 7.60	18.790	3 14 19.6	91.29
22	23 10 57.09	18.884	3 58 48.3	91.00	22	0 41 0.36	18.798	3 23 27.0	91.17
23	23 12 50.36	18.873	S. 3 49 41.9	91.13	23	0 42 53.18	18.808	N. 3 32 33.6	91.03
THURSDAY 10.					SATURDAY 12.				
	h m s	s	° ' " "	"		h m s	s	° ' " "	"
0	23 14 43.57	18.863	S. 3 40 34.7	91.27	0	0 44 46.05	18.816	N. 3 41 39.4	90.90
1	23 16 36.71	18.852	3 31 26.7	91.39	1	0 46 38.97	18.826	3 50 44.4	90.77
2	23 18 29.79	18.842	3 22 18.0	91.51	2	0 48 31.96	18.836	3 59 48.6	90.63
3	23 20 22.81	18.832	3 13 8.6	91.62	3	0 50 25.00	18.846	4 8 51.9	90.48
4	23 22 15.77	18.822	3 3 58.6	91.72	4	0 52 18.11	18.858	4 17 54.3	90.32
5	23 24 8.67	18.813	2 54 48.0	91.82	5	0 54 11.29	18.868	4 26 55.7	90.15
6	23 26 1.53	18.805	2 45 36.8	91.92	6	0 56 4.53	18.880	4 35 56.1	89.98
7	23 27 54.33	18.796	2 36 25.0	92.01	7	0 57 57.85	18.893	4 44 55.5	89.81
8	23 29 47.08	18.788	2 27 12.7	92.08	8	0 59 51.24	18.904	4 53 53.8	89.63
9	23 31 39.79	18.782	2 18 0.0	92.16	9	1 1 44.70	18.918	5 2 51.1	89.46
10	23 33 32.46	18.774	2 8 46.8	92.24	10	1 3 38.25	18.932	5 11 47.3	89.27
11	23 35 25.08	18.768	1 59 33.1	92.31	11	1 5 31.88	18.945	5 20 42.3	89.07
12	23 37 17.67	18.762	1 50 19.1	92.36	12	1 7 25.59	18.959	5 29 36.2	88.88
13	23 39 10.22	18.755	1 41 4.8	92.41	13	1 9 19.39	18.974	5 38 28.8	88.67
14	23 41 2.73	18.749	1 31 50.2	92.46	14	1 11 13.28	18.989	5 47 20.2	88.46
15	23 42 55.21	18.744	1 22 35.3	92.51	15	1 13 7.26	19.004	5 56 10.3	88.24
16	23 44 47.66	18.740	1 13 20.1	92.55	16	1 15 1.33	19.021	6 4 59.1	88.02
17	23 46 40.09	18.737	1 4 4.7	92.58	17	1 16 55.51	19.038	6 13 46.5	87.79
18	23 48 32.50	18.732	0 54 49.1	92.61	18	1 18 49.78	19.054	6 22 32.6	87.57
19	23 50 24.88	18.728	0 45 33.4	92.63	19	1 20 44.16	19.072	6 31 17.3	87.33
20	23 52 17.24	18.726	0 36 17.6	92.64	20	1 22 38.64	19.089	6 40 0.5	87.08
21	23 54 9.59	18.723	0 27 1.7	92.66	21	1 24 33.23	19.108	6 48 42.3	86.83
22	23 56 1.92	18.721	0 17 45.7	92.66	22	1 26 27.94	19.127	6 57 22.5	86.58
23	23 57 54.24	18.720	S. 0 8 29.8	92.66	23	1 28 22.75	19.145	7 6 1.2	86.33
24	23 59 46.56	18.718	N. 0 0 46.2	92.66	24	1 30 17.68	19.165	N. 7 14 38.4	86.06

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 13.					TUESDAY 15.				
	h m s	s	° ' " "	" "		h m s	s	° ' " "	" "
0	1 30 17.68	19.165	N. 7 14 38.4	86.06	0	3 5 19.19	20.574	N. 13 25 59.2	66.29
1	1 32 12.73	19.186	7 23 13.9	85.78	1	3 7 22.75	20.613	13 32 35.2	65.73
2	1 34 7.91	19.206	7 31 47.8	85.51	2	3 9 26.54	20.651	13 39 7.9	65.16
3	1 36 3.20	19.226	7 40 20.0	85.23	3	3 11 30.56	20.689	13 45 37.1	64.57
4	1 37 58.62	19.248	7 48 50.5	84.94	4	3 13 34.81	20.728	13 52 2.7	63.98
5	1 39 54.18	19.270	7 57 19.3	84.64	5	3 15 39.29	20.767	13 58 24.8	63.38
6	1 41 49.86	19.291	8 5 46.2	84.34	6	3 17 44.01	20.807	14 4 43.3	62.78
7	1 43 45.67	19.314	8 14 11.4	84.04	7	3 19 48.97	20.846	14 10 58.1	62.17
8	1 45 41.63	19.338	8 22 34.7	83.73	8	3 21 54.16	20.885	14 17 9.3	61.55
9	1 47 37.72	19.360	8 30 56.2	83.42	9	3 23 59.59	20.926	14 23 16.7	60.93
10	1 49 33.95	19.384	8 39 15.7	83.08	10	3 26 5.27	20.966	14 29 20.4	60.30
11	1 51 30.33	19.409	8 47 33.2	82.76	11	3 28 11.18	21.006	14 35 20.3	59.66
12	1 53 26.86	19.433	8 55 48.8	82.43	12	3 30 17.34	21.048	14 41 16.3	59.00
13	1 55 23.53	19.458	9 4 2.4	82.09	13	3 32 23.75	21.088	14 47 8.3	58.35
14	1 57 20.35	19.483	9 12 13.9	81.74	14	3 34 30.40	21.129	14 52 56.5	57.70
15	1 59 17.33	19.510	9 20 23.3	81.38	15	3 36 37.30	21.170	14 58 40.7	57.03
16	2 1 14.47	19.536	9 28 30.5	81.03	16	3 38 44.44	21.212	15 4 20.8	56.35
17	2 3 11.76	19.563	9 36 35.6	80.67	17	3 40 51.84	21.253	15 9 56.9	55.67
18	2 5 9.22	19.590	9 44 38.5	80.30	18	3 42 59.48	21.295	15 15 28.8	54.98
19	2 7 6.84	19.617	9 52 39.2	79.93	19	3 45 7.38	21.338	15 20 56.6	54.28
20	2 9 4.62	19.644	10 0 37.6	79.54	20	3 47 15.53	21.379	15 26 20.2	53.58
21	2 11 2.57	19.673	10 8 33.7	79.16	21	3 49 23.93	21.422	15 31 39.6	52.87
22	2 13 0.70	19.702	10 16 27.5	78.77	22	3 51 32.59	21.464	15 36 54.6	52.14
23	2 14 58.99	19.731	N. 10 24 18.9	78.36	23	3 53 41.50	21.507	N. 15 42 5.3	51.42
MONDAY 14.					WEDNESDAY 16.				
0	2 16 57.47	19.761	N. 10 32 7.8	77.95	0	3 55 50.67	21.549	N. 15 47 11.7	50.69
1	2 18 56.12	19.790	10 39 54.3	77.54	1	3 58 0.09	21.593	15 52 13.6	49.95
2	2 20 54.95	19.820	10 47 38.3	77.13	2	4 0 9.78	21.636	15 57 11.1	49.20
3	2 22 53.96	19.851	10 55 19.8	76.71	3	4 2 19.72	21.678	16 2 4.0	48.44
4	2 24 53.16	19.883	11 2 58.8	76.28	4	4 4 29.92	21.721	16 6 52.4	47.68
5	2 26 52.55	19.913	11 10 35.1	75.83	5	4 6 40.37	21.764	16 11 36.2	46.92
6	2 28 52.12	19.945	11 18 8.8	75.39	6	4 8 51.09	21.808	16 16 15.4	46.13
7	2 30 51.89	19.978	11 25 39.8	74.93	7	4 11 2.07	21.852	16 20 49.8	45.35
8	2 32 51.85	20.009	11 33 8.0	74.48	8	4 13 13.31	21.894	16 25 19.6	44.56
9	2 34 52.00	20.043	11 40 33.6	74.02	9	4 15 24.80	21.938	16 29 44.5	43.76
10	2 36 52.36	20.076	11 47 56.3	73.55	10	4 17 36.56	21.982	16 34 4.7	42.96
11	2 38 52.91	20.108	11 55 16.2	73.08	11	4 19 48.58	22.025	16 38 20.0	42.13
12	2 40 53.66	20.142	12 2 33.2	72.59	12	4 22 0.86	22.068	16 42 30.3	41.31
13	2 42 54.62	20.177	12 9 47.3	72.11	13	4 24 13.40	22.113	16 46 35.7	40.49
14	2 44 55.78	20.212	12 16 58.5	71.62	14	4 26 26.21	22.156	16 50 36.2	39.65
15	2 46 57.16	20.247	12 24 6.7	71.11	15	4 28 39.27	22.198	16 54 31.5	38.80
16	2 48 58.74	20.282	12 31 11.8	70.60	16	4 30 52.59	22.242	16 58 21.8	37.96
17	2 51 0.54	20.318	12 38 13.9	70.09	17	4 33 6.17	22.286	17 2 7.0	37.10
18	2 53 2.55	20.353	12 45 12.9	69.57	18	4 35 20.02	22.329	17 5 47.0	36.23
19	2 55 4.77	20.388	12 52 8.7	69.03	19	4 37 34.12	22.372	17 9 21.7	35.35
20	2 57 7.21	20.425	12 59 1.3	68.50	20	4 39 48.48	22.416	17 12 51.2	34.48
21	2 59 9.87	20.463	13 5 50.7	67.97	21	4 42 3.11	22.459	17 16 15.4	33.59
22	3 1 12.76	20.499	13 12 36.9	67.42	22	4 44 17.99	22.501	17 19 34.3	32.70
23	3 3 15.86	20.536	13 19 19.7	66.86	23	4 46 33.12	22.544	17 22 47.8	31.79
24	3 5 19.19	20.574	N. 13 25 59.2	66.29	24	4 48 48.52	22.588	N. 17 25 55.8	30.88

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Vars. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.		
THURSDAY 17.					SATURDAY 19.						
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"		
0	4 48 48	52	22.588	N.17 25 55.8	30.88	0	6 41 41	39	24.302	N.17 57 22.4	19.81
1	4 51 4	17	22.630	17 28 58.4	29.98	1	6 44 7	27	24.326	17 55 20.0	20.98
2	4 53 20	08	22.673	17 31 55.5	29.04	2	6 46 33	30	24.351	17 53 10.7	22.13
3	4 55 36	24	22.715	17 34 46.9	28.11	3	6 48 59	48	24.374	17 50 54.5	23.29
4	4 57 52	66	22.758	17 37 32.8	27.18	4	6 51 25	79	24.397	17 48 31.2	24.46
5	5 0 9	33	22.799	17 40 13.1	26.24	5	6 53 52	24	24.419	17 46 1.0	25.63
6	5 2 26	25	22.841	17 42 47.7	25.28	6	6 56 18	82	24.441	17 43 23.7	26.80
7	5 4 43	42	22.883	17 45 16.5	24.33	7	6 58 45	53	24.462	17 40 39.4	27.97
8	5 7 0	85	22.925	17 47 39.6	23.36	8	7 1 12	36	24.483	17 37 48.1	29.13
9	5 9 18	52	22.966	17 49 56.8	22.39	9	7 3 39	32	24.503	17 34 49.8	30.30
10	5 11 36	44	23.008	17 52 8.3	21.42	10	7 6 6	39	24.521	17 31 44.5	31.47
11	5 13 54	61	23.048	17 54 13.8	20.43	11	7 8 33	57	24.540	17 28 32.2	32.64
12	5 16 13	02	23.088	17 56 13.4	19.43	12	7 11 0	87	24.559	17 25 12.8	33.82
13	5 18 31	67	23.129	17 58 7.0	18.44	13	7 13 28	28	24.576	17 21 46.4	34.98
14	5 20 50	57	23.169	17 59 54.7	17.44	14	7 15 55	78	24.593	17 18 13.0	36.16
15	5 23 9	70	23.209	18 1 36.3	16.43	15	7 18 23	39	24.609	17 14 32.5	37.33
16	5 25 29	08	23.249	18 3 11.8	15.41	16	7 20 51	09	24.624	17 10 45.1	38.49
17	5 27 48	69	23.288	18 4 41.2	14.38	17	7 23 18	88	24.639	17 6 50.6	39.67
18	5 30 8	53	23.327	18 6 4.4	13.36	18	7 25 46	76	24.654	17 2 49.1	40.83
19	5 32 28	61	23.365	18 7 21.5	12.33	19	7 28 14	73	24.668	16 58 40.7	41.99
20	5 34 48	91	23.403	18 8 32.3	11.28	20	7 30 42	77	24.680	16 54 25.2	43.16
21	5 37 9	45	23.442	18 9 36.9	10.24	21	7 33 10	89	24.693	16 50 2.8	44.32
22	5 39 30	21	23.479	18 10 35.2	9.18	22	7 35 39	09	24.705	16 45 33.4	45.48
23	5 41 51	20	23.517	N.18 11 27.1	8.13	23	7 38 7	35	24.716	N.16 40 57.1	46.63
FRIDAY 18.					SUNDAY 20.						
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"		
0	5 44 12	41	23.553	N.18 12 12.7	7.07	0	7 40 35	68	24.727	N.16 36 13.8	47.79
1	5 46 33	84	23.589	18 12 51.9	5.99	1	7 43 4	07	24.737	16 31 23.6	48.94
2	5 48 55	48	23.625	18 13 24.6	4.92	2	7 45 32	52	24.746	16 26 26.5	50.09
3	5 51 17	34	23.662	18 13 50.9	3.84	3	7 48 1	02	24.754	16 21 22.5	51.23
4	5 53 39	42	23.698	18 14 10.7	2.76	4	7 50 29	57	24.763	16 16 11.7	52.38
5	5 56 1	71	23.732	18 14 24.0	1.67	5	7 52 58	17	24.770	16 10 54.0	53.52
6	5 58 24	20	23.766	18 14 30.7	0.58	6	7 55 26	81	24.778	16 5 29.5	54.65
7	6 0 46	90	23.800	18 14 30.9	0.53	7	7 57 55	50	24.784	15 59 58.2	55.78
8	6 3 9	80	23.833	18 14 24.4	1.63	8	8 0 24	22	24.789	15 54 20.1	56.91
9	6 5 32	90	23.867	18 14 11.3	2.74	9	8 2 52	97	24.794	15 48 35.3	58.03
10	6 7 56	20	23.899	18 13 51.5	3.85	10	8 5 21	75	24.799	15 42 43.7	59.15
11	6 10 19	69	23.931	18 13 25.1	4.97	11	8 7 50	56	24.803	15 36 45.5	60.26
12	6 12 43	37	23.963	18 12 51.9	6.09	12	8 10 19	39	24.807	15 30 40.6	61.37
13	6 15 7	24	23.994	18 12 12.0	7.21	13	8 12 48	24	24.809	15 24 29.1	62.47
14	6 17 31	30	24.026	18 11 25.4	8.34	14	8 15 17	10	24.812	15 18 11.0	63.56
15	6 19 55	55	24.056	18 10 31.9	9.48	15	8 17 45	98	24.814	15 11 46.4	64.65
16	6 22 19	97	24.085	18 9 31.7	10.61	16	8 20 14	87	24.815	15 5 15.2	65.73
17	6 24 44	57	24.113	18 8 24.6	11.75	17	8 22 43	76	24.815	14 58 37.6	66.81
18	6 27 9	33	24.142	18 7 10.7	12.89	18	8 25 12	65	24.815	14 51 53.5	67.88
19	6 29 34	27	24.171	18 5 49.9	14.04	19	8 27 41	54	24.815	14 45 3.0	68.95
20	6 31 59	38	24.198	18 4 22.2	15.19	20	8 30 10	43	24.814	14 38 6.1	70.01
21	6 34 24	65	24.224	18 2 47.6	16.34	21	8 32 39	31	24.813	14 31 2.9	71.06
22	6 36 50	07	24.250	18 1 6.1	17.49	22	8 35 8	18	24.811	14 23 53.4	72.10
23	6 39 15	65	24.277	17 59 17.7	18.64	23	8 37 37	04	24.809	14 16 37.7	73.13
24	6 41 41	39	24.302	N.17 57 22.4	19.81	24	8 40 5	89	24.806	N.14 9 15.8	74.16

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.	Hour.	Right Ascension.	Var. in 10m.	Declination.	Var. in 10m.
MONDAY 21.					WEDNESDAY 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	8 40 5.89	24.806	N. 14 9 15.8	74.16	0	10 38 6.99	24.273	N. 6 34 9.8	110.82
1	8 42 34.71	24.802	14 1 47.8	75.18	1	10 40 32.58	24.258	6 23 3.5	111.26
2	8 45 3.51	24.798	13 54 13.7	76.19	2	10 42 58.09	24.243	6 11 54.7	111.68
3	8 47 32.28	24.793	13 46 33.5	77.20	3	10 45 23.50	24.228	6 0 43.4	112.09
4	8 50 1.03	24.789	13 38 47.3	78.19	4	10 47 48.82	24.213	5 49 29.6	112.49
5	8 52 29.75	24.783	13 30 55.2	79.18	5	10 50 14.05	24.198	5 38 13.5	112.87
6	8 54 58.43	24.778	13 22 57.2	80.16	6	10 52 39.19	24.183	5 26 55.1	113.24
7	8 57 27.08	24.772	13 14 53.3	81.13	7	10 55 4.24	24.168	5 15 34.6	113.59
8	8 59 55.69	24.765	13 6 43.7	82.08	8	10 57 29.20	24.152	5 4 12.0	113.93
9	9 2 24.26	24.758	12 58 28.4	83.03	9	10 59 54.06	24.137	4 52 47.4	114.25
10	9 4 52.79	24.751	12 50 7.4	83.97	10	11 2 18.84	24.123	4 41 21.0	114.56
11	9 7 21.27	24.743	12 41 40.8	84.89	11	11 4 43.53	24.108	4 29 52.7	114.85
12	9 9 49.71	24.735	12 33 8.7	85.82	12	11 7 8.13	24.093	4 18 22.8	115.13
13	9 12 18.09	24.726	12 24 31.0	86.73	13	11 9 32.64	24.078	4 6 51.2	115.39
14	9 14 46.42	24.718	12 15 48.0	87.62	14	11 11 57.06	24.063	3 55 18.1	115.64
15	9 17 14.70	24.708	12 6 59.6	88.51	15	11 14 21.39	24.048	3 43 43.5	115.87
16	9 19 42.92	24.699	11 58 5.9	89.38	16	11 16 45.64	24.034	3 32 7.6	116.08
17	9 22 11.09	24.689	11 49 7.0	90.25	17	11 19 9.80	24.019	3 20 30.5	116.28
18	9 24 39.19	24.678	11 40 2.9	91.10	18	11 21 33.87	24.005	3 8 52.2	116.47
19	9 27 7.23	24.668	11 30 53.8	91.94	19	11 23 57.86	23.992	2 57 12.8	116.64
20	9 29 35.20	24.657	11 21 39.6	92.77	20	11 26 21.77	23.978	2 45 32.5	116.80
21	9 32 3.11	24.647	11 12 20.5	93.59	21	11 28 45.59	23.963	2 33 51.2	116.95
22	9 34 30.96	24.635	11 2 56.5	94.41	22	11 31 9.33	23.949	2 22 9.1	117.07
23	9 36 58.73	24.623	N. 10 53 27.6	95.20	23	11 33 32.98	23.935	N. 2 10 26.4	117.18
TUESDAY 22.					THURSDAY 24.				
0	9 39 26.44	24.612	N. 10 43 54.1	95.98	0	11 35 56.55	23.922	N. 1 58 43.0	117.28
1	9 41 54.07	24.598	10 34 15.9	96.75	1	11 38 20.04	23.908	1 46 59.1	117.36
2	9 44 21.62	24.586	10 24 33.1	97.52	2	11 40 43.45	23.895	1 35 14.7	117.43
3	9 46 49.10	24.574	10 14 45.7	98.26	3	11 43 6.78	23.882	1 23 30.0	117.48
4	9 49 16.51	24.561	10 4 54.0	98.98	4	11 45 30.03	23.869	1 11 45.0	117.51
5	9 51 43.83	24.548	9 54 57.9	99.72	5	11 47 53.21	23.857	0 59 59.9	117.53
6	9 54 11.08	24.535	9 44 57.4	100.43	6	11 50 16.31	23.843	0 48 14.7	117.53
7	9 56 38.25	24.521	9 34 52.8	101.11	7	11 52 39.33	23.831	0 36 29.5	117.53
8	9 59 5.33	24.508	9 24 44.1	101.79	8	11 55 2.28	23.818	0 24 44.4	117.51
9	10 1 32.34	24.494	9 14 31.3	102.47	9	11 57 25.15	23.806	0 12 59.4	117.47
10	10 3 59.26	24.479	9 4 14.5	103.12	10	11 59 47.95	23.794	N. 0 1 14.8	117.41
11	10 6 26.09	24.465	8 53 53.9	103.76	11	12 2 10.68	23.783	S. 0 10 29.5	117.35
12	10 8 52.84	24.452	8 43 29.4	104.38	12	12 4 33.34	23.771	0 22 13.4	117.28
13	10 11 19.51	24.437	8 33 1.3	104.99	13	12 6 55.93	23.759	0 33 56.8	117.18
14	10 13 46.08	24.422	8 22 29.5	105.60	14	12 9 18.45	23.748	0 45 39.5	117.06
15	10 16 12.57	24.408	8 11 54.1	106.19	15	12 11 40.90	23.737	0 57 21.5	116.93
16	10 18 38.98	24.393	8 1 15.2	106.76	16	12 14 3.29	23.726	1 9 2.7	116.80
17	10 21 5.29	24.378	7 50 33.0	107.31	17	12 16 25.61	23.715	1 20 43.1	116.65
18	10 23 31.52	24.364	7 39 47.5	107.86	18	12 18 47.87	23.704	1 32 22.5	116.48
19	10 25 57.66	24.348	7 28 58.7	108.39	19	12 21 10.06	23.693	1 44 0.8	116.30
20	10 28 23.70	24.333	7 18 6.8	108.90	20	12 23 32.19	23.683	1 55 38.1	116.11
21	10 30 49.66	24.319	7 7 11.9	109.40	21	12 25 54.26	23.673	2 7 14.1	115.89
22	10 33 15.53	24.303	6 56 14.0	109.88	22	12 28 16.27	23.663	2 18 48.8	115.68
23	10 35 41.30	24.288	6 45 13.3	110.35	23	12 30 38.22	23.653	2 30 22.2	115.44
24	10 38 6.99	24.273	N. 6 34 9.8	110.82	24	12 33 0.11	23.644	S. 2 41 54.1	115.18

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
FRIDAY 25.					SUNDAY 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	12 33 0	11	23 644	S. 2 41 54	1	14 25 42	79	23 369	S. 11 2 43
1	12 35 21	95	23 635	2 53 24	1	14 28 3	00	23 367	11 11 36
2	12 37 43	73	23 626	3 4 53	2	14 30 23	19	23 363	11 20 25
3	12 40 5	46	23 618	3 16 20	3	14 32 43	36	23 359	11 29 9
4	12 42 27	14	23 608	3 27 45	4	14 35 3	50	23 356	11 37 49
5	12 44 48	76	23 599	3 39 8	5	14 37 23	63	23 353	11 46 23
6	12 47 10	33	23 591	3 50 30	6	14 39 43	74	23 350	11 54 53
7	12 49 31	85	23 583	4 1 49	7	14 42 3	83	23 347	12 3 17
8	12 51 53	32	23 575	4 13 7	8	14 44 23	90	23 343	12 11 37
9	12 54 14	75	23 567	4 24 22	9	14 46 43	94	23 339	12 19 52
10	12 56 36	12	23 558	4 35 35	10	14 49 3	97	23 337	12 28 1
11	12 58 57	45	23 551	4 46 45	11	14 51 23	98	23 333	12 36 6
12	13 1 18	73	23 544	4 57 54	12	14 53 43	97	23 330	12 44 5
13	13 3 39	98	23 537	5 9 0	13	14 56 3	94	23 326	12 51 59
14	13 6 1	18	23 529	5 20 3	14	14 58 23	88	23 323	12 59 48
15	13 8 22	33	23 523	5 31 4	15	15 0 43	81	23 319	13 7 32
16	13 10 43	45	23 517	5 42 1	16	15 3 3	71	23 315	13 15 10
17	13 13 4	53	23 510	5 52 57	17	15 5 23	59	23 312	13 22 44
18	13 15 25	57	23 503	6 3 49	18	15 7 43	45	23 308	13 30 11
19	13 17 46	57	23 498	6 14 38	19	15 10 3	28	23 303	13 37 34
20	13 20 7	54	23 492	6 25 25	20	15 12 23	09	23 300	13 44 51
21	13 22 28	47	23 485	6 36 8	21	15 14 42	88	23 296	13 52 3
22	13 24 49	36	23 479	6 46 49	22	15 17 2	64	23 292	13 59 9
23	13 27 10	22	23 474	S. 6 57 26	23	15 19 22	38	23 288	S. 14 6 9
SATURDAY 26.					MONDAY 28.				
0	13 29 31	05	23 469	S. 7 8 0	0	15 21 42	09	23 283	S. 14 13 4
1	13 31 51	85	23 463	7 18 30	1	15 24 1	78	23 278	14 19 54
2	13 34 12	61	23 458	7 28 58	2	15 26 21	43	23 273	14 26 38
3	13 36 33	35	23 453	7 39 22	3	15 28 41	06	23 270	14 33 16
4	13 38 54	05	23 448	7 49 42	4	15 31 0	67	23 265	14 39 49
5	13 41 14	72	23 443	7 59 59	5	15 33 20	24	23 259	14 46 15
6	13 43 35	37	23 439	8 10 12	6	15 35 39	78	23 254	14 52 37
7	13 45 55	99	23 434	8 20 21	7	15 37 59	29	23 249	14 58 52
8	13 48 16	58	23 430	8 30 27	8	15 40 18	77	23 243	15 5 2
9	13 50 37	15	23 426	8 40 29	9	15 42 38	21	23 238	15 11 6
10	13 52 57	69	23 421	8 50 27	10	15 44 57	62	23 232	15 17 4
11	13 55 18	20	23 417	9 0 21	11	15 47 16	99	23 226	15 22 57
12	13 57 38	69	23 413	9 10 11	12	15 49 36	33	23 221	15 28 43
13	13 59 59	15	23 408	9 19 57	13	15 51 55	64	23 214	15 34 24
14	14 2 19	59	23 405	9 29 40	14	15 54 14	90	23 207	15 39 59
15	14 4 40	01	23 401	9 39 17	15	15 56 34	12	23 201	15 45 28
16	14 7 0	40	23 398	9 48 51	16	15 58 53	31	23 194	15 50 51
17	14 9 20	78	23 394	9 58 21	17	16 1 12	45	23 187	15 56 8
18	14 11 41	13	23 390	10 7 46	18	16 3 31	55	23 179	16 1 19
19	14 14 1	46	23 387	10 17 6	19	16 5 50	60	23 172	16 6 24
20	14 16 21	77	23 383	10 26 23	20	16 8 9	61	23 164	16 11 23
21	14 18 42	05	23 379	10 35 35	21	16 10 28	57	23 157	16 16 17
22	14 21 2	32	23 377	10 44 42	22	16 12 47	49	23 148	16 21 4
23	14 23 22	57	23 373	10 53 45	23	16 15 6	35	23 140	16 25 45
24	14 25 42	79	23 369	S. 11 2 43	24	16 17 25	17	23 132	S. 16 30 20

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 29.					THURSDAY 31.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	16 17 25.17	23.132	S. 16 30 20.6	45.36	0	18 6 58.35	22.410	S. 18 11 14.0	3.03
1	16 19 43.93	23.123	16 34 49.7	44.35	1	18 9 12.75	22.388	18 10 52.9	4.00
2	16 22 2.64	23.114	16 39 12.8	43.34	2	18 11 27.01	22.366	18 10 26.0	4.97
3	16 24 21.30	23.105	16 43 29.8	42.33	3	18 13 41.14	22.344	18 9 53.3	5.93
4	16 26 39.90	23.095	16 47 40.8	41.33	4	18 15 55.14	22.322	18 9 14.8	6.89
5	16 28 58.44	23.085	16 51 45.7	40.31	5	18 18 9.00	22.298	18 8 30.6	7.84
6	16 31 16.92	23.075	16 55 44.5	39.29	6	18 20 22.72	22.276	18 7 40.7	8.80
7	16 33 35.34	23.065	16 59 37.2	38.28	7	18 22 36.31	22.253	18 6 45.0	9.75
8	16 35 53.70	23.055	17 3 23.8	37.26	8	18 24 49.76	22.229	18 5 43.7	10.69
9	16 38 12.00	23.044	17 7 4.3	36.24	9	18 27 3.06	22.206	18 4 36.7	11.63
10	16 40 30.23	23.033	17 10 38.7	35.22	10	18 29 16.23	22.183	18 3 24.1	12.58
11	16 42 48.39	23.022	17 14 6.9	34.20	11	18 31 29.25	22.158	18 2 5.8	13.52
12	16 45 6.49	23.010	17 17 29.1	33.18	12	18 33 42.12	22.133	18 0 41.9	14.45
13	16 47 24.51	22.998	17 20 45.1	32.17	13	18 35 54.85	22.109	17 59 12.4	15.38
14	16 49 42.46	22.986	17 23 55.1	31.15	14	18 38 7.43	22.084	17 57 37.4	16.29
15	16 52 0.34	22.974	17 26 58.9	30.12	15	18 40 19.86	22.059	17 55 56.9	17.22
16	16 54 18.15	22.962	17 29 56.5	29.10	16	18 42 32.14	22.033	17 54 10.8	18.13
17	16 56 35.88	22.948	17 32 48.1	28.08	17	18 44 44.26	22.008	17 52 19.3	19.04
18	16 58 53.53	22.935	17 35 37.5	27.06	18	18 46 56.24	21.983	17 50 22.3	19.95
19	17 1 11.10	22.922	17 38 12.8	26.04	19	18 49 8.06	21.958	17 48 19.9	20.86
20	17 3 28.59	22.908	17 40 46.0	25.02	20	18 51 19.73	21.932	17 46 12.0	21.76
21	17 5 46.00	22.894	17 43 13.0	24.00	21	18 53 31.24	21.906	17 43 58.8	22.65
22	17 8 3.32	22.879	17 45 34.0	22.98	22	18 55 42.60	21.879	17 41 40.2	23.54
23	17 10 20.55	22.865	S. 17 47 48.8	21.96	23	18 57 53.79	21.853	S. 17 39 16.3	24.43
WEDNESDAY 30.					FRIDAY, SEPT. 1.				
0	17 12 37.70	22.850	S. 17 49 57.5	20.94	0	19 0 4.83	21.827	S. 17 36 47.1	25.31
1	17 14 54.75	22.835	17 52 0.1	19.93					
2	17 17 11.72	22.820	17 53 56.6	18.91					
3	17 19 28.59	22.804	17 55 47.0	17.90					
4	17 21 45.37	22.788	17 57 31.4	16.88					
5	17 24 2.05	22.772	17 59 9.6	15.87					
6	17 26 18.63	22.755	18 0 41.8	14.86					
7	17 28 35.11	22.738	18 2 7.9	13.84					
8	17 30 51.49	22.721	18 3 27.9	12.83					
9	17 33 7.76	22.703	18 4 41.9	11.83					
10	17 35 23.93	22.687	18 5 49.9	10.83					
11	17 37 40.00	22.668	18 6 51.8	9.82					
12	17 39 55.95	22.650	18 7 47.7	8.82					
13	17 42 11.80	22.632	18 8 37.6	7.82					
14	17 44 27.53	22.613	18 9 21.5	6.83					
15	17 46 43.15	22.594	18 9 59.5	5.83					
16	17 48 58.66	22.575	18 10 31.4	4.83					
17	17 51 14.05	22.554	18 10 57.4	3.84					
18	17 53 29.31	22.534	18 11 17.5	2.85					
19	17 55 44.46	22.515	18 11 31.6	1.86					
20	17 57 59.49	22.495	18 11 39.8	0.88					
21	18 0 14.40	22.474	18 11 42.2	0.10					
22	18 2 29.18	22.453	18 11 38.6	1.08					
23	18 4 43.83	22.431	18 11 29.2	2.05					
24	18 6 58.35	22.410	S. 18 11 14.0	3.03					

PHASES OF THE MOON.

		h	m
Aug. 7	○ Full Moon	4	18.7
15	☾ Last Quarter	8	45.8
22	● New Moon	8	34.0
28	☽ First Quarter	23	54.9

		h
Aug. 10	☾ Apogee	20.9
23	☾ Perigee	7.7

AT APPARENT NOON.

Date.	THE SUN'S				Sidereal Time of the Semidiameter passing the Meridian.*	Equation of Time, to be added to		Var. in 1 hour.
	Apparent Right Ascension.	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.		subtracted from Apparent Time.	added to	
Frid. 1	h m s 10 39 35.26	s 9.075	N. 8° 28' 43".9	" 54.23	m s 1 4.37	m s 0 7.51	s 0.780	
Sat. 2	10 43 12.89	9.062	8 6 58.2	54.56	1 4.33	0 11.36	0.793	
Sun. 3	10 46 50.22	9.049	7 45 4.8	54.88	1 4.29	0 30.53	0.805	
Mon. 4	10 50 27.26	9.038	7 23 3.9	55.19	1 4.25	0 49.99	0.816	
Tues. 5	10 54 4.05	9.028	7 0 55.8	55.48	1 4.21	1 9.70	0.826	
Wed. 6	10 57 40.60	9.018	6 38 40.9	55.76	1 4.18	1 29.65	0.836	
Thur. 7	11 1 16.93	9.010	6 16 19.4	56.03	1 4.15	1 49.82	0.844	
Frid. 8	11 4 53.06	9.002	5 53 51.7	56.28	1 4.12	2 10.18	0.852	
Sat. 9	11 8 29.01	8.995	5 31 18.0	56.52	1 4.09	2 30.72	0.859	
Sun. 10	11 12 4.82	8.989	5 8 38.7	56.75	1 4.07	2 51.41	0.865	
Mon. 11	11 15 40.49	8.984	4 45 54.1	56.96	1 4.05	3 12.24	0.870	
Tues. 12	11 19 16.04	8.980	4 23 4.5	57.16	1 4.03	3 33.18	0.874	
Wed. 13	11 22 51.51	8.976	4 0 10.3	57.35	1 4.02	3 54.20	0.877	
Thur. 14	11 26 26.91	8.974	3 37 11.8	57.52	1 4.01	4 15.30	0.880	
Frid. 15	11 30 2.26	8.972	3 14 9.2	57.69	1 4.00	4 36.45	0.882	
Sat. 16	11 33 37.58	8.971	2 51 2.9	57.83	1 3.99	4 57.62	0.882	
Sun. 17	11 37 12.89	8.971	2 27 53.3	57.96	1 3.99	5 18.80	0.882	
Mon. 18	11 40 48.21	8.972	2 4 40.7	58.08	1 3.99	5 39.98	0.882	
Tues. 19	11 44 23.55	8.974	1 41 25.5	58.18	1 3.99	6 1.12	0.880	
Wed. 20	11 47 58.94	8.976	1 18 7.9	58.27	1 4.00	6 22.23	0.878	
Thur. 21	11 51 34.38	8.978	0 54 48.4	58.35	1 4.01	6 43.28	0.876	
Frid. 22	11 55 9.90	8.982	0 31 27.3	58.40	1 4.02	7 4.26	0.872	
Sat. 23	11 58 45.50	8.986	N. 0 8 5.0	58.45	1 4.03	7 25.15	0.868	
Sun. 24	12 2 21.21	8.990	S. 0 15 18.2	58.48	1 4.05	7 45.94	0.864	
Mon. 25	12 5 57.04	8.996	0 38 41.8	58.49	1 4.08	8 6.61	0.858	
Tues. 26	12 9 33.00	9.002	1 2 5.6	58.49	1 4.10	8 27.14	0.852	
Wed. 27	12 13 9.12	9.009	1 25 29.2	58.47	1 4.13	8 47.51	0.845	
Thur. 28	12 16 45.42	9.017	1 48 52.2	58.44	1 4.16	9 7.71	0.837	
Frid. 29	12 20 21.92	9.025	2 12 14.4	58.40	1 4.19	9 27.71	0.829	
Sat. 30	12 23 58.64	9.035	2 35 35.3	58.34	1 4.23	9 47.48	0.819	
Sun. 31	12 27 35.60	9.046	S. 2 58 54.6	58.26	1 4.27	10 7.02	0.809	

* Mean Time of the Semidiameter passing may be found by subtracting 0.18 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be added to	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi- diameter.*	subtracted from Apparent Time.	
Frid.	1	h m s 10 39 35.24	N. 8 28 44.0	15 52.64	m s 0 7.51	h m s 10 39 27.73
Sat.	2	10 43 12.92	8 6 58.1	15 52.88	0 11.37	10 43 24.28
Sun.	3	10 46 50.29	7 45 4.4	15 53.11	0 30.54	10 47 20.84
Mon.	4	10 50 27.39	7 23 3.2	15 53.35	0 50.00	10 51 17.39
Tues.	5	10 54 4.22	7 0 54.8	15 53.59	1 9.72	10 55 13.94
Wed.	6	10 57 40.82	6 38 39.5	15 53.83	1 29.67	10 59 10.49
Thur.	7	11 1 17.20	6 16 17.7	15 54.07	1 49.84	11 3 7.04
Frid.	8	11 4 53.38	5 53 49.6	15 54.31	2 10.21	11 7 3.60
Sat.	9	11 8 29.39	5 31 15.6	15 54.55	2 30.76	11 11 0.15
Sun.	10	11 12 5.24	5 8 36.0	15 54.79	2 51.46	11 14 56.70
Mon.	11	11 15 40.96	4 45 51.1	15 55.04	3 12.29	11 18 53.25
Tues.	12	11 19 16.57	4 23 1.2	15 55.28	3 33.23	11 22 49.80
Wed.	13	11 22 52.09	4 0 6.6	15 55.53	3 54.26	11 26 46.36
Thur.	14	11 26 27.54	3 37 7.7	15 55.78	4 15.36	11 30 42.91
Frid.	15	11 30 2.95	3 14 4.8	15 56.03	4 36.51	11 34 39.46
Sat.	16	11 33 38.32	2 50 58.2	15 56.28	4 57.69	11 38 36.01
Sun.	17	11 37 13.68	2 27 48.2	15 56.54	5 18.88	11 42 32.56
Mon.	18	11 40 49.06	2 4 35.2	15 56.79	5 40.06	11 46 29.12
Tues.	19	11 44 24.45	1 41 19.6	15 57.05	6 1.21	11 50 25.67
Wed.	20	11 47 59.89	1 18 1.7	15 57.32	6 22.32	11 54 22.22
Thur.	21	11 51 35.39	0 54 41.9	15 57.59	6 43.38	11 58 18.77
Frid.	22	11 55 10.96	0 31 20.4	15 57.85	7 4.36	12 2 15.32
Sat.	23	11 58 46.61	N. 0 7 57.8	15 58.12	7 25.26	12 6 11.87
Sun.	24	12 2 22.37	S. 0 15 25.7	15 58.40	7 46.05	12 10 8.42
Mon.	25	12 5 58.25	0 38 49.7	15 58.67	8 6.72	12 14 4.98
Tues.	26	12 9 34.27	1 2 13.9	15 58.95	8 27.26	12 18 1.53
Wed.	27	12 13 10.44	1 25 37.8	15 59.23	8 47.64	12 21 58.08
Thur.	28	12 16 46.80	1 49 1.1	15 59.51	9 7.84	12 25 54.63
Frid.	29	12 20 23.35	2 12 23.6	15 59.79	9 27.84	12 29 51.18
Sat.	30	12 24 0.12	2 35 44.8	16 0.07	9 47.62	12 33 47.73
Sun.	31	12 27 37.13	S. 2 59 4.4	16 0.35	10 7.16	12 37 44.29

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
					Noon.	Midnight.	Noon.	Midnight.
				h m s				
1	158° 15' 1.0	N. 0.56	0.0038749	13 18 21.12	15 11.86	15 7.51	55 40.82	55 24.88
2	159 13 5.9	0.52	.0037685	13 14 25.22	15 3.55	14 59.99	55 10.38	54 57.31
3	160 11 12.3	0.46	.0036614	13 10 29.31	14 56.79	14 53.97	54 45.62	54 35.28
4	161 9 20.3	0.37	0.0035537	13 6 33.40	14 51.51	14 49.39	54 26.25	54 18.49
5	162 7 29.9	0.27	.0034454	13 2 37.50	14 47.61	14 46.18	54 11.98	54 6.73
6	163 5 41.3	0.15	.0033365	12 58 41.59	14 45.08	14 44.34	54 2.72	54 0.00
7	164 3 54.4	N. 0.03	0.0032272	12 54 45.68	14 43.95	14 43.94	53 58.57	53 58.54
8	165 2 9.3	S. 0.10	.0031174	12 50 49.78	14 44.32	14 45.12	53 59.94	54 2.87
9	166 0 26.1	0.23	.0030071	12 46 53.87	14 46.37	14 48.07	54 7.42	54 13.68
10	166 58 44.9	0.33	0.0028963	12 42 57.97	14 50.28	14 52.99	54 21.75	54 31.70
11	167 57 5.6	0.43	.0027850	12 39 2.06	14 56.26	15 0.07	54 43.65	54 57.62
12	168 55 28.4	0.51	.0026731	12 35 6.15	15 4.45	15 9.40	55 13.66	55 31.79
13	169 53 53.4	0.55	0.0025606	12 31 10.25	15 14.90	15 20.93	55 51.96	56 14.08
14	170 52 20.4	0.58	.0024475	12 27 14.34	15 27.47	15 34.45	56 38.04	57 3.60
15	171 50 49.6	0.57	.0023335	12 23 18.44	15 41.80	15 49.41	57 30.50	57 58.37
16	172 49 21.1	0.53	0.0022186	12 19 22.53	15 57.14	16 4.90	58 26.74	58 55.15
17	173 47 54.7	0.46	.0021028	12 15 26.62	16 12.47	16 19.70	59 22.91	59 49.40
18	174 46 30.4	0.36	.0019859	12 11 30.72	16 26.38	16 32.33	60 13.90	60 35.67
19	175 45 8.3	0.23	0.0018678	12 7 34.81	16 37.34	16 41.26	60 54.04	61 8.37
20	176 43 48.3	S. 0.10	.0017485	12 3 38.91	16 43.94	16 45.27	61 18.19	61 23.08
21	177 42 30.3	N. 0.05	.0016280	11 59 43.00	16 45.22	16 43.78	61 22.90	61 17.63
22	178 41 14.2	0.19	0.0015062	11 55 47.10	16 41.02	16 37.03	61 7.52	60 52.88
23	179 40 0.0	0.32	.0013832	11 51 51.19	16 31.95	16 25.96	60 34.30	60 12.36
24	180 38 47.6	0.44	.0012592	11 47 55.28	16 19.26	16 12.04	59 47.80	59 21.32
25	181 37 37.0	0.54	0.0011343	11 43 59.38	16 4.48	15 56.76	58 53.61	58 25.35
26	182 36 28.0	0.60	.0010086	11 40 3.47	15 49.07	15 41.52	57 57.15	57 29.50
27	183 35 20.8	0.63	.0008824	11 36 7.57	15 34.25	15 27.34	57 2.85	56 37.56
28	184 34 15.4	0.63	0.0007558	11 32 11.66	15 20.87	15 14.91	56 13.86	55 51.99
29	185 33 11.6	0.61	.0006290	11 28 15.76	15 9.47	15 4.58	55 32.04	55 14.13
30	186 32 9.6	0.56	.0005021	11 24 19.85	15 0.24	14 56.46	54 58.24	54 44.40
31	187 31 9.4	N. 0.47	0.0003753	11 20 23.94	14 53.22	14 50.51	54 32.53	54 22.60

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.	Noon.	Upper.	Lower.
					d	h m	h m
1	284° 21' 30.2	290° 36' 50.5	N. 5° 5' 16.9	N. 4° 54' 57.6	9.64	8 37.9	21 2.5
2	296 48 53.9	302 57 58.1	4 41 15.3	4 24 23.6	10.64	9 26.6	21 50.2
3	309 4 20.0	315 8 15.5	4 4 37.3	3 42 12.2	11.64	10 13.3	22 36.1
4	321 10 0.2	327 9 49.4	3 17 25.2	2 50 33.8	12.64	10 58.4	23 20.4
5	333 7 57.7	339 4 40.3	2 21 56.3	1 51 51.5	13.64	11 42.1	* *
6	345 0 12.0	350 54 48.9	1 20 38.6	N. 0 48 37.0	14.64	12 24.9	0 3.6
7	356 48 47.2	2 42 24.5	N. 0 16 6.2	S. 0 16 34.1	15.64	13 7.2	0 46.1
8	8 35 59.4	14 29 52.2	S. 0 49 4.4	1 21 5.8	16.64	13 49.6	1 28.3
9	20 24 24.2	26 19 58.4	1 52 19.1	2 22 25.8	17.64	14 32.7	2 11.0
10	32 17 0.0	38 15 55.0	2 51 7.5	3 18 6.2	18.64	15 16.9	2 54.6
11	44 17 11.6	50 21 18.5	3 43 4.3	4 5 44.3	19.64	16 2.9	3 39.7
12	56 28 46.1	62 40 5.0	4 25 49.1	4 43 1.6	20.64	16 51.0	4 26.7
13	68 55 46.0	75 16 19.1	4 57 5.2	5 7 43.7	21.64	17 41.4	5 15.9
14	81 42 12.7	88 13 53.4	5 14 41.3	5 17 43.4	22.64	18 34.0	6 7.4
15	94 51 43.8	101 36 2.1	5 16 36.7	5 11 9.9	23.64	19 28.4	7 1.0
16	108 27 0.4	115 24 44.1	5 1 14.4	4 46 45.5	24.64	20 24.2	7 56.2
17	122 29 9.5	129 40 3.8	4 27 43.1	4 4 12.6	25.64	21 20.6	8 52.4
18	136 57 3.9	144 19 35.9	3 36 26.4	3 4 44.0	26.64	22 17.3	9 49.0
19	151 46 55.7	159 18 9.6	2 29 32.7	1 51 27.4	27.64	23 13.7	10 45.5
20	166 52 15.1	174 28 4.5	S. 1 11 9.6	S. 0 29 26.5	28.64	* *	11 41.9
21	182 4 25.5	189 40 5.1	N. 0 12 51.2	N. 0 54 51.5	0.31	0 10.0	12 38.1
22	197 13 51.8	204 44 38.7	1 35 43.2	2 14 38.6	1.31	1 6.2	13 34.3
23	212 11 25.4	219 33 20.3	2 50 54.7	3 23 55.2	2.31	2 2.4	14 30.5
24	226 49 41.1	233 59 56.5	3 53 11.4	4 18 21.6	3.31	2 58.5	15 26.5
25	241 3 45.1	248 0 55.7	4 39 11.6	4 55 33.9	4.31	3 54.3	16 21.9
26	254 51 26.6	261 35 23.6	5 7 26.5	5 14 52.2	5.31	4 49.2	17 16.1
27	268 12 59.6	274 44 33.0	5 17 57.8	5 16 52.7	6.31	5 42.7	18 8.8
28	281 10 26.6	287 31 6.1	5 11 48.9	5 2 59.5	7.31	6 34.3	18 59.3
29	293 46 59.6	299 58 36.1	4 50 39.0	4 35 2.8	8.31	7 23.8	19 47.8
30	306 6 25.5	312 10 57.5	4 16 26.4	3 55 6.3	9.31	8 11.2	20 34.2
31	318 12 40.8	324 12 3.4	N. 3 31 18.8	N. 3 5 21.2	10.31	8 56.7	21 18.8

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
FRIDAY 1.					SUNDAY 3.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	19 0 4.83	21.827	S. 17 36 47.1	25.31	0	20 41 35.91	20.460	S. 14 3 28.2	61.44
1	19 2 15.71	21.800	17 34 12.6	26.18	1	20 43 38.58	20.432	13 57 17.7	62.06
2	19 4 26.43	21.773	17 31 32.9	27.06	2	20 45 41.09	20.405	13 51 3.5	62.66
3	19 6 36.98	21.746	17 28 47.9	27.93	3	20 47 43.44	20.377	13 44 45.8	63.26
4	19 8 47.38	21.719	17 25 57.8	28.78	4	20 49 45.61	20.348	13 38 24.4	63.86
5	19 10 57.61	21.691	17 23 2.5	29.65	5	20 51 47.62	20.321	13 31 59.5	64.43
6	19 13 7.67	21.663	17 20 2.0	30.50	6	20 53 49.46	20.293	13 25 31.2	65.02
7	19 15 17.57	21.637	17 16 56.5	31.34	7	20 55 51.14	20.267	13 18 59.3	65.60
8	19 17 27.31	21.608	17 13 45.9	32.19	8	20 57 52.66	20.239	13 12 24.0	66.17
9	19 19 36.87	21.580	17 10 30.2	33.03	9	20 59 54.01	20.211	13 5 45.3	66.73
10	19 21 46.27	21.553	17 7 9.5	33.87	10	21 1 55.19	20.184	12 59 3.3	67.28
11	19 23 55.51	21.525	17 3 43.8	34.69	11	21 3 56.22	20.158	12 52 18.0	67.83
12	19 26 4.57	21.496	17 0 13.2	35.51	12	21 5 57.09	20.131	12 45 29.3	68.38
13	19 28 13.46	21.468	16 56 37.7	36.33	13	21 7 57.79	20.103	12 38 37.4	68.91
14	19 30 22.19	21.440	16 52 57.3	37.14	14	21 9 58.33	20.077	12 31 42.4	69.44
15	19 32 30.74	21.411	16 49 12.0	37.95	15	21 11 58.72	20.052	12 24 44.1	69.97
16	19 34 39.12	21.383	16 45 21.9	38.75	16	21 13 58.95	20.025	12 17 42.7	70.49
17	19 36 47.33	21.354	16 41 27.0	39.55	17	21 15 59.02	19.999	12 10 38.2	71.00
18	19 38 55.37	21.326	16 37 27.3	40.34	18	21 17 58.94	19.974	12 3 30.7	71.51
19	19 41 3.24	21.298	16 33 22.9	41.13	19	21 19 58.71	19.948	11 56 20.1	72.01
20	19 43 10.94	21.268	16 29 13.8	41.91	20	21 21 58.32	19.923	11 49 6.6	72.50
21	19 45 18.46	21.239	16 25 0.0	42.68	21	21 23 57.78	19.898	11 41 50.1	72.99
22	19 47 25.81	21.210	16 20 41.6	43.45	22	21 25 57.09	19.872	11 34 30.7	73.48
23	19 49 32.98	21.182	S. 16 16 18.6	44.22	23	21 27 56.24	19.847	S. 11 27 8.4	73.95
SATURDAY 2.					MONDAY 4.				
0	19 51 39.99	21.153	S. 16 11 51.0	44.98	0	21 29 55.25	19.823	S. 11 19 43.3	74.42
1	19 53 46.82	21.123	16 7 18.9	45.73	1	21 31 54.12	19.798	11 12 15.4	74.88
2	19 55 53.47	21.094	16 2 42.3	46.48	2	21 33 52.83	19.773	11 4 44.7	75.34
3	19 57 59.95	21.066	15 58 1.2	47.23	3	21 35 51.40	19.750	10 57 11.3	75.79
4	20 0 6.26	21.037	15 53 15.6	47.96	4	21 37 49.83	19.727	10 49 35.2	76.23
5	20 2 12.39	21.007	15 48 25.7	48.68	5	21 39 48.12	19.703	10 41 56.5	76.67
6	20 4 18.34	20.978	15 43 31.4	49.41	6	21 41 46.27	19.679	10 34 15.2	77.10
7	20 6 24.13	20.950	15 38 32.8	50.13	7	21 43 44.27	19.656	10 26 31.3	77.53
8	20 8 29.74	20.920	15 33 29.9	50.84	8	21 45 42.14	19.633	10 18 44.8	77.95
9	20 10 35.17	20.891	15 28 22.7	51.55	9	21 47 39.87	19.610	10 10 55.9	78.36
10	20 12 40.43	20.863	15 23 11.3	52.25	10	21 49 37.46	19.588	10 3 4.5	78.78
11	20 14 45.52	20.833	15 17 55.7	52.94	11	21 51 34.92	19.566	9 55 10.6	79.18
12	20 16 50.43	20.804	15 12 36.0	53.63	12	21 53 32.25	19.543	9 47 14.4	79.57
13	20 18 55.17	20.775	15 7 12.1	54.32	13	21 55 29.44	19.522	9 39 15.8	79.96
14	20 20 59.73	20.746	15 1 44.2	54.99	14	21 57 26.51	19.501	9 31 14.9	80.33
15	20 23 4.12	20.718	14 56 12.2	55.67	15	21 59 23.45	19.479	9 23 11.8	80.71
16	20 25 8.34	20.689	14 50 36.2	56.33	16	22 1 20.46	19.458	9 15 6.4	81.08
17	20 27 12.39	20.660	14 44 56.3	56.98	17	22 3 16.94	19.437	9 6 58.8	81.45
18	20 29 16.26	20.631	14 39 12.4	57.64	18	22 5 13.50	19.417	8 58 49.0	81.81
19	20 31 19.96	20.603	14 33 24.6	58.29	19	22 7 9.94	19.397	8 50 37.1	82.15
20	20 33 23.49	20.574	14 27 32.9	58.94	20	22 9 6.26	19.377	8 42 23.2	82.50
21	20 35 26.85	20.546	14 21 37.3	59.57	21	22 11 2.46	19.357	8 34 7.1	82.84
22	20 37 30.04	20.518	14 15 38.0	60.19	22	22 12 58.54	19.338	8 25 49.1	83.17
23	20 39 33.06	20.489	14 9 35.0	60.82	23	22 14 54.51	19.318	8 17 29.1	83.50
24	20 41 35.91	20.460	S. 14 3 28.2	61.44	24	22 16 50.36	19.299	S. 8 9 7.1	83.83

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 5.					THURSDAY 7.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	22 16 50.36	19.299	S. 8 9 7.1	83.83	0	23 47 52.59	18.758	S. 1 1 16.4	92.17
1	22 18 46.10	19.281	8 0 43.2	84.14	1	23 49 45.12	18.754	0 52 3.3	92.20
2	22 20 41.73	19.263	7 52 17.4	84.45	2	23 51 37.64	18.753	0 42 50.0	92.23
3	22 22 37.25	19.244	7 43 49.8	84.74	3	23 53 30.15	18.751	0 33 36.6	92.24
4	22 24 32.66	19.227	7 35 20.5	85.04	4	23 55 22.65	18.748	0 24 23.1	92.25
5	22 26 27.97	19.209	7 26 49.3	85.34	5	23 57 15.13	18.746	0 15 9.6	92.25
6	22 28 23.17	19.193	7 18 16.4	85.62	6	23 59 7.60	18.745	S. 0 5 56.1	92.26
7	22 30 18.28	19.176	7 9 41.9	85.89	7	0 1 0.07	18.745	N. 0 3 17.5	92.26
8	22 32 13.28	19.158	7 1 5.7	86.17	8	0 2 52.54	18.744	0 12 31.0	92.25
9	22 34 8.18	19.142	6 52 27.8	86.44	9	0 4 45.00	18.744	0 21 44.5	92.23
10	22 36 2.98	19.126	6 43 48.4	86.69	10	0 6 37.47	18.745	0 30 57.8	92.21
11	22 37 57.69	19.111	6 35 7.5	86.94	11	0 8 29.94	18.745	0 40 11.0	92.18
12	22 39 52.31	19.095	6 26 25.1	87.20	12	0 10 22.41	18.746	0 49 24.0	92.14
13	22 41 46.83	19.079	6 17 41.1	87.44	13	0 12 14.89	18.747	0 58 36.7	92.11
14	22 43 41.26	19.065	6 8 55.8	87.68	14	0 14 7.37	18.748	1 7 49.3	92.07
15	22 45 35.61	19.051	6 0 9.0	87.91	15	0 15 59.87	18.751	1 17 1.5	92.02
16	22 47 29.87	19.037	5 51 20.9	88.13	16	0 17 52.38	18.753	1 26 13.5	91.97
17	22 49 24.05	19.023	5 42 31.5	88.34	17	0 19 44.91	18.757	1 35 25.1	91.90
18	22 51 18.14	19.008	5 33 40.8	88.56	18	0 21 37.46	18.759	1 44 36.3	91.83
19	22 53 12.15	18.996	5 24 48.8	88.77	19	0 23 30.02	18.763	1 53 47.1	91.76
20	22 55 6.09	18.983	5 15 55.6	88.96	20	0 25 22.61	18.767	2 2 57.4	91.68
21	22 56 59.95	18.971	5 7 1.3	89.15	21	0 27 15.22	18.771	2 12 7.2	91.59
22	22 58 53.74	18.958	4 58 5.8	89.35	22	0 29 7.86	18.776	2 21 16.5	91.51
23	23 0 47.45	18.946	S. 4 49 9.1	89.53	23	0 31 0.53	18.781	N. 2 30 25.3	91.42
WEDNESDAY 6.					FRIDAY 8.				
0	23 2 41.09	18.934	S. 4 40 11.4	89.70	0	0 32 53.23	18.786	N. 2 39 33.5	91.31
1	23 4 34.66	18.923	4 31 12.7	89.87	1	0 34 45.96	18.792	2 48 41.0	91.20
2	23 6 28.17	18.913	4 22 13.0	90.03	2	0 36 38.73	18.798	2 57 47.9	91.09
3	23 8 21.61	18.903	4 13 12.3	90.20	3	0 38 31.54	18.804	3 6 54.1	90.98
4	23 10 15.00	18.893	4 4 10.6	90.35	4	0 40 24.38	18.811	3 15 59.6	90.86
5	23 12 8.32	18.882	3 55 8.1	90.49	5	0 42 17.27	18.818	3 25 4.4	90.73
6	23 14 1.58	18.872	3 46 4.7	90.64	6	0 44 10.20	18.826	3 34 8.3	90.58
7	23 15 54.78	18.863	3 37 0.4	90.77	7	0 46 3.18	18.834	3 43 11.4	90.45
8	23 17 47.93	18.854	3 27 55.4	90.89	8	0 47 56.21	18.843	3 52 13.7	90.30
9	23 19 41.03	18.845	3 18 49.7	91.02	9	0 49 49.29	18.851	4 1 15.0	90.14
10	23 21 34.07	18.837	3 9 43.2	91.14	10	0 51 42.42	18.859	4 10 15.4	89.99
11	23 23 27.07	18.830	3 0 36.0	91.25	11	0 53 35.60	18.869	4 19 14.9	89.83
12	23 25 20.03	18.822	2 51 28.2	91.36	12	0 55 28.85	18.879	4 28 13.4	89.66
13	23 27 12.94	18.814	2 42 19.7	91.46	13	0 57 22.15	18.889	4 37 10.8	89.48
14	23 29 5.80	18.808	2 33 10.7	91.54	14	0 59 15.52	18.900	4 46 7.2	89.30
15	23 30 58.63	18.801	2 24 1.2	91.63	15	1 1 8.95	18.910	4 55 2.4	89.12
16	23 32 51.41	18.794	2 14 51.1	91.72	16	1 3 2.44	18.922	5 3 56.6	88.93
17	23 34 44.16	18.789	2 5 40.5	91.79	17	1 4 56.01	18.933	5 12 49.5	88.73
18	23 36 36.88	18.783	1 56 29.6	91.86	18	1 6 49.64	18.945	5 21 41.3	88.53
19	23 38 29.56	18.778	1 47 18.2	91.93	19	1 8 43.35	18.958	5 30 31.8	88.32
20	23 40 22.22	18.774	1 38 6.4	91.99	20	1 10 37.13	18.970	5 39 21.1	88.11
21	23 42 14.85	18.769	1 28 54.3	92.04	21	1 12 30.99	18.983	5 48 9.1	87.88
22	23 44 7.45	18.765	1 19 41.9	92.08	22	1 14 24.93	18.997	5 56 55.7	87.65
23	23 46 0.03	18.762	1 10 29.3	92.13	23	1 16 18.95	19.010	6 5 40.9	87.43
24	23 47 52.59	18.758	S. 1 1 16.4	92.17	24	1 18 13.05	19.024	N. 6 14 24.8	87.19

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 9.					MONDAY 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	1 18 13.05	19.024	N. 6 14 24.8	87.19	0	2 51 48.70	20.097	N. 12 34 38.6	68.98
1	1 20 7.24	19.038	6 23 7.2	86.94	1	2 53 49.37	20.127	12 41 30.9	68.45
2	1 22 1.51	19.053	6 31 48.1	86.70	2	2 55 50.22	20.157	12 48 20.0	67.92
3	1 23 55.88	19.069	6 40 27.6	86.45	3	2 57 51.25	20.187	12 55 5.9	67.38
4	1 25 50.34	19.084	6 49 5.5	86.18	4	2 59 52.46	20.218	13 1 48.6	66.84
5	1 27 44.89	19.100	6 57 41.8	85.92	5	3 1 53.86	20.248	13 8 28.0	66.29
6	1 29 39.54	19.117	7 6 16.5	85.64	6	3 3 55.44	20.278	13 15 4.1	65.73
7	1 31 34.29	19.133	7 14 49.5	85.37	7	3 5 57.20	20.310	13 21 36.8	65.17
8	1 33 29.13	19.149	7 23 20.9	85.09	8	3 7 59.16	20.342	13 28 6.1	64.60
9	1 35 24.08	19.168	7 31 50.6	84.80	9	3 10 1.30	20.373	13 34 32.0	64.03
10	1 37 19.14	19.185	7 40 18.5	84.50	10	3 12 3.64	20.406	13 40 54.4	63.44
11	1 39 14.30	19.203	7 48 44.6	84.20	11	3 14 6.17	20.438	13 47 13.3	62.86
12	1 41 9.57	19.222	7 57 8.9	83.90	12	3 16 8.89	20.469	13 53 28.7	62.27
13	1 43 4.96	19.240	8 5 31.4	83.59	13	3 18 11.80	20.502	13 59 40.5	61.67
14	1 45 0.45	19.258	8 13 52.0	83.27	14	3 20 14.91	20.535	14 5 48.7	61.06
15	1 46 56.06	19.278	8 22 10.6	82.94	15	3 22 18.22	20.568	14 11 53.2	60.45
16	1 48 51.79	19.298	8 30 27.3	82.63	16	3 24 21.72	20.601	14 17 54.1	59.83
17	1 50 47.64	19.318	8 38 42.1	82.29	17	3 26 25.43	20.635	14 23 51.2	59.20
18	1 52 43.61	19.338	8 46 54.8	81.94	18	3 28 29.34	20.668	14 29 44.5	58.57
19	1 54 39.70	19.359	8 55 5.4	81.59	19	3 30 33.44	20.701	14 35 34.0	57.93
20	1 56 35.92	19.380	9 3 13.9	81.24	20	3 32 37.75	20.735	14 41 19.7	57.29
21	1 58 32.26	19.402	9 11 20.3	80.89	21	3 34 42.26	20.769	14 47 1.5	56.64
22	2 0 28.74	19.423	9 19 24.6	80.53	22	3 36 46.98	20.803	14 52 39.4	55.98
23	2 2 25.34	19.445	N. 9 27 26.6	80.15	23	3 38 51.90	20.838	N. 14 58 13.3	55.32
SUNDAY 10.					TUESDAY 12.				
0	2 4 22.08	19.468	N. 9 35 26.4	79.78	0	3 40 57.03	20.873	N. 15 3 43.2	54.65
1	2 6 18.96	19.491	9 43 23.9	79.39	1	3 43 2.37	20.908	15 9 9.1	53.98
2	2 8 15.97	19.513	9 51 19.1	79.01	2	3 45 7.92	20.942	15 14 30.9	53.30
3	2 10 13.12	19.537	9 59 12.0	78.62	3	3 47 13.67	20.976	15 19 48.7	52.61
4	2 12 10.41	19.561	10 7 2.5	78.22	4	3 49 19.63	21.012	15 25 2.2	51.91
5	2 14 7.85	19.585	10 14 50.6	77.82	5	3 51 25.81	21.047	15 30 11.6	51.22
6	2 16 5.43	19.608	10 22 36.3	77.40	6	3 53 32.19	21.082	15 35 16.8	50.51
7	2 18 3.15	19.633	10 30 19.4	76.98	7	3 55 38.79	21.118	15 40 17.7	49.79
8	2 20 1.03	19.658	10 38 0.1	76.57	8	3 57 45.60	21.153	15 45 14.3	49.08
9	2 21 59.05	19.683	10 45 38.2	76.13	9	3 59 52.63	21.189	15 50 6.6	48.35
10	2 23 57.23	19.709	10 53 13.7	75.70	10	4 1 59.87	21.224	15 54 54.5	47.62
11	2 25 55.56	19.735	11 0 46.6	75.26	11	4 4 7.32	21.259	15 59 38.0	46.88
12	2 27 54.05	19.762	11 8 16.8	74.81	12	4 6 14.98	21.296	16 4 17.0	46.13
13	2 29 52.70	19.788	11 15 44.3	74.36	13	4 8 22.87	21.333	16 8 51.6	45.38
14	2 31 51.50	19.814	11 23 9.1	73.90	14	4 10 30.97	21.368	16 13 21.6	44.63
15	2 33 50.47	19.842	11 30 31.1	73.43	15	4 12 39.28	21.403	16 17 47.1	43.87
16	2 35 49.60	19.868	11 37 50.3	72.97	16	4 14 47.81	21.440	16 22 8.0	43.09
17	2 37 48.89	19.896	11 45 6.7	72.48	17	4 16 56.56	21.477	16 26 24.2	42.32
18	2 39 48.35	19.924	11 52 20.1	72.00	18	4 19 5.53	21.513	16 30 35.8	41.53
19	2 41 47.98	19.953	11 59 30.7	71.52	19	4 21 14.71	21.548	16 34 42.6	40.74
20	2 43 47.78	19.981	12 6 38.3	71.03	20	4 23 24.11	21.585	16 38 44.7	39.95
21	2 45 47.75	20.009	12 13 43.0	70.53	21	4 25 33.73	21.622	16 42 42.0	39.15
22	2 47 47.89	20.038	12 20 44.6	70.01	22	4 27 43.57	21.658	16 46 34.5	38.34
23	2 49 48.21	20.068	12 27 43.1	69.50	23	4 29 53.62	21.693	16 50 22.1	37.53
24	2 51 48.70	20.097	N. 12 34 38.6	68.98	24	4 32 3.89	21.730	N. 16 54 4.8	36.71

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 13.					FRIDAY 15.				
	h m s	s	N. ° ' "	36 "		h m s	s	N. ° ' "	9 "
0	4 32 3.89	21.730	16 54 4.8	36.71	0	6 20 22.50	23.330	18 5 2.7	9.10
1	4 34 14.38	21.767	16 57 42.6	35.89	1	6 22 42.56	23.358	18 4 4.9	10.16
2	4 36 25.09	21.803	17 1 15.5	35.06	2	6 25 2.79	23.385	18 3 0.8	11.23
3	4 38 36.01	21.838	17 4 43.3	34.21	3	6 27 23.18	23.412	18 1 50.2	12.31
4	4 40 47.15	21.875	17 8 6.0	33.37	4	6 29 43.73	23.438	18 0 33.1	13.38
5	4 42 58.51	21.911	17 11 23.7	32.53	5	6 32 4.43	23.463	17 59 9.6	14.45
6	4 45 10.08	21.948	17 14 36.3	31.67	6	6 34 25.29	23.490	17 57 39.7	15.53
7	4 47 21.88	21.983	17 17 43.7	30.81	7	6 36 46.31	23.515	17 56 3.2	16.62
8	4 49 33.88	22.019	17 20 46.0	29.94	8	6 39 7.47	23.540	17 54 20.3	17.70
9	4 51 46.11	22.056	17 23 43.0	29.06	9	6 41 28.79	23.565	17 52 30.8	18.79
10	4 53 58.55	22.091	17 26 34.7	28.18	10	6 43 50.25	23.589	17 50 34.8	19.88
11	4 56 11.20	22.127	17 29 21.2	27.30	11	6 46 11.86	23.613	17 48 32.3	20.96
12	4 58 24.07	22.163	17 32 2.3	26.41	12	6 48 33.61	23.637	17 46 23.3	22.05
13	5 0 37.15	22.198	17 34 38.1	25.52	13	6 50 55.50	23.659	17 44 7.7	23.15
14	5 2 50.45	22.234	17 37 8.5	24.61	14	6 53 17.52	23.683	17 41 45.5	24.25
15	5 5 3.96	22.269	17 39 33.4	23.70	15	6 55 39.69	23.705	17 39 16.7	25.35
16	5 7 17.68	22.305	17 41 52.9	22.78	16	6 58 1.98	23.727	17 36 41.3	26.45
17	5 9 31.62	22.340	17 44 6.8	21.87	17	7 0 24.41	23.748	17 33 59.3	27.54
18	5 11 45.76	22.374	17 46 15.3	20.94	18	7 2 46.96	23.769	17 31 10.8	28.64
19	5 14 0.11	22.410	17 48 18.1	20.01	19	7 5 9.64	23.791	17 28 15.6	29.75
20	5 16 14.68	22.445	17 50 15.4	19.08	20	7 7 32.45	23.811	17 25 13.8	30.85
21	5 18 29.45	22.479	17 52 7.1	18.13	21	7 9 55.37	23.831	17 22 5.4	31.95
22	5 20 44.43	22.513	17 53 53.0	17.18	22	7 12 18.42	23.851	17 18 50.4	33.06
23	5 22 59.61	22.548	N. 17 55 33.3	16.24	23	7 14 41.58	23.870	N. 17 15 28.7	34.17
THURSDAY 14.					SATURDAY 16.				
	h m s	s	N. ° ' "	15 "		h m s	s	N. ° ' "	35 "
0	5 25 15.01	22.583	17 57 7.9	15.28	0	7 17 4.86	23.888	17 12 0.4	35.27
1	5 27 30.60	22.616	17 58 36.7	14.31	1	7 19 28.24	23.907	17 8 25.5	36.38
2	5 29 46.40	22.650	17 59 59.6	13.34	2	7 21 51.74	23.925	17 4 43.9	37.48
3	5 32 2.40	22.683	18 1 16.8	12.38	3	7 24 15.34	23.943	17 0 55.8	38.58
4	5 34 18.60	22.717	18 2 28.1	11.40	4	7 26 39.05	23.960	16 57 1.0	39.69
5	5 36 35.00	22.749	18 3 33.6	10.42	5	7 29 2.86	23.976	16 52 59.5	40.79
6	5 38 51.59	22.783	18 4 33.1	9.43	6	7 31 26.76	23.993	16 48 51.5	41.89
7	5 41 8.39	22.816	18 5 26.7	8.43	7	7 33 50.77	24.009	16 44 36.8	42.99
8	5 43 25.38	22.848	18 6 14.3	7.43	8	7 36 14.87	24.023	16 40 15.6	44.09
9	5 45 42.56	22.880	18 6 55.9	6.43	9	7 38 39.05	24.038	16 35 47.7	45.19
10	5 47 59.94	22.912	18 7 31.5	5.43	10	7 41 3.33	24.054	16 31 13.3	46.28
11	5 50 17.50	22.943	18 8 1.1	4.42	11	7 43 27.70	24.068	16 26 32.3	47.38
12	5 52 35.26	22.975	18 8 24.5	3.40	12	7 45 52.15	24.082	16 21 44.7	48.48
13	5 54 53.20	23.006	18 8 41.9	2.38	13	7 48 16.68	24.095	16 16 50.5	49.58
14	5 57 11.33	23.038	18 8 53.1	1.36	14	7 50 41.29	24.108	16 11 49.8	50.66
15	5 59 29.65	23.068	18 8 58.2	0.33	15	7 53 5.98	24.122	16 6 42.6	51.75
16	6 1 48.15	23.098	18 8 57.0	0.71	16	7 55 30.75	24.133	16 1 28.8	52.84
17	6 4 6.83	23.128	18 8 49.7	1.73	17	7 57 55.58	24.145	15 56 8.5	53.92
18	6 6 25.68	23.158	18 8 36.2	2.78	18	8 0 20.49	24.157	15 50 41.8	55.00
19	6 8 44.72	23.188	18 8 16.4	3.83	19	8 2 45.47	24.168	15 45 8.5	56.08
20	6 11 3.93	23.217	18 7 50.3	4.88	20	8 5 10.51	24.178	15 39 28.8	57.15
21	6 13 23.32	23.246	18 7 17.9	5.93	21	8 7 35.61	24.188	15 33 42.7	58.22
22	6 15 42.88	23.273	18 6 39.2	6.98	22	8 10 0.77	24.198	15 27 50.2	59.28
23	6 18 2.60	23.302	18 5 54.1	8.04	23	8 12 25.99	24.208	15 21 51.3	60.35
24	6 20 22.50	23.330	N. 18 5 2.7	9.10	24	8 14 51.27	24.218	N. 15 15 46.0	61.41

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascens.on.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 17.					TUESDAY 19.				
	h m s	s	N. 15 15 46.0	61.41		h m s	s	N. 8 30 52.8	104.02
0	8 14 51.27	24.218	15 9 34.4	62.46	0	10 11 33.61	24.317	8 20 26.7	104.67
1	8 17 16.60	24.227	15 3 16.5	63.52	1	10 13 59.50	24.314	8 9 56.8	105.30
2	8 19 41.99	24.235	14 56 52.2	64.57	2	10 16 25.38	24.312	7 59 23.1	105.92
3	8 22 7.42	24.243	14 50 21.7	65.60	3	10 18 51.24	24.309	7 48 45.8	106.52
4	8 24 32.90	24.251	14 43 45.0	66.64	4	10 21 17.09	24.307	7 38 4.9	107.11
5	8 26 58.43	24.258	14 37 2.0	67.68	5	10 23 42.92	24.303	7 27 20.5	107.69
6	8 29 24.00	24.265	14 30 12.9	68.70	6	10 26 8.73	24.301	7 16 32.6	108.26
7	8 31 49.61	24.272	14 23 17.6	69.72	7	10 28 34.53	24.298	7 5 41.4	108.81
8	8 34 15.26	24.278	14 16 16.2	70.73	8	10 31 0.30	24.294	6 54 46.9	109.34
9	8 36 40.95	24.284	14 9 8.8	71.74	9	10 33 26.06	24.292	6 43 49.3	109.87
10	8 39 6.67	24.289	14 1 55.3	72.75	10	10 35 51.80	24.289	6 32 48.5	110.38
11	8 41 32.42	24.295	13 54 35.8	73.74	11	10 38 17.53	24.286	6 21 44.7	110.88
12	8 43 58.21	24.300	13 47 10.4	74.73	12	10 40 43.23	24.282	6 10 37.9	111.37
13	8 46 24.02	24.304	13 39 39.0	75.73	13	10 43 8.91	24.279	5 59 28.3	111.83
14	8 48 49.86	24.309	13 32 1.7	76.71	14	10 45 34.58	24.276	5 48 16.0	112.28
15	8 51 15.73	24.313	13 24 18.5	77.68	15	10 48 0.22	24.273	5 37 0.9	112.73
16	8 53 41.62	24.318	13 16 29.6	78.63	16	10 50 25.85	24.270	5 25 43.3	113.15
17	8 56 7.54	24.321	13 8 34.9	79.59	17	10 52 51.46	24.267	5 14 23.1	113.57
18	8 58 33.47	24.323	13 0 34.5	80.54	18	10 55 17.05	24.263	5 3 0.5	113.96
19	9 0 59.42	24.327	12 52 28.4	81.48	19	10 57 42.62	24.261	4 51 35.6	114.34
20	9 3 25.39	24.329	12 44 16.7	82.42	20	11 0 8.18	24.257	4 40 8.4	114.71
21	9 5 51.37	24.331	12 35 59.4	83.34	21	11 2 33.71	24.253	4 28 39.1	115.06
22	9 8 17.36	24.333	12 27 36.6	84.26	22	11 4 59.22	24.251	N. 4 17 7.7	115.40
23	9 10 43.37	24.336			23	11 7 24.72	24.248		
MONDAY 18.					WEDNESDAY 20.				
	h m s	s	N. 12 19 8.3	85.18		h m s	s	N. 4 5 34.3	115.73
0	9 13 9.39	24.337	12 10 34.5	86.08	0	11 9 50.20	24.245	3 53 59.0	116.03
1	9 15 35.41	24.338	12 1 55.4	86.96	1	11 12 15.66	24.242	3 42 21.9	116.33
2	9 18 1.44	24.339	11 53 11.0	87.84	2	11 14 41.10	24.239	3 30 43.1	116.60
3	9 20 27.48	24.341	11 44 21.3	88.72	3	11 17 6.53	24.237	3 19 2.7	116.87
4	9 22 53.53	24.341	11 35 26.3	89.59	4	11 19 31.94	24.233	3 7 20.7	117.12
5	9 25 19.57	24.341	11 26 26.2	90.44	5	11 21 57.33	24.230	2 55 37.3	117.34
6	9 27 45.62	24.342	11 17 21.0	91.28	6	11 24 22.70	24.228	2 43 52.6	117.56
7	9 30 11.67	24.342	11 8 10.8	92.12	7	11 26 48.06	24.226	2 32 6.6	117.76
8	9 32 37.72	24.342	10 58 55.6	92.94	8	11 29 13.41	24.223	2 20 19.5	117.94
9	9 35 3.77	24.342	10 49 35.5	93.76	9	11 31 38.74	24.220	2 8 31.3	118.12
10	9 37 29.82	24.341	10 40 10.5	94.57	10	11 34 4.05	24.218	1 56 42.1	118.28
11	9 39 55.86	24.339	10 30 40.7	95.37	11	11 36 29.35	24.216	1 44 52.0	118.41
12	9 42 21.89	24.338	10 21 6.1	96.15	12	11 38 54.64	24.213	1 33 1.2	118.53
13	9 44 47.92	24.338	10 11 26.9	96.92	13	11 41 19.91	24.210	1 21 9.7	118.63
14	9 47 13.94	24.337	10 1 43.1	97.68	14	11 43 45.16	24.208	1 9 17.6	118.73
15	9 49 39.96	24.336	9 51 54.7	98.43	15	11 46 10.41	24.207	0 57 25.0	118.80
16	9 52 5.97	24.333	9 42 1.9	99.17	16	11 48 35.64	24.204	0 45 32.0	118.86
17	9 54 31.96	24.332	9 32 4.7	99.90	17	11 51 0.86	24.202	0 33 38.7	118.90
18	9 56 57.95	24.330	9 22 3.1	100.62	18	11 53 26.06	24.200	0 21 45.2	118.93
19	9 59 23.92	24.328	9 11 57.3	101.32	19	11 55 51.26	24.198	0 9 51.6	118.94
20	10 1 49.89	24.327	9 1 47.3	102.02	20	11 58 16.44	24.197	S. 0 2 2.1	118.94
21	10 4 15.84	24.323	8 51 33.1	102.70	21	12 0 41.62	24.195	0 13 55.7	118.92
22	10 6 41.77	24.322	8 41 14.9	103.36	22	12 3 6.78	24.193	0 25 49.1	118.88
23	10 9 7.70	24.320	8 30 52.8	104.02	23	12 5 31.94	24.192	0 37 42.3	118.84
24	10 11 33.61	24.317			24	12 7 57.08	24.190		

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
THURSDAY 21.					SATURDAY 23.				
	h m s	s	' "	' "		h m s	s	' "	' "
0	12 7 57.08	24.190	S. 0 37 42.3	118.84	0	14 4 0.56	24.175	S. 9 33 44.4	99.13
1	12 10 22.22	24.189	0 49 35.2	118.78	1	14 6 25.61	24.174	9 43 36.9	98.39
2	12 12 47.35	24.188	1 1 27.6	118.69	2	14 8 50.65	24.173	9 53 25.1	97.66
3	12 15 12.48	24.187	1 13 19.5	118.59	3	14 11 15.69	24.173	10 3 8.8	96.90
4	12 17 37.59	24.185	1 25 10.7	118.48	4	14 13 40.72	24.172	10 12 47.9	96.13
5	12 20 2.70	24.183	1 37 1.2	118.35	5	14 16 5.75	24.171	10 22 22.4	95.36
6	12 22 27.80	24.183	1 48 50.9	118.21	6	14 18 30.77	24.169	10 31 52.2	94.58
7	12 24 52.90	24.183	2 0 39.7	118.05	7	14 20 55.78	24.168	10 41 17.3	93.78
8	12 27 17.99	24.182	2 12 27.5	117.88	8	14 23 20.78	24.166	10 50 37.6	92.98
9	12 29 43.08	24.181	2 24 14.2	117.68	9	14 25 45.77	24.164	10 59 53.1	92.17
10	12 32 8.16	24.180	2 35 59.7	117.48	10	14 28 10.75	24.163	11 9 3.6	91.34
11	12 34 33.24	24.180	2 47 44.0	117.26	11	14 30 35.72	24.161	11 18 9.2	90.52
12	12 36 58.32	24.179	2 59 26.8	117.02	12	14 33 0.68	24.159	11 27 9.8	89.67
13	12 39 23.39	24.178	3 11 8.2	116.78	13	14 35 25.63	24.157	11 36 5.2	88.82
14	12 41 48.46	24.178	3 22 48.1	116.51	14	14 37 50.56	24.153	11 44 55.6	87.96
15	12 44 13.52	24.178	3 34 26.3	116.22	15	14 40 15.47	24.151	11 53 40.7	87.08
16	12 46 38.59	24.178	3 46 2.7	115.93	16	14 42 40.37	24.148	12 2 20.6	86.21
17	12 49 3.65	24.177	3 57 37.4	115.62	17	14 45 5.25	24.145	12 10 55.2	85.33
18	12 51 28.71	24.177	4 9 10.1	115.28	18	14 47 30.11	24.143	12 19 24.5	84.43
19	12 53 53.77	24.177	4 20 40.8	114.94	19	14 49 54.96	24.139	12 27 48.4	83.53
20	12 56 18.83	24.177	4 32 9.4	114.59	20	14 52 19.78	24.134	12 36 6.9	82.63
21	12 58 43.89	24.177	4 43 35.9	114.23	21	14 54 44.57	24.131	12 44 19.9	81.71
22	13 1 8.95	24.176	4 55 0.1	113.84	22	14 57 9.35	24.128	12 52 27.4	80.78
23	13 3 34.00	24.176	S. 5 6 22.0	113.44	23	14 59 34.10	24.123	S. 13 0 29.3	79.85
FRIDAY 22.					SUNDAY 24.				
	h m s	s	' "	' "		h m s	s	' "	' "
0	13 5 59.06	24.177	S. 5 17 41.4	113.03	0	15 1 58.82	24.118	S. 13 8 25.6	78.91
1	13 8 24.12	24.177	5 28 58.3	112.60	1	15 4 23.51	24.113	13 16 16.2	77.96
2	13 10 49.18	24.177	5 40 12.6	112.16	2	15 6 48.18	24.109	13 24 1.1	77.01
3	13 13 14.24	24.177	5 51 24.2	111.70	3	15 9 12.82	24.103	13 31 40.3	76.06
4	13 15 39.30	24.177	6 2 33.0	111.23	4	15 11 37.42	24.098	13 39 13.8	75.09
5	13 18 4.36	24.177	6 13 38.9	110.74	5	15 14 1.99	24.092	13 46 41.4	74.11
6	13 20 29.42	24.177	6 24 41.9	110.25	6	15 16 26.52	24.086	13 54 3.1	73.13
7	13 22 54.48	24.178	6 35 41.9	109.74	7	15 18 51.02	24.080	14 1 19.0	72.16
8	13 25 19.55	24.178	6 46 38.8	109.22	8	15 21 15.48	24.073	14 8 29.0	71.17
9	13 27 44.61	24.178	6 57 32.5	108.68	9	15 23 39.90	24.067	14 15 33.0	70.17
10	13 30 9.68	24.178	7 8 23.0	108.13	10	15 26 4.28	24.059	14 22 31.0	69.17
11	13 32 34.74	24.178	7 19 10.1	107.57	11	15 28 28.61	24.052	14 29 23.0	68.16
12	13 34 59.81	24.178	7 29 53.8	106.99	12	15 30 52.90	24.044	14 36 8.9	67.15
13	13 37 24.88	24.178	7 40 34.0	106.40	13	15 33 17.14	24.036	14 42 48.8	66.14
14	13 39 49.94	24.178	7 51 10.6	105.80	14	15 35 41.33	24.028	14 49 22.6	65.12
15	13 42 15.01	24.178	8 1 43.6	105.19	15	15 38 5.47	24.019	14 55 50.2	64.08
16	13 44 40.08	24.178	8 12 12.9	104.56	16	15 40 29.56	24.010	15 2 11.6	63.06
17	13 47 5.15	24.178	8 22 38.3	103.92	17	15 42 53.59	24.000	15 8 26.9	62.03
18	13 49 30.21	24.177	8 32 59.9	103.28	18	15 45 17.56	23.991	15 14 36.0	60.99
19	13 51 55.27	24.178	8 43 17.6	102.62	19	15 47 41.48	23.982	15 20 38.8	59.94
20	13 54 20.34	24.178	8 53 31.3	101.93	20	15 50 5.34	23.972	15 26 35.3	58.90
21	13 56 45.40	24.176	9 3 40.8	101.24	21	15 52 29.14	23.961	15 32 25.6	57.86
22	13 59 10.45	24.176	9 13 46.2	100.55	22	15 54 52.87	23.950	15 38 9.6	56.81
23	14 1 35.51	24.176	9 23 47.4	99.85	23	15 57 16.54	23.939	15 43 47.3	55.75
24	14 4 0.56	24.175	S. 9 33 44.4	99.13	24	15 59 40.14	23.927	S. 15 49 18.6	54.69

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
MONDAY 25.					WEDNESDAY 27.				
	h m s		° ' "	"		h m s		° ' "	"
0	15 59 40.14	23.927	S. 15 49 18.6	54.69	0	17 52 31.52	22.964	S. 18 8 9.5	3.45
1	16 2 3.66	23.915	15 54 43.6	53.63	1	17 54 49.22	22.935	18 8 27.1	2.43
2	16 4 27.12	23.903	16 0 2.2	52.57	2	17 57 6.74	22.907	18 8 38.6	1.41
3	16 6 50.50	23.891	16 5 14.4	51.50	3	17 59 24.10	22.879	18 8 44.0	0.40
4	16 9 13.81	23.878	16 10 20.2	50.43	4	18 1 41.29	22.850	18 8 43.4	0.61
5	16 11 37.03	23.864	16 15 19.6	49.37	5	18 3 58.30	22.821	18 8 36.7	1.63
6	16 14 0.18	23.851	16 20 12.6	48.30	6	18 6 15.14	22.792	18 8 23.9	2.63
7	16 16 23.24	23.837	16 24 59.2	47.23	7	18 8 31.80	22.762	18 8 5.1	3.63
8	16 18 46.22	23.823	16 29 39.3	46.14	8	18 10 48.28	22.732	18 7 40.3	4.63
9	16 21 9.12	23.808	16 34 12.9	45.07	9	18 13 4.58	22.702	18 7 9.6	5.62
10	16 23 31.92	23.793	16 38 40.1	43.99	10	18 15 20.70	22.672	18 6 32.9	6.61
11	16 25 54.63	23.778	16 43 0.8	42.92	11	18 17 36.64	22.642	18 5 50.3	7.59
12	16 28 17.25	23.763	16 47 15.1	41.83	12	18 19 52.40	22.611	18 5 1.8	8.58
13	16 30 39.78	23.746	16 51 22.8	40.75	13	18 22 7.97	22.579	18 4 7.4	9.55
14	16 33 2.20	23.729	16 55 24.1	39.67	14	18 24 23.35	22.548	18 3 7.2	10.52
15	16 35 24.53	23.713	16 59 18.9	38.58	15	18 26 38.54	22.517	18 2 1.2	11.48
16	16 37 46.75	23.695	17 3 7.1	37.50	16	18 28 53.55	22.486	18 0 49.5	12.44
17	16 40 8.87	23.678	17 6 48.9	36.43	17	18 31 8.37	22.454	17 59 31.9	13.40
18	16 42 30.89	23.660	17 10 24.2	35.34	18	18 33 23.00	22.422	17 58 8.7	14.35
19	16 44 52.79	23.642	17 13 53.0	34.26	19	18 35 37.43	22.389	17 56 39.7	15.30
20	16 47 14.59	23.623	17 17 15.3	33.18	20	18 37 51.67	22.358	17 55 5.1	16.23
21	16 49 36.27	23.604	17 20 31.1	32.09	21	18 40 5.72	22.325	17 53 24.9	17.18
22	16 51 57.84	23.585	17 23 40.4	31.02	22	18 42 19.57	22.293	17 51 39.0	18.11
23	16 54 19.29	23.565	S. 17 26 43.3	29.93	23	18 44 33.23	22.260	S. 17 49 47.6	19.03
TUESDAY 26.					THURSDAY 28.				
0	16 56 40.62	23.545	S. 17 29 39.6	28.84	0	18 46 46.69	22.227	S. 17 47 50.6	19.96
1	16 59 1.83	23.525	17 32 29.4	27.77	1	18 48 59.95	22.194	17 45 48.1	20.87
2	17 1 22.92	23.504	17 35 12.8	26.69	2	18 51 13.02	22.161	17 43 40.2	21.78
3	17 3 43.88	23.483	17 37 49.7	25.62	3	18 53 25.88	22.128	17 41 26.7	22.69
4	17 6 4.72	23.462	17 40 20.2	24.54	4	18 55 38.55	22.094	17 39 7.9	23.58
5	17 8 25.42	23.440	17 42 44.2	23.46	5	18 57 51.01	22.061	17 36 43.7	24.48
6	17 10 46.00	23.418	17 45 1.7	22.38	6	19 0 3.28	22.028	17 34 14.1	25.38
7	17 13 6.44	23.395	17 47 12.8	21.32	7	19 2 15.34	21.993	17 31 39.2	26.26
8	17 15 26.74	23.372	17 49 17.5	20.25	8	19 4 27.20	21.960	17 28 59.0	27.14
9	17 17 46.90	23.349	17 51 15.8	19.18	9	19 6 38.86	21.926	17 26 13.5	28.01
10	17 20 6.93	23.326	17 53 7.7	18.11	10	19 8 50.31	21.892	17 23 22.9	28.88
11	17 22 26.81	23.302	17 54 53.1	17.04	11	19 11 1.56	21.858	17 20 27.0	29.74
12	17 24 46.55	23.278	17 56 32.2	15.98	12	19 13 12.61	21.824	17 17 26.0	30.60
13	17 27 6.15	23.253	17 58 4.9	14.93	13	19 15 23.45	21.790	17 14 19.8	31.45
14	17 29 25.59	23.228	17 59 31.3	13.88	14	19 17 34.09	21.757	17 11 8.6	32.29
15	17 31 44.89	23.204	18 0 51.4	12.82	15	19 19 44.53	21.723	17 7 52.3	33.13
16	17 34 4.04	23.178	18 2 5.1	11.76	16	19 21 54.76	21.688	17 4 31.0	33.97
17	17 36 23.03	23.152	18 3 12.5	10.72	17	19 24 4.78	21.653	17 1 4.7	34.80
18	17 38 41.86	23.126	18 4 13.7	9.67	18	19 26 14.60	21.620	16 57 33.4	35.62
19	17 41 0.54	23.100	18 5 8.5	8.62	19	19 28 24.22	21.586	16 53 57.3	36.43
20	17 43 19.06	23.073	18 5 57.1	7.58	20	19 30 33.63	21.551	16 50 16.2	37.25
21	17 45 37.42	23.047	18 6 39.5	6.55	21	19 32 42.83	21.517	16 46 30.3	38.05
22	17 47 55.62	23.019	18 7 15.7	5.52	22	19 34 51.83	21.483	16 42 39.6	38.85
23	17 50 13.65	22.992	18 7 45.7	4.48	23	19 37 0.62	21.448	16 38 44.1	39.64
24	17 52 31.52	22.964	S. 18 8 9.5	3.45	24	19 39 9.20	21.413	S. 16 34 43.9	40.43

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 29.					SATURDAY 30.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	19 39 9.20	21.413	S. 16 34 43.9	40.43	0	20 29 34.49	20.613	S. 14 36 28.5	57.54
1	19 41 17.58	21.379	16 30 38.9	41.22	1	20 31 38.07	20.582	14 30 41.3	58.18
2	19 43 25.75	21.345	16 26 29.3	41.98	2	20 33 41.47	20.550	14 24 50.4	58.80
3	19 45 33.72	21.312	16 22 15.1	42.76	3	20 35 44.67	20.518	14 18 55.7	59.43
4	19 47 41.49	21.278	16 17 56.2	43.53	4	20 37 47.69	20.488	14 12 57.2	60.05
5	19 49 49.05	21.243	16 13 32.8	44.28	5	20 39 50.52	20.456	14 6 55.1	60.66
6	19 51 56.41	21.209	16 9 4.8	45.03	6	20 41 53.16	20.425	14 0 49.3	61.27
7	19 54 3.56	21.175	16 4 32.4	45.78	7	20 43 55.62	20.395	13 54 39.9	61.87
8	19 56 10.51	21.141	15 59 55.5	46.52	8	20 45 57.90	20.364	13 48 26.9	62.47
9	19 58 17.25	21.107	15 55 14.2	47.25	9	20 47 59.99	20.333	13 42 10.3	63.05
10	20 0 23.79	21.073	15 50 28.5	47.98	10	20 50 1.89	20.303	13 35 50.3	63.63
11	20 2 30.13	21.040	15 45 38.4	48.71	11	20 52 3.62	20.273	13 29 26.7	64.21
12	20 4 36.27	21.007	15 40 44.0	49.42	12	20 54 5.17	20.243	13 22 59.8	64.78
13	20 6 42.21	20.973	15 35 45.4	50.13	13	20 56 6.54	20.213	13 16 29.4	65.35
14	20 8 47.95	20.940	15 30 42.5	50.83	14	20 58 7.73	20.184	13 9 55.6	65.90
15	20 10 53.49	20.907	15 25 35.4	51.53	15	21 0 8.75	20.155	13 3 18.6	66.45
16	20 12 58.83	20.873	15 20 24.2	52.22	16	21 2 9.59	20.126	12 56 38.2	67.00
17	20 15 3.97	20.841	15 15 8.8	52.91	17	21 4 10.26	20.098	12 49 54.6	67.54
18	20 17 8.92	20.808	15 9 49.3	53.58	18	21 6 10.76	20.069	12 43 7.7	68.08
19	20 19 13.67	20.775	15 4 25.8	54.26	19	21 8 11.09	20.041	12 36 17.7	68.60
20	20 21 18.22	20.743	14 58 58.2	54.93	20	21 10 11.25	20.013	12 29 24.5	69.13
21	20 23 22.58	20.710	14 53 26.7	55.58	21	21 12 11.24	19.985	12 22 28.2	69.64
22	20 25 26.74	20.678	14 47 51.2	56.24	22	21 14 11.07	19.958	12 15 28.8	70.15
23	20 27 30.71	20.646	14 42 11.8	56.89	23	21 16 10.74	19.931	12 8 26.4	70.66
24	20 29 34.49	20.613	S. 14 36 28.5	57.54	24	21 18 10.24	19.903	S. 12 1 20.9	71.16

PHASES OF THE MOON.

Sept.	h	m
5	19	47.2
13	22	20.0
20	16	38.3
27	10	40.4

Sept.	h
7	6.2
20	17.6

AT APPARENT NOON.

Date.		THE SUN'S				Sidereal Time of the Semi-diameter passing the Meridian.*	Equation of Time, to be subtracted from Apparent Time.		Var. in hour.
		Apparent Right Ascension.	Var. in hour.	Apparent Declination.	Var. in hour.				
		h m s	s	° ' "	"	m s	m s	s	
Sun.	1	12 27 35.60	9.046	S. 2 58' 54".6	58.26	1 4.27	10 7.02	0.809	
Mon.	2	12 31 12.83	9.057	3 22 12.0	58.18	1 4.32	10 26.29	0.797	
Tues.	3	12 34 50.35	9.070	3 45 27.1	58.08	1 4.36	10 45.27	0.784	
Wed.	4	12 38 28.18	9.083	4 8 39.6	57.96	1 4.41	11 3.94	0.771	
Thur.	5	12 42 6.34	9.098	4 31 49.2	57.83	1 4.46	11 22.28	0.757	
Frid.	6	12 45 44.87	9.113	4 54 55.4	57.68	1 4.52	11 40.26	0.741	
Sat.	7	12 49 23.77	9.129	5 17 58.0	57.52	1 4.57	11 57.86	0.725	
Sun.	8	12 53 3.08	9.147	5 40 56.6	57.35	1 4.63	12 15.06	0.708	
Mon.	9	12 56 42.81	9.165	6 3 50.9	57.16	1 4.70	12 31.83	0.690	
Tues.	10	13 0 22.99	9.184	6 26 40.4	56.96	1 4.76	12 48.16	0.670	
Wed.	11	13 4 3.65	9.204	6 49 24.9	56.74	1 4.83	13 4.01	0.650	
Thur.	12	13 7 44.80	9.225	7 12 3.9	56.51	1 4.90	13 19.37	0.629	
Frid.	13	13 11 26.46	9.247	7 34 37.2	56.26	1 4.98	13 34.22	0.608	
Sat.	14	13 15 8.65	9.270	7 57 4.3	55.99	1 5.05	13 48.54	0.585	
Sun.	15	13 18 51.40	9.293	8 19 24.9	55.71	1 5.13	14 2.31	0.562	
Mon.	16	13 22 34.72	9.317	8 41 38.5	55.42	1 5.21	14 15.51	0.538	
Tues.	17	13 26 18.63	9.342	9 3 44.9	55.10	1 5.30	14 28.12	0.513	
Wed.	18	13 30 3.13	9.367	9 25 43.5	54.78	1 5.38	14 40.13	0.488	
Thur.	19	13 33 48.25	9.393	9 47 34.1	54.43	1 5.47	14 51.53	0.462	
Frid.	20	13 37 34.00	9.420	10 9 16.1	54.06	1 5.56	15 2.31	0.436	
Sat.	21	13 41 20.39	9.446	10 30 49.2	53.69	1 5.66	15 12.45	0.409	
Sun.	22	13 45 7.42	9.473	10 52 13.0	53.29	1 5.75	15 21.94	0.382	
Mon.	23	13 48 55.11	9.501	11 13 27.0	52.87	1 5.85	15 30.77	0.354	
Tues.	24	13 52 43.48	9.530	11 34 30.9	52.44	1 5.95	15 38.94	0.326	
Wed.	25	13 56 32.53	9.558	11 55 24.2	51.99	1 6.06	15 46.43	0.297	
Thur.	26	14 0 22.27	9.587	12 16 6.5	51.53	1 6.16	15 53.22	0.268	
Frid.	27	14 4 12.71	9.617	12 36 37.4	51.05	1 6.27	15 59.31	0.239	
Sat.	28	14 8 3.88	9.647	12 56 56.6	50.55	1 6.37	16 4.68	0.208	
Sun.	29	14 11 55.79	9.678	13 17 3.5	50.03	1 6.48	16 9.32	0.178	
Mon.	30	14 15 48.44	9.710	13 36 57.9	49.50	1 6.59	16 13.21	0.146	
Tues.	31	14 19 41.85	9.741	13 56 39.3	48.95	1 6.71	16 16.34	0.115	
Wed.	32	14 23 36.03	9.774	S. 14 16 7.3	48.38	1 6.82	16 18.71	0.082	

* Mean Time of the Semidiameter passing may be found by subtracting 0^s.18 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be subtracted from Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*		
		h m s	S. ° ' "	16 "	m s	h m s
Sun.	1	12 27 37.13	2 59 4.4	16 0.35	10 7.16	12 37 44.29
Mon.	2	12 31 14.41	3 22 22.1	16 0.63	10 26.43	12 41 40.84
Tues.	3	12 34 51.98	3 45 37.5	16 0.91	10 45.41	12 45 37.39
Wed.	4	12 38 29.86	4 8 50.3	16 1.19	11 4.09	12 49 33.94
Thur.	5	12 42 8.07	4 32 0.1	16 1.47	11 22.43	12 53 30.49
Frid.	6	12 45 46.64	4 55 6.6	16 1.74	11 40.41	12 57 27.04
Sat.	7	12 49 25.59	5 18 9.5	16 2.02	11 58.01	13 1 23.60
Sun.	8	12 53 4.94	5 41 8.3	16 2.30	12 15.21	13 5 20.15
Mon.	9	12 56 44.72	6 4 2.8	16 2.57	12 31.98	13 9 16.70
Tues.	10	13 0 24.95	6 26 52.5	16 2.84	12 48.30	13 13 13.25
Wed.	11	13 4 5.65	6 49 37.2	16 3.11	13 4.15	13 17 9.81
Thur.	12	13 7 46.84	7 12 16.5	16 3.38	13 19.51	13 21 6.36
Frid.	13	13 11 28.55	7 34 49.9	16 3.65	13 34.36	13 25 2.91
Sat.	14	13 15 10.79	7 57 17.2	16 3.92	13 48.68	13 28 59.46
Sun.	15	13 18 53.58	8 19 37.9	16 4.19	14 2.44	13 32 56.02
Mon.	16	13 22 36.94	8 41 51.7	16 4.46	14 15.63	13 36 52.57
Tues.	17	13 26 20.88	9 3 58.2	16 4.72	14 28.24	13 40 49.12
Wed.	18	13 30 5.42	9 25 56.9	16 4.99	14 40.25	13 44 45.67
Thur.	19	13 33 50.58	9 47 47.6	16 5.26	14 51.64	13 48 42.23
Frid.	20	13 37 36.36	10 9 29.7	16 5.53	15 2.41	13 52 38.78
Sat.	21	13 41 22.78	10 31 2.8	16 5.80	15 12.55	13 56 35.33
Sun.	22	13 45 9.85	10 52 26.7	16 6.07	15 22.04	14 0 31.88
Mon.	23	13 48 57.57	11 13 40.7	16 6.34	15 30.87	14 4 28.44
Tues.	24	13 52 45.96	11 34 44.6	16 6.61	15 39.03	14 8 24.99
Wed.	25	13 56 35.04	11 55 37.8	16 6.88	15 46.51	14 12 21.54
Thur.	26	14 0 24.81	12 16 20.1	16 7.15	15 53.29	14 16 18.10
Frid.	27	14 4 15.28	12 36 51.0	16 7.42	15 59.37	14 20 14.65
Sat.	28	14 8 6.47	12 57 10.1	16 7.68	16 4.73	14 24 11.20
Sun.	29	14 11 58.39	13 17 17.0	16 7.95	16 9.36	14 28 7.76
Mon.	30	14 15 51.06	13 37 11.3	16 8.21	16 13.25	14 32 4.31
Tues.	31	14 19 44.49	13 56 52.6	16 8.47	16 16.37	14 36 0.86
Wed.	32	14 23 38.69	S. 14 16 20.4	16 8.72	16 18.73	14 39 57.42

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	<i>Noon.</i>	<i>Noon.</i>			<i>Noon.</i>	<i>Midnight.</i>	<i>Noon.</i>	<i>Midnight.</i>
				h m s				
1	187° 31' 9.4	N. 0.47	0.0003753	11 20 23.94	14 53.22	14 50.51	54 32.53	54 22.60
2	188 30 11.0	0.36	.0002487	11 16 28.04	14 48.31	14 46.58	54 14.53	54 8.19
3	189 29 14.5	0.24	0.0001224	11 12 32.13	14 45.30	14 44.45	54 3.53	54 0.42
4	190 28 19.9	N. 0.12	9.9999964	11 8 36.22	14 44.02	14 43.95	53 58.81	53 58.58
5	191 27 27.3	0.00	.9998708	11 4 40.32	14 44.26	14 44.91	53 59.70	54 2.10
6	192 26 36.7	S. 0.13	.9997457	11 0 44.41	14 45.92	14 47.26	54 5.77	54 10.68
7	193 25 48.2	0.25	9.9996212	10 56 48.51	14 48.93	14 50.95	54 16.82	54 24.22
8	194 25 1.8	0.35	.9994973	10 52 52.60	14 53.33	14 56.07	54 32.92	54 42.98
9	195 24 17.6	0.43	.9993739	10 48 56.69	14 59.20	15 2.71	54 54.42	55 7.28
10	196 23 35.6	0.49	9.9992510	10 45 0.79	15 6.63	15 10.96	55 21.64	55 37.51
11	197 22 55.8	0.52	.9991287	10 41 4.88	15 15.71	15 20.87	55 54.92	56 13.86
12	198 22 18.3	0.53	.9990068	10 37 8.98	15 26.45	15 32.40	56 34.28	56 56.08
13	199 21 43.1	0.50	9.9988854	10 33 13.07	15 38.69	15 45.26	57 19.12	57 43.20
14	200 21 10.3	0.44	.9987643	10 29 17.16	15 52.03	15 58.91	58 8.01	58 33.23
15	201 20 39.8	0.35	.9986434	10 25 21.26	16 5.79	16 12.52	58 58.43	59 23.08
16	202 20 11.7	0.24	9.9985225	10 21 25.35	16 18.94	16 24.89	59 46.60	60 8.41
17	203 19 45.8	S. 0.11	.9984017	10 17 29.44	16 30.19	16 34.68	60 27.84	60 44.27
18	204 19 22.2	N. 0.03	.9982809	10 13 33.54	16 38.18	16 40.55	60 57.09	61 5.79
19	205 19 0.8	0.17	9.9981599	10 9 37.63	16 41.70	16 41.56	61 9.99	61 9.48
20	206 18 41.4	0.32	.9980387	10 5 41.72	16 40.10	16 37.36	61 4.13	60 54.10
21	207 18 24.1	0.44	.9979173	10 1 45.82	16 33.41	16 28.39	60 39.65	60 21.24
22	208 18 8.7	0.53	9.9977958	9 57 49.91	16 22.43	16 15.74	59 59.43	59 34.86
23	209 17 55.1	0.61	.9976743	9 53 54.00	16 8.47	16 0.83	59 8.23	58 40.26
24	210 17 43.3	0.65	.9975529	9 49 58.09	15 53.01	15 45.20	58 11.62	57 42.96
25	211 17 33.3	0.66	9.9974318	9 46 2.19	15 37.52	15 30.12	57 14.82	56 47.72
26	212 17 24.9	0.64	.9973112	9 42 6.28	15 23.11	15 16.59	56 22.05	55 58.16
27	213 17 18.2	0.59	.9971912	9 38 10.37	15 10.62	15 5.25	55 36.27	55 16.60
28	214 17 13.1	0.52	9.9970721	9 34 14.46	15 0.52	14 56.43	54 59.25	54 44.28
29	215 17 9.7	0.43	.9969538	9 30 18.56	14 52.99	14 50.22	54 31.70	54 21.55
30	216 17 7.9	0.32	.9968366	9 26 22.65	14 48.08	14 46.56	54 13.70	54 8.12
31	217 17 7.8	0.19	.9967205	9 22 26.74	14 45.61	14 45.22	54 4.66	54 3.21
32	218 17 9.4	N. 0.08	9.9966058	9 18 30.83	14 45.34	14 45.93	54 3.66	54 5.84

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.		Noon.	Upper.	Lower.
1	318° 12' 40"·8	324° 12' 3"·4	N. 3° 31' 18"·8	N. 3° 5' 21"·2	10·31	h m 8 56·7	h m 21 18·8
2	330 9 32·0	336 5 31·7	2 37 30·5	2 8 4·7	11·31	9 40·6	22 2·1
3	342 0 26·1	347 54 37·3	1 37 21·6	1 5 40·0	12·31	10 23·5	22 44·7
4	353 48 25·9	359 42 10·9	N. 0 33 18·7	N. 0 0 37·0	13·31	11 5·8	23 27·0
5	5 36 10·6	11 30 41·8	S. 0 32 5·7	S. 1 4 29·7	14·31	11 48·2	* *
6	17 26 0·7	23 22 22·9	1 36 15·2	2 7 2·7	15·31	12 31·2	0 9·6
7	29 20 3·9	35 19 18·7	2 36 32·6	3 4 25·9	16·31	13 15·2	0 53·1
8	41 20 22·9	47 23 32·3	3 30 23·8	3 54 8·5	17·31	14 0·7	1 37·7
9	53 29 3·4	59 37 13·4	4 15 22·6	4 33 49·7	18·31	14 47·9	2 24·1
10	65 48 20·5	72 2 43·5	4 49 14·2	5 1 21·8	19·31	15 37·1	3 12·3
11	78 20 41·9	84 42 35·9	5 9 59·0	5 14 53·9	20·31	16 28·0	4 2·3
12	91 8 45·8	97 39 31·5	5 15 56·0	5 12 56·7	21·31	17 20·4	4 54·0
13	104 15 11·8	110 56 4·2	5 5 49·2	4 54 29·4	22·31	18 13·8	5 47·0
14	117 42 23·3	124 34 20·5	4 38 56·3	4 19 12·2	23·31	19 8·0	6 40·8
15	131 32 1·9	138 35 28·4	3 55 24·0	3 27 43·2	24·31	20 2·4	7 35·2
16	145 44 33·4	152 59 2·7	2 56 27·2	2 21 59·2	25·31	20 57·1	8 29·7
17	160 18 32·7	167 42 30·7	1 44 48·6	S. 1 5 31·0	26·31	21 52·1	9 24·6
18	175 10 14·3	182 40 52·2	S. 0 24 47·7	N. 0 16 35·7	27·31	22 47·7	10 19·8
19	190 13 25·4	197 46 48·4	N. 0 57 50·4	1 38 6·6	28·31	23 44·0	11 15·7
20	205 19 51·9	212 51 25·4	2 16 35·6	2 52 32·0	29·31	* *	12 12·4
21	220 20 19·6	227 45 29·4	3 25 15·2	3 54 11·7	0·93	0 41·1	13 9·8
22	235 5 56·7	242 20 52·0	4 18 55·5	4 39 8·8	1·93	1 38·6	14 7·3
23	249 29 36·0	256 31 40·3	4 54 41·3	5 5 30·3	2·93	2 35·8	15 4·1
24	263 26 47·9	270 14 52·4	5 11 39·2	5 13 16·5	3·93	3 32·0	15 59·4
25	276 55 57·1	283 30 14·4	5 10 34·6	5 3 48·8	4·93	4 26·2	16 52·4
26	289 58 3·6	296 19 50·5	4 53 16·2	4 39 14·9	5·93	5 17·9	17 42·8
27	302 36 5·1	308 47 21·3	4 22 3·8	4 2 1·5	6·93	6 7·0	18 30·6
28	314 54 14·7	320 57 22·7	3 39 26·8	3 14 38·0	7·93	6 53·7	19 16·2
29	326 57 23·0	332 54 53·0	2 47 53·1	2 19 29·8	8·93	7 38·3	20 0·0
30	338 50 29·1	344 44 46·6	1 49 45·9	1 18 59·0	9·93	8 21·5	20 42·7
31	350 38 18·7	356 31 37·1	N. 0 47 26·7	N. 0 15 26·8	10·93	9 3·8	21 24·9
32	2 25 10·2	8 19 24·6	S. 0 16 42·4	S. 0 48 42·3	11·93	9 46·1	22 7·4

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .				
SUNDAY 1.					TUESDAY 3.								
	h m s	s	° ' "	"		h m s	s	° ' "	"				
0	21 18 10	24	19 903	S. 12 1 20	9	71 16	0	22 51 8	71	18 957	S. 5 33 34	6	88 19
1	21 20 9	58	19 877	11 54 12	5	71 64	1	22 53 2	42	18 945	5 24 44	8	88 40
2	21 22 8	76	19 850	11 47 1	2	72 13	2	22 54 56	05	18 933	5 15 53	8	88 60
3	21 24 7	78	19 823	11 39 46	9	72 62	3	22 56 49	62	18 923	5 7 1	6	88 81
4	21 26 6	64	19 798	11 32 29	8	73 08	4	22 58 43	12	18 912	4 58 8	1	89 01
5	21 28 5	35	19 773	11 25 9	9	73 56	5	23 0 36	56	18 902	4 49 13	5	89 19
6	21 30 3	91	19 748	11 17 47	1	74 03	6	23 2 29	94	18 893	4 40 17	8	89 38
7	21 32 2	32	19 722	11 10 21	6	74 48	7	23 4 23	27	18 883	4 31 20	9	89 57
8	21 34 0	57	19 697	11 2 53	4	74 93	8	23 6 16	53	18 873	4 22 23	0	89 73
9	21 35 58	68	19 673	10 55 22	5	75 38	9	23 8 9	74	18 864	4 13 24	1	89 90
10	21 37 56	64	19 648	10 47 48	9	75 81	10	23 10 2	90	18 856	4 4 24	2	90 06
11	21 39 54	45	19 624	10 40 12	8	76 24	11	23 11 56	01	18 848	3 55 23	4	90 22
12	21 41 52	13	19 601	10 32 34	0	76 67	12	23 13 49	07	18 839	3 46 21	6	90 38
13	21 43 49	66	19 578	10 24 52	7	77 09	13	23 15 42	08	18 832	3 37 18	9	90 52
14	21 45 47	06	19 554	10 17 8	9	77 51	14	23 17 35	05	18 825	3 28 15	4	90 65
15	21 47 44	31	19 531	10 9 22	6	77 92	15	23 19 27	08	18 818	3 19 11	1	90 79
16	21 49 41	43	19 509	10 1 33	9	78 33	16	23 21 20	87	18 812	3 10 5	9	90 92
17	21 51 38	42	19 487	9 53 42	7	78 72	17	23 23 13	72	18 806	3 1 0	1	91 03
18	21 53 35	27	19 464	9 45 49	2	79 11	18	23 25 6	54	18 801	2 51 53	5	91 16
19	21 55 31	99	19 443	9 37 53	4	79 50	19	23 26 59	33	18 795	2 42 46	2	91 27
20	21 57 28	58	19 422	9 29 55	2	79 88	20	23 28 52	08	18 789	2 33 38	3	91 37
21	21 59 25	05	19 401	9 21 54	8	80 25	21	23 30 44	80	18 785	2 24 29	8	91 48
22	22 1 21	39	19 380	9 13 52	2	80 63	22	23 32 37	50	18 781	2 15 20	6	91 57
23	22 3 17	61	19 359	S. 9 5 47	3	80 99	23	23 34 30	17	18 777	S. 2 6 11	0	91 65
MONDAY 2.					WEDNESDAY 4.								
	h m s	s	° ' "	"		h m s	s	° ' "	"				
0	22 5 13	70	19 339	S. 8 57 40	3	81 34	0	23 36 22	82	18 773	S. 1 57 0	8	91 73
1	22 7 9	68	19 320	8 49 31	2	81 69	1	23 38 15	45	18 770	1 47 50	2	91 81
2	22 9 5	54	19 300	8 41 20	0	82 03	2	23 40 8	06	18 767	1 38 39	1	91 88
3	22 11 1	28	19 281	8 33 6	8	82 38	3	23 42 0	65	18 764	1 29 27	6	91 95
4	22 12 56	91	19 263	8 24 51	5	82 72	4	23 43 53	23	18 762	1 20 15	7	92 01
5	22 14 52	43	19 244	8 16 34	2	83 04	5	23 45 45	80	18 761	1 11 3	5	92 06
6	22 16 47	84	19 226	8 8 15	0	83 36	6	23 47 38	36	18 759	1 1 51	0	92 11
7	22 18 43	14	19 208	7 59 53	9	83 68	7	23 49 30	91	18 758	0 52 38	2	92 15
8	22 20 38	34	19 191	7 51 30	8	83 99	8	23 51 23	46	18 758	0 43 25	2	92 18
9	22 22 33	43	19 173	7 43 6	0	84 29	9	23 53 16	00	18 757	0 34 12	0	92 22
10	22 24 28	41	19 156	7 34 39	3	84 60	10	23 55 8	54	18 758	0 24 58	6	92 24
11	22 26 23	30	19 141	7 26 10	8	84 89	11	23 57 1	09	18 758	0 15 45	1	92 26
12	22 28 18	10	19 125	7 17 40	6	85 18	12	23 58 53	63	18 758	S. 0 6 31	5	92 28
13	22 30 12	80	19 108	7 9 8	7	85 46	13	0 0 46	18	18 759	N. 0 2 42	2	92 28
14	22 32 7	40	19 093	7 0 35	1	85 73	14	0 2 38	74	18 761	0 11 55	9	92 28
15	22 34 1	91	19 078	6 51 59	9	86 01	15	0 4 31	31	18 763	0 21 9	6	92 28
16	22 35 56	33	19 063	6 43 23	0	86 28	16	0 6 23	89	18 764	0 30 23	3	92 28
17	22 37 50	66	19 048	6 34 44	6	86 53	17	0 8 16	48	18 767	0 39 36	9	92 26
18	22 39 44	91	19 034	6 26 4	7	86 78	18	0 10 9	09	18 770	0 48 50	4	92 23
19	22 41 39	07	19 021	6 17 23	2	87 03	19	0 12 1	72	18 773	0 58 3	7	92 21
20	22 43 33	16	19 007	6 8 40	3	87 28	20	0 13 54	37	18 777	1 7 16	9	92 18
21	22 45 27	16	18 993	5 59 55	9	87 51	21	0 15 47	04	18 780	1 16 29	8	92 13
22	22 47 21	08	18 981	5 51 10	2	87 73	22	0 17 39	73	18 784	1 25 42	5	92 09
23	22 49 14	93	18 969	5 42 23	1	87 97	23	0 19 32	45	18 788	1 34 54	9	92 04
24	22 51 8	71	18 957	S. 5 33 34	6	88 19	24	0 21 25	19	18 793	N. 1 44 7	0	91 98

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .		
THURSDAY 5.					SATURDAY 7.						
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"		
0	0 21 25	19	18.793	N. 1 44 7.0	91.98	0	1 52 49	76	19.416	N. 8 47 56.5	82.30
1	0 23 17	97	18.799	1 53 18.7	91.93	1	1 54 46	32	19.436	8 56 9.2	81.95
2	0 25 10	78	18.805	2 2 30.1	91.86	2	1 56 42	99	19.456	9 4 19.9	81.60
3	0 27 3	63	18.811	2 11 41.0	91.78	3	1 58 39	79	19.477	9 12 28.4	81.23
4	0 28 56	51	18.817	2 20 51.5	91.70	4	2 0 36	71	19.498	9 20 34.7	80.86
5	0 30 49	43	18.823	2 30 1.4	91.62	5	2 2 33	76	19.520	9 28 38.7	80.48
6	0 32 42	39	18.831	2 39 10.9	91.53	6	2 4 30	95	19.542	9 36 40.5	80.11
7	0 34 35	40	18.838	2 48 19.7	91.43	7	2 6 28	26	19.563	9 44 40.0	79.72
8	0 36 28	45	18.845	2 57 28.0	91.33	8	2 8 25	70	19.585	9 52 37.1	79.33
9	0 38 21	54	18.853	3 6 35.6	91.22	9	2 10 23	28	19.608	10 0 31.9	78.93
10	0 40 14	69	18.862	3 15 42.6	91.11	10	2 12 20	99	19.630	10 8 24.2	78.52
11	0 42 7	88	18.870	3 24 48.9	90.98	11	2 14 18	84	19.653	10 16 14.1	78.11
12	0 44 1	13	18.880	3 33 54.4	90.85	12	2 16 16	82	19.676	10 24 1.5	77.69
13	0 45 54	44	18.889	3 42 59.1	90.72	13	2 18 14	95	19.699	10 31 46.4	77.27
14	0 47 47	80	18.898	3 52 3.0	90.58	14	2 20 13	21	19.723	10 39 28.7	76.83
15	0 49 41	22	18.908	4 1 6.1	90.44	15	2 22 11	62	19.747	10 47 8.4	76.40
16	0 51 34	70	18.918	4 10 8.3	90.29	16	2 24 10	17	19.771	10 54 45.5	75.95
17	0 53 28	24	18.929	4 19 9.6	90.13	17	2 26 8	87	19.795	11 2 19.8	75.50
18	0 55 21	85	18.941	4 28 9.9	89.97	18	2 28 7	71	19.819	11 9 51.5	75.05
19	0 57 15	53	18.952	4 37 9.2	89.80	19	2 30 6	70	19.844	11 17 20.4	74.58
20	0 59 9	27	18.963	4 46 7.5	89.63	20	2 32 5	84	19.869	11 24 46.5	74.12
21	1 1 3	08	18.975	4 55 4.8	89.45	21	2 34 5	13	19.894	11 32 9.8	73.65
22	1 2 56	97	18.988	5 4 0.9	89.26	22	2 36 4	57	19.919	11 39 30.3	73.17
23	1 4 50	93	19.000	5 12 55.9	89.08	23	2 38 4	16	19.944	N. 11 46 47.8	72.68
FRIDAY 6.					SUNDAY 8.						
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"		
0	1 6 44	97	19.013	N. 5 21 49.8	88.88	0	2 40 3	90	19.970	N. 11 54 2.4	72.18
1	1 8 39	09	19.027	5 30 42.4	88.67	1	2 42 3	80	19.997	12 1 14.0	71.68
2	1 10 33	29	19.040	5 39 33.8	88.46	2	2 44 3	86	20.023	12 8 22.6	71.18
3	1 12 27	57	19.054	5 48 23.9	88.24	3	2 46 4	07	20.048	12 15 28.1	70.67
4	1 14 21	94	19.068	5 57 12.7	88.02	4	2 48 4	44	20.075	12 22 30.6	70.15
5	1 16 16	39	19.083	6 6 0.1	87.79	5	2 50 4	97	20.102	12 29 29.9	69.62
6	1 18 10	93	19.098	6 14 46.2	87.56	6	2 52 5	66	20.128	12 36 26.0	69.09
7	1 20 5	56	19.113	6 23 30.8	87.32	7	2 54 6	51	20.155	12 43 19.0	68.56
8	1 22 0	28	19.128	6 32 14.0	87.07	8	2 56 7	52	20.182	12 50 8.7	68.01
9	1 23 55	10	19.144	6 40 55.6	86.82	9	2 58 8	69	20.209	12 56 55.1	67.46
10	1 25 50	01	19.160	6 49 35.8	86.57	10	3 0 10	03	20.237	13 3 38.2	66.91
11	1 27 45	02	19.176	6 58 14.4	86.29	11	3 2 11	53	20.264	13 10 18.0	66.35
12	1 29 40	12	19.193	7 6 51.3	86.02	12	3 4 13	20	20.293	13 16 54.4	65.78
13	1 31 35	33	19.210	7 15 26.6	85.75	13	3 6 15	04	20.320	13 23 27.3	65.20
14	1 33 30	64	19.228	7 24 0.3	85.47	14	3 8 17	04	20.348	13 29 56.8	64.63
15	1 35 26	06	19.245	7 32 32.2	85.18	15	3 10 19	21	20.376	13 36 22.8	64.04
16	1 37 21	58	19.262	7 41 2.4	84.88	16	3 12 21	55	20.404	13 42 45.3	63.44
17	1 39 17	20	19.280	7 49 30.8	84.58	17	3 14 24	06	20.433	13 49 4.1	62.84
18	1 41 12	94	19.299	7 57 57.4	84.28	18	3 16 26	74	20.461	13 55 19.4	62.24
19	1 43 8	79	19.318	8 6 52.1	83.96	19	3 18 29	59	20.489	14 1 31.0	61.63
20	1 45 4	75	19.337	8 14 44.9	83.64	20	3 20 32	61	20.518	14 7 38.9	61.02
21	1 47 0	83	19.356	8 23 5.8	83.32	21	3 22 35	81	20.547	14 13 43.2	60.39
22	1 48 57	02	19.375	8 31 24.7	82.98	22	3 24 39	18	20.576	14 19 43.6	59.76
23	1 50 53	33	19.395	8 39 41.6	82.65	23	3 26 42	72	20.604	14 25 40.3	59.13
24	1 52 49	76	19.416	N. 8 47 56.5	82.30	24	3 28 46	43	20.633	N. 14 31 33.1	58.48

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
MONDAY 9.					WEDNESDAY 11.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	3 28 46.43	20.633	N. 14 31 33.1	58.48	0	5 11 12.35	22.029	N. 17 47 17.4	20.97
1	3 30 50.32	20.663	14 37 22.1	57.83	1	5 13 24.61	22.056	17 49 20.5	20.06
2	3 32 54.39	20.693	14 43 7.1	57.18	2	5 15 37.02	22.082	17 51 18.1	19.15
3	3 34 58.63	20.722	14 48 48.3	56.53	3	5 17 49.59	22.109	17 53 10.3	18.23
4	3 37 3.05	20.751	14 54 25.4	55.86	4	5 20 2.33	22.136	17 54 56.9	17.31
5	3 39 7.64	20.780	14 59 58.6	55.18	5	5 22 15.22	22.161	17 56 38.0	16.39
6	3 41 12.41	20.810	15 5 27.6	54.50	6	5 24 28.26	22.187	17 58 13.6	15.46
7	3 43 17.36	20.839	15 10 52.6	53.83	7	5 26 41.46	22.213	17 59 43.5	14.52
8	3 45 22.48	20.868	15 16 13.5	53.14	8	5 28 54.81	22.238	18 1 7.8	13.58
9	3 47 27.78	20.898	15 21 30.3	52.44	9	5 31 8.32	22.264	18 2 26.5	12.65
10	3 49 33.26	20.928	15 26 42.8	51.73	10	5 33 21.98	22.288	18 3 39.6	11.70
11	3 51 38.92	20.958	15 31 51.1	51.03	11	5 35 35.78	22.313	18 4 46.9	10.75
12	3 53 44.76	20.988	15 36 55.2	50.32	12	5 37 49.74	22.338	18 5 48.6	9.78
13	3 55 50.78	21.018	15 41 54.9	49.59	13	5 40 3.84	22.363	18 6 44.5	8.83
14	3 57 56.97	21.047	15 46 50.3	48.87	14	5 42 18.09	22.387	18 7 34.6	7.88
15	4 0 3.34	21.077	15 51 41.4	48.14	15	5 44 32.48	22.411	18 8 19.0	6.92
16	4 2 9.89	21.107	15 56 28.0	47.40	16	5 46 47.02	22.434	18 8 57.6	5.95
17	4 4 16.62	21.137	16 1 10.2	46.66	17	5 49 1.69	22.458	18 9 30.4	4.98
18	4 6 23.53	21.167	16 5 47.9	45.92	18	5 51 16.51	22.482	18 9 57.4	4.01
19	4 8 30.62	21.196	16 10 21.2	45.17	19	5 53 31.47	22.504	18 10 18.5	3.03
20	4 10 37.88	21.225	16 14 49.9	44.40	20	5 55 46.56	22.527	18 10 33.7	2.05
21	4 12 45.32	21.255	16 19 14.0	43.63	21	5 58 1.79	22.550	18 10 43.1	1.07
22	4 14 52.94	21.285	16 23 33.5	42.86	22	6 0 17.16	22.572	18 10 46.5	0.08
23	4 17 0.74	21.315	N. 16 27 48.3	42.08	23	6 2 32.65	22.593	N. 18 10 44.0	0.92
TUESDAY 10.					THURSDAY 12.				
0	4 19 8.72	21.345	N. 16 31 58.5	41.31	0	6 4 48.28	22.616	N. 18 10 35.5	1.91
1	4 21 16.88	21.374	16 36 4.0	40.52	1	6 7 4.04	22.637	18 10 21.1	2.89
2	4 23 25.21	21.403	16 40 4.8	39.73	2	6 9 19.92	22.658	18 10 0.8	3.89
3	4 25 33.72	21.433	16 44 0.8	38.93	3	6 11 35.94	22.679	18 9 34.4	4.90
4	4 27 42.41	21.463	16 47 51.9	38.12	4	6 13 52.07	22.699	18 9 2.0	5.90
5	4 29 51.27	21.492	16 51 38.2	37.32	5	6 16 8.33	22.720	18 8 23.6	6.91
6	4 32 0.31	21.521	16 55 19.7	36.50	6	6 18 24.71	22.740	18 7 39.1	7.92
7	4 34 9.52	21.550	16 58 56.2	35.68	7	6 20 41.21	22.760	18 6 48.6	8.93
8	4 36 18.91	21.579	17 2 27.8	34.86	8	6 22 57.83	22.780	18 5 52.0	9.93
9	4 38 28.47	21.608	17 5 54.5	34.02	9	6 25 14.57	22.799	18 4 49.4	10.94
10	4 40 38.21	21.637	17 9 16.1	33.18	10	6 27 31.42	22.818	18 3 40.7	11.97
11	4 42 48.12	21.666	17 12 32.7	32.35	11	6 29 48.38	22.836	18 2 25.8	12.98
12	4 44 58.20	21.694	17 15 44.3	31.50	12	6 32 5.45	22.854	18 1 4.9	14.00
13	4 47 8.45	21.723	17 18 50.7	30.65	13	6 34 22.63	22.873	17 59 37.8	15.03
14	4 49 18.87	21.752	17 21 52.1	29.80	14	6 36 39.92	22.891	17 58 4.6	16.04
15	4 51 29.47	21.780	17 24 48.3	28.93	15	6 38 57.32	22.908	17 56 25.3	17.07
16	4 53 40.23	21.808	17 27 39.3	28.07	16	6 41 14.82	22.925	17 54 39.8	18.09
17	4 55 51.17	21.837	17 30 25.1	27.19	17	6 43 32.42	22.943	17 52 48.2	19.12
18	4 58 2.27	21.864	17 33 5.6	26.32	18	6 45 50.13	22.959	17 50 50.4	20.15
19	5 0 13.54	21.892	17 35 40.9	25.44	19	6 48 7.93	22.975	17 48 46.4	21.18
20	5 2 24.97	21.919	17 38 10.9	24.56	20	6 50 25.83	22.992	17 46 36.3	22.21
21	5 4 36.57	21.947	17 40 35.6	23.67	21	6 52 43.83	23.008	17 44 19.9	23.24
22	5 6 48.33	21.974	17 42 54.9	22.78	22	6 55 1.92	23.023	17 41 57.4	24.27
23	5 9 0.26	22.002	17 45 8.9	21.88	23	6 57 20.10	23.038	17 39 28.7	25.30
24	5 11 12.35	22.029	N. 17 47 17.4	20.97	24	6 59 38.37	23.053	N. 17 36 53.8	26.33

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 13.					SUNDAY 15.				
	h m s	s	N. ° ' "	" "		h m s	s	N. ° ' "	" "
0	6 59 38.37	23.053	N. 17 36 53.8	26.33	0	8 51 31.17	23.478	N. 13 33 18.8	74.22
1	7 1 56.73	23.068	17 34 12.7	27.36	1	8 53 52.05	23.483	13 25 50.8	75.13
2	7 4 15.18	23.083	17 31 25.5	28.39	2	8 56 12.96	23.487	13 18 17.3	76.03
3	7 6 33.72	23.097	17 28 32.0	29.43	3	8 58 33.89	23.491	13 10 38.4	76.93
4	7 8 52.34	23.110	17 25 32.3	30.47	4	9 0 54.85	23.495	13 2 54.2	77.82
5	7 11 11.04	23.123	17 22 26.4	31.50	5	9 3 15.83	23.498	12 55 4.6	78.71
6	7 13 29.82	23.137	17 19 14.3	32.53	6	9 5 36.83	23.503	12 47 9.7	79.59
7	7 15 48.68	23.150	17 15 56.0	33.57	7	9 7 57.86	23.507	12 39 9.5	80.47
8	7 18 7.62	23.163	17 12 31.5	34.60	8	9 10 18.91	23.510	12 31 4.1	81.33
9	7 20 26.63	23.175	17 9 0.8	35.63	9	9 12 39.98	23.514	12 22 53.5	82.20
10	7 22 45.72	23.188	17 5 23.9	36.66	10	9 15 1.08	23.518	12 14 37.7	83.05
11	7 25 4.88	23.199	17 1 40.9	37.69	11	9 17 22.19	23.521	12 6 16.9	83.89
12	7 27 24.11	23.210	16 57 51.6	38.73	12	9 19 43.33	23.524	11 57 51.0	84.73
13	7 29 43.40	23.222	16 53 56.1	39.76	13	9 22 4.48	23.528	11 49 20.1	85.57
14	7 32 2.77	23.233	16 49 54.5	40.78	14	9 24 25.66	23.531	11 40 44.2	86.39
15	7 34 22.20	23.243	16 45 46.8	41.81	15	9 26 46.85	23.534	11 32 3.4	87.21
16	7 36 41.69	23.254	16 41 32.8	42.84	16	9 29 8.07	23.538	11 23 17.7	88.03
17	7 39 1.25	23.265	16 37 12.7	43.86	17	9 31 29.31	23.541	11 14 27.1	88.83
18	7 41 20.87	23.275	16 32 46.5	44.88	18	9 33 50.56	23.544	11 5 31.8	89.62
19	7 43 40.55	23.284	16 28 14.1	45.91	19	9 36 11.84	23.548	10 56 31.7	90.41
20	7 46 0.28	23.293	16 23 35.6	46.93	20	9 38 33.13	23.551	10 47 26.9	91.18
21	7 48 20.07	23.303	16 18 51.0	47.94	21	9 40 54.45	23.555	10 38 17.5	91.95
22	7 50 39.92	23.313	16 14 0.3	48.96	22	9 43 15.79	23.558	10 29 3.5	92.71
23	7 52 59.82	23.321	N. 16 9 3.5	49.98	23	9 45 37.14	23.561	N. 10 19 45.0	93.46
SATURDAY 14.					MONDAY 16.				
	h m s	s	N. ° ' "	" "		h m s	s	N. ° ' "	" "
0	7 55 19.77	23.330	N. 16 4 0.6	50.98	0	9 47 58.52	23.565	N. 10 10 22.0	94.21
1	7 57 39.78	23.339	15 58 51.7	51.99	1	9 50 19.92	23.568	10 0 54.5	94.94
2	7 59 59.84	23.347	15 53 36.7	53.00	2	9 52 41.33	23.571	9 51 22.7	95.67
3	8 2 19.94	23.354	15 48 15.7	54.00	3	9 55 2.77	23.575	9 41 46.5	96.38
4	8 4 40.09	23.362	15 42 48.7	55.00	4	9 57 24.23	23.578	9 32 6.1	97.08
5	8 7 0.29	23.370	15 37 15.7	56.00	5	9 59 45.71	23.582	9 22 21.5	97.78
6	8 9 20.53	23.377	15 31 36.7	56.99	6	10 2 7.21	23.585	9 12 32.7	98.48
7	8 11 40.81	23.384	15 25 51.8	57.98	7	10 4 28.73	23.588	9 2 39.8	99.16
8	8 14 1.14	23.391	15 20 1.0	58.97	8	10 6 50.27	23.593	8 52 42.8	99.83
9	8 16 21.50	23.398	15 14 4.2	59.96	9	10 9 11.84	23.597	8 42 41.9	100.48
10	8 18 41.91	23.404	15 8 1.5	60.94	10	10 11 33.43	23.600	8 32 37.1	101.13
11	8 21 2.35	23.410	15 1 52.9	61.92	11	10 13 55.04	23.604	8 22 28.4	101.77
12	8 23 22.83	23.417	14 55 38.5	62.88	12	10 16 16.68	23.608	8 12 15.9	102.39
13	8 25 43.35	23.423	14 49 18.3	63.85	13	10 18 38.34	23.612	8 1 59.7	103.00
14	8 28 3.90	23.428	14 42 52.3	64.82	14	10 21 0.02	23.616	7 51 39.9	103.61
15	8 30 24.49	23.434	14 36 20.5	65.78	15	10 23 21.73	23.621	7 41 16.4	104.21
16	8 32 45.11	23.439	14 29 42.9	66.73	16	10 25 43.47	23.625	7 30 49.4	104.79
17	8 35 5.76	23.444	14 22 59.7	67.68	17	10 28 5.23	23.628	7 20 18.9	105.37
18	8 37 26.44	23.450	14 16 10.7	68.64	18	10 30 27.01	23.633	7 9 45.0	105.93
19	8 39 47.16	23.455	14 9 16.0	69.58	19	10 32 48.83	23.638	6 59 7.7	106.48
20	8 42 7.90	23.460	14 2 15.8	70.51	20	10 35 10.67	23.643	6 48 27.2	107.02
21	8 44 28.68	23.465	13 55 9.9	71.45	21	10 37 32.54	23.648	6 37 43.5	107.54
22	8 46 49.48	23.469	13 47 58.4	72.38	22	10 39 54.45	23.653	6 26 56.7	108.06
23	8 49 10.31	23.474	13 40 41.4	73.30	23	10 42 16.38	23.658	6 16 6.8	108.57
24	8 51 31.17	23.478	N. 13 33 18.8	74.22	24	10 44 38.34	23.663	N. 6 5 13.9	109.06

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 17.					THURSDAY 19.				
	h m s	s	N. ° ' "	109 ^m "		h m s	s	S. ° ' "	116 ^m "
0	10 44 38.34	23.663	N. 6 5 13.9	109.06	0	12 39 5.82	24.083	S. 3 9 47.2	116.73
1	10 47 0.34	23.668	5 54 18.1	109.53	1	12 41 30.35	24.095	3 21 27.0	116.53
2	10 49 22.36	23.673	5 43 19.5	110.01	2	12 43 54.96	24.108	3 33 5.5	116.31
3	10 51 44.42	23.680	5 32 18.0	110.47	3	12 46 19.64	24.119	3 44 42.7	116.08
4	10 54 6.52	23.686	5 21 13.9	110.90	4	12 48 44.39	24.131	3 56 18.5	115.83
5	10 56 28.65	23.692	5 10 7.2	111.33	5	12 51 9.21	24.143	4 7 52.7	115.57
6	10 58 50.82	23.698	4 58 57.9	111.75	6	12 53 34.11	24.156	4 19 25.3	115.29
7	11 1 13.02	23.703	4 47 46.2	112.16	7	12 55 59.08	24.168	4 30 56.2	115.00
8	11 3 35.26	23.709	4 36 32.0	112.55	8	12 58 24.12	24.180	4 42 25.3	114.69
9	11 5 57.53	23.716	4 25 15.6	112.93	9	13 0 49.24	24.193	4 53 52.5	114.37
10	11 8 19.85	23.723	4 13 56.9	113.30	10	13 3 14.43	24.205	5 5 17.7	114.03
11	11 10 42.21	23.729	4 2 36.0	113.65	11	13 5 39.70	24.218	5 16 40.9	113.68
12	11 13 4.60	23.736	3 51 13.1	113.98	12	13 8 5.04	24.230	5 28 1.9	113.31
13	11 15 27.04	23.743	3 39 48.2	114.32	13	13 10 30.46	24.243	5 39 20.6	112.93
14	11 17 49.52	23.751	3 28 21.3	114.63	14	13 12 55.95	24.255	5 50 37.0	112.53
15	11 20 12.05	23.758	3 16 52.6	114.93	15	13 15 21.52	24.268	6 1 51.0	112.12
16	11 22 34.62	23.766	3 5 22.1	115.22	16	13 17 47.16	24.280	6 13 2.4	111.68
17	11 24 57.24	23.773	2 53 50.0	115.48	17	13 20 12.88	24.293	6 24 11.2	111.25
18	11 27 19.90	23.781	2 42 16.3	115.73	18	13 22 38.67	24.305	6 35 17.4	110.79
19	11 29 42.61	23.789	2 30 41.1	115.99	19	13 25 4.54	24.318	6 46 20.7	110.32
20	11 32 5.37	23.797	2 19 4.4	116.22	20	13 27 30.48	24.329	6 57 21.2	109.83
21	11 34 28.17	23.805	2 7 26.4	116.43	21	13 29 56.49	24.342	7 8 18.7	109.33
22	11 36 51.03	23.814	1 55 47.2	116.63	22	13 32 22.58	24.354	7 19 13.1	108.82
23	11 39 13.94	23.823	N. 1 44 6.8	116.83	23	13 34 48.74	24.366	S. 7 30 4.5	108.29
WEDNESDAY 18.					FRIDAY 20.				
	h m s	s	N. ° ' "	117 ^m "		h m s	s	S. ° ' "	107 ^m "
0	11 41 36.90	23.831	N. 1 32 25.2	117.01	0	13 37 14.97	24.378	S. 7 40 52.6	107.74
1	11 43 59.91	23.840	1 20 42.7	117.16	1	13 39 41.27	24.390	7 51 37.4	107.18
2	11 46 22.98	23.849	1 8 59.3	117.30	2	13 42 7.65	24.403	8 2 18.8	106.62
3	11 48 46.10	23.858	0 57 15.1	117.43	3	13 44 34.10	24.414	8 12 56.8	106.03
4	11 51 9.28	23.868	0 45 30.1	117.56	4	13 47 0.62	24.426	8 23 31.2	105.43
5	11 53 32.51	23.877	0 33 44.4	117.66	5	13 49 27.21	24.438	8 34 1.9	104.82
6	11 55 55.80	23.887	0 21 58.2	117.73	6	13 51 53.87	24.449	8 44 29.0	104.19
7	11 58 19.15	23.897	N. 0 10 11.6	117.81	7	13 54 20.60	24.460	8 54 52.2	103.54
8	12 0 42.56	23.907	S. 0 1 35.5	117.87	8	13 56 47.39	24.471	9 5 11.5	102.89
9	12 3 6.03	23.917	0 13 22.9	117.91	9	13 59 14.25	24.483	9 15 26.9	102.23
10	12 5 29.56	23.927	0 25 10.4	117.93	10	14 1 41.18	24.493	9 25 38.3	101.55
11	12 7 53.15	23.938	0 36 58.1	117.95	11	14 4 8.17	24.503	9 35 45.5	100.85
12	12 10 16.81	23.948	0 48 45.8	117.94	12	14 6 35.22	24.514	9 45 48.5	100.14
13	12 12 40.53	23.958	1 0 33.4	117.93	13	14 9 2.34	24.525	9 55 47.2	99.43
14	12 15 4.31	23.968	1 12 20.9	117.90	14	14 11 29.52	24.534	10 5 41.6	98.70
15	12 17 28.15	23.980	1 24 8.2	117.85	15	14 13 56.75	24.544	10 15 31.6	97.95
16	12 19 52.07	23.992	1 35 55.1	117.78	16	14 16 24.05	24.555	10 25 17.0	97.19
17	12 22 16.05	24.002	1 47 41.5	117.70	17	14 18 51.41	24.564	10 34 57.9	96.42
18	12 24 40.09	24.013	1 59 27.5	117.61	18	14 21 18.82	24.573	10 44 34.1	95.64
19	12 27 4.21	24.025	2 11 12.8	117.50	19	14 23 46.28	24.582	10 54 5.6	94.85
20	12 29 28.39	24.036	2 22 57.5	117.37	20	14 26 13.80	24.591	11 3 32.3	94.05
21	12 31 52.64	24.048	2 34 41.3	117.23	21	14 28 41.37	24.598	11 12 54.2	93.23
22	12 34 16.96	24.060	2 46 24.3	117.08	22	14 31 8.98	24.607	11 22 11.1	92.40
23	12 36 41.36	24.072	2 58 6.3	116.91	23	14 33 36.65	24.615	11 31 23.0	91.57
24	12 39 5.82	24.083	S. 3 9 47.2	116.73	24	14 36 4.36	24.623	S. 11 40 29.9	90.72

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 21.					MONDAY 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	14 36 4.36	24.623	S. 11 40 29.9	90.72	0	16 34 21.82	24.477	S. 17 1 25.5	40.63
1	14 38 32.12	24.630	11 49 31.6	89.85	1	16 36 48.64	24.462	17 5 25.8	39.48
2	14 40 59.92	24.637	11 58 28.1	88.98	2	16 39 15.36	24.445	17 9 19.3	38.33
3	14 43 27.76	24.643	12 7 19.3	88.09	3	16 41 41.98	24.428	17 13 5.8	37.17
4	14 45 55.64	24.649	12 16 5.2	87.21	4	16 44 8.50	24.411	17 16 45.3	36.02
5	14 48 23.55	24.655	12 24 45.8	86.30	5	16 46 34.91	24.393	17 20 18.0	34.87
6	14 50 51.50	24.661	12 33 20.8	85.38	6	16 49 1.21	24.373	17 23 43.7	33.71
7	14 53 19.48	24.666	12 41 50.4	84.47	7	16 51 27.39	24.354	17 27 2.5	32.56
8	14 55 47.49	24.671	12 50 14.4	83.53	8	16 53 53.46	24.335	17 30 14.4	31.40
9	14 58 15.53	24.676	12 58 32.8	82.59	9	16 56 19.41	24.314	17 33 19.3	30.25
10	15 0 43.60	24.680	13 6 45.5	81.64	10	16 58 45.23	24.293	17 36 17.4	29.10
11	15 3 11.69	24.683	13 14 52.5	80.68	11	17 1 10.92	24.271	17 39 8.5	27.94
12	15 5 39.80	24.687	13 22 53.6	79.71	12	17 3 36.48	24.248	17 41 52.7	26.79
13	15 8 7.93	24.689	13 30 49.0	78.73	13	17 6 1.90	24.226	17 44 30.0	25.64
14	15 10 36.07	24.692	13 38 38.4	77.74	14	17 8 27.19	24.203	17 47 0.4	24.49
15	15 13 4.23	24.694	13 46 21.9	76.75	15	17 10 52.34	24.179	17 49 23.9	23.34
16	15 15 32.40	24.696	13 53 59.4	75.74	16	17 13 17.34	24.155	17 51 40.5	22.19
17	15 18 0.58	24.697	14 1 30.8	74.73	17	17 15 42.20	24.130	17 53 50.2	21.05
18	15 20 28.76	24.697	14 8 56.2	73.72	18	17 18 6.90	24.104	17 55 53.1	19.92
19	15 22 56.94	24.697	14 16 15.4	72.69	19	17 20 31.45	24.078	17 57 49.2	18.78
20	15 25 25.13	24.697	14 23 28.5	71.66	20	17 22 55.84	24.053	17 59 38.4	17.63
21	15 27 53.31	24.696	14 30 35.3	70.62	21	17 25 20.08	24.026	18 1 20.8	16.50
22	15 30 21.48	24.695	14 37 35.9	69.57	22	17 27 44.15	23.998	18 2 56.4	15.37
23	15 32 49.65	24.694	S. 14 44 30.1	68.51	23	17 30 8.05	23.970	S. 18 4 25.2	14.24
SUNDAY 22.					TUESDAY 24.				
0	15 35 17.81	24.692	S. 14 51 18.0	67.46	0	17 32 31.79	23.942	S. 18 5 47.3	13.11
1	15 37 45.95	24.688	14 57 59.6	66.39	1	17 34 55.35	23.913	18 7 2.5	11.98
2	15 40 14.07	24.685	15 4 34.7	65.31	2	17 37 18.74	23.883	18 8 11.1	10.87
3	15 42 42.17	24.682	15 11 3.3	64.23	3	17 39 41.95	23.853	18 9 13.0	9.75
4	15 45 10.25	24.678	15 17 25.5	63.15	4	17 42 4.98	23.823	18 10 8.1	8.63
5	15 47 38.30	24.673	15 23 41.1	62.06	5	17 44 27.82	23.792	18 10 56.6	7.52
6	15 50 6.32	24.668	15 29 50.2	60.97	6	17 46 50.48	23.761	18 11 38.4	6.42
7	15 52 34.31	24.662	15 35 52.7	59.87	7	17 49 12.95	23.729	18 12 13.7	5.32
8	15 55 2.26	24.656	15 41 48.6	58.77	8	17 51 35.23	23.697	18 12 42.3	4.22
9	15 57 30.18	24.649	15 47 37.9	57.66	9	17 53 57.31	23.664	18 13 4.3	3.13
10	15 59 58.05	24.641	15 53 20.5	56.54	10	17 56 19.20	23.632	18 13 19.8	2.04
11	16 2 25.87	24.633	15 58 56.4	55.43	11	17 58 40.89	23.598	18 13 28.8	0.96
12	16 4 53.64	24.624	16 4 25.6	54.31	12	18 1 2.38	23.564	18 13 31.3	0.13
13	16 7 21.36	24.616	16 9 48.1	53.18	13	18 3 23.66	23.529	18 13 27.3	1.21
14	16 9 49.03	24.606	16 15 3.8	52.05	14	18 5 44.73	23.495	18 13 16.8	2.28
15	16 12 16.63	24.595	16 20 12.7	50.92	15	18 8 5.60	23.461	18 13 0.0	3.33
16	16 14 44.17	24.585	16 25 14.9	49.79	16	18 10 26.26	23.425	18 12 36.8	4.40
17	16 17 11.65	24.574	16 30 10.2	48.65	17	18 12 46.70	23.389	18 12 7.2	5.46
18	16 19 39.06	24.562	16 34 58.7	47.51	18	18 15 6.93	23.353	18 11 31.3	6.51
19	16 22 6.39	24.548	16 39 40.3	46.37	19	18 17 26.94	23.317	18 10 49.1	7.55
20	16 24 33.64	24.536	16 44 15.1	45.23	20	18 19 46.73	23.280	18 10 0.7	8.59
21	16 27 0.82	24.523	16 48 43.1	44.08	21	18 22 6.30	23.243	18 9 6.0	9.63
22	16 29 27.91	24.508	16 53 4.1	42.93	22	18 24 25.65	23.206	18 8 5.2	10.66
23	16 31 54.91	24.493	16 57 18.3	41.78	23	18 26 44.77	23.168	18 6 58.1	11.68
24	16 34 21.82	24.477	S. 17 1 25.5	40.63	24	18 29 3.66	23.130	S. 18 5 45.0	12.69

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 25.					FRIDAY 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	18 29 3.66	23.130	S. 18° 5' 45".0	12.69	0	20 15 24.40	21.164	S. 15° 19' 44".6	53.85
1	18 31 22.33	23.092	18 4 25.8	13.71	1	20 17 31.26	21.124	15 14 19.4	54.54
2	18 33 40.77	23.053	18 3 0.5	14.72	2	20 19 37.89	21.084	15 8 50.1	55.22
3	18 35 58.97	23.014	18 1 29.2	15.72	3	20 21 44.27	21.044	15 3 16.7	55.89
4	18 38 16.94	22.976	17 59 51.9	16.72	4	20 23 50.42	21.005	14 57 39.4	56.56
5	18 40 34.68	22.937	17 58 8.6	17.70	5	20 25 56.33	20.965	14 51 58.0	57.23
6	18 42 52.18	22.898	17 56 19.5	18.68	6	20 28 2.00	20.926	14 46 12.7	57.88
7	18 45 9.45	22.858	17 54 24.5	19.66	7	20 30 7.44	20.888	14 40 23.5	58.53
8	18 47 26.47	22.818	17 52 23.6	20.63	8	20 32 12.65	20.849	14 34 30.4	59.17
9	18 49 43.26	22.778	17 50 16.9	21.59	9	20 34 17.63	20.810	14 28 33.5	59.79
10	18 51 59.81	22.738	17 48 4.5	22.54	10	20 36 22.37	20.771	14 22 32.9	60.42
11	18 54 16.11	22.697	17 45 46.4	23.49	11	20 38 26.88	20.733	14 16 28.5	61.04
12	18 56 32.17	22.656	17 43 22.6	24.44	12	20 40 31.17	20.696	14 10 20.4	61.66
13	18 58 47.98	22.615	17 40 53.1	25.38	13	20 42 35.23	20.658	14 4 8.6	62.26
14	19 1 3.55	22.575	17 38 18.0	26.31	14	20 44 39.07	20.621	13 57 53.3	62.85
15	19 3 18.88	22.534	17 35 37.4	27.23	15	20 46 42.68	20.583	13 51 34.4	63.45
16	19 5 33.96	22.492	17 32 51.3	28.15	16	20 48 46.07	20.547	13 45 11.9	64.04
17	19 7 48.78	22.450	17 29 59.6	29.07	17	20 50 49.24	20.510	13 38 45.9	64.62
18	19 10 3.36	22.410	17 27 2.5	29.96	18	20 52 52.19	20.474	13 32 16.5	65.18
19	19 12 17.70	22.368	17 24 0.1	30.86	19	20 54 54.93	20.438	13 25 43.7	65.75
20	19 14 31.78	22.326	17 20 52.2	31.75	20	20 56 57.45	20.403	13 19 7.5	66.32
21	19 16 45.61	22.285	17 17 39.1	32.63	21	20 58 59.76	20.368	13 12 27.9	66.87
22	19 18 59.20	22.243	17 14 20.6	33.52	22	21 1 1.86	20.332	13 5 45.1	67.41
23	19 21 12.53	22.201	S. 17 10 56.9	34.38	23	21 3 3.74	20.297	S. 12 58 59.0	67.95
THURSDAY 26.					SATURDAY 28.				
0	19 23 25.61	22.159	S. 17 7 28.0	35.24	0	21 5 5.42	20.263	S. 12 52 9.7	68.48
1	19 25 38.44	22.117	17 3 54.0	36.09	1	21 7 6.89	20.228	12 45 17.2	69.02
2	19 27 51.01	22.075	17 0 14.9	36.95	2	21 9 8.16	20.195	12 38 21.5	69.53
3	19 30 3.34	22.033	16 56 30.6	37.79	3	21 11 9.23	20.161	12 31 22.8	70.04
4	19 32 15.41	21.992	16 52 41.4	38.63	4	21 13 10.09	20.128	12 24 21.0	70.56
5	19 34 27.24	21.950	16 48 47.1	39.46	5	21 15 10.76	20.095	12 17 16.1	71.06
6	19 36 38.81	21.908	16 44 47.9	40.27	6	21 17 11.23	20.063	12 10 8.3	71.55
7	19 38 50.13	21.866	16 40 43.9	41.08	7	21 19 11.51	20.030	12 2 57.5	72.04
8	19 41 1.20	21.823	16 36 34.9	41.90	8	21 21 11.59	19.998	11 55 43.8	72.53
9	19 43 12.01	21.782	16 32 21.1	42.69	9	21 23 11.48	19.966	11 48 27.2	73.00
10	19 45 22.58	21.740	16 28 2.6	43.48	10	21 25 11.18	19.935	11 41 7.8	73.47
11	19 47 32.89	21.698	16 23 39.3	44.28	11	21 27 10.70	19.905	11 33 45.6	73.93
12	19 49 42.96	21.657	16 19 11.3	45.06	12	21 29 10.04	19.874	11 26 20.6	74.40
13	19 51 52.77	21.615	16 14 38.6	45.83	13	21 31 9.19	19.843	11 18 52.8	74.85
14	19 54 2.34	21.573	16 10 1.4	46.58	14	21 33 8.16	19.814	11 11 22.4	75.28
15	19 56 11.65	21.532	16 5 19.6	47.35	15	21 35 6.96	19.785	11 3 49.4	75.73
16	19 58 20.72	21.491	16 0 33.2	48.10	16	21 37 5.58	19.755	10 56 13.7	76.17
17	20 0 29.54	21.449	15 55 42.4	48.84	17	21 39 4.02	19.726	10 48 35.4	76.59
18	20 2 38.11	21.408	15 50 47.1	49.58	18	21 41 2.29	19.698	10 40 54.6	77.02
19	20 4 46.44	21.368	15 45 47.5	50.31	19	21 43 0.40	19.671	10 33 11.2	77.43
20	20 6 54.52	21.327	15 40 43.4	51.03	20	21 44 58.34	19.643	10 25 25.4	77.83
21	20 9 2.36	21.286	15 35 35.1	51.74	21	21 46 56.11	19.616	10 17 37.2	78.24
22	20 11 9.95	21.244	15 30 22.5	52.46	22	21 48 53.73	19.589	10 9 46.5	78.64
23	20 13 17.29	21.204	15 25 5.6	53.16	23	21 50 51.18	19.562	10 1 53.5	79.03
24	20 15 24.40	21.164	S. 15 19 44.6	53.85	24	21 52 48.47	19.536	S. 9 53 58.2	79.42

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 29.					TUESDAY 31.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	21 52 48.47	19.536	S. 9 53 58.2	79.42	0	23 24 21.10	18.768	S. 2 59 2.1	91.37
1	21 54 45.61	19.511	9 46 0.5	79.80	1	23 26 13.69	18.763	2 49 53.5	91.48
2	21 56 42.60	19.485	9 38 0.6	80.17	2	23 28 6.25	18.758	2 40 44.3	91.59
3	21 58 39.43	19.460	9 29 58.5	80.54	3	23 29 58.78	18.753	2 31 34.4	91.70
4	22 0 36.12	19.437	9 21 54.1	80.91	4	23 31 51.28	18.748	2 22 23.9	91.79
5	22 2 32.67	19.413	9 13 47.6	81.26	5	23 33 43.76	18.744	2 13 12.9	91.88
6	22 4 29.07	19.388	9 5 39.0	81.61	6	23 35 36.21	18.740	2 4 1.3	91.98
7	22 6 25.32	19.364	8 57 28.3	81.95	7	23 37 28.64	18.737	1 54 49.1	92.07
8	22 8 21.44	19.342	8 49 15.6	82.29	8	23 39 21.06	18.735	1 45 36.5	92.14
9	22 10 17.43	19.320	8 41 0.8	82.63	9	23 41 13.46	18.733	1 36 23.4	92.22
10	22 12 13.28	19.298	8 32 44.0	82.96	10	23 43 5.85	18.731	1 27 9.9	92.28
11	22 14 9.00	19.276	8 24 25.3	83.28	11	23 44 58.23	18.729	1 17 56.0	92.35
12	22 16 4.59	19.254	8 16 4.7	83.60	12	23 46 50.60	18.728	1 8 41.7	92.40
13	22 18 0.05	19.233	8 7 42.1	83.92	13	23 48 42.96	18.728	0 59 27.2	92.45
14	22 19 55.39	19.213	7 59 17.7	84.22	14	23 50 35.33	18.728	0 50 12.3	92.50
15	22 21 50.60	19.193	7 50 51.5	84.51	15	23 52 27.69	18.727	0 40 57.2	92.54
16	22 23 45.70	19.173	7 42 23.6	84.81	16	23 54 20.05	18.728	0 31 41.8	92.58
17	22 25 40.68	19.154	7 33 53.8	85.10	17	23 56 12.42	18.729	0 22 26.3	92.60
18	22 27 35.55	19.136	7 25 22.4	85.38	18	23 58 4.80	18.731	0 13 10.6	92.63
19	22 29 30.31	19.117	7 16 49.2	85.67	19	23 59 57.19	18.733	S. 0 3 54.8	92.65
20	22 31 24.95	19.098	7 8 14.4	85.93	20	0 1 49.59	18.734	N. 0 5 21.2	92.67
21	22 33 19.49	19.082	6 59 38.0	86.20	21	0 3 42.00	18.737	0 14 37.2	92.67
22	22 35 13.93	19.065	6 51 0.0	86.46	22	0 5 34.43	18.740	0 23 53.2	92.67
23	22 37 8.27	19.048	S. 6 42 20.5	86.72	23	0 7 26.88	18.743	N. 0 33 9.2	92.67
MONDAY 30.					WEDNESDAY, NOV. 1.				
0	22 39 2.50	19.031	S. 6 33 39.4	86.98	0	0 9 19.35	18.748	N. 0 42 25.2	92.66
1	22 40 56.64	19.016	6 24 56.8	87.22					
2	22 42 50.69	19.000	6 16 12.8	87.45					
3	22 44 44.64	18.985	6 7 27.4	87.69					
4	22 46 38.51	18.971	5 58 40.5	87.92					
5	22 48 32.29	18.957	5 49 52.4	88.14					
6	22 50 25.99	18.943	5 41 2.8	88.37					
7	22 52 19.60	18.929	5 32 12.0	88.57					
8	22 54 13.14	18.917	5 23 20.0	88.78					
9	22 56 6.60	18.903	5 14 26.7	88.98					
10	22 57 59.98	18.892	5 5 32.2	89.18					
11	22 59 53.30	18.881	4 56 36.6	89.37					
12	23 1 46.55	18.869	4 47 39.8	89.56					
13	23 3 39.73	18.858	4 38 41.9	89.73					
14	23 5 32.84	18.848	4 29 43.0	89.91					
15	23 7 25.90	18.838	4 20 43.0	90.08					
16	23 9 18.90	18.828	4 11 42.0	90.24					
17	23 11 11.84	18.819	4 2 40.1	90.40					
18	23 13 4.73	18.811	3 53 37.2	90.56					
19	23 14 57.57	18.803	3 44 33.4	90.70					
20	23 16 50.36	18.795	3 35 28.8	90.84					
21	23 18 43.11	18.788	3 26 23.3	90.98					
22	23 20 35.81	18.781	3 17 17.0	91.12					
23	23 22 28.48	18.774	3 8 9.9	91.24					
24	23 24 21.10	18.768	S. 2 59 2.1	91.37					

PHASES OF THE MOON.

Oct.	h m
5	○ Full Moon - - - 12 58.3
13	☾ Last Quarter - - - 9 55.4
20	● New Moon - - - 1 40.2
27	☽ First Quarter - - - 1 26.4

Oct.	h
4	☾ Apogee - - - - - 8.0
19	☾ Perigee - - - - - 4.7
31	☾ Apogee - - - - - 15.2

AT APPARENT NOON.

		THE SUN'S				Sidereal Time of the Semi-diameter passing the Meridian.*	Equation of Time, to be subtracted from Apparent Time.	Var. in hour
Date.		Apparent Right Ascension.	Var. in hour.	Apparent Declination.	Var. in hour.			
		h m s	s	° ′ ″	″	m s	m s	s
Wed.	1	14 23 36.03	9.774	S. 14 16 7.3	48.38	1 6.82	16 18.71	0.082
Thur.	2	14 27 31.00	9.807	14 35 21.5	47.80	1 6.93	16 20.29	0.049
Frid.	3	14 31 26.77	9.840	14 54 21.6	47.20	1 7.05	16 21.07	0.016
Sat.	4	14 35 23.34	9.874	15 13 7.1	46.58	1 7.16	16 21.05	0.018
Sun.	5	14 39 20.74	9.909	15 31 37.6	45.95	1 7.28	16 20.21	0.052
Mon.	6	14 43 18.97	9.944	15 49 52.8	45.30	1 7.40	16 18.54	0.087
Tues.	7	14 47 18.04	9.979	16 7 52.2	44.64	1 7.52	16 16.04	0.122
Wed.	8	14 51 17.95	10.014	16 25 35.5	43.96	1 7.64	16 12.69	0.157
Thur.	9	14 55 18.72	10.050	16 43 2.2	43.26	1 7.75	16 8.48	0.193
Frid.	10	14 59 20.36	10.086	17 0 12.0	42.55	1 7.87	16 3.41	0.229
Sat.	11	15 3 22.86	10.122	17 17 4.4	41.81	1 7.99	15 57.48	0.265
Sun.	12	15 7 26.24	10.159	17 33 39.1	41.07	1 8.11	15 50.67	0.302
Mon.	13	15 11 30.49	10.195	17 49 55.7	40.31	1 8.23	15 43.00	0.338
Tues.	14	15 15 35.61	10.231	18 5 53.8	39.53	1 8.35	15 34.46	0.374
Wed.	15	15 19 41.60	10.268	18 21 33.0	38.73	1 8.47	15 25.05	0.410
Thur.	16	15 23 48.46	10.304	18 36 52.8	37.91	1 8.58	15 14.77	0.446
Frid.	17	15 27 56.17	10.339	18 51 52.9	37.09	1 8.70	15 3.64	0.481
Sat.	18	15 32 4.73	10.374	19 6 33.0	36.24	1 8.82	14 51.67	0.516
Sun.	19	15 36 14.13	10.409	19 20 52.5	35.38	1 8.93	14 38.86	0.551
Mon.	20	15 40 24.36	10.443	19 34 51.1	34.50	1 9.05	14 25.23	0.585
Tues.	21	15 44 35.39	10.476	19 48 28.4	33.60	1 9.16	14 10.79	0.618
Wed.	22	15 48 47.23	10.510	20 1 44.1	32.69	1 9.27	13 55.55	0.651
Thur.	23	15 52 59.85	10.542	20 14 37.7	31.77	1 9.38	13 39.53	0.684
Frid.	24	15 57 13.24	10.574	20 27 8.9	30.83	1 9.49	13 22.74	0.715
Sat.	25	16 1 27.39	10.605	20 39 17.4	29.87	1 9.59	13 5.20	0.746
Sun.	26	16 5 42.28	10.636	20 51 2.7	28.90	1 9.70	12 46.91	0.777
Mon.	27	16 9 57.90	10.666	21 2 24.7	27.92	1 9.80	12 27.90	0.807
Tues.	28	16 14 14.24	10.695	21 13 22.9	26.92	1 9.90	12 8.18	0.836
Wed.	29	16 18 31.27	10.724	21 23 57.0	25.91	1 9.99	11 47.76	0.865
Thur.	30	16 22 48.98	10.752	21 34 6.8	24.89	1 10.09	11 26.66	0.893
Frid.	31	16 27 7.36	10.779	S. 21 43 51.9	23.86	1 10.18	11 4.89	0.920

* Mean Time of the Semidiameter passing may be found by subtracting 0.19 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be subtracted from Apparent Time.	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*		
Wed.	1	h m s 14 23 38.69	S. 14 16 20.4	16 8.72	m s 16 18.73	h m s 14 39 57.42
Thur.	2	14 27 33.67	14 35 34.5	16 8.97	16 20.30	14 43 53.97
Frid.	3	14 31 29.45	14 54 34.5	16 9.22	16 21.07	14 47 50.52
Sat.	4	14 35 26.04	15 13 19.8	16 9.47	16 21.04	14 51 47.08
Sun.	5	14 39 23.44	15 31 50.1	16 9.71	16 20.19	14 55 43.63
Mon.	6	14 43 21.67	15 50 5.1	16 9.95	16 18.52	14 59 40.19
Tues.	7	14 47 20.74	16 8 4.3	16 10.19	16 16.00	15 3 36.74
Wed.	8	14 51 20.65	16 25 47.3	16 10.42	16 12.64	15 7 33.30
Thur.	9	14 55 21.42	16 43 13.8	16 10.65	16 8.43	15 11 29.85
Frid.	10	14 59 23.06	17 0 23.3	16 10.87	16 3.35	15 15 26.40
Sat.	11	15 3 25.55	17 17 15.5	16 11.09	15 57.40	15 19 22.96
Sun.	12	15 7 28.92	17 33 50.0	16 11.31	15 50.59	15 23 19.51
Mon.	13	15 11 33.16	17 50 6.3	16 11.53	15 42.91	15 27 16.07
Tues.	14	15 15 38.26	18 6 4.1	16 11.74	15 34.36	15 31 12.62
Wed.	15	15 19 44.24	18 21 42.9	16 11.95	15 24.94	15 35 9.18
Thur.	16	15 23 51.08	18 37 2.4	16 12.16	15 14.66	15 39 5.73
Frid.	17	15 27 58.77	18 52 2.2	16 12.36	15 3.52	15 43 2.29
Sat.	18	15 32 7.30	19 6 41.9	16 12.57	14 51.54	15 46 58.84
Sun.	19	15 36 16.67	19 21 1.1	16 12.77	14 38.73	15 50 55.40
Mon.	20	15 40 26.87	19 34 59.4	16 12.97	14 25.09	15 54 51.96
Tues.	21	15 44 37.87	19 48 36.3	16 13.17	14 10.64	15 58 48.51
Wed.	22	15 48 49.67	20 1 51.6	16 13.37	13 55.40	16 2 45.07
Thur.	23	15 53 2.25	20 14 44.9	16 13.56	13 39.38	16 6 41.62
Frid.	24	15 57 15.60	20 27 15.8	16 13.75	13 22.58	16 10 38.18
Sat.	25	16 1 29.70	20 39 23.9	16 13.94	13 5.04	16 14 34.74
Sun.	26	16 5 44.54	20 51 8.9	16 14.12	12 46.75	16 18 31.29
Mon.	27	16 10 0.11	21 2 30.5	16 14.30	12 27.73	16 22 27.85
Tues.	28	16 14 16.40	21 13 28.4	16 14.47	12 8.01	16 26 24.40
Wed.	29	16 18 33.38	21 24 2.1	16 14.64	11 47.59	16 30 20.96
Thur.	30	16 22 51.03	21 34 11.5	16 14.81	11 26.48	16 34 17.52
Frid.	31	16 27 9.35	S. 21 43 56.3	16 14.97	11 4.72	16 38 14.07

* The Semidiameter for *Apparent* Noon may be assumed the same as that for *Mean* Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
					Noon.	Midnight.	Noon.	Midnight.
				h m s				
1	218 17 9.4	N. 0.08	9.9966058	9 18 30.83	14 45.34	14 45.93	54 3.66	54 5.84
2	219 17 12.7	S. 0.04	.9964925	9 14 34.93	14 46.96	14 48.38	54 9.60	54 14.81
3	220 17 17.8	0.16	.9963806	9 10 39.02	14 50.16	14 52.26	54 21.32	54 29.01
4	221 17 24.6	0.27	9.9962703	9 6 43.11	14 54.65	14 57.30	54 37.77	54 47.48
5	222 17 33.2	0.35	.9961616	9 2 47.20	15 0.19	15 3.30	54 58.07	55 9.45
6	223 17 43.7	0.42	.9960546	8 58 51.29	15 6.62	15 10.14	55 21.61	55 34.49
7	224 17 56.1	0.45	9.9959492	8 54 55.38	15 13.84	15 17.73	55 48.07	56 2.36
8	225 18 10.3	0.47	.9958455	8 50 59.48	15 21.83	15 26.11	56 17.35	56 33.04
9	226 18 26.5	0.44	.9957435	8 47 3.57	15 30.58	15 35.24	56 49.42	57 6.47
10	227 18 44.7	0.39	9.9956430	8 43 7.66	15 40.06	15 45.03	57 24.14	57 42.34
11	228 19 4.9	0.31	.9955441	8 39 11.75	15 50.11	15 55.25	58 0.94	58 19.80
12	229 19 27.0	0.20	.9954465	8 35 15.84	16 0.39	16 5.47	58 38.66	58 57.27
13	230 19 51.1	S. 0.07	9.9953503	8 31 19.93	16 10.39	16 15.04	59 15.28	59 32.30
14	231 20 17.2	N. 0.06	.9952553	8 27 24.02	16 19.28	16 23.03	59 47.88	60 1.61
15	232 20 45.2	0.21	.9951613	8 23 28.11	16 26.14	16 28.49	60 12.99	60 21.60
16	233 21 15.0	0.34	9.9950684	8 19 32.20	16 29.96	16 30.48	60 27.00	60 28.91
17	234 21 46.5	0.46	.9949764	8 15 36.30	16 29.98	16 28.43	60 27.08	60 21.40
18	235 22 19.8	0.57	.9948852	8 11 40.39	16 25.84	16 22.25	60 11.92	59 58.76
19	236 22 54.6	0.64	9.9947948	8 7 44.48	16 17.75	16 12.43	59 42.23	59 22.75
20	237 23 30.9	0.69	.9947053	8 3 48.57	16 6.43	15 59.91	59 0.77	58 36.88
21	238 24 8.6	0.72	.9946168	7 59 52.66	15 53.01	15 45.93	58 11.63	57 45.65
22	239 24 47.5	0.70	9.9945293	7 55 56.75	15 38.79	15 31.75	57 19.50	56 53.70
23	240 25 27.6	0.65	.9944431	7 52 0.84	15 24.94	15 18.49	56 28.75	56 5.12
24	241 26 8.9	0.58	.9943582	7 48 4.93	15 12.49	15 7.01	55 43.11	55 23.05
25	242 26 51.3	0.50	9.9942748	7 44 9.02	15 2.14	14 57.91	55 5.19	54 49.71
26	243 27 34.8	0.41	.9941930	7 40 13.11	14 54.36	14 51.51	54 36.71	54 26.27
27	244 28 19.3	0.29	.9941130	7 36 17.20	14 49.37	14 47.94	54 18.43	54 13.17
28	245 29 4.8	0.17	9.9940349	7 32 21.29	14 47.20	14 47.12	54 10.46	54 10.19
29	246 29 51.4	N. 0.06	.9939588	7 28 25.38	14 47.68	14 48.84	54 12.24	54 16.49
30	247 30 38.9	S. 0.06	.9938849	7 24 29.47	14 50.55	14 52.76	54 22.74	54 30.85
31	248 31 27.5	S. 0.16	9.9938131	7 20 33.55	14 55.42	14 58.47	54 40.60	54 51.75

MEAN TIME.

THE MOON'S							
Day.	Longitude.		Latitude.		Age.	Meridian Passage.	
	Noon.	Midnight.	Noon.	Midnight.	Noon.	Upper.	Lower.
1	2 25 10.2	8 19 24.6	S. 0 16 42.4	S. 0 48 42.3	11.93	9 46.1	22 7.4
2	14 14 44.2	20 11 29.6	1 20 14.1	1 50 58.7	12.93	10 28.9	22 50.6
3	26 9 59.4	32 10 29.1	2 20 36.5	2 48 48.0	13.93	11 12.7	23 35.1
4	38 13 11.9	44 18 18.6	3 15 13.7	3 39 34.5	14.93	11 58.0	* *
5	50 25 58.1	56 36 17.4	4 1 31.8	4 20 47.7	15.93	12 45.1	0 21.3
6	62 49 22.0	69 5 16.9	4 37 6.0	4 50 11.2	16.93	13 34.2	1 9.4
7	75 24 6.1	81 45 53.7	4 59 50.1	5 5 51.1	17.93	14 24.9	1 59.3
8	88 10 43.9	94 38 41.7	5 8 4.8	5 6 24.4	18.93	15 16.9	2 50.8
9	101 9 52.8	107 44 23.9	5 0 45.5	4 51 6.7	19.93	16 9.6	3 43.2
10	114 22 22.1	121 3 55.8	4 37 29.2	4 19 57.5	20.93	17 2.5	4 36.1
11	127 49 13.4	134 38 22.8	3 58 39.4	3 33 46.4	21.93	17 55.4	5 29.0
12	141 31 31.2	148 28 43.8	3 5 33.5	2 34 19.8	22.93	18 48.0	6 21.7
13	155 30 2.6	162 35 25.8	2 0 28.7	1 24 27.3	23.93	19 40.7	7 14.3
14	169 44 46.3	176 57 50.7	S. 0 46 47.6	S. 0 8 5.0	24.93	20 33.8	8 7.2
15	184 14 18.2	191 33 40.5	N. 0 31 1.6	N. 1 9 50.7	25.93	21 27.9	9 0.7
16	198 55 21.0	206 18 35.3	1 47 39.4	2 23 44.7	26.93	22 23.3	9 55.4
17	213 42 32.2	221 6 15.3	2 57 25.3	3 28 2.9	27.93	23 20.0	10 51.5
18	228 28 44.9	235 49 0.0	3 55 3.9	4 18 0.8	28.93	* *	11 48.8
19	243 6 1.6	250 18 54.4	4 36 33.3	4 50 28.1	0.50	0 17.7	12 46.6
20	257 26 50.2	264 29 8.3	4 59 39.5	5 4 8.7	1.50	1 15.4	13 44.0
21	271 25 18.1	278 14 59.2	5 4 3.2	4 59 35.2	2.50	2 12.1	14 39.7
22	284 58 1.6	291 34 25.1	4 51 0.9	4 38 39.5	3.50	3 6.6	15 32.9
23	298 4 18.7	304 27 59.8	4 22 51.6	4 3 58.9	4.50	3 58.4	16 23.2
24	310 45 52.7	316 58 27.1	3 42 23.1	3 18 25.6	5.50	4 47.3	17 10.7
25	323 6 17.6	329 10 1.9	2 52 27.4	2 24 48.4	6.50	5 33.5	17 55.8
26	335 10 19.8	341 7 52.6	1 55 47.9	1 25 44.4	7.50	6 17.7	18 39.2
27	347 3 22.5	352 57 30.8	N. 0 54 55.8	N. 0 23 39.5	8.50	7 0.5	19 21.7
28	358 50 58.5	4 44 24.9	S. 0 7 47.2	S. 0 39 7.3	9.50	7 42.7	20 3.8
29	10 38 27.3	16 33 41.0	1 10 3.4	1 40 18.1	10.50	8 25.1	20 46.6
30	22 30 38.1	28 29 47.0	2 9 33.6	2 37 31.4	11.50	9 8.3	21 30.5
31	34 31 33.1	40 36 17.5	S. 3 3 53.2	S. 3 28 20.1	12.50	9 53.1	22 16.1

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 1.					FRIDAY 3.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	0 9 19.35	18.748	0 42 25.2	92.66	0	1 40 29.34	19.376	7 55 15.0	85.40
1	0 11 11.85	18.752	0 51 41.1	92.64	1	1 42 25.66	19.398	8 3 46.5	85.09
2	0 13 4.38	18.757	1 0 56.9	92.63	2	1 44 22.11	19.419	8 12 16.1	84.79
3	0 14 56.93	18.762	1 10 12.6	92.60	3	1 46 18.69	19.441	8 20 44.0	84.48
4	0 16 49.52	18.768	1 19 28.1	92.57	4	1 48 15.40	19.463	8 29 9.9	84.15
5	0 18 42.14	18.773	1 28 43.4	92.53	5	1 50 12.25	19.486	8 37 33.8	83.83
6	0 20 34.80	18.779	1 37 58.4	92.48	6	1 52 9.23	19.508	8 45 55.8	83.50
7	0 22 27.49	18.786	1 47 13.2	92.44	7	1 54 6.35	19.532	8 54 15.8	83.16
8	0 24 20.23	18.793	1 56 27.7	92.38	8	1 56 3.61	19.555	9 2 33.7	82.81
9	0 26 13.01	18.801	2 5 41.8	92.33	9	1 58 1.01	19.578	9 10 49.5	82.46
10	0 28 5.84	18.808	2 14 55.6	92.27	10	1 59 58.55	19.602	9 19 3.2	82.10
11	0 29 58.71	18.817	2 24 9.0	92.19	11	2 1 56.23	19.626	9 27 14.7	81.73
12	0 31 51.64	18.826	2 33 21.9	92.11	12	2 3 54.06	19.650	9 35 24.0	81.36
13	0 33 44.62	18.834	2 42 34.3	92.03	13	2 5 52.03	19.675	9 43 31.0	80.98
14	0 35 37.65	18.843	2 51 46.3	91.95	14	2 7 50.16	19.700	9 51 35.7	80.59
15	0 37 30.74	18.853	3 0 57.7	91.85	15	2 9 48.43	19.724	9 59 38.1	80.21
16	0 39 23.89	18.864	3 10 8.5	91.75	16	2 11 46.85	19.750	10 7 38.2	79.81
17	0 41 17.11	18.875	3 19 18.7	91.64	17	2 13 45.43	19.776	10 15 35.8	79.39
18	0 43 10.39	18.885	3 28 28.2	91.53	18	2 15 44.16	19.801	10 23 30.9	78.98
19	0 45 3.73	18.897	3 37 37.1	91.42	19	2 17 43.04	19.827	10 31 23.6	78.57
20	0 46 57.15	18.908	3 46 45.2	91.29	20	2 19 42.08	19.853	10 39 13.7	78.14
21	0 48 50.63	18.920	3 55 52.6	91.17	21	2 21 41.28	19.879	10 47 1.3	77.71
22	0 50 44.19	18.933	4 4 59.2	91.03	22	2 23 40.63	19.906	10 54 46.2	77.27
23	0 52 37.82	18.946	N. 4 14 5.0	90.89	23	2 25 40.15	19.933	N. 11 2 28.5	76.83
THURSDAY 2.					SATURDAY 4.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	0 54 31.54	18.959	N. 4 23 9.9	90.74	0	2 27 39.83	19.960	N. 11 10 8.1	76.38
1	0 56 25.33	18.972	4 32 13.9	90.59	1	2 29 39.67	19.987	11 17 45.0	75.92
2	0 58 19.20	18.986	4 41 17.0	90.43	2	2 31 39.67	20.014	11 25 19.1	75.45
3	1 0 13.16	19.000	4 50 19.1	90.27	3	2 33 39.84	20.042	11 32 50.4	74.98
4	1 2 7.20	19.014	4 59 20.2	90.10	4	2 35 40.17	20.069	11 40 18.8	74.49
5	1 4 1.33	19.030	5 8 20.3	89.92	5	2 37 40.67	20.097	11 47 44.3	74.01
6	1 5 55.56	19.045	5 17 19.3	89.73	6	2 39 41.33	20.125	11 55 6.9	73.52
7	1 7 49.87	19.060	5 26 17.1	89.55	7	2 41 42.17	20.153	12 2 26.5	73.02
8	1 9 44.28	19.077	5 35 13.9	89.36	8	2 43 43.17	20.181	12 9 43.1	72.52
9	1 11 38.79	19.093	5 44 9.4	89.15	9	2 45 44.34	20.209	12 16 56.7	72.00
10	1 13 33.40	19.109	5 53 3.7	88.95	10	2 47 45.68	20.238	12 24 7.1	71.48
11	1 15 28.10	19.126	6 1 56.8	88.73	11	2 49 47.20	20.268	12 31 14.4	70.95
12	1 17 22.91	19.143	6 10 48.5	88.52	12	2 51 48.89	20.296	12 38 18.5	70.42
13	1 19 17.82	19.161	6 19 39.0	88.29	13	2 53 50.75	20.325	12 45 19.4	69.88
14	1 21 12.84	19.179	6 28 28.0	88.06	14	2 55 52.79	20.354	12 52 17.0	69.33
15	1 23 7.97	19.198	6 37 15.7	87.83	15	2 57 55.00	20.383	12 59 11.3	68.78
16	1 25 3.21	19.216	6 46 1.9	87.58	16	2 59 57.38	20.412	13 6 2.3	68.22
17	1 26 58.56	19.235	6 54 46.6	87.33	17	3 1 59.94	20.442	13 12 49.9	67.65
18	1 28 54.03	19.255	7 3 29.8	87.07	18	3 4 2.68	20.472	13 19 34.1	67.08
19	1 30 49.62	19.274	7 12 11.4	86.81	19	3 6 5.60	20.501	13 26 14.8	66.49
20	1 32 45.32	19.293	7 20 51.5	86.54	20	3 8 8.69	20.531	13 32 52.0	65.91
21	1 34 41.14	19.313	7 29 29.9	86.27	21	3 10 11.97	20.561	13 39 25.7	65.32
22	1 36 37.08	19.334	7 38 6.7	85.98	22	3 12 15.42	20.589	13 45 55.8	64.71
23	1 38 33.15	19.355	7 46 41.7	85.69	23	3 14 19.04	20.619	13 52 22.2	64.10
24	1 40 29.34	19.376	N. 7 55 15.0	85.40	24	3 16 22.85	20.650	N. 13 58 45.0	63.49

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.	Hour.	Right Ascension.	Var. in rom.	Declination.	Var. in rom.
SUNDAY 5.					TUESDAY 7.				
	h m s	s	N. 13 58 45 0	63 49		h m s	s	N. 17 40 41 9	26 72
0	3 16 22.85	20.650	14 5 4.1	62.88	0	4 58 52.93	22.016	17 43 19.5	25.81
1	3 18 26.84	20.679	14 11 19.5	62.25	1	5 1 5.10	22.040	17 45 51.6	24.91
2	3 20 31.00	20.709	14 17 31.1	61.61	2	5 3 17.41	22.064	17 48 18.4	24.00
3	3 22 35.35	20.739	14 23 38.8	60.97	3	5 5 29.87	22.088	17 50 39.6	23.08
4	3 24 39.87	20.769	14 29 42.7	60.33	4	5 7 42.47	22.112	17 52 55.4	22.17
5	3 26 44.58	20.799	14 35 42.7	59.68	5	5 9 55.21	22.135	17 55 5.6	21.24
6	3 28 49.46	20.829	14 41 38.8	59.01	6	5 12 8.09	22.158	17 57 10.3	20.32
7	3 30 54.53	20.860	14 47 30.8	58.34	7	5 14 21.10	22.180	17 59 9.4	19.38
8	3 32 59.78	20.890	14 53 18.9	57.67	8	5 16 34.25	22.203	18 1 2.9	18.46
9	3 35 5.21	20.920	14 59 2.9	56.99	9	5 18 47.54	22.225	18 2 50.9	17.52
10	3 37 10.82	20.949	15 4 42.8	56.30	10	5 21 0.95	22.247	18 4 33.1	16.57
11	3 39 16.60	20.979	15 10 18.5	55.61	11	5 23 14.50	22.268	18 6 9.7	15.63
12	3 41 22.57	21.010	15 15 50.1	54.92	12	5 25 28.17	22.289	18 7 40.7	14.68
13	3 43 28.72	21.039	15 21 17.5	54.21	13	5 27 41.97	22.310	18 9 5.9	13.73
14	3 45 35.04	21.069	15 26 40.6	53.49	14	5 29 55.89	22.331	18 10 25.4	12.77
15	3 47 41.55	21.100	15 31 59.4	52.77	15	5 32 9.94	22.351	18 11 39.1	11.81
16	3 49 48.24	21.129	15 37 13.9	52.05	16	5 34 24.10	22.370	18 12 47.1	10.85
17	3 51 55.10	21.159	15 42 24.0	51.32	17	5 36 38.38	22.390	18 13 49.3	9.88
18	3 54 2.15	21.189	15 47 29.7	50.58	18	5 38 52.78	22.409	18 14 45.7	8.92
19	3 56 9.37	21.218	15 52 31.0	49.84	19	5 41 7.29	22.428	18 15 36.3	7.94
20	3 58 16.77	21.248	15 57 27.8	49.09	20	5 43 21.92	22.447	18 16 21.0	6.97
21	4 0 24.35	21.278	16 2 20.1	48.34	21	5 45 36.65	22.464	18 16 59.9	5.99
22	4 2 32.10	21.307	16 7 7.9	47.58	22	5 47 51.49	22.483	18 17 32.9	5.01
23	4 4 40.03	21.337			23	5 50 6.44	22.500		
MONDAY 6.					WEDNESDAY 8.				
0	4 6 48.14	21.366	16 16 29.6	46.81	0	5 52 21.49	22.517	18 18 0.0	4.03
1	4 8 56.42	21.394	16 21 32.5	45.26	1	5 54 36.64	22.533	18 18 21.2	3.04
2	4 11 4.87	21.423	16 25 32.7	44.47	2	5 56 51.89	22.550	18 18 45.9	2.06
3	4 13 13.50	21.452	16 29 57.1	43.68	3	5 59 7.24	22.566	18 18 49.3	0.07
4	4 15 22.30	21.481	16 34 16.8	42.88	4	6 1 22.68	22.581	18 18 46.7	0.93
5	4 17 31.27	21.509	16 42 41.8	42.08	5	6 3 38.21	22.597	18 18 38.2	1.92
6	4 19 40.41	21.538	16 46 47.0	41.28	6	6 5 53.84	22.612	18 18 23.7	2.92
7	4 21 49.72	21.566	16 50 47.3	39.64	7	6 8 9.55	22.626	18 17 36.7	3.92
8	4 23 59.20	21.594	16 54 42.7	38.82	8	6 10 25.35	22.640	18 17 4.2	4.92
9	4 26 8.85	21.622	16 58 33.1	37.98	9	6 12 41.23	22.654	18 16 25.7	5.92
10	4 28 18.67	21.650	17 2 18.5	37.14	10	6 14 57.20	22.668	18 15 41.1	6.93
11	4 30 28.65	21.678	17 5 58.8	36.30	11	6 17 13.25	22.681	18 14 50.5	7.93
12	4 32 38.80	21.704	17 9 34.1	35.46	12	6 19 29.37	22.693	18 13 53.9	8.94
13	4 34 49.10	21.731	17 13 4.3	34.61	13	6 21 45.57	22.706	18 12 51.2	9.96
14	4 36 59.57	21.759	17 16 29.4	33.76	14	6 24 1.84	22.718	18 11 42.4	10.97
15	4 39 10.21	21.786	17 19 49.4	32.89	15	6 26 18.19	22.730	18 10 27.6	11.98
16	4 41 21.00	21.812	17 23 4.1	32.02	16	6 28 34.60	22.741	18 9 6.7	12.98
17	4 43 31.95	21.838	17 26 13.6	31.15	17	6 30 51.08	22.752	18 7 39.8	13.98
18	4 45 43.06	21.864	17 29 17.9	30.27	18	6 33 7.62	22.762	18 6 6.7	14.98
19	4 47 54.32	21.890	17 32 16.9	29.38	19	6 35 24.22	22.773	18 4 27.6	15.98
20	4 50 5.74	21.916	17 35 10.5	28.50	20	6 37 40.89	22.783	18 2 42.4	16.98
21	4 52 17.31	21.941	17 37 58.9	27.62	21	6 39 57.61	22.792	18 0 51.2	17.98
22	4 54 29.03	21.967			22	6 42 14.39	22.801		
23	4 56 40.91	21.992			23	6 44 31.22	22.809		
24	4 58 52.93	22.016	N. 17 40 41.9	26.72	24	6 46 48.10	22.818	N. 17 58 53.8	20.07

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
THURSDAY 9.					SATURDAY 11.				
	h m s	s	N. 17° 58' 53".8	20.07		h m s	s	N. 14° 28' 21".2	66.64
0	6 46 48.10	22.818			0	8 36 43.20	22.890		
1	6 49 5.03	22.826	17 56 50.4	21.08	1	8 39 0.53	22.887	14 21 38.7	67.53
2	6 51 22.01	22.834	17 54 40.9	22.09	2	8 41 17.84	22.883	14 14 50.8	68.42
3	6 53 39.04	22.842	17 52 25.3	23.10	3	8 43 35.13	22.880	14 7 57.7	69.28
4	6 55 56.11	22.848	17 50 3.7	24.12	4	8 45 52.40	22.878	14 0 59.4	70.15
5	6 58 13.22	22.854	17 47 35.9	25.13	5	8 48 9.66	22.874	13 53 55.9	71.02
6	7 0 30.36	22.861	17 45 2.1	26.13	6	8 50 26.89	22.871	13 46 47.2	71.88
7	7 2 47.55	22.868	17 42 22.3	27.15	7	8 52 44.11	22.867	13 39 33.4	72.73
8	7 5 4.77	22.873	17 39 36.3	28.17	8	8 55 1.30	22.863	13 32 14.5	73.58
9	7 7 22.02	22.878	17 36 44.3	29.17	9	8 57 18.47	22.861	13 24 50.5	74.42
10	7 9 39.31	22.884	17 33 46.3	30.18	10	8 59 35.63	22.858	13 17 21.5	75.25
11	7 11 56.63	22.888	17 30 42.2	31.18	11	9 1 52.76	22.854	13 9 47.5	76.08
12	7 14 13.97	22.892	17 27 32.1	32.18	12	9 4 9.88	22.851	13 2 8.6	76.89
13	7 16 31.33	22.896	17 24 16.0	33.19	13	9 6 26.97	22.847	12 54 24.8	77.72
14	7 18 48.72	22.900	17 20 53.8	34.20	14	9 8 44.04	22.843	12 46 36.0	78.53
15	7 21 6.13	22.904	17 17 25.6	35.20	15	9 11 1.09	22.841	12 38 42.5	79.33
16	7 23 23.57	22.907	17 13 51.4	36.19	16	9 13 18.13	22.837	12 30 44.1	80.13
17	7 25 41.02	22.910	17 10 11.3	37.19	17	9 15 35.14	22.833	12 22 41.0	80.91
18	7 27 58.49	22.912	17 6 25.1	38.19	18	9 17 52.13	22.831	12 14 33.2	81.69
19	7 30 15.97	22.914	17 2 33.0	39.18	19	9 20 9.11	22.828	12 6 20.7	82.47
20	7 32 33.46	22.917	16 58 34.9	40.18	20	9 22 26.07	22.825	11 58 3.6	83.24
21	7 34 50.97	22.919	16 54 30.9	41.16	21	9 24 43.01	22.822	11 49 41.8	84.01
22	7 37 8.49	22.921	16 50 21.0	42.15	22	9 26 59.93	22.818	11 41 15.5	84.76
23	7 39 26.02	22.922	N. 16 46 5.1	43.14	23	9 29 16.83	22.816	N. 11 32 44.7	85.51
FRIDAY 10.					SUNDAY 12.				
0	7 41 43.55	22.923	N. 16 41 43.3	44.12	0	9 31 33.72	22.813	N. 11 24 9.4	86.25
1	7 44 1.09	22.923	16 37 15.7	45.09	1	9 33 50.59	22.811	11 15 29.7	86.98
2	7 46 18.63	22.924	16 32 42.2	46.07	2	9 36 7.45	22.808	11 6 45.6	87.71
3	7 48 36.18	22.924	16 28 2.8	47.05	3	9 38 24.29	22.806	10 57 57.2	88.43
4	7 50 53.72	22.924	16 23 17.6	48.02	4	9 40 41.12	22.804	10 49 4.5	89.14
5	7 53 11.27	22.925	16 18 26.6	48.98	5	9 42 57.94	22.802	10 40 7.5	89.85
6	7 55 28.82	22.924	16 13 29.8	49.95	6	9 45 14.74	22.799	10 31 6.3	90.54
7	7 57 46.36	22.923	16 8 27.2	50.91	7	9 47 31.53	22.798	10 22 1.0	91.23
8	8 0 3.90	22.923	16 3 18.9	51.87	8	9 49 48.31	22.796	10 12 51.6	91.91
9	8 2 21.44	22.923	15 58 4.8	52.83	9	9 52 5.08	22.794	10 3 38.1	92.58
10	8 4 38.97	22.921	15 52 45.0	53.78	10	9 54 21.84	22.793	9 54 20.7	93.24
11	8 6 56.49	22.919	15 47 19.5	54.72	11	9 56 38.59	22.792	9 44 59.2	93.91
12	8 9 14.00	22.918	15 41 48.4	55.66	12	9 58 55.34	22.791	9 35 33.8	94.55
13	8 11 31.50	22.917	15 36 11.6	56.60	13	10 1 12.08	22.790	9 26 4.6	95.18
14	8 13 49.00	22.915	15 30 29.2	57.54	14	10 3 28.82	22.789	9 16 31.6	95.82
15	8 16 6.48	22.913	15 24 41.1	58.47	15	10 5 45.55	22.788	9 6 54.8	96.44
16	8 18 23.95	22.911	15 18 47.5	59.39	16	10 8 2.28	22.788	8 57 14.3	97.05
17	8 20 41.41	22.909	15 12 48.4	60.32	17	10 10 19.01	22.788	8 47 30.2	97.65
18	8 22 58.86	22.907	15 6 43.7	61.24	18	10 12 35.74	22.788	8 37 42.5	98.25
19	8 25 16.29	22.903	15 0 33.5	62.15	19	10 14 52.47	22.788	8 27 51.2	98.84
20	8 27 33.70	22.901	14 54 17.9	63.06	20	10 17 9.20	22.789	8 17 56.4	99.42
21	8 29 51.10	22.898	14 47 56.8	63.97	21	10 19 25.94	22.790	8 7 58.2	99.98
22	8 32 8.48	22.896	14 41 30.3	64.87	22	10 21 42.68	22.791	7 57 56.6	100.54
23	8 34 25.85	22.893	14 34 58.4	65.76	23	10 23 59.43	22.792	7 47 51.7	101.09
24	8 36 43.20	22.890	N. 14 28 21.2	66.64	24	10 26 16.18	22.793	N. 7 37 43.5	101.63

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .			
MONDAY 13.					WEDNESDAY 15.							
	h m s	s	° ' "	"		h m s	s	° ' "	"			
0	10 26 16	18	22 793	N. 7 37 43	5 101 63	0	12 16 22	77	23 202	S. 1 12 37	8	114 97
1	10 28 32	95	22 796	7 27 32	1 102 17	1	12 18 42	03	23 218	1 24 7	6	114 96
2	10 30 49	73	22 798	7 17 17	2 102 68	2	12 21 1	38	23 233	1 35 37	3	114 93
3	10 33 6	52	22 799	7 6 59	3 103 19	3	12 23 20	82	23 249	1 47 6	7	114 88
4	10 35 23	32	22 802	6 56 39	4 103 70	4	12 25 40	37	23 267	1 58 35	8	114 83
5	10 37 40	14	22 805	6 46 15	5 104 20	5	12 28 0	02	23 283	2 10 4	6	114 76
6	10 39 56	98	22 808	6 35 48	6 104 68	6	12 30 19	77	23 300	2 21 32	9	114 67
7	10 42 13	83	22 811	6 25 19	7 105 14	7	12 32 39	62	23 318	2 33 0	6	114 58
8	10 44 30	71	22 815	6 14 47	8 105 62	8	12 34 59	58	23 335	2 44 27	8	114 47
9	10 46 47	61	22 818	6 4 12	9 106 07	9	12 37 19	64	23 353	2 55 54	2	114 34
10	10 49 4	53	22 822	5 53 34	10 106 51	10	12 39 39	82	23 372	3 7 19	9	114 21
11	10 51 21	47	22 827	5 42 53	11 106 94	11	12 42 0	10	23 390	3 18 44	7	114 06
12	10 53 38	45	22 832	5 32 11	12 107 36	12	12 44 20	50	23 409	3 30 8	6	113 89
13	10 55 55	45	22 836	5 21 25	13 107 78	13	12 46 41	01	23 428	3 41 31	4	113 71
14	10 58 12	48	22 842	5 10 37	14 108 18	14	12 49 1	63	23 446	3 52 53	1	113 52
15	11 0 29	55	22 846	4 59 47	15 108 56	15	12 51 22	36	23 466	4 4 13	7	113 32
16	11 2 46	65	22 852	4 48 55	16 108 94	16	12 53 43	22	23 486	4 15 33	0	113 10
17	11 5 3	78	22 859	4 38 0	17 109 32	17	12 56 4	19	23 505	4 26 50	9	112 87
18	11 7 20	96	22 866	4 27 3	18 109 68	18	12 58 25	28	23 525	4 38 7	4	112 63
19	11 9 38	17	22 872	4 16 4	19 110 02	19	13 0 46	49	23 545	4 49 22	4	112 37
20	11 11 55	42	22 879	4 5 3	20 110 35	20	13 3 7	82	23 566	5 0 35	8	112 09
21	11 14 12	72	22 887	3 53 59	21 110 68	21	13 5 29	28	23 586	5 11 47	5	111 80
22	11 16 30	06	22 894	3 42 54	22 110 99	22	13 7 50	85	23 606	5 22 57	4	111 50
23	11 18 47	45	22 902	3 31 48	23 111 30	23	13 10 12	55	23 627	5 34 5	5	111 19
TUESDAY 14.					THURSDAY 16.							
0	11 21 4	89	22 910	N. 3 20 39	3 111 59	0	13 12 34	38	23 648	S. 5 45 11	7	110 86
1	11 23 22	37	22 918	3 9 28	1 111 87	1	13 14 56	33	23 668	5 56 15	8	110 52
2	11 25 39	91	22 928	2 58 16	2 112 13	2	13 17 18	40	23 690	6 7 17	9	110 17
3	11 27 57	50	22 937	2 47 3	3 112 39	3	13 19 40	61	23 712	6 18 17	8	109 79
4	11 30 15	15	22 947	2 35 48	4 112 63	4	13 22 2	94	23 733	6 29 15	4	109 41
5	11 32 32	86	22 957	2 24 31	5 112 86	5	13 24 25	40	23 754	6 40 10	7	109 01
6	11 34 50	63	22 967	2 13 13	6 113 08	6	13 26 47	99	23 776	6 51 3	5	108 59
7	11 37 8	46	22 977	2 1 54	7 113 30	7	13 29 10	71	23 798	7 1 53	8	108 17
8	11 39 26	35	22 987	1 50 34	8 113 50	8	13 31 33	57	23 820	7 12 41	6	107 74
9	11 41 44	30	22 998	1 39 12	9 113 68	9	13 33 56	55	23 841	7 23 26	7	107 28
10	11 44 2	33	23 010	1 27 50	10 113 85	10	13 36 19	66	23 863	7 34 9	0	106 82
11	11 46 20	42	23 022	1 16 26	11 114 01	11	13 38 42	90	23 885	7 44 48	5	106 33
12	11 48 38	59	23 034	1 5 2	12 114 16	12	13 41 6	28	23 907	7 55 25	0	105 84
13	11 50 56	83	23 046	0 53 36	13 114 30	13	13 43 29	78	23 928	8 5 58	6	105 33
14	11 53 15	14	23 058	0 42 10	14 114 42	14	13 45 53	42	23 951	8 16 29	0	104 81
15	11 55 33	53	23 071	0 30 43	15 114 53	15	13 48 17	19	23 973	8 26 56	3	104 28
16	11 57 51	99	23 084	0 19 16	16 114 63	16	13 50 41	09	23 994	8 37 20	4	103 73
17	12 0 10	54	23 098	N. 0 7 47	17 114 72	17	13 53 5	12	24 017	8 47 41	1	103 17
18	12 2 29	17	23 113	S. 0 3 40	18 114 79	18	13 55 29	29	24 038	8 57 58	4	102 59
19	12 4 47	89	23 127	0 15 9	19 114 85	19	13 57 53	58	24 060	9 8 12	2	102 01
20	12 7 6	69	23 140	0 26 38	20 114 91	20	14 0 18	01	24 082	9 18 22	5	101 41
21	12 9 25	57	23 155	0 38 8	21 114 94	21	14 2 42	57	24 103	9 28 29	1	100 78
22	12 11 44	55	23 170	0 49 38	22 114 96	22	14 5 7	25	24 125	9 38 31	9	100 16
23	12 14 3	61	23 185	1 1 8	23 114 97	23	14 7 32	07	24 147	9 48 31	0	99 52
24	12 16 22	77	23 202	S. 1 12 37	24 114 97	24	14 9 57	01	24 168	9 58 26	2	98 87

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 17.					SUNDAY 19.				
	h m s	s	° ′ ″	″		h m s	s	° ′ ″	″
0	14 9 57.01	24.168	S. 9 58 26.2	98.87	0	16 7 55.65	24.829	S. 16 15 30.6	54.47
1	14 12 22.09	24.190	10 8 17.4	98.20	1	16 10 24.63	24.830	16 20 54.0	53.33
2	14 14 47.29	24.211	10 18 4.6	97.52	2	16 12 53.61	24.830	16 26 10.6	52.20
3	14 17 12.62	24.232	10 27 47.6	96.83	3	16 15 22.59	24.830	16 31 20.4	51.06
4	14 19 38.07	24.253	10 37 26.5	96.12	4	16 17 51.57	24.830	16 36 23.3	49.92
5	14 22 3.65	24.274	10 47 1.1	95.40	5	16 20 20.55	24.828	16 41 19.4	48.77
6	14 24 29.36	24.294	10 56 31.3	94.67	6	16 22 49.51	24.825	16 46 8.5	47.61
7	14 26 55.18	24.314	11 5 57.1	93.93	7	16 25 18.45	24.822	16 50 50.7	46.46
8	14 29 21.13	24.335	11 15 18.4	93.18	8	16 27 47.38	24.819	16 55 26.0	45.30
9	14 31 47.20	24.354	11 24 35.2	92.41	9	16 30 16.28	24.815	16 59 54.3	44.13
10	14 34 13.38	24.374	11 33 47.3	91.63	10	16 32 45.16	24.810	17 4 15.6	42.97
11	14 36 39.69	24.394	11 42 54.7	90.83	11	16 35 14.00	24.804	17 8 29.9	41.80
12	14 39 6.11	24.413	11 51 57.3	90.03	12	16 37 42.81	24.798	17 12 37.2	40.63
13	14 41 32.64	24.432	12 0 55.1	89.22	13	16 40 11.57	24.790	17 16 37.4	39.45
14	14 43 59.29	24.451	12 9 47.9	88.39	14	16 42 40.29	24.783	17 20 30.6	38.28
15	14 46 26.05	24.469	12 18 35.8	87.55	15	16 45 8.96	24.774	17 24 16.7	37.09
16	14 48 52.92	24.487	12 27 18.5	86.70	16	16 47 37.58	24.764	17 27 55.7	35.91
17	14 51 19.89	24.504	12 35 56.2	85.84	17	16 50 6.13	24.753	17 31 27.6	34.73
18	14 53 46.97	24.522	12 44 28.6	84.97	18	16 52 34.62	24.743	17 34 52.4	33.54
19	14 56 14.16	24.539	12 52 55.8	84.08	19	16 55 3.05	24.732	17 38 10.1	32.36
20	14 58 41.44	24.556	13 1 17.6	83.19	20	16 57 31.40	24.718	17 41 20.7	31.17
21	15 1 8.83	24.573	13 9 34.1	82.28	21	16 59 59.67	24.705	17 44 24.1	29.98
22	15 3 36.31	24.588	13 17 45.0	81.37	22	17 2 27.86	24.692	17 47 20.4	28.79
23	15 6 3.88	24.603	S. 13 25 50.5	80.45	23	17 4 55.97	24.678	S. 17 50 9.6	27.60
SATURDAY 18.					MONDAY 20.				
0	15 8 31.55	24.619	S. 13 33 50.4	79.51	0	17 7 23.99	24.662	S. 17 52 51.6	26.41
1	15 10 59.31	24.633	13 41 44.6	78.56	1	17 9 51.91	24.645	17 55 26.5	25.23
2	15 13 27.15	24.648	13 49 33.1	77.61	2	17 12 19.73	24.628	17 57 54.3	24.03
3	15 15 55.08	24.662	13 57 15.9	76.65	3	17 14 47.45	24.611	18 0 14.9	22.84
4	15 18 23.09	24.675	14 4 52.9	75.67	4	17 17 15.06	24.593	18 2 28.4	21.66
5	15 20 51.18	24.688	14 12 23.9	74.68	5	17 19 42.56	24.573	18 4 34.8	20.48
6	15 23 19.35	24.700	14 19 49.0	73.69	6	17 22 9.94	24.553	18 6 34.1	19.28
7	15 25 47.58	24.712	14 27 8.2	72.69	7	17 24 37.20	24.533	18 8 26.2	18.10
8	15 28 15.89	24.724	14 34 21.3	71.68	8	17 27 4.34	24.513	18 10 11.3	16.93
9	15 30 44.27	24.735	14 41 28.3	70.66	9	17 29 31.35	24.491	18 11 49.3	15.74
10	15 33 12.71	24.745	14 48 29.2	69.63	10	17 31 58.23	24.467	18 13 20.2	14.56
11	15 35 41.21	24.755	14 55 23.9	68.59	11	17 34 24.96	24.443	18 14 44.0	13.38
12	15 38 9.77	24.764	15 2 12.3	67.55	12	17 36 51.55	24.420	18 16 0.7	12.20
13	15 40 38.38	24.773	15 8 54.5	66.50	13	17 39 18.00	24.396	18 17 10.4	11.03
14	15 43 7.04	24.781	15 15 30.3	65.43	14	17 41 44.30	24.370	18 18 13.1	9.87
15	15 45 35.75	24.788	15 21 59.7	64.37	15	17 44 10.44	24.344	18 19 8.8	8.71
16	15 48 4.50	24.795	15 28 22.7	63.29	16	17 46 36.43	24.317	18 19 57.6	7.54
17	15 50 33.29	24.802	15 34 39.2	62.21	17	17 49 2.25	24.289	18 20 39.3	6.38
18	15 53 2.12	24.808	15 40 49.2	61.13	18	17 51 27.90	24.262	18 21 14.1	5.23
19	15 55 30.98	24.813	15 46 52.7	60.03	19	17 53 53.39	24.233	18 21 42.0	4.07
20	15 57 59.87	24.818	15 52 49.6	58.93	20	17 56 18.70	24.203	18 22 2.9	2.92
21	16 0 28.79	24.822	15 58 39.9	57.82	21	17 58 43.83	24.173	18 22 17.0	1.78
22	16 2 57.73	24.824	16 4 23.5	56.71	22	18 1 8.78	24.143	18 22 24.3	0.64
23	16 5 26.68	24.827	16 10 0.4	55.59	23	18 3 33.55	24.113	18 22 24.7	0.50
24	16 7 55.65	24.829	S. 16 15 30.6	54.47	24	18 5 58.13	24.081	S. 18 22 18.3	1.63

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 21.					THURSDAY 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	18 5 58.13	24.081	S. 18 22 18.3	1.63	0	19 57 2.04	22.083	S. 16 15 32.2	48.46
1	18 8 22.52	24.048	18 22 5.1	2.76	1	19 59 14.39	22.036	16 10 39.1	49.24
2	18 10 46.71	24.014	18 21 45.2	3.88	2	20 1 26.47	21.990	16 5 41.3	50.02
3	18 13 10.69	23.981	18 21 18.5	5.00	3	20 3 38.27	21.944	16 0 38.9	50.79
4	18 15 34.48	23.948	18 20 45.2	6.11	4	20 5 49.80	21.898	15 55 31.8	51.57
5	18 17 58.06	23.913	18 20 5.2	7.22	5	20 8 1.04	21.851	15 50 20.1	52.32
6	18 20 21.43	23.878	18 19 18.6	8.32	6	20 10 12.01	21.806	15 45 4.0	53.07
7	18 22 44.59	23.843	18 18 25.4	9.42	7	20 12 22.71	21.760	15 39 43.3	53.81
8	18 25 7.54	23.806	18 17 25.6	10.51	8	20 14 33.13	21.713	15 34 18.3	54.54
9	18 27 30.26	23.769	18 16 19.3	11.59	9	20 16 43.27	21.668	15 28 48.8	55.27
10	18 29 52.77	23.732	18 15 6.5	12.67	10	20 18 53.14	21.623	15 23 15.0	55.98
11	18 32 15.05	23.694	18 13 47.3	13.74	11	20 21 2.74	21.577	15 17 37.0	56.68
12	18 34 37.10	23.656	18 12 21.6	14.82	12	20 23 12.06	21.531	15 11 54.8	57.39
13	18 36 58.92	23.618	18 10 49.5	15.88	13	20 25 21.11	21.486	15 6 8.3	58.09
14	18 39 20.51	23.579	18 9 11.1	16.93	14	20 27 29.89	21.441	15 0 17.7	58.78
15	18 41 41.87	23.540	18 7 26.4	17.98	15	20 29 38.40	21.396	14 54 23.0	59.45
16	18 44 2.99	23.499	18 5 35.4	19.02	16	20 31 46.64	21.351	14 48 24.3	60.11
17	18 46 23.86	23.459	18 3 38.2	20.05	17	20 33 54.61	21.307	14 42 21.7	60.77
18	18 48 44.50	23.419	18 1 34.8	21.08	18	20 36 2.31	21.262	14 36 15.1	61.43
19	18 51 4.89	23.378	17 59 25.3	22.10	19	20 38 9.75	21.218	14 30 4.5	62.08
20	18 53 25.03	23.337	17 57 9.6	23.12	20	20 40 16.92	21.173	14 23 50.1	62.72
21	18 55 44.93	23.295	17 54 47.9	24.13	21	20 42 23.83	21.129	14 17 31.9	63.34
22	18 58 4.57	23.253	17 52 20.1	25.13	22	20 44 30.47	21.086	14 11 10.0	63.96
23	19 0 23.96	23.210	S. 17 49 46.4	26.12	23	20 46 36.86	21.042	S. 14 4 44.4	64.58
WEDNESDAY 22.					FRIDAY 24.				
0	19 2 43.09	23.168	S. 17 47 6.7	27.11	0	20 48 42.98	20.998	S. 13 58 15.1	65.18
1	19 5 1.97	23.124	17 44 21.1	28.08	1	20 50 48.84	20.956	13 51 42.2	65.78
2	19 7 20.58	23.081	17 41 29.7	29.05	2	20 52 54.45	20.913	13 45 5.7	66.38
3	19 9 38.94	23.038	17 38 32.5	30.01	3	20 54 59.80	20.871	13 38 25.7	66.96
4	19 11 57.03	22.993	17 35 29.6	30.97	4	20 57 4.90	20.829	13 31 42.2	67.53
5	19 14 14.85	22.948	17 32 20.9	31.93	5	20 59 9.75	20.788	13 24 55.3	68.10
6	19 16 32.41	22.905	17 29 6.5	32.87	6	21 1 14.35	20.746	13 18 5.0	68.66
7	19 18 49.71	22.861	17 25 46.5	33.79	7	21 3 18.70	20.704	13 11.11.4	69.22
8	19 21 6.74	22.816	17 22 21.0	34.72	8	21 5 22.80	20.663	13 4 14.4	69.77
9	19 23 23.50	22.771	17 18 49.9	35.64	9	21 7 26.65	20.623	12 57 14.2	70.30
10	19 25 39.99	22.726	17 15 13.3	36.55	10	21 9 30.27	20.583	12 50 10.8	70.83
11	19 27 56.21	22.680	17 11 31.3	37.45	11	21 11 33.64	20.542	12 43 4.3	71.35
12	19 30 12.15	22.634	17 7 43.9	38.34	12	21 13 36.77	20.502	12 35 54.6	71.87
13	19 32 27.82	22.589	17 3 51.2	39.23	13	21 15 39.66	20.463	12 28 41.8	72.38
14	19 34 43.22	22.544	16 59 53.2	40.11	14	21 17 42.32	20.424	12 21 26.0	72.88
15	19 36 58.35	22.498	16 55 49.9	40.98	15	21 19 44.75	20.385	12 14 7.3	73.38
16	19 39 13.20	22.452	16 51 41.4	41.84	16	21 21 46.94	20.347	12 6 45.5	73.87
17	19 41 27.77	22.406	16 47 27.8	42.69	17	21 23 48.91	20.309	11 59 20.9	74.34
18	19 43 42.07	22.360	16 43 9.1	43.54	18	21 25 50.65	20.271	11 51 53.4	74.82
19	19 45 56.09	22.313	16 38 45.3	44.38	19	21 27 52.16	20.233	11 44 23.1	75.28
20	19 48 9.83	22.268	16 34 16.5	45.22	20	21 29 53.45	20.197	11 36 50.0	75.75
21	19 50 23.30	22.222	16 29 42.7	46.03	21	21 31 54.52	20.160	11 29 14.1	76.20
22	19 52 36.49	22.175	16 25 4.1	46.84	22	21 33 55.37	20.124	11 21 35.6	76.64
23	19 54 49.40	22.129	16 20 20.6	47.66	23	21 35 56.01	20.089	11 13 54.4	77.08
24	19 57 2.04	22.083	S. 16 15 32.2	48.46	24	21 37 56.44	20.053	S. 11 6 10.6	77.52

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 25.					MONDAY 27.				
	h m s	s	° ′ ″	″		h m s	s	° ′ ″	″
0	21 37 56.44	20.053	S. 11 6 10.6	77.52	0	23 10 56.59	18.877	S. 4 16 11.9	91.06
1	21 39 56.65	20.018	10 58 24.2	77.94	1	23 12 49.81	18.863	4 7 5.1	91.21
2	21 41 56.65	19.983	10 50 35.3	78.36	2	23 14 42.95	18.851	3 57 57.4	91.34
3	21 43 56.45	19.950	10 42 43.9	78.78	3	23 16 36.02	18.840	3 48 49.0	91.48
4	21 45 56.05	19.916	10 34 50.0	79.18	4	23 18 29.03	18.829	3 39 39.7	91.61
5	21 47 55.44	19.882	10 26 53.7	79.58	5	23 20 21.97	18.818	3 30 29.7	91.73
6	21 49 54.63	19.849	10 18 55.0	79.98	6	23 22 14.84	18.807	3 21 19.0	91.84
7	21 51 53.63	19.817	10 10 54.0	80.36	7	23 24 7.65	18.798	3 12 7.6	91.96
8	21 53 52.43	19.784	10 2 50.7	80.73	8	23 26 0.41	18.788	3 2 55.5	92.08
9	21 55 51.04	19.753	9 54 45.2	81.11	9	23 27 53.11	18.779	2 53 42.7	92.18
10	21 57 49.46	19.722	9 46 37.4	81.48	10	23 29 45.76	18.771	2 44 29.4	92.27
11	21 59 47.70	19.691	9 38 27.4	81.84	11	23 31 38.36	18.763	2 35 15.5	92.37
12	22 1 45.75	19.660	9 30 15.3	82.19	12	23 33 30.91	18.755	2 26 1.0	92.45
13	22 3 43.62	19.630	9 22 1.1	82.54	13	23 35 23.42	18.748	2 16 46.1	92.53
14	22 5 41.31	19.601	9 13 44.8	82.88	14	23 37 15.89	18.743	2 7 30.6	92.62
15	22 7 38.83	19.572	9 5 26.5	83.22	15	23 39 8.33	18.737	1 58 14.7	92.68
16	22 9 36.18	19.543	8 57 6.2	83.55	16	23 41 0.73	18.731	1 48 58.4	92.75
17	22 11 33.35	19.515	8 48 43.9	83.88	17	23 42 53.10	18.726	1 39 41.7	92.82
18	22 13 30.36	19.488	8 40 19.7	84.19	18	23 44 45.44	18.722	1 30 24.6	92.88
19	22 15 27.20	19.460	8 31 53.6	84.50	19	23 46 37.76	18.718	1 21 7.2	92.92
20	22 17 23.88	19.433	8 23 25.7	84.81	20	23 48 30.06	18.715	1 11 49.6	92.97
21	22 19 20.40	19.407	8 14 55.9	85.11	21	23 50 22.34	18.712	1 2 31.6	93.02
22	22 21 16.76	19.381	8 6 24.4	85.40	22	23 52 14.60	18.708	0 53 13.4	93.05
23	22 23 12.97	19.356	S. 7 57 51.1	85.69	23	23 54 6.84	18.707	S. 0 43 55.0	93.08
SUNDAY 26.					TUESDAY 28.				
0	22 25 9.03	19.331	S. 7 49 16.1	85.97	0	23 55 59.08	18.706	S. 0 34 36.4	93.11
1	22 27 4.94	19.306	7 40 39.5	86.24	1	23 57 51.31	18.705	0 25 17.7	93.13
2	22 29 0.70	19.282	7 32 1.2	86.52	2	23 59 43.54	18.704	0 15 58.9	93.14
3	22 30 56.32	19.259	7 23 21.3	86.78	3	0 1 35.76	18.704	0 6 40.0	93.16
4	22 32 51.81	19.236	7 14 39.8	87.04	4	0 3 27.99	18.705	S. 0 2 39.0	93.17
5	22 34 47.15	19.213	7 5 56.8	87.29	5	0 5 20.22	18.706	0 11 58.0	93.16
6	22 36 42.36	19.191	6 57 12.3	87.54	6	0 7 12.46	18.708	0 21 16.9	93.16
7	22 38 37.44	19.170	6 48 26.3	87.78	7	0 9 4.71	18.709	0 30 35.9	93.15
8	22 40 32.40	19.149	6 39 38.9	88.02	8	0 10 56.97	18.711	0 39 54.7	93.13
9	22 42 27.23	19.128	6 30 50.1	88.25	9	0 12 49.24	18.714	0 49 13.5	93.12
10	22 44 21.93	19.107	6 21 59.9	88.48	10	0 14 41.54	18.718	0 58 32.1	93.09
11	22 46 16.51	19.088	6 13 8.3	88.70	11	0 16 33.86	18.722	1 7 50.6	93.06
12	22 48 10.98	19.069	6 4 15.5	88.91	12	0 18 26.20	18.726	1 17 8.8	93.03
13	22 50 5.34	19.050	5 55 21.4	89.12	13	0 20 18.57	18.731	1 26 26.9	92.98
14	22 51 59.58	19.032	5 46 26.1	89.33	14	0 22 10.97	18.736	1 35 44.6	92.93
15	22 53 53.72	19.014	5 37 29.5	89.53	15	0 24 3.40	18.742	1 45 2.1	92.89
16	22 55 47.75	18.997	5 28 31.8	89.71	16	0 25 55.87	18.748	1 54 19.3	92.83
17	22 57 41.68	18.980	5 19 33.0	89.90	17	0 27 48.38	18.755	2 3 36.1	92.77
18	22 59 35.51	18.964	5 10 33.0	90.08	18	0 29 40.93	18.762	2 12 52.5	92.70
19	23 1 29.25	18.948	5 1 32.0	90.26	19	0 31 33.52	18.769	2 22 8.5	92.63
20	23 3 22.89	18.933	4 52 29.9	90.43	20	0 33 26.16	18.778	2 31 24.1	92.56
21	23 5 16.44	18.918	4 43 26.8	90.59	21	0 35 18.85	18.786	2 40 39.2	92.48
22	23 7 9.91	18.904	4 34 22.8	90.75	22	0 37 11.59	18.795	2 49 53.8	92.38
23	23 9 3.29	18.890	4 25 17.8	90.91	23	0 39 4.39	18.804	2 59 7.8	92.28
24	23 10 56.59	18.877	S. 4 16 11.9	91.06	24	0 40 57.24	18.814	N. 3 8 21.2	92.19

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 29.					THURSDAY 30.				
	h m s	s	° ' " N.	"		h m s	s	° ' " N.	"
0	0 40 57.24	18.814	3 8 21.2	92.19	0	1 26 30.21	19.184	6 45 25.5	88.16
1	0 42 50.16	18.825	3 17 34.1	92.09	1	1 28 25.38	19.206	6 54 13.7	87.91
2	0 44 43.14	18.836	3 26 46.3	91.98	2	1 30 20.68	19.227	7 3 0.4	87.67
3	0 46 36.19	18.848	3 35 57.8	91.86	3	1 32 16.10	19.248	7 11 45.7	87.42
4	0 48 29.31	18.859	3 45 8.6	91.74	4	1 34 11.65	19.269	7 20 29.4	87.15
5	0 50 22.50	18.871	3 54 18.7	91.62	5	1 36 7.33	19.291	7 29 11.5	86.88
6	0 52 15.76	18.883	4 3 28.1	91.49	6	1 38 3.14	19.313	7 37 52.0	86.62
7	0 54 9.10	18.897	4 12 36.6	91.35	7	1 39 59.09	19.337	7 46 30.9	86.34
8	0 56 2.52	18.910	4 21 44.3	91.21	8	1 41 55.18	19.360	7 55 8.1	86.06
9	0 57 56.02	18.924	4 30 51.1	91.06	9	1 43 51.41	19.384	8 3 43.6	85.77
10	0 59 49.61	18.938	4 39 57.0	90.90	10	1 45 47.79	19.408	8 12 17.3	85.47
11	1 1 43.28	18.953	4 49 1.9	90.74	11	1 47 44.31	19.433	8 20 49.2	85.17
12	1 3 37.05	18.969	4 58 5.9	90.58	12	1 49 40.98	19.457	8 29 19.3	84.86
13	1 5 30.91	18.985	5 7 8.9	90.42	13	1 51 37.79	19.482	8 37 47.5	84.54
14	1 7 24.87	19.001	5 16 10.9	90.23	14	1 53 34.76	19.508	8 46 13.8	84.22
15	1 9 18.92	19.017	5 25 11.7	90.05	15	1 55 31.88	19.533	8 54 38.1	83.89
16	1 11 13.07	19.034	5 34 11.5	89.87	16	1 57 29.16	19.559	9 3 0.5	83.56
17	1 13 7.33	19.052	5 43 10.1	89.68	17	1 59 26.59	19.585	9 11 20.8	83.22
18	1 15 1.69	19.069	5 52 7.6	89.48	18	2 1 24.18	19.613	9 19 39.1	82.87
19	1 16 56.16	19.088	6 1 3.8	89.27	19	2 3 21.94	19.640	9 27 55.2	82.51
20	1 18 50.74	19.106	6 9 58.8	89.06	20	2 5 19.86	19.667	9 36 9.2	82.16
21	1 20 45.43	19.125	6 18 52.5	88.83	21	2 7 17.94	19.694	9 44 21.1	81.79
22	1 22 40.24	19.145	6 27 44.8	88.61	22	2 9 16.19	19.722	9 52 30.7	81.41
23	1 24 35.17	19.164	6 36 35.8	88.39	23	2 11 14.61	19.750	10 0 38.0	81.03
24	1 26 30.21	19.184	N. 6 45 25.5	88.16	24	2 13 13.19	19.778	N. 10 8 43.1	80.65

PHASES OF THE MOON.

Nov. 4	○ Full Moon	- - - - -	h m
11	☾ Last Quarter	- - - - -	19 52.5
18	● New Moon	- - - - -	12 6.4
25	☽ First Quarter	- - - - -	20 15.0

Nov. 16	☾ Perigee	- - - - -	h
28	☾ Apogee	- - - - -	12.1
			7.4

AT APPARENT NOON.

Date.	THE SUN'S				Sidereal Time of the Semidiameter passing the Meridian.*	Equation of Time, to be subtracted from		Var. in 1 hour.
	Apparent Right Ascension.	Var. in 1 hour.	Apparent Declination.	Var. in 1 hour.		added to Apparent Time.		
	h m s	s	° ' "	"	m s	m s	s	
Frid. 1	16 27 7.36	10.779	S. 21 43 51.9	23.86	1 10.18	11 4.89	0.920	
Sat. 2	16 31 26.39	10.806	21 53 12.0	22.81	1 10.27	10 42.49	0.947	
Sun. 3	16 35 46.04	10.831	22 2 6.9	21.76	1 10.35	10 19.45	0.972	
Mon. 4	16 40 6.30	10.856	22 10 36.3	20.69	1 10.44	9 55.81	0.997	
Tues. 5	16 44 27.15	10.881	22 18 39.9	19.61	1 10.51	9 31.58	1.021	
Wed. 6	16 48 48.57	10.904	22 26 17.5	18.52	1 10.59	9 6.79	1.044	
Thur. 7	16 53 10.54	10.926	22 33 28.9	17.42	1 10.66	8 41.45	1.067	
Frid. 8	16 57 33.03	10.948	22 40 13.8	16.31	1 10.73	8 15.58	1.088	
Sat. 9	17 1 56.03	10.968	22 46 32.0	15.20	1 10.79	7 49.21	1.108	
Sun. 10	17 6 19.51	10.987	22 52 23.3	14.08	1 10.85	7 22.37	1.127	
Mon. 11	17 10 43.43	11.005	22 57 47.6	12.94	1 10.90	6 55.08	1.146	
Tues. 12	17 15 7.77	11.022	23 2 44.6	11.80	1 10.95	6 27.37	1.163	
Wed. 13	17 19 32.51	11.038	23 7 14.2	10.66	1 11.00	5 59.26	1.178	
Thur. 14	17 23 57.60	11.052	23 11 16.3	9.51	1 11.04	5 30.81	1.192	
Frid. 15	17 28 23.02	11.065	23 14 50.6	8.35	1 11.08	5 2.03	1.205	
Sat. 16	17 32 48.72	11.076	23 17 57.2	7.19	1 11.12	4 32.96	1.216	
Sun. 17	17 37 14.68	11.086	23 20 35.8	6.02	1 11.15	4 3.64	1.226	
Mon. 18	17 41 40.85	11.094	23 22 46.3	4.85	1 11.17	3 34.11	1.234	
Tues. 19	17 46 7.19	11.100	23 24 28.8	3.68	1 11.19	3 4.41	1.240	
Wed. 20	17 50 33.66	11.105	23 25 43.1	2.51	1 11.21	2 34.57	1.245	
Thur. 21	17 55 0.23	11.108	23 26 29.1	1.33	1 11.22	2 4.64	1.248	
Frid. 22	17 59 26.86	11.110	23 26 46.9	0.15	1 11.23	1 34.66	1.249	
Sat. 23	18 3 53.50	11.110	23 26 36.3	1.03	1 11.23	1 4.65	1.250	
Sun. 24	18 8 20.13	11.109	23 25 57.5	2.21	1 11.23	0 34.66	1.249	
Mon. 25	18 12 46.71	11.106	23 24 50.4	3.39	1 11.22	0 4.72	1.246	
Tues. 26	18 17 13.21	11.101	23 23 15.0	4.56	1 11.21	0 25.14	1.241	
Wed. 27	18 21 39.58	11.096	23 21 11.4	5.74	1 11.20	0 54.87	1.236	
Thur. 28	18 26 5.80	11.089	23 18 39.6	6.91	1 11.18	1 24.45	1.229	
Frid. 29	18 30 31.83	11.080	23 15 39.8	8.07	1 11.15	1 53.84	1.220	
Sat. 30	18 34 57.64	11.070	23 12 12.0	9.24	1 11.12	2 23.02	1.210	
Sun. 31	18 39 23.20	11.059	23 8 16.2	10.40	1 11.09	2 51.94	1.199	
Mon. 32	18 43 48.48	11.047	S. 23 3 52.7	11.56	1 11.05	3 20.58	1.187	

* Mean Time of the Semidiameter passing may be found by subtracting 0.19 from the Sidereal Time.

AT MEAN NOON.

Date.		THE SUN'S			Equation of Time, to be subtracted from	Sidereal Time.
		Apparent Right Ascension.	Apparent Declination.	Semi-diameter.*	added to Apparent Time.	
Frid.	1	h m s 16 27 9.35	S. 21° 43' 56".3	16' 14".97	m s 11 4.72	h m s 16 38 14.07
Sat.	2	16 31 28.31	21 53 16.1	16 15.13	10 42.32	16 42 10.63
Sun.	3	16 35 47.90	22 2 10.6	16 15.28	10 19.29	16 46 7.19
Mon.	4	16 40 8.10	22 10 39.7	16 15.42	9 55.65	16 50 3.74
Tues.	5	16 44 28.88	22 18 43.0	16 15.56	9 31.42	16 54 0.30
Wed.	6	16 48 50.23	22 26 20.3	16 15.70	9 6.63	16 57 56.86
Thur.	7	16 53 12.12	22 33 31.4	16 15.83	8 41.29	17 1 53.41
Frid.	8	16 57 34.54	22 40 16.0	16 15.95	8 15.43	17 5 49.97
Sat.	9	17 1 57.46	22 46 33.9	16 16.07	7 49.07	17 9 46.53
Sun.	10	17 6 20.85	22 52 25.0	16 16.17	7 22.23	17 13 43.08
Mon.	11	17 10 44.70	22 57 49.1	16 16.28	6 54.95	17 17 39.64
Tues.	12	17 15 8.96	23 2 45.9	16 16.38	6 27.24	17 21 36.20
Wed.	13	17 19 33.61	23 7 15.3	16 16.48	5 59.15	17 25 32.76
Thur.	14	17 23 58.62	23 11 17.2	16 16.57	5 30.70	17 29 29.31
Frid.	15	17 28 23.95	23 14 51.3	16 16.66	5 1.93	17 33 25.87
Sat.	16	17 32 49.56	23 17 57.7	16 16.75	4 32.87	17 37 22.43
Sun.	17	17 37 15.43	23 20 36.2	16 16.83	4 3.56	17 41 18.98
Mon.	18	17 41 41.51	23 22 46.6	16 16.91	3 34.04	17 45 15.54
Tues.	19	17 46 7.75	23 24 29.0	16 16.99	3 4.35	17 49 12.10
Wed.	20	17 50 34.14	23 25 43.2	16 17.06	2 34.52	17 53 8.66
Thur.	21	17 55 0.62	23 26 29.2	16 17.13	2 4.60	17 57 5.21
Frid.	22	17 59 27.15	23 26 46.9	16 17.19	1 34.62	18 1 1.77
Sat.	23	18 3 53.70	23 26 36.3	16 17.25	1 4.63	18 4 58.33
Sun.	24	18 8 20.24	23 25 57.5	16 17.31	0 34.65	18 8 54.89
Mon.	25	18 12 46.73	23 24 50.4	16 17.36	0 4.72	18 12 51.44
Tues.	26	18 17 13.13	23 23 15.0	16 17.41	0 25.13	18 16 48.00
Wed.	27	18 21 39.41	23 21 11.5	16 17.45	0 54.85	18 20 44.56
Thur.	28	18 26 5.54	23 18 39.8	16 17.48	1 24.42	18 24 41.12
Frid.	29	18 30 31.48	23 15 40.0	16 17.51	1 53.80	18 28 37.67
Sat.	30	18 34 57.20	23 12 12.3	16 17.54	2 22.97	18 32 34.23
Sun.	31	18 39 22.67	23 8 16.7	16 17.56	2 51.88	18 36 30.79
Mon.	32	18 43 47.86	S. 23° 3' 53".3	16 17.57	3 20.52	18 40 27.34

* The Semidiameter for Apparent Noon may be assumed the same as that for Mean Noon.

MEAN TIME.

Day.	THE SUN'S <i>Apparent</i>		Logarithm of the Radius Vector of the Earth.	Transit of the First Point of Aries.	THE MOON'S			
	Longitude.	Latitude.			Semidiameter.		Horizontal Parallax.	
	Noon.	Noon.			Noon.	Midnight.	Noon.	Midnight.
					h	m	s	
1	248° 31' 27.5	S. 0° 16'	9.9938131	7 20 33.55	14 55.42	14 58.47	54 40.60	54 51.75
2	249 32 17.1	0.24	.9937437	7 16 37.64	15 1.84	15 5.48	55 4.09	55 17.43
3	250 33 7.7	0.31	.9936767	7 12 41.73	15 9.32	15 13.30	55 31.49	55 46.09
4	251 33 59.3	0.34	9.9936122	7 8 45.82	15 17.37	15 21.48	56 1.02	56 16.09
5	252 34 52.0	0.35	.9935501	7 4 49.91	15 25.59	15 29.65	56 31.13	56 46.01
6	253 35 45.8	0.34	.9934907	7 0 54.00	15 33.64	15 37.53	57 0.63	57 14.88
7	254 36 37.7	0.29	9.9934337	6 56 58.09	15 41.31	15 44.96	57 28.72	57 42.09
8	255 37 36.8	0.22	.9933792	6 53 2.18	15 48.49	15 51.87	57 55.01	58 7.42
9	256 38 34.0	S. 0.11	.9933272	6 49 6.27	15 55.12	15 58.23	58 19.34	58 30.72
10	257 39 32.4	N. 0.01	9.9932776	6 45 10.36	16 1.18	16 3.96	58 41.54	58 51.73
11	258 40 32.0	0.14	.9932301	6 41 14.44	16 6.55	16 8.91	59 1.20	59 9.85
12	259 41 32.7	0.28	.9931847	6 37 18.53	16 11.00	16 12.76	59 17.50	59 23.96
13	260 42 34.6	0.42	9.9931413	6 33 22.62	16 14.15	16 15.10	59 29.04	59 32.51
14	261 43 37.5	0.54	.9930997	6 29 26.71	16 15.54	16 15.43	59 34.15	59 33.72
15	262 44 41.3	0.65	.9930598	6 25 30.80	16 14.70	16 13.32	59 31.06	59 26.01
16	263 45 46.1	0.74	9.9930216	6 21 34.89	16 11.27	16 8.54	59 18.50	59 8.49
17	264 46 51.7	0.78	.9929849	6 17 38.98	16 5.15	16 1.14	58 56.08	58 41.40
18	265 47 58.0	0.80	.9929498	6 13 43.07	15 56.57	15 51.53	58 24.66	58 6.18
19	266 49 4.8	0.80	9.9929161	6 9 47.15	15 46.11	15 40.40	57 46.30	57 25.39
20	267 50 12.2	0.75	.9928840	6 5 51.24	15 34.53	15 28.62	57 3.90	56 42.24
21	268 51 19.9	0.68	.9928536	6 1 55.33	15 22.78	15 17.13	56 20.84	56 0.13
22	269 52 27.9	0.59	9.9928249	5 57 59.42	15 11.77	15 6.79	55 40.47	55 22.22
23	270 53 36.2	0.50	.9927980	5 54 3.51	15 2.27	14 58.29	55 5.67	54 51.10
24	271 54 44.6	0.38	.9927730	5 50 7.60	14 54.92	14 52.18	54 38.74	54 28.73
25	272 55 53.1	0.26	9.9927501	5 46 11.69	14 50.15	14 48.81	54 21.27	54 16.39
26	273 57 1.6	0.15	.9927294	5 42 15.77	14 48.21	14 48.32	54 14.17	54 14.59
27	274 58 10.2	N. 0.04	.9927110	5 38 19.86	14 49.16	14 50.70	54 17.67	54 23.29
28	275 59 18.8	S. 0.06	9.9926949	5 34 23.95	14 52.90	14 55.74	54 31.36	54 41.76
29	277 0 27.4	0.15	.9926813	5 30 28.04	14 59.15	15 3.09	54 54.25	55 8.67
30	278 1 35.9	0.22	.9926702	5 26 32.13	15 7.47	15 12.22	55 24.73	55 42.13
31	279 2 44.3	0.27	.9926618	5 22 36.22	15 17.25	15 22.48	56 0.59	56 19.75
32	280 3 52.7	S. 0.29	9.9926562	5 18 40.31	15 27.81	15 33.13	56 39.26	56 58.75

MEAN TIME.

THE MOON'S																	
Day.	Longitude.		Latitude.		Age.	Meridian Passage.											
	Noon.	Midnight.	Noon.	Midnight.	Noon.	Upper.	Lower.										
	^o	[']	["]	^o	[']	["]	^o	[']	["]		^o	[']	["]				
1	34	31	33.1	40	36	17.5	S. 3	3	53.2	S. 3	28	20.1	12.50	9	53.1	22	16.1
2	46	44	17.0	52	55	44.2	3	50	33.2	4	10	14.0	13.50	10	39.7	23	3.9
3	59	10	47.1	65	29	29.8	4	27	4.5	4	40	47.7	14.50	11	28.6	23	53.9
4	71	51	51.7	78	17	48.9	4	51	8.1	4	57	52.3	15.50	12	19.6	*	*
5	84	47	14.4	91	19	58.5	5	0	49.0	4	59	50.2	16.50	13	12.2	0	45.7
6	97	55	49.8	104	34	36.2	4	54	50.9	4	45	49.8	17.50	14	5.7	1	38.9
7	111	16	5.4	118	0	6.0	4	32	49.5	4	15	56.2	18.50	14	59.4	2	32.6
8	124	46	27.8	131	35	2.4	3	55	20.2	3	31	15.6	19.50	15	52.6	3	26.1
9	138	25	43.8	145	18	27.8	3	4	0.1	2	33	54.7	20.50	16	45.0	4	18.9
10	152	13	12.1	159	9	55.9	2	1	23.8	1	26	54.6	21.50	17	36.8	5	11.0
11	166	8	39.0	173	9	21.1	S. 0	50	56.7	S. 0	14	2.2	22.50	18	28.3	6	2.5
12	180	12	0.3	187	16	32.8	N. 0	23	15.2	N. 1	0	20.1	23.50	19	20.1	6	54.1
13	194	22	51.1	201	30	43.4	1	36	36.8	2	11	29.0	24.50	20	12.9	7	46.3
14	208	39	52.8	215	49	56.6	2	44	21.2	3	14	39.8	25.50	21	7.0	8	39.7
15	223	0	26.8	230	10	49.5	3	41	53.1	4	5	33.5	26.50	22	2.6	9	34.6
16	237	20	26.5	244	28	36.3	4	25	17.5	4	40	46.8	27.50	22	59.3	10	30.9
17	251	34	35.7	258	37	41.3	4	51	49.2	4	58	18.2	28.50	23	56.2	11	27.8
18	265	37	12.1	272	32	30.7	5	0	13.8	4	57	41.3	29.50	*	*	12	24.4
19	279	23	5.2	286	8	30.2	4	50	51.8	4	40	0.2	0.99	0	52.1	13	19.4
20	292	48	28.2	299	22	49.7	4	25	25.3	4	7	28.0	1.99	1	46.0	14	12.0
21	305	51	33.0	312	14	44.7	3	46	31.2	3	22	58.4	2.99	2	37.3	15	1.8
22	318	32	38.2	324	45	33.8	2	57	12.9	2	29	37.9	3.99	3	25.7	15	48.9
23	330	53	57.6	336	58	20.2	2	0	35.9	1	30	28.0	4.99	4	11.6	16	33.7
24	342	59	16.3	348	57	23.8	N. 0	59	34.6	N. 0	28	14.6	5.99	4	55.5	17	16.9
25	354	53	22.6	0	47	54.5	S. 0	3	13.7	S. 0	34	32.8	6.99	5	38.1	17	59.3
26	6	41	41.8	12	35	26.8	1	5	25.8	1	35	36.3	7.99	6	20.3	18	41.5
27	18	29	51.7	24	25	37.4	2	4	48.0	2	32	44.3	8.99	7	2.9	19	24.6
28	30	23	23.0	36	23	44.8	2	59	8.8	3	23	44.5	9.99	7	46.6	20	9.0
29	42	27	16.8	48	34	28.7	3	46	14.3	4	6	20.7	10.99	8	32.0	20	55.5
30	54	45	45.9	61	1	28.8	4	23	46.2	4	38	13.4	11.99	9	19.7	21	44.5
31	67	21	52.2	73	47	5.2	4	49	25.7	4	57	7.2	12.99	10	9.9	22	35.8
32	80	17	10.0	86	52	3.0	S. 5	1	4.2	S. 5	1	4.7	13.99	11	2.4	23	29.3

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 1.					SUNDAY 3.				
	h m s	s	N. 10° 8' 43" 1	80° 65'		h m s	s	N. 15° 37' 57" 9	53° 80'
0	2 13 13·19	19·778			0	3 51 51·85	21·373		
1	2 15 11·95	19·808	10 16 45·8	80·25	1	3 54 0·19	21·407	15 43 18·5	53·07
2	2 17 10·89	19·838	10 24 46·1	79·85	2	3 56 8·73	21·441	15 48 34·7	52·33
3	2 19 10·00	19·867	10 32 44·0	79·44	3	3 58 17·48	21·476	15 53 46·4	51·58
4	2 21 9·29	19·897	10 40 39·4	79·03	4	4 0 26·44	21·511	15 58 53·6	50·82
5	2 23 8·76	19·926	10 48 32·3	78·61	5	4 2 35·61	21·545	16 3 56·2	50·06
6	2 25 8·40	19·956	10 56 22·7	78·18	6	4 4 44·98	21·579	16 8 54·3	49·29
7	2 27 8·23	19·987	11 4 10·5	77·74	7	4 6 54·56	21·613	16 13 47·7	48·51
8	2 29 8·25	20·018	11 11 55·6	77·30	8	4 9 4·34	21·647	16 18 36·4	47·72
9	2 31 8·45	20·048	11 19 38·1	76·86	9	4 11 14·32	21·680	16 23 20·4	46·93
10	2 33 8·83	20·080	11 27 17·9	76·40	10	4 13 24·50	21·714	16 27 59·7	46·15
11	2 35 9·41	20·112	11 34 54·9	75·93	11	4 15 34·89	21·748	16 32 34·2	45·34
12	2 37 10·17	20·143	11 42 29·1	75·47	12	4 17 45·48	21·781	16 37 3·8	44·53
13	2 39 11·12	20·175	11 50 0·5	74·99	13	4 19 56·26	21·814	16 41 28·6	43·72
14	2 41 12·27	20·207	11 57 29·0	74·51	14	4 22 7·25	21·847	16 45 48·4	42·89
15	2 43 13·61	20·239	12 4 54·6	74·02	15	4 24 18·43	21·880	16 50 3·3	42·07
16	2 45 15·14	20·272	12 12 17·2	73·52	16	4 26 29·81	21·912	16 54 13·2	41·23
17	2 47 16·87	20·305	12 19 36·8	73·01	17	4 28 41·38	21·944	16 58 18·0	40·38
18	2 49 18·80	20·338	12 26 53·3	72·50	18	4 30 53·14	21·977	17 2 17·8	39·54
19	2 51 20·92	20·371	12 34 6·8	71·98	19	4 33 5·10	22·008	17 6 12·5	38·68
20	2 53 23·25	20·404	12 41 17·1	71·46	20	4 35 17·24	22·040	17 10 2·0	37·83
21	2 55 25·77	20·437	12 48 24·3	70·93	21	4 37 29·58	22·072	17 13 46·4	36·96
22	2 57 28·49	20·471	12 55 28·2	70·38	22	4 39 42·10	22·103	17 17 25·5	36·08
23	2 59 31·42	20·504	N. 13 2 28·8	69·83	23	4 41 54·81	22·133	N. 17 20 59·4	35·21
SATURDAY 2.					MONDAY 4.				
	h m s	s	N. 13 9 26·2	69·28		h m s	s	N. 17 24 28·0	34·33
0	3 1 34·54	20·538			0	4 44 7·70	22·163		
1	3 3 37·87	20·573	13 16 20·2	68·72	1	4 46 20·77	22·193	17 27 51·3	33·43
2	3 5 41·41	20·607	13 23 10·8	68·15	2	4 48 34·02	22·223	17 31 9·2	32·53
3	3 7 45·15	20·641	13 29 58·0	67·57	3	4 50 47·45	22·253	17 34 21·7	31·63
4	3 9 49·10	20·675	13 36 41·7	66·98	4	4 53 1·06	22·283	17 37 28·7	30·72
5	3 11 53·25	20·709	13 43 21·8	66·39	5	4 55 14·84	22·312	17 40 30·3	29·81
6	3 13 57·61	20·744	13 49 58·4	65·80	6	4 57 28·80	22·340	17 43 26·4	28·89
7	3 16 2·18	20·779	13 56 31·4	65·20	7	4 59 42·92	22·368	17 46 17·0	27·97
8	3 18 6·96	20·813	14 3 0·8	64·58	8	5 1 57·21	22·396	17 49 2·1	27·04
9	3 20 11·94	20·848	14 9 26·4	63·96	9	5 4 11·67	22·424	17 51 41·5	26·10
10	3 22 17·13	20·883	14 15 48·3	63·33	10	5 6 26·30	22·451	17 54 15·3	25·17
11	3 24 22·53	20·918	14 22 6·4	62·70	11	5 8 41·08	22·477	17 56 43·5	24·23
12	3 26 28·15	20·953	14 28 20·7	62·06	12	5 10 56·02	22·503	17 59 6·0	23·27
13	3 28 33·97	20·988	14 34 31·1	61·41	13	5 13 11·12	22·530	18 1 22·7	22·32
14	3 30 40·00	21·023	14 40 37·6	60·76	14	5 15 26·38	22·556	18 3 33·7	21·37
15	3 32 46·24	21·058	14 46 40·2	60·09	15	5 17 41·79	22·581	18 5 39·0	20·40
16	3 34 52·69	21·093	14 52 38·7	59·42	16	5 19 57·35	22·605	18 7 38·5	19·43
17	3 36 59·35	21·128	14 58 33·2	58·74	17	5 22 13·05	22·629	18 9 32·1	18·45
18	3 39 6·22	21·163	15 4 23·6	58·06	18	5 24 28·90	22·654	18 11 19·9	17·47
19	3 41 13·30	21·198	15 10 9·9	57·37	19	5 26 44·90	22·678	18 13 1·8	16·49
20	3 43 20·59	21·233	15 15 52·0	56·67	20	5 29 1·03	22·700	18 14 37·8	15·51
21	3 45 28·09	21·268	15 21 29·9	55·97	21	5 31 17·30	22·723	18 16 7·9	14·53
22	3 47 35·80	21·303	15 27 3·6	55·25	22	5 33 33·71	22·746	18 17 32·1	13·53
23	3 49 43·72	21·338	15 32 32·9	54·53	23	5 35 50·25	22·768	18 18 50·2	12·53
24	3 51 51·85	21·373	N. 15 37 57·9	53·80	24	5 38 6·92	22·788	N. 18 20 2·4	11·53

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
TUESDAY 5.					THURSDAY 7.				
	h m s	s	N. 18 20 2.4	11.53		h m s	s	N. 17 16 16.4	38.24
0	5 38 6.92	22.788	N. 18 20 2.4	11.53	0	7 29 0.26	23.223	N. 17 16 16.4	38.24
1	5 40 23.71	22.808	18 21 8.6	10.53	1	7 31 19.59	23.220	17 12 23.9	39.26
2	5 42 40.62	22.829	18 22 8.7	9.52	2	7 33 38.90	23.217	17 8 25.3	40.28
3	5 44 57.66	22.850	18 23 2.8	8.51	3	7 35 58.19	23.213	17 4 20.6	41.28
4	5 47 14.82	22.869	18 23 50.8	7.50	4	7 38 17.46	23.209	17 0 9.9	42.29
5	5 49 32.09	22.888	18 24 32.8	6.48	5	7 40 36.70	23.204	16 55 53.1	43.29
6	5 51 49.47	22.906	18 25 8.6	5.46	6	7 42 55.91	23.200	16 51 30.4	44.29
7	5 54 6.96	22.923	18 25 38.3	4.43	7	7 45 15.10	23.195	16 47 1.6	45.30
8	5 56 24.55	22.941	18 26 1.8	3.41	8	7 47 34.25	23.189	16 42 26.8	46.29
9	5 58 42.25	22.958	18 26 19.2	2.38	9	7 49 53.37	23.183	16 37 46.1	47.28
10	6 1 0.05	22.975	18 26 30.4	1.35	10	7 52 12.45	23.177	16 32 59.5	48.26
11	6 3 17.95	22.991	18 26 35.4	0.32	11	7 54 31.49	23.171	16 28 7.0	49.24
12	6 5 35.94	23.006	18 26 34.2	0.72	12	7 56 50.50	23.164	16 23 8.6	50.22
13	6 7 54.02	23.021	18 26 26.8	1.75	13	7 59 9.46	23.156	16 18 4.3	51.19
14	6 10 12.19	23.035	18 26 13.2	2.78	14	8 1 28.37	23.148	16 12 54.3	52.16
15	6 12 30.44	23.049	18 25 53.4	3.83	15	8 3 47.24	23.141	16 7 38.4	53.13
16	6 14 48.78	23.063	18 25 27.3	4.88	16	8 6 6.06	23.133	16 2 16.8	54.08
17	6 17 7.20	23.076	18 24 54.9	5.92	17	8 8 24.83	23.124	15 56 49.4	55.04
18	6 19 25.69	23.088	18 24 16.3	6.96	18	8 10 43.55	23.116	15 51 16.3	55.98
19	6 21 44.25	23.099	18 23 31.4	8.01	19	8 13 2.22	23.107	15 45 37.6	56.93
20	6 24 2.88	23.111	18 22 40.2	9.05	20	8 15 20.83	23.098	15 39 53.2	57.87
21	6 26 21.58	23.122	18 21 42.8	10.10	21	8 17 39.39	23.088	15 34 3.2	58.80
22	6 28 40.34	23.132	18 20 39.0	11.15	22	8 19 57.89	23.078	15 28 7.6	59.73
23	6 30 59.16	23.141	N. 18 19 29.0	12.20	23	8 22 16.32	23.068	N. 15 22 6.5	60.65
WEDNESDAY 6.					FRIDAY 8.				
	h m s	s	N. 18 18 12.6	13.25		h m s	s	N. 15 15 59.8	61.57
0	6 33 18.03	23.150	N. 18 18 12.6	13.25	0	8 24 34.70	23.058	N. 15 15 59.8	61.57
1	6 35 36.96	23.159	18 16 50.0	14.30	1	8 26 53.02	23.047	15 9 47.7	62.48
2	6 37 55.94	23.168	18 15 21.0	15.35	2	8 29 11.27	23.036	15 3 30.1	63.38
3	6 40 14.97	23.176	18 13 45.8	16.40	3	8 31 29.45	23.025	14 57 7.1	64.28
4	6 42 34.05	23.183	18 12 4.2	17.45	4	8 33 47.57	23.015	14 50 38.8	65.17
5	6 44 53.16	23.189	18 10 16.4	18.50	5	8 36 5.63	23.004	14 44 5.1	66.06
6	6 47 12.32	23.196	18 8 22.2	19.56	6	8 38 23.62	22.992	14 37 26.1	66.94
7	6 49 31.51	23.201	18 6 21.7	20.60	7	8 40 41.53	22.980	14 30 41.8	67.81
8	6 51 50.73	23.206	18 4 15.0	21.65	8	8 42 59.38	22.969	14 23 52.4	68.68
9	6 54 9.98	23.210	18 2 1.9	22.70	9	8 45 17.16	22.957	14 16 57.7	69.54
10	6 56 29.25	23.214	17 59 42.6	23.74	10	8 47 34.87	22.945	14 9 57.9	70.39
11	6 58 48.55	23.218	17 57 17.0	24.79	11	8 49 52.50	22.933	14 2 53.0	71.24
12	7 1 7.87	23.222	17 54 45.1	25.84	12	8 52 10.07	22.922	13 55 43.0	72.08
13	7 3 27.21	23.224	17 52 6.9	26.88	13	8 54 27.56	22.908	13 48 28.0	72.92
14	7 5 46.56	23.226	17 49 22.5	27.93	14	8 56 44.97	22.896	13 41 8.0	73.74
15	7 8 5.92	23.228	17 46 31.8	28.97	15	8 59 2.31	22.884	13 33 43.1	74.56
16	7 10 25.30	23.230	17 43 34.9	30.00	16	9 1 19.58	22.872	13 26 13.3	75.38
17	7 12 44.68	23.230	17 40 31.8	31.04	17	9 3 36.77	22.859	13 18 38.6	76.18
18	7 15 4.06	23.230	17 37 22.4	32.08	18	9 5 53.89	22.847	13 10 59.1	76.98
19	7 17 23.44	23.230	17 34 6.8	33.11	19	9 8 10.93	22.833	13 3 14.8	77.77
20	7 19 42.82	23.229	17 30 45.1	34.14	20	9 10 27.89	22.821	12 55 25.9	78.55
21	7 22 2.19	23.228	17 27 17.1	35.17	21	9 12 44.78	22.809	12 47 32.2	79.33
22	7 24 21.56	23.227	17 23 43.0	36.19	22	9 15 1.60	22.797	12 39 33.9	80.09
23	7 26 40.92	23.225	17 20 2.8	37.22	23	9 17 18.34	22.783	12 31 31.1	80.85
24	7 29 0.26	23.223	N. 17 16 16.4	38.24	24	9 19 35.00	22.771	N. 12 23 23.7	81.61

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SATURDAY 9.					MONDAY 11.				
	h m s	s	N. 12 23 23.7	81.61		h m s	s	N. 4 41 6.9	107.49
0	9 19 35.00	22.771	12 15 11.8	82.36	0	11 7 40.47	22.354	4 30 21.0	107.80
1	9 21 51.59	22.758	12 6 55.4	83.09	1	11 9 54.59	22.352	4 19 33.3	108.10
2	9 24 8.10	22.746	11 58 34.7	83.82	2	11 12 8.69	22.350	4 8 43.8	108.38
3	9 26 24.54	22.733	11 50 9.6	84.54	3	11 14 22.79	22.349	3 57 52.7	108.65
4	9 28 40.90	22.721	11 41 40.2	85.25	4	11 16 36.88	22.348	3 47 0.0	108.92
5	9 30 57.19	22.708	11 33 6.6	85.96	5	11 18 50.97	22.348	3 36 5.7	109.18
6	9 33 13.40	22.696	11 24 28.7	86.66	6	11 21 5.05	22.348	3 25 9.9	109.43
7	9 35 29.54	22.684	11 15 46.7	87.34	7	11 23 19.14	22.348	3 14 12.6	109.66
8	9 37 45.61	22.672	11 7 0.6	88.02	8	11 25 33.23	22.349	3 3 14.0	109.88
9	9 40 1.60	22.659	10 58 10.4	88.69	9	11 27 47.33	22.350	2 52 14.1	110.09
10	9 42 17.52	22.647	10 49 16.3	89.35	10	11 30 1.43	22.352	2 41 12.9	110.29
11	9 44 33.37	22.636	10 40 18.2	90.02	11	11 32 15.55	22.353	2 30 10.6	110.48
12	9 46 49.15	22.624	10 31 16.1	90.67	12	11 34 29.67	22.355	2 19 7.1	110.67
13	9 49 4.86	22.613	10 22 10.2	91.30	13	11 36 43.81	22.358	2 8 2.5	110.84
14	9 51 20.50	22.602	10 13 0.5	91.93	14	11 38 57.97	22.362	1 56 57.0	110.99
15	9 53 36.08	22.590	9 54 30.0	92.54	15	11 41 12.15	22.365	1 45 50.6	111.14
16	9 55 51.58	22.578	9 45 9.2	93.16	16	11 43 26.35	22.369	1 34 43.3	111.28
17	9 58 7.02	22.568	9 35 44.8	93.77	17	11 45 40.58	22.373	1 23 35.2	111.42
18	10 0 22.40	22.558	9 26 17.0	94.35	18	11 47 54.83	22.378	1 12 26.3	111.53
19	10 2 37.71	22.547	9 16 45.6	94.93	19	11 50 9.12	22.383	1 0 56.7	111.63
20	10 4 52.96	22.537	9 7 10.8	95.52	20	11 52 23.43	22.388	0 50 6.7	111.73
21	10 7 8.15	22.527	8 57 32.6	96.08	21	11 54 37.78	22.395	0 38 56.1	111.82
22	10 9 23.28	22.517	8 47 51.1	96.64	22	11 56 52.17	22.402	0 27 44.9	111.89
23	10 11 38.35	22.507			23	11 59 6.60	22.408		
SUNDAY 10.					TUESDAY 12.				
0	10 13 53.36	22.497	N. 8 47 51.1	97.18	0	12 1 21.07	22.415	N. 0 16 33.4	111.95
1	10 16 8.31	22.488	8 38 6.4	97.73	1	12 3 35.58	22.423	N. 0 5 21.5	112.00
2	10 18 23.21	22.479	8 28 18.4	98.26	2	12 5 50.14	22.430	S. 0 5 50.6	112.04
3	10 20 38.06	22.470	8 18 27.3	98.78	3	12 8 4.74	22.438	0 17 3.0	112.07
4	10 22 52.85	22.461	8 8 33.1	99.29	4	12 10 19.40	22.447	0 28 15.5	112.09
5	10 25 7.59	22.453	7 58 35.8	99.79	5	12 12 34.11	22.457	0 39 28.1	112.10
6	10 27 22.29	22.446	7 48 35.6	100.28	6	12 14 48.88	22.467	0 50 40.7	112.10
7	10 29 36.94	22.438	7 38 32.4	100.77	7	12 17 3.71	22.476	1 1 53.3	112.08
8	10 31 51.54	22.430	7 28 26.4	101.23	8	12 19 18.59	22.486	1 13 5.7	112.05
9	10 34 6.10	22.423	7 18 17.6	101.70	9	12 21 33.54	22.497	1 24 17.9	112.02
10	10 36 20.62	22.416	7 8 6.0	102.16	10	12 23 48.56	22.508	1 35 29.9	111.97
11	10 38 35.09	22.409	6 57 51.7	102.61	11	12 26 3.64	22.520	1 46 41.5	111.90
12	10 40 49.53	22.403	6 47 34.7	103.04	12	12 28 18.80	22.532	1 57 52.7	111.83
13	10 43 3.93	22.397	6 37 15.2	103.46	13	12 30 34.02	22.543	2 9 3.5	111.75
14	10 45 18.30	22.392	6 26 53.2	103.88	14	12 32 49.32	22.557	2 20 13.7	111.66
15	10 47 32.63	22.386	6 16 28.7	104.28	15	12 35 4.70	22.570	2 31 23.4	111.55
16	10 49 46.93	22.381	6 6 1.8	104.68	16	12 37 20.16	22.583	2 42 32.3	111.43
17	10 52 1.20	22.377	5 55 32.5	105.07	17	12 39 35.70	22.597	2 53 40.6	111.31
18	10 54 15.45	22.372	5 45 0.9	105.44	18	12 41 51.32	22.611	3 4 48.0	111.16
19	10 56 29.67	22.368	5 34 27.2	105.81	19	12 44 7.03	22.626	3 15 54.5	111.01
20	10 58 43.87	22.365	5 23 51.2	106.17	20	12 46 22.83	22.641	3 27 0.1	110.85
21	11 0 58.05	22.361	5 13 13.1	106.52	21	12 48 38.72	22.656	3 38 4.7	110.68
22	11 3 12.20	22.358	5 2 33.0	106.85	22	12 50 54.70	22.672	3 49 8.2	110.49
23	11 5 26.34	22.356	4 51 50.9	107.18	23	12 53 10.78	22.688	4 0 10.6	110.29
24	11 7 40.47	22.354	N. 4 41 6.9	107.49	24	12 55 26.95	22.703	S. 4 11 11.7	110.08

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
WEDNESDAY 13.					FRIDAY 15.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	12 55 26.95	22.703	S. 4 11 11.7	110.08	0	14 46 47.56	23.747	S. 12 13 11.2	86.28
1	12 57 43.22	22.720	4 22 11.5	109.86	1	14 49 10.11	23.770	12 21 46.6	85.51
2	12 59 59.59	22.738	4 33 10.0	109.63	2	14 51 32.80	23.793	12 30 17.3	84.73
3	13 2 16.07	22.755	4 44 7.1	109.38	3	14 53 55.63	23.816	12 38 43.3	83.93
4	13 4 32.65	22.772	4 55 2.6	109.13	4	14 56 18.59	23.838	12 47 4.5	83.13
5	13 6 49.33	22.789	5 5 56.6	108.86	5	14 58 41.69	23.862	12 55 20.9	82.32
6	13 9 6.12	22.808	5 16 48.9	108.58	6	15 1 4.93	23.884	13 3 32.3	81.48
7	13 11 23.03	22.827	5 27 39.5	108.28	7	15 3 28.30	23.907	13 11 38.7	80.65
8	13 13 40.05	22.846	5 38 28.3	107.98	8	15 5 51.81	23.928	13 19 40.1	79.80
9	13 15 57.18	22.865	5 49 15.3	107.67	9	15 8 15.44	23.950	13 27 36.3	78.94
10	13 18 14.43	22.884	6 0 0.4	107.35	10	15 10 39.21	23.972	13 35 27.4	78.08
11	13 20 31.79	22.903	6 10 43.5	107.01	11	15 13 3.10	23.993	13 43 13.3	77.21
12	13 22 49.27	22.924	6 21 24.5	106.65	12	15 15 27.12	24.014	13 50 53.9	76.33
13	13 25 6.88	22.945	6 32 3.3	106.29	13	15 17 51.27	24.035	13 58 29.2	75.43
14	13 27 24.61	22.965	6 42 40.0	105.92	14	15 20 15.54	24.055	14 5 59.0	74.52
15	13 29 42.46	22.985	6 53 14.4	105.53	15	15 22 39.93	24.075	14 13 23.4	73.61
16	13 32 0.43	23.006	7 3 46.4	105.13	16	15 25 4.44	24.095	14 20 42.3	72.69
17	13 34 18.53	23.028	7 14 16.0	104.73	17	15 27 29.07	24.115	14 27 55.7	71.76
18	13 36 36.76	23.049	7 24 43.1	104.31	18	15 29 53.82	24.134	14 35 3.4	70.81
19	13 38 55.12	23.071	7 35 7.7	103.88	19	15 32 18.68	24.153	14 42 5.4	69.86
20	13 41 13.61	23.093	7 45 29.6	103.43	20	15 34 43.65	24.171	14 49 1.7	68.91
21	13 43 32.23	23.114	7 55 48.8	102.98	21	15 37 8.73	24.188	14 55 52.3	67.94
22	13 45 50.98	23.137	8 6 5.3	102.51	22	15 39 33.91	24.206	15 2 37.0	66.97
23	13 48 9.87	23.159	S. 8 16 18.9	102.03	23	15 41 59.20	24.223	S. 15 9 15.9	65.98
THURSDAY 14.					SATURDAY 16.				
0	13 50 28.89	23.182	S. 8 26 29.6	101.53	0	15 44 24.59	24.240	S. 15 15 48.8	64.99
1	13 52 48.05	23.205	8 36 37.3	101.03	1	15 46 50.08	24.257	15 22 15.8	63.99
2	13 55 7.35	23.228	8 46 41.9	100.51	2	15 49 15.67	24.273	15 28 36.7	62.98
3	13 57 26.78	23.250	8 56 43.4	99.99	3	15 51 41.35	24.288	15 34 51.6	61.97
4	13 59 46.35	23.273	9 6 41.8	99.45	4	15 54 7.12	24.303	15 41 0.3	60.94
5	14 2 6.06	23.297	9 16 36.8	98.90	5	15 56 32.98	24.317	15 47 2.9	59.92
6	14 4 25.91	23.320	9 26 28.6	98.34	6	15 58 58.92	24.331	15 52 59.4	58.89
7	14 6 45.90	23.343	9 36 16.9	97.76	7	16 1 24.95	24.344	15 58 49.6	57.84
8	14 9 6.03	23.368	9 46 1.7	97.18	8	16 3 51.05	24.357	16 4 33.5	56.78
9	14 11 26.31	23.392	9 55 43.0	96.58	9	16 6 17.23	24.369	16 10 11.0	55.73
10	14 13 46.73	23.415	10 5 20.7	95.98	10	16 8 43.48	24.381	16 15 42.3	54.67
11	14 16 7.29	23.438	10 14 54.7	95.36	11	16 11 9.80	24.392	16 21 7.1	53.60
12	14 18 27.99	23.462	10 24 25.0	94.73	12	16 13 36.18	24.403	16 26 25.5	52.53
13	14 20 48.83	23.486	10 33 51.5	94.08	13	16 16 2.63	24.413	16 31 37.4	51.44
14	14 23 9.82	23.510	10 43 14.0	93.43	14	16 18 29.14	24.423	16 36 42.8	50.36
15	14 25 30.95	23.534	10 52 32.6	92.77	15	16 20 55.70	24.431	16 41 41.7	49.27
16	14 27 52.23	23.558	11 1 47.2	92.09	16	16 23 22.31	24.439	16 46 34.0	48.17
17	14 30 13.65	23.582	11 10 57.7	91.41	17	16 25 48.97	24.447	16 51 19.7	47.06
18	14 32 35.21	23.605	11 20 4.1	90.71	18	16 28 15.67	24.453	16 55 58.7	45.95
19	14 34 56.91	23.629	11 29 6.2	89.99	19	16 30 42.41	24.459	17 0 31.1	44.84
20	14 37 18.76	23.653	11 38 4.0	89.28	20	16 33 9.18	24.465	17 4 56.8	43.73
21	14 39 40.75	23.677	11 46 57.5	88.55	21	16 35 35.99	24.471	17 9 15.8	42.61
22	14 42 2.88	23.700	11 55 46.6	87.81	22	16 38 2.83	24.475	17 13 28.1	41.48
23	14 44 25.15	23.723	12 4 31.2	87.05	23	16 40 29.69	24.478	17 17 33.5	40.34
24	14 46 47.56	23.747	S. 12 13 11.2	86.28	24	16 42 56.57	24.482	S. 17 21 32.2	39.22

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
SUNDAY 17.					TUESDAY 19.				
	h m s		S. ° ' "			h m s		S. ° ' "	
0	16 42 56.57	24.482	17 21 32.2	39.22	0	18 39 24.62	23.769	18 16 42.0	15.77
1	16 45 23.47	24.484	17 25 24.1	38.08	1	18 41 47.14	23.738	18 15 4.2	16.83
2	16 47 50.38	24.486	17 29 9.1	36.93	2	18 44 9.47	23.705	18 13 20.0	17.91
3	16 50 17.30	24.486	17 32 47.2	35.78	3	18 46 31.60	23.672	18 11 29.3	18.98
4	16 52 44.21	24.486	17 36 18.5	34.64	4	18 48 53.53	23.638	18 9 32.3	20.03
5	16 55 11.13	24.486	17 39 42.9	33.49	5	18 51 15.26	23.605	18 7 28.9	21.09
6	16 57 38.04	24.484	17 43 0.4	32.34	6	18 53 36.79	23.571	18 5 19.2	22.14
7	17 0 4.94	24.483	17 46 11.0	31.18	7	18 55 58.11	23.536	18 3 3.2	23.18
8	17 2 31.83	24.480	17 49 14.6	30.02	8	18 58 19.22	23.500	18 0 41.0	24.22
9	17 4 58.70	24.477	17 52 11.2	28.86	9	19 0 40.11	23.464	17 58 12.6	25.25
10	17 7 25.55	24.473	17 55 0.9	27.71	10	19 3 0.79	23.428	17 55 38.1	26.27
11	17 9 52.37	24.467	17 57 43.7	26.54	11	19 5 21.25	23.391	17 52 57.4	27.28
12	17 12 19.15	24.461	18 0 19.4	25.38	12	19 7 41.48	23.353	17 50 10.7	28.29
13	17 14 45.90	24.455	18 2 48.2	24.21	13	19 10 1.49	23.316	17 47 17.9	29.30
14	17 17 12.61	24.448	18 5 9.9	23.04	14	19 12 21.27	23.278	17 44 19.1	30.29
15	17 19 39.27	24.440	18 7 24.7	21.88	15	19 14 40.82	23.238	17 41 14.4	31.28
16	17 22 5.89	24.432	18 9 32.4	20.71	16	19 17 0.13	23.199	17 38 3.8	32.26
17	17 24 32.45	24.422	18 11 33.2	19.54	17	19 19 19.21	23.161	17 34 47.3	33.23
18	17 26 58.95	24.411	18 13 26.9	18.37	18	19 21 38.06	23.121	17 31 25.0	34.20
19	17 29 25.38	24.400	18 15 13.6	17.20	19	19 23 56.66	23.081	17 27 56.9	35.16
20	17 31 51.75	24.389	18 16 53.3	16.04	20	19 26 15.03	23.041	17 24 23.1	36.11
21	17 34 18.05	24.377	18 18 26.1	14.88	21	19 28 33.15	22.999	17 20 43.6	37.05
22	17 36 44.27	24.363	18 19 51.8	13.70	22	19 30 51.02	22.958	17 16 58.4	37.99
23	17 39 10.40	24.348	S. 18 21 10.5	12.53	23	19 33 8.65	22.917	S. 17 13 7.7	38.92
MONDAY 18.					WEDNESDAY 20.				
	h m s		S. ° ' "			h m s		S. ° ' "	
0	17 41 36.45	24.334	S. 18 22 22.2	11.38	0	19 35 26.02	22.875	S. 17 9 11.4	39.84
1	17 44 2.41	24.319	18 23 27.0	10.22	1	19 37 43.15	22.833	17 5 9.6	40.75
2	17 46 28.28	24.303	18 24 24.8	9.05	2	19 40 0.02	22.791	17 1 2.4	41.65
3	17 48 54.05	24.286	18 25 15.6	7.88	3	19 42 16.64	22.748	16 56 49.8	42.55
4	17 51 19.71	24.268	18 25 59.4	6.73	4	19 44 33.00	22.705	16 52 31.8	43.44
5	17 53 45.27	24.250	18 26 36.3	5.58	5	19 46 49.10	22.662	16 48 8.5	44.32
6	17 56 10.71	24.230	18 27 6.3	4.43	6	19 49 4.94	22.619	16 43 40.0	45.18
7	17 58 36.03	24.211	18 27 29.4	3.27	7	19 51 20.53	22.576	16 39 6.3	46.05
8	18 1 1.24	24.191	18 27 45.5	2.12	8	19 53 35.85	22.532	16 34 27.4	46.91
9	18 3 26.32	24.169	18 27 54.8	0.98	9	19 55 50.91	22.488	16 29 43.4	47.76
10	18 5 51.27	24.147	18 27 57.2	0.17	10	19 58 5.71	22.445	16 24 54.3	48.60
11	18 8 16.08	24.124	18 27 52.8	1.31	11	20 0 20.25	22.401	16 20 0.2	49.43
12	18 10 40.76	24.101	18 27 41.5	2.45	12	20 2 34.52	22.356	16 15 1.2	50.24
13	18 13 5.29	24.077	18 27 23.4	3.58	13	20 4 48.52	22.311	16 9 57.3	51.06
14	18 15 29.68	24.053	18 26 58.6	4.71	14	20 7 2.25	22.267	16 4 48.5	51.87
15	18 17 53.92	24.027	18 26 26.9	5.84	15	20 9 15.72	22.223	15 59 34.9	52.66
16	18 20 18.00	24.000	18 25 48.5	6.96	16	20 11 28.92	22.178	15 54 16.6	53.45
17	18 22 41.92	23.973	18 25 3.4	8.07	17	20 13 41.85	22.133	15 48 53.5	54.23
18	18 25 5.68	23.946	18 24 11.7	9.18	18	20 15 54.51	22.088	15 43 25.8	55.00
19	18 27 29.27	23.918	18 23 13.2	10.30	19	20 18 6.91	22.044	15 37 53.5	55.76
20	18 29 52.70	23.890	18 22 8.1	11.39	20	20 20 19.04	21.998	15 32 16.7	56.52
21	18 32 15.95	23.860	18 20 56.5	12.49	21	20 22 30.89	21.953	15 26 35.3	57.27
22	18 34 39.02	23.830	18 19 38.2	13.59	22	20 24 42.48	21.908	15 20 49.5	58.00
23	18 37 1.91	23.800	18 18 13.4	14.68	23	20 26 53.79	21.863	15 14 59.3	58.73
24	18 39 24.62	23.769	S. 18 16 42.0	15.77	24	20 29 4.84	21.819	S. 15 9 4.8	59.45

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
THURSDAY 21.					SATURDAY 23.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	20 29 4.84	21.819	S. 15 9 4.8	59.45	0	22 8 54.56	19.874	S. 9 16 39.2	84.35
1	20 31 15.62	21.774	15 3 5.9	60.16	1	22 10 53.70	19.840	9 8 12.1	84.68
2	20 33 26.13	21.729	14 57 2.9	60.86	2	22 12 52.64	19.808	8 59 43.1	85.00
3	20 35 36.37	21.684	14 50 55.6	61.56	3	22 14 51.40	19.777	8 51 12.1	85.32
4	20 37 46.34	21.639	14 44 44.2	62.24	4	22 16 49.96	19.744	8 42 39.2	85.63
5	20 39 56.04	21.594	14 38 28.7	62.92	5	22 18 48.33	19.713	8 34 4.5	85.94
6	20 42 5.47	21.550	14 32 9.2	63.58	6	22 20 46.52	19.683	8 25 27.9	86.24
7	20 44 14.64	21.506	14 25 45.7	64.25	7	22 22 44.53	19.653	8 16 49.6	86.53
8	20 46 23.54	21.462	14 19 18.2	64.90	8	22 24 42.35	19.623	8 8 9.6	86.82
9	20 48 32.18	21.418	14 12 46.9	65.54	9	22 26 40.00	19.593	7 59 27.8	87.10
10	20 50 40.55	21.373	14 6 11.7	66.18	10	22 28 37.47	19.563	7 50 44.4	87.37
11	20 52 48.65	21.328	13 59 32.8	66.80	11	22 30 34.76	19.535	7 41 59.4	87.63
12	20 54 56.49	21.285	13 52 50.1	67.42	12	22 32 31.89	19.508	7 33 12.8	87.89
13	20 57 4.07	21.241	13 46 3.7	68.03	13	22 34 28.85	19.480	7 24 24.7	88.15
14	20 59 11.38	21.198	13 39 13.8	68.63	14	22 36 25.65	19.453	7 15 35.0	88.40
15	21 1 18.44	21.154	13 32 20.2	69.23	15	22 38 22.29	19.426	7 6 43.9	88.63
16	21 3 25.23	21.111	13 25 23.1	69.81	16	22 40 18.76	19.399	6 57 51.4	88.87
17	21 5 31.77	21.068	13 18 22.5	70.38	17	22 42 15.08	19.374	6 48 57.5	89.10
18	21 7 38.05	21.025	13 11 18.5	70.95	18	22 44 11.25	19.348	6 40 2.2	89.33
19	21 9 44.07	20.983	13 4 11.1	71.51	19	22 46 7.26	19.323	6 31 5.6	89.54
20	21 11 49.84	20.940	12 57 0.4	72.06	20	22 48 3.13	19.300	6 22 7.7	89.75
21	21 13 55.35	20.898	12 49 46.4	72.60	21	22 49 58.86	19.276	6 13 8.6	89.95
22	21 16 0.61	20.856	12 42 29.2	73.13	22	22 51 54.44	19.252	6 4 8.3	90.15
23	21 18 5.62	20.814	S. 12 35 8.8	73.67	23	22 53 49.88	19.229	S. 5 55 6.8	90.34
FRIDAY 22.					SUNDAY 24.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	21 20 10.38	20.773	S. 12 27 45.2	74.18	0	22 55 45.19	19.207	S. 5 46 4.2	90.53
1	21 22 14.90	20.732	12 20 18.6	74.69	1	22 57 40.36	19.185	5 37 0.5	90.71
2	21 24 19.17	20.691	12 12 48.9	75.20	2	22 59 35.41	19.163	5 27 55.7	90.88
3	21 26 23.19	20.650	12 5 16.2	75.70	3	23 1 30.32	19.142	5 18 49.9	91.05
4	21 28 26.97	20.610	11 57 40.5	76.18	4	23 3 25.11	19.123	5 9 43.1	91.21
5	21 30 30.51	20.570	11 50 2.0	76.66	5	23 5 19.79	19.103	5 0 35.4	91.37
6	21 32 33.81	20.530	11 42 20.6	77.13	6	23 7 14.34	19.082	4 51 26.7	91.53
7	21 34 36.87	20.491	11 34 36.4	77.59	7	23 9 8.77	19.063	4 42 17.1	91.68
8	21 36 39.70	20.452	11 26 49.5	78.05	8	23 11 3.10	19.045	4 33 6.6	91.81
9	21 38 42.29	20.413	11 18 59.8	78.51	9	23 12 57.31	19.027	4 23 55.4	91.94
10	21 40 44.65	20.374	11 11 7.4	78.94	10	23 14 51.42	19.009	4 14 43.3	92.07
11	21 42 46.78	20.337	11 3 12.5	79.38	11	23 16 45.42	18.993	4 5 30.5	92.19
12	21 44 48.69	20.299	10 55 14.9	79.81	12	23 18 39.33	18.976	3 56 17.0	92.32
13	21 46 50.37	20.261	10 47 14.8	80.23	13	23 20 33.13	18.959	3 47 2.7	92.43
14	21 48 51.82	20.223	10 39 12.2	80.63	14	23 22 26.84	18.944	3 37 47.8	92.53
15	21 50 53.05	20.187	10 31 7.2	81.03	15	23 24 20.46	18.929	3 28 32.3	92.63
16	21 52 54.07	20.152	10 22 59.8	81.43	16	23 26 13.99	18.915	3 19 16.2	92.73
17	21 54 54.87	20.115	10 14 50.0	81.82	17	23 28 7.44	18.901	3 9 59.6	92.82
18	21 56 55.45	20.079	10 6 37.9	82.20	18	23 30 0.80	18.887	3 0 42.4	92.91
19	21 58 55.82	20.044	9 58 23.6	82.58	19	23 31 54.08	18.874	2 51 24.7	92.99
20	22 0 55.98	20.009	9 50 7.0	82.95	20	23 33 47.29	18.862	2 42 6.5	93.07
21	22 2 55.93	19.974	9 41 48.2	83.31	21	23 35 40.43	18.850	2 32 47.9	93.13
22	22 4 55.67	19.940	9 33 27.3	83.66	22	23 37 33.49	18.838	2 23 28.9	93.20
23	22 6 55.21	19.907	9 25 4.3	84.01	23	23 39 26.49	18.828	2 14 9.5	93.26
24	22 8 54.56	19.874	S. 9 16 39.2	84.35	24	23 41 19.43	18.818	S. 2 4 49.8	93.31

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
MONDAY 25.					WEDNESDAY 27.				
	h m s	s	° ' "	"		h m s	s	° ' "	"
0	23 41 19.43	18.818	S. 2 4 49.8	93.31	0	1 11 25.72	18.922	N. 5 19 40.8	89.97
1	23 43 12.30	18.808	1 55 29.8	93.36	1	1 13 19.29	18.937	5 28 40.0	89.78
2	23 45 5.12	18.798	1 46 9.5	93.41	2	1 15 12.96	18.952	5 37 38.1	89.58
3	23 46 57.88	18.789	1 36 48.9	93.44	3	1 17 6.71	18.967	5 46 34.9	89.37
4	23 48 50.59	18.781	1 27 28.2	93.48	4	1 19 0.56	18.983	5 55 30.5	89.16
5	23 50 43.25	18.773	1 18 7.2	93.51	5	1 20 54.51	18.999	6 4 24.8	88.94
6	23 52 35.87	18.766	1 8 46.1	93.53	6	1 22 48.55	19.016	6 13 17.8	88.72
7	23 54 28.44	18.759	0 59 24.9	93.54	7	1 24 42.70	19.034	6 22 9.4	88.49
8	23 56 20.98	18.753	0 50 3.6	93.56	8	1 26 36.96	19.052	6 30 59.7	88.27
9	23 58 13.48	18.748	0 40 42.2	93.58	9	1 28 31.32	19.069	6 39 48.6	88.03
10	0 0 5.95	18.742	0 31 20.7	93.58	10	1 30 25.79	19.088	6 48 36.0	87.78
11	0 1 58.38	18.737	0 21 59.3	93.57	11	1 32 20.38	19.108	6 57 22.0	87.53
12	0 3 50.79	18.733	0 12 37.9	93.56	12	1 34 15.08	19.128	7 6 6.4	87.28
13	0 5 43.18	18.729	S. 0 3 16.6	93.55	13	1 36 9.91	19.148	7 14 49.3	87.03
14	0 7 35.54	18.726	N. 0 6 4.7	93.53	14	1 38 4.85	19.168	7 23 30.7	86.76
15	0 9 27.89	18.724	0 15 25.8	93.52	15	1 39 59.92	19.189	7 32 10.4	86.48
16	0 11 20.23	18.722	0 24 46.8	93.48	16	1 41 55.12	19.211	7 40 48.5	86.21
17	0 13 12.55	18.719	0 34 7.6	93.45	17	1 43 50.45	19.233	7 49 24.9	85.93
18	0 15 4.86	18.718	0 43 28.2	93.42	18	1 45 45.91	19.254	7 57 59.6	85.64
19	0 16 57.17	18.718	0 52 48.6	93.38	19	1 47 41.50	19.277	8 6 32.6	85.34
20	0 18 49.48	18.718	1 2 8.7	93.33	20	1 49 37.23	19.301	8 15 3.7	85.04
21	0 20 41.79	18.718	1 11 28.5	93.28	21	1 51 33.11	19.325	8 23 33.1	84.74
22	0 22 34.10	18.719	1 20 48.0	93.22	22	1 53 29.13	19.348	8 32 0.6	84.43
23	0 24 26.42	18.721	N. 1 30 7.1	93.16	23	1 55 25.29	19.373	N. 8 40 26.3	84.12
TUESDAY 26.					THURSDAY 28.				
0	0 26 18.75	18.723	N. 1 39 25.9	93.09	0	1 57 21.60	19.398	N. 8 48 50.0	83.79
1	0 28 11.10	18.726	1 48 44.2	93.01	1	1 59 18.06	19.423	8 57 11.8	83.47
2	0 30 3.46	18.728	1 58 2.0	92.93	2	2 1 14.67	19.448	9 5 31.6	83.13
3	0 31 55.84	18.732	2 7 19.4	92.86	3	2 3 11.44	19.475	9 13 49.3	82.78
4	0 33 48.24	18.736	2 16 36.3	92.77	4	2 5 8.37	19.502	9 22 5.0	82.44
5	0 35 40.67	18.740	2 25 52.6	92.68	5	2 7 5.46	19.528	9 30 18.6	82.09
6	0 37 33.12	18.745	2 35 8.4	92.58	6	2 9 2.71	19.555	9 38 30.1	81.73
7	0 39 25.61	18.751	2 44 23.6	92.48	7	2 11 0.12	19.583	9 46 39.4	81.36
8	0 41 18.13	18.757	2 53 38.1	92.37	8	2 12 57.71	19.612	9 54 46.4	80.99
9	0 43 10.69	18.764	3 2 52.0	92.26	9	2 14 55.46	19.640	10 2 51.3	80.62
10	0 45 3.30	18.772	3 12 5.2	92.14	10	2 16 53.39	19.669	10 10 53.8	80.23
11	0 46 55.95	18.778	3 21 17.7	92.02	11	2 18 51.49	19.698	10 18 54.0	79.84
12	0 48 48.64	18.786	3 30 29.5	91.89	12	2 20 49.77	19.728	10 26 51.9	79.45
13	0 50 41.38	18.795	3 39 40.4	91.76	13	2 22 48.23	19.758	10 34 47.4	79.04
14	0 52 34.18	18.804	3 48 50.6	91.63	14	2 24 46.87	19.788	10 42 40.4	78.63
15	0 54 27.03	18.813	3 57 59.9	91.48	15	2 26 45.69	19.819	10 50 31.0	78.22
16	0 56 19.94	18.824	4 7 8.3	91.33	16	2 28 44.70	19.850	10 58 19.1	77.80
17	0 58 12.92	18.835	4 16 15.9	91.18	17	2 30 43.89	19.882	11 6 4.6	77.37
18	1 0 5.96	18.846	4 25 22.5	91.02	18	2 32 43.28	19.913	11 13 47.5	76.93
19	1 1 59.07	18.857	4 34 28.1	90.86	19	2 34 42.85	19.945	11 21 27.8	76.49
20	1 3 52.24	18.868	4 43 32.8	90.69	20	2 36 42.62	19.978	11 29 5.4	76.04
21	1 5 45.49	18.882	4 52 36.4	90.52	21	2 38 42.59	20.011	11 36 40.3	75.59
22	1 7 38.82	18.895	5 1 39.0	90.33	22	2 40 42.75	20.043	11 44 12.5	75.13
23	1 9 32.23	18.908	5 10 40.4	90.15	23	2 42 43.11	20.077	11 51 41.8	74.66
24	1 11 25.72	18.922	N. 5 19 40.8	89.97	24	2 44 43.68	20.112	N. 11 59 8.4	74.19

MEAN TIME.

THE MOON'S RIGHT ASCENSION AND DECLINATION.

Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .	Hour.	Right Ascension.	Var. in 10 ^m .	Declination.	Var. in 10 ^m .
FRIDAY 29.					SUNDAY 31.				
	h m s	s	N. ° ' "	"		h m s	s	N. ° ' "	"
0	2 44 43.68	20.112	N.11 59 8.4	74.19	0	4 25 32.65	21.937	N.16 47 9.1	43.04
1	2 46 44.45	20.145	12 6 32.1	73.70	1	4 27 44.39	21.976	16 51 24.9	42.21
2	2 48 45.42	20.178	12 13 52.8	73.21	2	4 29 56.36	22.014	16 55 35.6	41.37
3	2 50 46.59	20.213	12 21 10.6	72.73	3	4 32 8.56	22.053	16 59 41.3	40.53
4	2 52 47.98	20.249	12 28 25.5	72.23	4	4 34 20.99	22.091	17 3 42.0	39.69
5	2 54 49.58	20.284	12 35 37.3	71.71	5	4 36 33.65	22.129	17 7 37.6	38.83
6	2 56 51.39	20.319	12 42 46.0	71.19	6	4 38 46.54	22.167	17 11 28.0	37.97
7	2 58 53.41	20.354	12 49 51.6	70.67	7	4 40 59.65	22.204	17 15 13.2	37.10
8	3 0 55.64	20.390	12 56 54.1	70.14	8	4 43 12.99	22.242	17 18 53.2	36.23
9	3 2 58.09	20.427	13 3 53.3	69.60	9	4 45 26.55	22.278	17 22 27.9	35.34
10	3 5 0.76	20.463	13 10 49.3	69.07	10	4 47 40.33	22.316	17 25 57.3	34.45
11	3 7 3.65	20.500	13 17 42.1	68.52	11	4 49 54.34	22.353	17 29 21.3	33.56
12	3 9 6.76	20.537	13 24 31.5	67.95	12	4 52 8.56	22.388	17 32 40.0	32.66
13	3 11 10.09	20.573	13 31 17.5	67.38	13	4 54 23.00	22.425	17 35 53.2	31.74
14	3 13 13.64	20.611	13 38 0.1	66.82	14	4 56 37.66	22.462	17 39 0.9	30.83
15	3 15 17.42	20.648	13 44 39.3	66.24	15	4 58 52.54	22.497	17 42 3.2	29.92
16	3 17 21.42	20.686	13 51 15.0	65.66	16	5 1 7.62	22.532	17 44 59.9	28.98
17	3 19 25.65	20.724	13 57 47.2	65.06	17	5 3 22.92	22.568	17 47 51.0	28.05
18	3 21 30.11	20.762	14 4 15.7	64.46	18	5 5 38.43	22.602	17 50 36.5	27.11
19	3 23 34.79	20.799	14 10 40.7	63.85	19	5 7 54.14	22.636	17 53 16.3	26.16
20	3 25 39.70	20.838	14 17 1.9	63.23	20	5 10 10.06	22.670	17 55 50.4	25.21
21	3 27 44.85	20.877	14 23 19.5	62.62	21	5 12 26.18	22.703	17 58 18.8	24.25
22	3 29 50.22	20.915	14 29 33.3	61.98	22	5 14 42.50	22.737	18 0 41.4	23.28
23	3 31 55.83	20.954	N.14 35 43.3	61.34	23	5 16 59.02	22.769	N.18 2 58.2	22.32
SATURDAY 30.					MONDAY, JAN. 1, 1923.				
0	3 34 1.67	20.993	N.14 41 49.4	60.70	0	5 19 15.73	22.802	N.18 5 9.2	21.34
1	3 36 7.75	21.032	14 47 51.7	60.05					
2	3 38 14.06	21.071	14 53 50.0	59.39					
3	3 40 20.60	21.110	14 59 44.4	58.73					
4	3 42 27.38	21.149	15 5 34.7	58.05					
5	3 44 34.39	21.188	15 11 21.0	57.37					
6	3 46 41.64	21.228	15 17 3.2	56.68					
7	3 48 49.13	21.268	15 22 41.2	55.98					
8	3 50 56.85	21.307	15 28 15.0	55.28					
9	3 53 4.81	21.347	15 33 44.5	54.57					
10	3 55 13.01	21.386	15 39 9.8	53.86					
11	3 57 21.44	21.426	15 44 30.8	53.13					
12	3 59 30.12	21.466	15 49 47.4	52.39					
13	4 1 39.03	21.505	15 54 59.5	51.65					
14	4 3 48.18	21.544	16 0 7.2	50.91					
15	4 5 57.56	21.583	16 5 10.4	50.15					
16	4 8 7.18	21.623	16 10 9.0	49.39					
17	4 10 17.04	21.663	16 15 3.1	48.62					
18	4 12 27.14	21.703	16 19 52.5	47.84					
19	4 14 37.47	21.742	16 24 37.2	47.06					
20	4 16 48.04	21.781	16 29 17.2	46.28					
21	4 18 58.84	21.820	16 33 52.5	45.48					
22	4 21 9.88	21.859	16 38 22.9	44.66					
23	4 23 21.15	21.898	16 42 48.4	43.85					
24	4 25 32.65	21.937	N.16 47 9.1	43.04					

PHASES OF THE MOON.

Dec.	h	m
3	○ Full Moon	23 23.6
11	☾ Last Quarter	4 40.7
18	● New Moon	0 20.0
25	☽ First Quarter	17 53.1

Dec.	h
14	☾ Perigee
26	☾ Apogee

MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Merid. pass. Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log of True Dist. from the Earth.	Meridian Passage.	Heliocentric Longitude.			Heliocentric Latitude.			Log. of Rad. Vect.
	h	m	s		h	m	s					h	m	s	h	m	s	
Jan. 1	18	58	2.85	0.17	S. 24	43	39.0	2.34	6.17	0.1538496	0 16.7	289	29	53.0	S. 6	11	43.9	9.6508167
2	19	5	10.66	0.17	24	35	57.2	2.35	6.19	.1522323	0 19.9	292	31	50.4	6	21	32.8	.6475766
3	19	12	18.83	0.17	24	26	43.6	2.36	6.22	.1504117	0 23.1	295	36	44.6	6	30	25.8	.6440678
4	19	19	27.17	0.17	24	15	57.5	2.37	6.25	.1483806	0 26.3	298	44	52.8	6	38	18.9	.6402901
5	19	26	35.50	0.17	24	3	38.2	2.38	6.28	.1461307	0 29.5	301	56	32.0	6	45	7.6	.6362440
6	19	33	43.58	0.17	23	49	45.3	2.40	6.32	.1436533	0 32.7	305	11	59.7	6	50	47.3	.6319304
7	19	40	51.20	0.17	S. 23	34	18.2	2.41	6.36	0.1409385	0 35.9	308	31	34.2	S. 6	55	12.6	9.6273511
8	19	47	58.08	0.18	23	17	16.7	2.43	6.40	.1379755	0 39.1	311	55	34.7	6	58	17.7	.6225091
9	19	55	3.95	0.18	22	58	40.6	2.45	6.45	.1347522	0 42.2	315	24	20.8	6	59	56.6	.6174086
10	20	2	8.50	0.18	22	38	30.2	2.47	6.50	.1312556	0 45.4	318	58	12.9	7	0	2.6	.6120548
11	20	9	11.37	0.18	22	16	45.5	2.49	6.56	.1274715	0 48.5	322	37	32.1	6	58	28.4	.6064557
12	20	16	12.19	0.18	21	53	27.4	2.51	6.62	.1233843	0 51.6	326	22	40.2	6	55	6.5	.6006206
13	20	23	10.52	0.18	S. 21	28	36.7	2.54	6.69	0.1189775	0 54.6	330	13	59.1	S. 6	49	48.8	9.5945621
14	20	30	5.88	0.18	21	2	15.0	2.57	6.76	.1142330	0 57.6	334	11	51.4	6	42	27.0	.5882960
15	20	36	57.71	0.19	20	34	23.9	2.60	6.84	.1091315	1 0.5	338	16	39.6	6	32	52.5	.5818412
16	20	43	45.40	0.19	20	5	6.0	2.63	6.93	.1036529	1 3.3	342	28	46.1	6	20	56.6	.5752212
17	20	50	28.22	0.19	19	34	24.5	2.67	7.03	.0977754	1 6.1	346	48	32.6	6	30	39.9	.5684647
18	20	57	5.38	0.19	19	2	23.1	2.71	7.13	.0914769	1 8.8	351	16	20.1	5	49	27.1	.5616050
19	21	3	35.95	0.19	S. 18	29	6.9	2.75	7.24	0.0847340	1 11.3	355	52	27.8	S. 5	29	38.1	9.5546823
20	21	9	58.89	0.20	17	54	41.2	2.80	7.36	.0775240	1 13.8	0	37	12.8	5	6	57.7	.5477432
21	21	16	13.01	0.20	17	19	13.5	2.85	7.49	.0698237	1 16.1	5	30	49.5	4	41	21.7	.5408412
22	21	22	16.96	0.20	16	42	52.6	2.90	7.64	.0616117	1 18.2	10	33	27.9	4	12	48.3	.5340369
23	21	28	9.20	0.21	16	5	47.9	2.96	7.79	.0528677	1 20.1	15	45	13.7	3	41	18.6	.5273988
24	21	33	48.05	0.21	15	28	11.5	3.02	7.96	.0435752	1 21.8	21	6	6.2	3	6	57.8	.5210013
25	21	39	11.59	0.21	S. 14	50	16.9	3.09	8.14	0.0337217	1 23.2	26	35	58.0	S. 2	29	55.4	9.5149257
26	21	44	17.72	0.22	14	12	19.8	3.17	8.34	.0233015	1 24.4	32	14	33.2	1	50	26.2	.5092572
27	21	49	4.16	0.22	13	34	38.0	3.25	8.55	.0123161	1 25.2	38	1	26.8	1	8	50.6	.5040835
28	21	53	28.43	0.23	12	57	31.2	3.34	8.78	0.0007776	1 25.6	43	56	3.9	S. 0	25	35.0	.4994919
29	21	57	27.93	0.23	12	21	21.2	3.43	9.03	9.9887108	1 25.6	49	57	38.8	N. 0	18	48.7	.4955661
30	22	0	59.94	0.24	11	46	32.0	3.53	9.30	.9761551	1 25.2	56	5	15.5	1	3	43.5	.4923828
31	22	4	1.72	0.25	S. 11	13	28.6	3.63	9.58	9.9631674	1 24.3	62	17	47.5	N. 1	48	28.4	9.4900075
Feb. 1	22	6	30.59	0.25	10	42	37.4	3.75	9.88	.9498233	1 22.8	68	33	59.4	2	32	19.9	.4884912
2	22	8	24.04	0.26	10	14	25.2	3.87	10.19	.9362199	1 20.7	74	52	28.1	3	14	34.3	.4878676
3	22	9	39.83	0.27	9	49	18.4	3.99	10.52	.9224755	1 17.9	81	11	45.3	3	54	29.3	.4881509
4	22	10	16.19	0.28	9	27	42.1	4.12	10.86	.9087309	1 14.5	87	30	20.3	4	31	26.2	.4893343
5	22	10	11.94	0.29	9	9	59.1	4.25	11.21	.8951471	1 10.5	93	46	42.6	5	4	52.1	.4913915
6	22	9	26.68	0.30	S. 8	56	28.6	4.38	11.55	9.8819022	1 5.8	99	59	25.3	N. 5	34	20.8	9.4942779
7	22	8	0.91	0.31	8	47	25.0	4.51	11.89	.8691882	1 0.5	106	7	7.2	5	59	33.9	.4979329
8	22	5	56.19	0.32	8	42	56.8	4.64	12.23	.8572036	0 54.5	112	8	36.1	6	20	20.9	.5022836
9	22	3	15.21	0.33	8	43	5.4	4.76	12.54	.8461457	0 47.9	118	2	49.4	6	36	39.1	.5072485
10	22	0	1.81	0.34	8	47	44.4	4.87	12.83	.8362016	0 40.7	123	48	56.2	6	48	32.4	.5127412
11	21	56	20.91	0.34	8	56	39.9	4.97	13.09	.8275375	0 33.1	129	26	16.9	6	56	10.7	.5186741
12	21	52	18.35	0.34	S. 9	9	30.1	5.05	13.31	9.8202906	0 25.2	134	54	23.3	N. 6	59	48.1	9.5249602
13	21	48	0.70	0.34	9	25	46.5	5.12	13.49	.8145596	0 17.0	140	12	57.9	6	59	41.9	.5315169
14	21	43	34.88	0.35	9	44	55.7	5.17	13.62	.8104000	0 8.6	145	21	52.8	6	56	11.5	.5382670
15	21	39	7.89	0.35	10	6	20.5	5.20	13.70	.8078218	{ 0 23.50 } 0 23.50	150	21	8.5	6	49	37.3	.5451397
16	21	34	46.46	0.35	S. 10	29	22.8	5.21	13.73	9.8067907	23 44.0	155	10	52.4	N. 6	40	19.7	9.5520717

MERCURY, 1922.

147

MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semi-diameter.	Hor. Par.	Log. of True Dist. from the Earth.		Meridian Passage.	Heliocentric Longitude.			Heliocentric Latitude.			Log. of Rad. Vect.		
	Noon.				Noon.					Noon.			Noon.			Noon.					
	h	m	s		°	'	''	''	''	h	m		°	'	''	°	'	''			
Feb. 16	21	34	46.46	0.35	S.	10	29	22.8	5.21	13.73	9.8067907	23	44.0	155	10	52.4	N.	6	40	19.7	9.5520717
17	21	30	36.72	0.35		10	53	25.4	5.20	13.72	.8072337	23	36.2	159	51	17.7		6	28	38.6	.5590064
18	21	26	44.02	0.35		11	17	52.9	5.18	13.66	.8090455	23	28.7	164	22	41.9		6	14	52.9	.5658946
19	21	23	12.74	0.35		11	42	14.2	5.15	13.56	.8120978	23	21.7	168	45	25.8		5	59	20.3	.5726944
20	21	20	6.30	0.35		12	6	2.0	5.10	13.43	.8162472	23	15.2	172	59	52.8		5	42	17.0	.5793694
21	21	17	27.10	0.34		12	28	53.9	5.04	13.28	.8213451	23	9.1	177	6	27.5		5	23	57.6	.5858895
22	21	15	16.67	0.34	S.	12	50	32.0	4.97	13.10	9.8272442	23	3.5	181	5	35.6	N.	5	4	35.3	9.5922292
23	21	13	35.71	0.33		13	10	42.5	4.90	12.90	.8338032	22	58.3	184	57	42.8		4	44	21.8	.5983678
24	21	12	24.27	0.33		13	29	15.2	4.82	12.69	.8408916	22	53.7	188	43	15.1		4	23	27.2	.6042886
25	21	11	41.89	0.32		13	46	3.1	4.74	12.47	.8483912	22	49.5	192	22	37.9		4	2	0.7	.6099778
26	21	11	27.69	0.32		14	1	1.5	4.65	12.25	.8561975	22	45.7	195	56	16.0		3	40	10.0	.6154250
27	21	11	40.52	0.31		14	14	7.6	4.57	12.03	.8642204	22	42.4	199	24	33.5		3	18	2.1	.6206215
28	21	12	19.03	0.31	S.	14	25	20.3	4.48	11.81	9.8723824	22	39.5	202	47	53.5	N.	2	55	42.8	9.6255614
Mar. 1	21	13	21.76	0.31		14	34	39.4	4.40	11.59	.8806181	22	37.0	206	6	38.2		2	33	17.2	.6302397
2	21	14	47.20	0.30		14	42	5.6	4.32	11.37	.8888738	22	34.8	209	21	9.1		2	10	49.7	.6346536
3	21	16	33.83	0.30		14	47	40.1	4.24	11.15	.8971050	22	32.9	212	31	46.5		1	48	24.2	.6388005
4	21	18	40.17	0.29		14	51	24.5	4.16	10.94	.9052758	22	31.4	215	38	49.8		1	26	3.8	.6426792
5	21	21	4.79	0.29		14	53	20.5	4.08	10.74	.9133578	22	30.1	218	42	37.6		1	3	51.5	.6462894
6	21	23	46.32	0.28	S.	14	53	30.0	4.01	10.55	9.9213285	22	29.1	221	43	27.7	N.	0	41	49.6	9.6496306
7	21	26	43.47	0.28		14	51	55.2	3.93	10.36	.9291706	22	28.3	224	41	37.1	N.	0	20	0.3	.6527033
8	21	29	55.04	0.27		14	48	37.9	3.86	10.18	.9368710	22	27.8	227	37	22.0	S.	0	1	34.6	.6555083
9	21	33	19.91	0.27		14	43	40.2	3.79	10.00	.9444203	22	27.5	230	30	58.0		0	22	53.4	.6580463
10	21	36	57.06	0.26		14	37	3.9	3.73	9.83	.9518120	22	27.3	233	22	40.1		0	43	54.7	.6603182
11	21	40	45.55	0.26		14	28	51.0	3.67	9.67	.9590419	22	27.3	236	12	42.8		1	4	37.2	.6623252
12	21	44	44.48	0.25	S.	14	19	3.1	3.61	9.51	9.9661075	22	27.5	239	1	20.0	S.	1	24	59.6	9.6640682
13	21	48	53.09	0.25		14	7	42.1	3.56	9.36	.9730079	22	27.9	241	48	45.4		1	45	0.9	.6655481
14	21	53	10.63	0.24		13	54	49.5	3.50	9.22	.9797435	22	28.4	244	35	12.0		2	4	40.0	.6667658
15	21	57	36.46	0.24		13	40	27.0	3.45	9.08	.9863150	22	29.0	247	20	52.9		2	23	55.7	.6677219
16	22	2	9.98	0.23		13	24	35.9	3.40	8.95	.9927248	22	29.7	250	6	0.6		2	42	47.2	.6684172
17	22	6	50.63	0.23		13	7	17.9	3.35	8.82	9.9989749	22	30.5	252	50	47.7		3	1	13.3	.6688522
18	22	11	37.96	0.23	S.	12	48	34.2	3.30	8.70	0.0050679	22	31.4	255	35	26.4	S.	3	19	13.0	9.6690271
19	22	16	31.49	0.22		12	28	26.3	3.26	8.58	.0110072	22	32.5	258	20	9.0		3	36	45.0	.6689421
20	22	21	30.86	0.22		12	6	55.3	3.22	8.47	.0167954	22	33.7	261	5	7.6		3	53	48.3	.6685969
21	22	26	35.72	0.22		11	44	2.6	3.17	8.36	.0224360	22	34.9	263	50	34.6		4	10	21.5	.6679914
22	22	31	45.74	0.21		11	19	49.3	3.13	8.25	.0279317	22	36.2	266	36	42.1		4	26	23.2	.6671253
23	22	37	0.67	0.21		10	54	16.6	3.09	8.15	.0332862	22	37.5	269	23	42.6		4	41	51.9	.6659979
24	22	42	20.27	0.21	S.	10	27	25.7	3.06	8.05	0.0385017	22	39.0	272	11	48.7	S.	4	56	45.9	9.6646085
25	22	47	44.35	0.21		9	59	17.7	3.02	7.96	.0435811	22	40.5	275	1	13.1		5	11	3.3	.6629564
26	22	53	12.74	0.20		9	29	53.3	2.99	7.87	.0485268	22	42.1	277	52	9.0		5	24	42.1	.6610407
27	22	58	45.30	0.20		8	59	13.9	2.95	7.78	.0533410	22	43.8	280	44	49.6		5	37	40.1	.6588602
28	23	4	21.93	0.20		8	27	20.5	2.92	7.70	.0580251	22	45.5	283	39	28.7		5	49	54.7	.6564141
29	23	10	2.54	0.19		7	54	14.0	2.89	7.62	.0625804	22	47.3	286	36	20.6		6	1	23.4	.6537014
30	23	15	47.09	0.19	S.	7	19	55.6	2.86	7.54	0.0670083	22	49.2	289	35	39.8	S.	6	12	3.0	9.6507211
31	23	21	35.54	0.19		6	44	26.1	2.83	7.47	.0713085	22	51.1	292	37	41.5		6	21	50.2	.6474727
Apr. 1	23	27	27.90	0.19		6	7	46.6	2.81	7.40	.0754812	22	53.1	295	42	41.4		6	30	41.4	.6439554
2	23	33	24.19	0.19		5	29	58.2	2.78	7.33	.0795258	22	55.2	298	50	55.9		6	38	32.5	.6401693
3	23	39	24.43	0.18	S.	4	51	1.9	2.76	7.26	0.0834409	22	57.3	302	2	41.7	S.	6	45	19.2	9.6361147

MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.			Meridian Passage.	Heliocentric Longitude.			Heliocentric Latitude.			Log. of Rad. Vect.		
	h	m	s		h	m	s			h	m	s		h	m	s	h	m	s		h	m	s
Apr. 3	23	39	24.43	0.18	S.	4	51	1.9	2.76	7.26	0.0834409	22	57.3		302	2	41.7	S.	6	45	19.2	9.6361147
4	23	45	28.71	0.18		4	10	58.9	2.74	7.20	.0872245	22	59.5		305	18	16.8		6	50	56.6	.6317929
5	23	51	37.10	0.18		3	29	50.3	2.72	7.14	.0908738	23	1.8		308	37	59.2		6	55	19.5	.6272053
6	23	57	49.71	0.18		2	47	37.3	2.69	7.08	.0943858	23	4.1		312	2	8.2		6	58	22.1	.6223552
7	0	4	6.66	0.18		2	4	21.4	2.67	7.03	.0977553	23	6.5		315	31	3.4		6	59	58.3	.6172465
8	0	10	28.10	0.18		1	20	3.9	2.65	6.97	.1009775	23	9.0		319	5	5.3		7	0	1.2	.6118849
9	0	16	54.17	0.18	S.	0	34	46.5	2.63	6.92	0.1040461	23	11.6		322	44	35.0	S.	6	58	23.8	9.6062781
10	0	23	25.07	0.17	N.	0	11	29.1	2.61	6.88	.1069537	23	14.3		326	29	54.2		6	54	58.4	.6004356
11	0	30	0.96	0.17		0	58	40.9	2.60	6.84	.1096915	23	17.0		330	21	25.0		6	49	37.0	.5943703
12	0	36	42.04	0.17		1	46	46.5	2.58	6.80	.1122497	23	19.8		334	19	29.8		6	42	11.3	.5880977
13	0	43	28.51	0.17		2	35	43.6	2.56	6.76	.1146171	23	22.7		338	24	31.3		6	32	32.5	.5816374
14	0	50	20.58	0.17		3	25	29.3	2.55	6.72	.1167811	23	25.8		342	36	51.8		6	20	32.1	.5750124
15	0	57	18.42	0.17	N.	4	16	0.3	2.54	6.69	0.1187279	23	29.0		346	56	52.9	S.	6	6	1.6	9.5682520
16	1	4	22.25	0.17		5	7	12.7	2.53	6.66	.1204416	23	32.2		351	24	55.7		5	48	52.8	.5613896
17	1	11	32.21	0.17		5	59	2.4	2.52	6.64	.1219055	23	35.5		356	1	19.3		5	28	58.5	.5544655
18	1	18	48.47	0.17		6	51	24.4	2.51	6.62	.1231010	23	38.9		0	46	20.8		5	6	12.8	.5475265
19	1	26	11.13	0.17		7	44	13.2	2.50	6.61	.1240085	23	42.4		5	40	14.2		4	40	31.3	.5406263
20	1	33	40.26	0.17		8	37	22.4	2.50	6.60	.1246066	23	46.1		10	43	9.7		4	11	52.4	.5338258
21	1	41	15.88	0.17	N.	9	30	44.9	2.50	6.60	0.1248737	23	49.9		15	55	12.7	S.	3	40	17.3	9.5271937
22	1	48	57.92	0.17		10	24	12.8	2.50	6.60	.1247868	23	53.8		21	16	22.4		3	5	51.2	.5208051
23	1	56	46.23	0.17		11	17	37.2	2.50	6.61	.1243225	23	57.8		26	46	30.8		2	28	44.0	.5147406
24	2	4	40.60	0.17		12	10	48.4	2.51	6.62	.1234583	*	*		32	25	22.1		1	49	10.5	.5090859
25	2	12	40.66	0.17		13	3	35.8	2.52	6.64	.1221716	0	1.8		38	12	31.0		1	7	31.4	.5039287
26	2	20	45.96	0.17		13	55	48.1	2.53	6.67	.1204415	0	6.0		44	7	22.0	S.	0	24	13.1	.4993563
27	2	28	55.90	0.18	N.	14	47	13.5	2.54	6.70	0.1182495	0	10.2		50	9	9.4	N.	0	20	12.2	9.4954525
28	2	37	9.76	0.18		15	37	39.4	2.56	6.74	.1155797	0	14.5		56	16	56.7		1	5	7.3	.4922933
29	2	45	26.70	0.18		16	26	53.4	2.58	6.79	.1124196	0	18.9		62	29	37.0		1	49	51.2	.4899440
30	2	53	45.77	0.18		17	14	42.9	2.60	6.85	.1087613	0	23.3		68	45	54.7		2	33	40.5	.4884550
May 1	3	2	5.90	0.18		18	0	55.9	2.62	6.91	.1046012	0	27.7		75	4	26.6		3	15	51.2	.4878597
2	3	10	25.95	0.19		18	45	20.9	2.65	6.99	.0999410	0	32.1		81	23	44.2		3	55	41.2	.4881709
3	3	18	44.71	0.19	N.	19	27	47.4	2.69	7.07	0.0947867	0	36.4		87	42	16.7	N.	4	32	32.1	9.4893821
4	3	27	0.95	0.19		20	8	6.2	2.72	7.17	.0891497	0	40.8		93	58	33.8		5	5	51.0	.4914661
5	3	35	13.43	0.20		20	46	9.2	2.75	7.27	.0830459	0	45.1		100	11	8.5		5	35	11.9	.4943776
6	3	43	20.92	0.20		21	21	50.1	2.80	7.38	.0764936	0	49.3		106	18	40.2		6	0	16.8	.4980556
7	3	51	22.25	0.20		21	55	4.2	2.85	7.50	.0695160	0	53.3		112	19	56.6		6	20	55.5	.5024270
8	3	59	16.26	0.21		22	25	48.1	2.89	7.63	.0621376	0	57.3		118	13	55.7		6	37	5.3	.5074101
9	4	7	1.90	0.21	N.	22	54	0.1	2.94	7.76	0.0543846	1	1.1		123	59	46.8	N.	6	48	50.6	9.5129181
10	4	14	38.19	0.22		23	19	39.7	3.00	7.91	.0462845	1	4.8		129	36	50.7		6	56	21.1	.5188634
11	4	22	4.19	0.22		23	42	47.8	3.06	8.06	.0378647	1	8.3		135	4	39.5		6	59	51.2	.5251593
12	4	29	19.08	0.23		24	3	26.4	3.12	8.23	.0291525	1	11.6		140	22	56.2		6	59	38.3	.5317235
13	4	36	22.08	0.23		24	21	38.1	3.19	8.40	.0201753	1	14.7		145	31	33.1		6	56	1.9	.5384788
14	4	43	12.48	0.24		24	37	26.7	3.26	8.58	.0109587	1	17.6		150	30	30.8		6	49	22.3	.5453548
15	4	49	49.65	0.24	N.	24	50	56.1	3.33	8.77	0.0015278	1	20.2		155	19	57.1	N.	6	39	59.8	9.5522879
16	4	56	12.97	0.25		25	2	11.1	3.40	8.97	9.9919070	1	22.7		160	0	5.2		6	28	14.6	.5592221
17	5	2	21.88	0.25		25	11	16.4	3.48	9.17	.9821194	1	24.9		164	31	12.8		6	14	25.3	.5661084
18	5	8	15.87	0.26		25	18	17.3	3.56	9.38	.9721879	1	26.8		168	53	40.9		5	58	49.6	.5729049
19	5	13	54.44	0.27	N.	25	23	19.1	3.64	9.60	9.9621337	1	28.5		173	7	52.7	N.	5	41	43.7	9.5795756

MEAN TIME.

Date.	Apparent Light Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.	Meridian Passage.	Heliocentric Longitude.			Heliocentric Latitude.			Log. of Rad. Vect.	
	Noon.				Noon.							Noon.			Noon.				
	h	m	s	s	°	'	"	"	°		h	m	s	°	'	"	°	'	"
May 19	5	13	54.44	0.27	N.25	23	19.1	3.64	9.60	9.9621337	1 28.5	173	7	52.7	N. 5	41	43.7	9.5795756	
20	5	19	17.10	0.28	25	26	27.2	3.73	9.83	.9519786	1 29.9	177	14	13.1	5	23	22.2	.5860904	
21	5	24	23.40	0.29	25	27	46.0	3.82	10.06	.9417435	1 31.1	181	13	7.5	5	3	58.1	.5924242	
22	5	29	12.89	0.30	25	27	23.8	3.91	10.30	.9314494	1 32.1	185	5	2.0	4	43	43.1	.5985563	
23	5	33	45.15	0.30	25	25	23.1	4.01	10.55	.9211175	1 32.7	188	50	22.3	4	22	47.4	.6044701	
24	5	37	59.74	0.31	25	21	50.1	4.10	10.81	.9107695	1 32.9	192	29	33.9	4	1	20.1	.6101520	
25	5	41	56.26	0.31	N.25	16	50.2	4.20	11.07	9.9004281	1 32.8	196	3	1.6	N. 3	39	28.8	9.6155914	
26	5	45	34.30	0.32	25	10	28.2	4.30	11.33	.8901171	1 32.4	199	31	9.4	3	17	20.4	.6207802	
27	5	48	53.46	0.32	25	2	49.4	4.40	11.60	.8798612	1 31.8	202	54	20.4	2	55	0.8	.6257119	
28	5	51	53.40	0.33	24	53	58.6	4.50	11.88	.8696868	1 30.9	205	12	56.9	2	32	35.1	.6303822	
29	5	54	33.76	0.34	24	44	0.6	4.61	12.16	.8596227	1 29.6	209	27	20.1	2	10	7.7	.6347875	
30	5	56	54.23	0.35	24	33	0.3	4.72	12.44	.8497000	1 28.0	212	37	50.5	1	47	42.2	.6389262	
31	5	58	54.56	0.36	N.24	21	2.2	4.83	12.72	9.8399511	1 26.0	215	44	47.3	N. 1	25	22.1	9.6427965	
June 1	6	0	34.56	0.37	24	8	11.1	4.94	13.00	.8304116	1 23.7	218	48	29.3	1	3	10.1	.6463983	
2	6	1	54.07	0.37	23	54	31.6	5.04	13.28	.8211201	1 21.0	221	49	14.1	0	41	8.5	.6497311	
3	6	2	53.08	0.38	23	40	8.4	5.15	13.56	.8121172	1 18.1	224	47	18.7	N. 0	19	19.6	.6527957	
4	6	3	31.65	0.38	23	25	6.3	5.26	13.84	.8034466	1 14.8	227	42	59.3	S. 0	2	14.8	.6555922	
5	6	3	49.98	0.39	23	9	30.1	5.36	14.10	.7951545	1 11.2	230	36	31.4	0	23	33.1	.6581218	
6	6	3	48.42	0.39	N.22	53	24.9	5.45	14.36	9.7872889	1 7.7	233	28	10.2	S. 0	44	33.8	9.6603855	
7	6	3	27.48	0.40	22	36	55.9	5.55	14.61	.7798995	1 2.9	236	18	10.0	1	5	15.7	.6623844	
8	6	2	47.86	0.41	22	20	8.6	5.64	14.84	.7730379	0 58.3	239	6	44.7	1	25	37.4	.6641190	
9	6	1	50.45	0.41	22	3	8.9	5.72	15.05	.7667551	0 53.4	241	54	8.0	1	45	38.0	.6655908	
10	6	0	36.36	0.42	21	46	2.9	5.79	15.25	.7611021	0 48.2	244	40	33.0	2	5	16.4	.6668002	
11	5	59	6.90	0.42	21	28	57.4	5.85	15.43	.7561280	0 42.8	247	26	12.6	2	24	31.4	.6677482	
12	5	57	23.63	0.42	N.21	11	59.2	5.91	15.58	9.7518796	0 37.1	250	11	19.5	S. 2	43	22.1	9.6684354	
13	5	55	28.27	0.43	20	55	15.9	5.96	15.70	.7483989	0 31.3	252	56	6.1	3	1	47.4	.6688623	
14	5	53	22.77	0.43	20	38	55.1	6.00	15.80	.7457244	0 25.3	255	40	44.7	3	19	46.2	.6690290	
15	5	51	9.23	0.43	20	23	5.0	6.02	15.87	.7438867	0 19.2	258	25	27.6	3	37	17.4	.6689358	
16	5	48	49.89	0.43	20	7	53.6	6.03	15.91	.7429103	0 12.9	261	10	26.9	3	54	19.7	.6685825	
17	5	46	27.10	0.43	19	53	29.2	6.03	15.91	.7428110	0 6.6	263	55	54.9	4	10	52.0	.6679690	
18	5	44	3.25	0.43	N.19	40	0.0	6.02	15.88	9.7435966	{ 0 0.8 } 23 54.0	266	42	3.9	S. 4	26	52.7	9.6670947	
19	5	41	40.77	0.42	19	27	33.7	6.00	15.82	.7452650	23 47.8	269	29	6.2	4	42	20.3	.6659591	
20	5	39	22.04	0.42	19	16	17.6	5.97	15.73	.7478061	23 41.6	272	17	14.5	4	57	13.2	.6645615	
21	5	37	9.36	0.41	19	6	18.6	5.92	15.60	.7512008	23 35.6	275	6	41.6	5	11	29.4	.6629012	
22	5	35	4.93	0.41	18	57	42.4	5.86	15.45	.7554221	23 29.8	277	57	40.5	5	25	7.0	.6660973	
23	5	33	10.80	0.40	18	50	33.7	5.80	15.28	.7604364	23 24.2	280	50	24.6	5	38	3.6	.6587886	
24	5	31	28.83	0.40	N.18	44	56.6	5.72	15.08	9.7662038	23 18.8	283	45	7.6	S. 5	50	16.9	9.6563342	
25	5	30	0.71	0.39	18	40	53.6	5.63	14.85	.7726797	23 13.7	286	42	3.8	6	1	44.1	.6536131	
26	5	28	47.93	0.39	18	38	26.2	5.54	14.61	.7798155	23 8.8	289	41	27.9	6	12	22.1	.6506245	
27	5	27	51.78	0.38	18	37	34.9	5.44	14.35	.7875611	23 4.2	292	43	34.8	6	22	7.6	.6473675	
28	5	27	13.33	0.38	18	38	18.8	5.34	14.08	.7958638	22 59.9	295	48	40.5	6	30	57.0	.6438419	
29	5	26	53.52	0.37	18	40	36.0	5.23	13.80	.8046712	22 56.0	298	57	1.3	6	38	46.2	.6400474	
30	5	26	53.06	0.37	N.18	44	23.5	5.12	13.51	9.8139309	22 52.4	302	8	54.0	S. 6	45	30.8	9.6359846	
July 1	5	27	12.55	0.36	18	49	37.6	5.01	13.21	.8235922	22 49.1	305	24	36.4	6	51	6.0	.6316545	
2	5	27	52.45	0.35	18	56	13.6	4.90	12.91	.83336051	22 46.1	308	44	26.8	6	55	26.5	.6270588	
3	5	28	53.09	0.34	19	4	6.0	4.79	12.60	.8439220	22 43.5	312	8	44.4	6	58	26.5	.6222005	
4	5	30	14.72	0.33	N.19	13	8.8	4.67	12.30	9.8544970	22 41.3	315	37	48.8	S. 6	59	59.8	9.6170839	

MEAN TIME.

Date.	Apparent Light Ascension.			Sid. Time of Semid. Pass. Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.			Meridian Passage.	Heliocentric Longitude.			Heliocentric Latitude.			Log. of Rad. Vect.				
	Noon.				Noon.					Noon.				Noon.			Noon.			Noon.				
	h	m	s	s	°	'	"	"	"	°	'	"	h	m	s	°	'	"	°	'	"	°	'	"
July 4	5	30	14.72	0.33	N.19	13	8.8	4.67	12.30	9.8544970	22	41.3	315	37	48.8	S.	6	59	59.8	9.6170839				
5	5	31	57.50	0.32	19	23	15.2	4.55	12.00	.8652868	22	39.4	319	12	0.5	6	59	59.7	.6117145					
6	5	34	1.53	0.31	19	34	18.0	4.44	11.70	.8762498	22	37.9	322	51	40.8	6	58	19.1	.6061003					
7	5	36	26.85	0.30	19	46	9.3	4.33	11.41	.8873467	22	36.7	326	37	11.2	6	54	50.2	.6002507					
8	5	39	13.46	0.30	19	58	41.2	4.22	11.12	.8985403	22	35.9	330	28	53.9	6	49	25.1	.5941787					
9	5	42	21.33	0.29	20	11	44.8	4.11	10.83	.9097946	22	35.4	334	27	11.3	6	41	55.3	.5879001					
10	5	45	50.40	0.28	N.20	25	11.1	4.01	10.55	9.9210752	22	35.3	338	32	26.1	S.	6	32	12.3	9.5814343				
11	5	49	40.60	0.27	20	38	50.8	3.91	10.28	.9323494	22	35.5	342	45	0.5	6	20	7.4	.5748047					
12	5	53	51.81	0.27	20	52	34.0	3.81	10.02	.9435849	22	36.0	347	5	16.3	6	5	32.0	.5680405					
13	5	58	23.90	0.26	21	6	10.5	3.71	9.77	.9547503	22	36.9	351	33	34.3	5	48	18.2	.5611755					
14	6	3	16.70	0.26	21	19	29.6	3.62	9.52	.9658142	22	38.2	355	10	13.7	5	28	18.7	.5542502					
15	6	8	30.00	0.25	21	32	20.4	3.53	9.29	.9767455	22	39.8	0	55	31.5	5	5	27.5	.5473115					
16	6	14	3.53	0.25	N.21	44	31.6	3.44	9.06	9.9875132	22	41.7	5	49	41.6	S.	4	39	40.6	9.5404135				
17	6	19	56.96	0.24	21	55	51.6	3.35	8.84	9.9980857	22	44.0	10	52	54.1	4	10	56.1	.5336172					
18	6	26	9.88	0.24	22	6	8.5	3.27	8.63	0.0084316	22	46.6	16	5	14.0	3	39	15.6	.5269916					
19	6	32	41.74	0.23	22	15	10.3	3.20	8.43	.0185184	22	49.5	21	26	40.5	3	4	44.4	.5206118					
20	6	39	31.93	0.23	22	22	44.9	3.13	8.24	.0283140	22	52.7	26	57	5.5	2	27	32.3	.5145588					
21	6	46	39.66	0.22	22	28	40.6	3.06	8.07	.0377863	22	56.1	32	36	12.6	1	47	54.6	.5089183					
22	6	54	3.99	0.22	N.22	32	45.7	3.00	7.90	0.0469039	22	59.8	38	23	36.4	S.	1	6	11.9	9.5037780				
23	7	1	43.83	0.21	22	34	49.5	2.94	7.74	.0556359	23	3.8	44	18	41.1	S.	0	22	51.1	.4992252				
24	7	9	37.91	0.21	22	34	41.7	2.88	7.59	.0639536	23	8.0	50	20	40.5	N.	0	21	35.7	.4953432				
25	7	17	44.81	0.20	22	32	13.5	2.83	7.46	.0718298	23	12.3	56	28	37.8	1	6	31.1	.4922085					
26	7	26	2.95	0.20	22	27	17.2	2.78	7.33	.0792416	23	16.8	62	41	26.1	1	51	14.0	.4898853					
27	7	34	30.63	0.20	22	19	46.9	2.74	7.22	.0861686	23	21.5	68	57	49.2	2	35	0.8	.4884236					
28	7	43	6.05	0.19	N.22	9	38.5	2.70	7.11	0.0925960	23	26.3	75	16	23.7	N.	3	17	7.8	9.4878562				
29	7	51	47.34	0.19	21	56	49.7	2.66	7.02	.0985131	23	31.1	81	35	41.2	3	56	52.8	.4881958					
30	8	0	32.64	0.19	21	41	20.5	2.63	6.93	.1039145	23	35.9	87	54	10.9	4	33	37.5	.4894344					
31	8	9	20.12	0.19	21	23	12.6	2.60	6.85	.1087996	23	40.8	94	10	22.3	5	6	49.4	.4915450					
Aug. 1	8	18	8.00	0.18	21	2	29.6	2.57	6.78	.11311740	23	45.7	100	22	48.7	5	36	2.6	.4944812					
2	8	26	54.65	0.18	20	39	16.7	2.55	6.72	.1170466	23	50.5	106	30	9.7	6	0	59.4	.4981820					
3	8	35	38.56	0.18	N.20	13	40.6	2.53	6.67	0.1204315	23	55.3	112	31	13.3	N.	6	21	29.7	9.5025734				
4	8	44	18.38	0.18	19	45	49.0	2.51	6.63	.1233449	23	59.9	118	24	57.9	6	37	31.2	.5075741					
5	8	52	52.98	0.18	19	15	50.4	2.50	6.59	.1258069	*	*	124	10	33.2	6	49	8.3	.5130970					
6	9	1	21.36	0.17	18	43	54.0	2.49	6.56	.1278387	0	4.4	129	47	20.2	6	56	31.1	.5190543					
7	9	9	42.72	0.17	18	10	9.1	2.48	6.53	.1294631	0	8.8	135	14	51.5	6	59	54.0	.5253597					
8	9	17	56.45	0.17	17	34	45.4	2.48	6.52	.1307026	0	13.1	140	32	50.2	6	59	34.6	.5319309					
9	9	26	2.08	0.17	N.16	57	52.1	2.47	6.50	0.1315807	0	17.3	145	41	9.0	N.	6	55	52.2	9.5386909				
10	9	33	59.28	0.17	16	19	38.3	2.47	6.49	.1321197	0	21.3	150	39	48.9	6	49	7.2	.5455693					
11	9	41	47.83	0.17	15	40	12.9	2.47	6.49	.1323412	0	25.2	155	28	57.6	6	39	40.0	.5525032					
12	9	49	27.63	0.17	14	59	44.1	2.47	6.49	.1322661	0	28.9	160	8	48.7	6	27	50.6	.5594365					
13	9	56	58.67	0.17	-14	18	19.7	2.47	6.49	.1319135	0	32.5	164	39	39.8	6	13	57.8	.5663205					
14	10	4	21.00	0.17	13	36	7.2	2.47	6.50	.1313013	0	35.9	169	1	52.2	5	58	19.1	.5731135					
15	10	11	34.74	0.17	N.12	53	13.3	2.48	6.52	0.1304459	0	39.2	173	15	49.1	N.	5	41	10.6	9.5797798				
16	10	18	40.05	0.17	12	9	44.5	2.48	6.53	.1293625	0	42.4	177	21	55.2	5	22	46.9	.5862894					
17	10	25	37.13	0.17	11	25	46.5	2.49	6.55	.1280644	0	45.4	181	20	36.3	5	3	21.1	.5926172					
18	10	32	26.17	0.17	10	41	24.8	2.49	6.57	.1265639	0	48.3	185	12	18.2	4	43	4.7	.5987427					
19	10	39	7.43	0.17	N.	9	56	44.4	2.50	6.60	0.1248719	0	51.0	188	57	26.7	N.	4	22	7.9	9.6046494			

MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Semid. pass† Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.		Meridian Passage.	Heliocentric Longitude.		Heliocentric Latitude.		Log. of Rad. Vect.	
	h	m	s		h	m	s			h	m		h	m	h	m		h	m	h	m
Aug. 19	10	39	7.43	0.17	N. 9	56	44.4	2.50	6.60	0.1248719	0 51.0	188	57	26.7	N. 4	22	7.9	9.6046494
20	10	45	41.15	0.17	9	11	49.9	2.51	6.63	.1229978	0 53.6	192	36	27.4	4	0	39.6	.6103240
21	10	52	7.57	0.17	8	26	45.6	2.52	6.66	.1209499	0 56.1	196	9	44.8	3	38	47.7	.6157557
22	10	58	26.94	0.17	7	41	35.5	2.53	6.69	.1187353	0 58.5	199	37	43.0	3	16	38.9	.6209366
23	11	4	39.51	0.17	6	56	23.1	2.55	6.73	.1163605	1 0.8	203	0	45.2	2	54	19.1	.6258603
24	11	10	45.51	0.17	6	11	11.9	2.56	6.77	.1138306	1 3.0	206	19	13.5	2	31	53.2	.6305225
25	11	16	45.17	0.17	N. 5	26	5.0	2.58	6.81	0.1111499	1 5.0	209	33	29.2	N. 2	9	25.8	9.6349196
26	11	22	38.70	0.17	4	41	5.4	2.60	6.85	.1083220	1 7.0	212	43	52.7	1	47	0.5	.6390499
27	11	28	26.32	0.18	3	56	15.8	2.62	6.90	.1053496	1 8.8	215	50	43.3	1	24	40.5	.6429119
28	11	34	8.21	0.18	3	11	38.9	2.64	6.95	.1022348	1 10.5	218	54	19.5	1	2	28.8	.6465053
29	11	39	44.54	0.18	2	27	17.2	2.66	7.01	.0989790	1 12.2	221	54	59.1	0	40	27.6	.6498297
30	11	45	15.49	0.18	1	43	13.0	2.68	7.06	.0955830	1 13.8	224	52	59.0	N. 0	18	39.2	.6528859
31	11	50	41.19	0.18	N. 0	59	28.5	2.71	7.12	0.0920470	1 15.3	227	48	35.4	S. 0	2	54.8	9.6556743
Sept. 1	11	56	1.77	0.18	N. 0	16	6.0	2.73	7.18	.0883704	1 16.7	230	42	3.8	0	24	12.6	.6581957
2	12	1	17.33	0.18	S. 0	26	52.5	2.75	7.24	.0845525	1 18.0	233	33	39.3	0	45	12.7	.6604512
3	12	6	27.96	0.18	1	9	24.7	2.77	7.31	.0805917	1 19.2	236	23	36.2	1	5	54.0	.6624417
4	12	11	33.73	0.19	1	51	28.7	2.80	7.38	.0764864	1 20.3	239	12	8.5	1	26	15.1	.6641682
5	12	16	34.68	0.19	2	33	2.3	2.83	7.45	.0722339	1 21.4	241	59	29.8	1	46	15.1	.6656317
6	12	21	30.83	0.19	S. 3	14	3.5	2.86	7.53	0.0678317	1 22.4	244	45	53.3	S. 2	5	52.7	9.6668332
7	12	26	22.17	0.19	3	54	30.2	2.89	7.61	.0632763	1 23.3	247	31	31.7	2	25	7.0	.6677731
8	12	31	8.68	0.20	4	34	20.2	2.92	7.69	.0585644	1 24.1	250	16	37.7	2	43	56.9	.6684522
9	12	35	50.28	0.20	5	13	31.3	2.95	7.78	.0536923	1 24.8	253	1	23.9	3	2	21.4	.6688710
10	12	40	26.88	0.20	5	52	1.1	2.99	7.87	.0486557	1 25.5	255	46	2.5	3	20	19.3	.6690297
11	12	44	58.36	0.20	6	29	47.3	3.02	7.96	.0434500	1 26.1	258	30	45.7	3	37	49.7	.6689283
12	12	49	24.55	0.21	S. 7	6	47.2	3.06	8.06	0.0380706	1 26.6	261	15	45.7	S. 3	54	51.1	9.6685670
13	12	53	45.25	0.21	7	42	58.2	3.10	8.16	.0325128	1 27.0	264	1	14.8	4	11	22.4	.6679454
14	12	58	0.20	0.21	8	18	17.4	3.14	8.27	.0267717	1 27.3	266	47	25.3	4	27	22.1	.6670632
15	13	2	9.12	0.21	8	52	41.6	3.18	8.39	.0208418	1 27.5	269	34	29.5	4	42	48.6	.6659194
16	13	6	11.65	0.22	9	26	7.6	3.23	8.51	.0147185	1 27.6	272	22	40.1	4	57	40.4	.6645137
17	13	10	7.40	0.22	9	58	31.6	3.27	8.63	.0083968	1 27.6	275	12	9.8	5	11	55.4	.6628452
18	13	13	55.91	0.22	S. 10	29	49.8	3.32	8.76	0.0018723	1 27.4	278	3	11.7	S. 5	25	31.8	9.6609130
19	13	17	36.63	0.23	10	59	57.8	3.38	8.90	9.9951406	1 27.1	280	55	59.3	5	38	27.1	.6587161
20	13	21	8.97	0.23	11	28	51.0	3.44	9.04	.9881985	1 26.7	283	50	46.3	5	50	39.0	.6562534
21	13	24	32.23	0.23	11	56	23.9	3.49	9.19	.9810434	1 26.1	286	47	46.9	6	2	4.7	.6535241
22	13	27	45.65	0.24	12	22	30.9	3.55	9.35	.9736743	1 25.4	289	47	15.8	6	12	41.1	.6505270
23	13	30	48.37	0.24	12	47	5.6	3.61	9.52	.9660914	1 24.5	292	49	28.1	6	22	25.0	.6472618
24	13	33	39.43	0.25	S. 13	10	1.2	3.68	9.69	9.9582975	1 23.4	295	54	39.7	S. 6	31	12.6	9.6437279
25	13	36	17.76	0.25	13	31	9.6	3.75	9.87	.9502981	1 22.1	299	3	6.7	6	38	59.8	.6399251
26	13	38	42.23	0.26	13	50	22.2	3.82	10.05	.9421016	1 20.6	302	15	6.3	6	45	42.4	.6358539
27	13	40	51.56	0.27	14	7	29.7	3.89	10.25	.9337212	1 18.8	305	30	56.2	6	51	15.3	.6315155
28	13	42	44.39	0.28	14	22	21.3	3.97	10.45	.9251753	1 16.7	308	50	54.7	6	55	33.2	6269115
29	13	44	19.26	0.28	14	34	45.6	4.05	10.66	.9164885	1 14.3	312	15	20.8	6	58	30.7	.6220452
30	13	45	34.65	0.29	S. 14	44	30.0	4.13	10.88	9.9076930	1 11.6	315	44	34.6	S. 7	0	1.3	9.6169207
Oct. 1	13	46	28.98	0.29	14	51	20.8	4.22	11.11	.8988308	1 8.6	319	18	56.3	6	59	58.2	6115438
2	13	47	0.67	0.30	14	55	3.5	4.31	11.34	.8899543	1 5.2	322	58	47.1	6	58	14.3	.6059220
3	13	47	8.15	0.30	14	55	22.7	4.40	11.57	.8811288	1 1.4	324	44	28.7	6	54	41.9	.6000655
4	13	46	49.99	0.31	S. 14	52	2.7	4.48	11.80	9.8724343	0 57.1	330	36	23.4	S. 6	49	13.0	9.5939868

MERCURY, 1922.

MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.			Meridian Passage.	Heliocentric Longitude.			Heliocentric Latitude.			Log. of Rad. Vect.
	h	m	s		°	'	"			°	'	"		h	m	s	°	'	"	
Oct. 4	13 46	49.99	0.31	S. 14 52	2.7	4.48	11.80	9.8724343	0 57.1	330 30	23.4	S. 6 49	13.0	9.5939868						
5	13 46	4.95	0.31	14 44	48.0	4.57	12.04	.8639667	0 52.4	334 34	53.5	6 41	39.2	.5877021						
6	13 44	52.09	0.32	14 33	23.9	4.65	12.26	.8558403	0 47.2	338 40	21.6	6 31	51.9	.5812309						
7	13 43	10.94	0.32	14 17	37.8	4.73	12.48	.8481863	0 41.6	342 53	10.0	6 19	42.4	.5745969						
8	13 41	1.62	0.33	13 57	20.6	4.82	12.69	.8411547	0 35.5	347 13	40.5	6 5	2.3	.5678291						
9	13 38	25.02	0.33	13 32	28.3	4.89	12.87	.8349095	0 29.0	351 42	13.8	5 47	43.1	.5609619						
10	13 35	22.94	0.34	S. 13 3	3.9	4.94	13.03	9.8296274	0 22.0	356 19	9.1	S. 5 27	38.6	9.5540356						
11	13 31	58.20	0.34	12 29	19.7	4.99	13.15	.8254881	0 14.7	1 44	2.2	5 44	2.0	.5470976						
12	13 28	14.76	0.34	11 51	38.2	5.03	13.24	.8226681	{ 0 7.1 23 59.3 }	5 59	10.0	4 38	49.6	.5402020						
13	13 24	17.64	0.34	11 10	34.2	5.04	13.28	.8213269	23 51.3	11 2	39.3	4 9	59.6	.5334102						
14	13 20	12.85	0.34	10 26	54.5	5.04	13.27	.8215962	23 43.3	16 15	16.2	3 38	13.7	.5267912						
15	13 16	7.15	0.34	9 41	36.7	5.01	13.21	.8235671	23 35.4	21 36	59.4	3 3	37.3	.5204205						
16	13 12	7.75	0.34	S. 8 55	47.2	4.97	13.10	9.8272800	23 27.7	27 7	40.8	S. 2 26	20.5	9.5143793						
17	13 8	21.88	0.33	8 10	36.7	4.91	12.93	.8327185	23 20.4	32 47	3.6	1 46	38.5	.5087533						
18	13 4	56.45	0.33	7 27	17.0	4.83	12.73	.8398089	23 13.5	38 34	42.0	1 4	52.4	.5036303						
19	13 1	57.62	0.32	6 46	55.4	4.73	12.48	.8484226	23 7.1	44 30	0.0	S. 0 21	29.1	.4990973						
20	12 59	30.49	0.31	6 10	31.2	4.63	12.19	.8583863	23 1.3	50 32	11.2	N. 0 22	59.2	.4952378						
21	12 57	38.97	0.30	5 38	52.7	4.51	11.88	.8694949	22 56.1	56 40	18.3	1 7	54.8	.4921274						
22	12 56	25.61	0.29	S. 5 12	35.4	4.38	11.56	9.8815239	22 51.6	62 53	14.0	N. 1 52	36.6	9.4898305						
23	12 55	51.69	0.29	4 52	1.5	4.26	11.23	.8912437	22 47.7	69 9	42.1	2 36	20.9	.4883965						
24	12 55	57.32	0.28	4 37	20.8	4.14	10.89	.9074306	22 44.5	75 28	19.0	3 18	24.1	.4878573						
25	12 56	41.59	0.28	4 28	32.0	4.01	10.56	.9208768	22 41.9	81 47	36.0	3 58	4.0	.4882250						
26	12 58	2.80	0.27	4 25	24.9	3.88	10.23	.9343969	22 39.8	88 6	2.3	4 34	42.6	.4894913						
27	12 59	58.67	0.26	4 27	41.9	3.76	9.92	.9478303	22 38.3	94 22	7.6	5 7	47.3	.4916280						
28	13 2	26.51	0.25	S. 4 35	0.7	3.65	9.63	9.9610434	22 37.3	100 34	25.5	N. 5 36	52.8	9.4945888						
29	13 5	23.47	0.24	4 46	55.8	3.55	9.35	.9739291	22 36.7	106 41	35.4	6 1	41.4	.4983118						
30	13 8	46.58	0.23	5 2	59.7	3.45	9.08	.9864053	22 36.5	112 42	26.0	6 22	3.4	.5027214						
Nov. 1	13 12	32.97	0.22	5 22	44.7	3.35	8.83	9.9984113	22 36.7	118 35	55.8	6 37	56.7	.5077412						
2	13 16	39.86	0.22	5 45	43.6	3.26	8.60	0.0099060	22 37.2	124 21	15.0	6 49	25.8	.5132785						
3	13 21	4.70	0.21	6 11	30.1	3.18	8.39	.0208639	22 37.9	129 57	44.8	6 56	40.9	.5192477						
4	13 25	45.16	0.21	S. 6 39	39.8	3.11	8.19	0.0312733	22 38.9	135 24	58.4	N. 6 59	56.7	9.5255624						
5	13 30	39.12	0.20	7 9	49.9	3.04	8.00	.0411320	22 40.0	140 42	39.0	6 59	30.7	.5321403						
6	13 35	44.73	0.20	7 41	39.7	2.97	7.83	.0504464	22 41.3	145 50	39.7	6 55	42.3	.5389047						
7	13 41	0.38	0.20	8 14	50.5	2.91	7.67	.0592284	22 42.7	150 49	1.6	6 48	52.0	.5457855						
8	13 46	24.63	0.19	8 49	5.4	2.86	7.53	.0674943	22 44.3	155 37	52.7	6 39	20.2	.5527197						
9	13 51	56.29	0.19	9 24	9.7	2.81	7.40	.0752631	22 46.0	160 17	26.7	6 27	26.7	.5596520						
10	13 57	34.33	0.19	S. 9 59	49.9	2.76	7.28	0.0825557	22 47.8	164 48	1.5	N. 6 13	30.4	9.5665336						
11	14 3	17.88	0.18	10 35	54.4	2.72	7.17	.0893935	22 49.6	169 9	58.1	5 57	48.7	.5733230						
12	14 9	6.21	0.18	11 12	12.9	2.68	7.06	.0957986	22 51.5	173 23	39.9	5 40	37.7	.5799847						
13	14 14	58.71	0.18	11 48	36.1	2.64	6.96	.1017923	22 53.5	177 29	31.9	5 22	12.0	.5864887						
14	14 20	54.88	0.18	12 24	56.2	2.61	6.87	.1073957	22 55.6	181 27	59.6	5 2	44.4	.5928103						
15	14 26	54.30	0.18	13 1	6.1	2.57	6.79	.1126289	22 57.7	185 19	29.0	4 42	26.6	.5989291						
16	14 32	56.64	0.17	S. 13 36	59.6	2.54	6.71	0.1175112	22 59.8	189 4	25.8	N. 4 21	28.8	9.6048288						
17	14 39	1.61	0.17	14 12	31.1	2.51	6.64	.1220602	23 2.0	192 43	15.4	3 59	57.7	.6104959						
18	14 45	9.01	0.17	14 47	35.9	2.49	6.58	.1262934	23 4.2	196 16	22.7	3 38	7.2	.6159199						
19	14 51	18.66	0.17	15 22	9.6	2.47	6.52	.1302262	23 6.5	199 44	11.5	3 15	57.9	.6210925						
20	14 57	30.43	0.17	S. 15 56	8.3	2.46	6.47	0.1338735	23 8.8	203 7	4.9	N. 2 53	37.8	9.6260081						

MEAN TIME.

Date.	Apparent Right Ascension.			Sid. Time of Semid. Pass- Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Log. of True Dist. from the Earth.		Meridian Passage.	Heliocentric Longitude.		Heliocentric Latitude.		Log. of Rad. Vect.
	Noon.				Noon.					Noon.			Noon.		Noon.		
	h	m	s	s	°	'	"	"		h	m	h	m	°	'	"	
Nov. 19	14 57	30	43	0.17	S. 15 56	8.3	2.46	6.47	0.1338735	23 8.8	203 7 4.9	N. 2 53 37.8	9.6260081				
20	15 3	44	20	0.17	16 29 28.5	2.44	6.42	0.1372487	23 11.1	206 25 25.2	2 31 1.9	9.6306620					
21	15 9	59	92	0.17	17 2 7.3	2.42	6.37	0.1403645	23 13.5	209 39 33.5	2 8 44.5	9.6350509					
22	15 16	17	52	0.17	17 34 1.6	2.40	6.33	0.1432322	23 15.9	212 49 50.1	1 46 19.3	9.6391728					
23	15 22	36	96	0.17	18 5 8.9	2.39	6.29	0.1458625	23 18.3	215 56 34.4	1 23 59.5	9.6430265					
24	15 28	58	24	0.17	18 35 27.0	2.37	6.25	0.1482650	23 20.7	219 0 5.0	1 1 48.1	9.6466115					
25	15 35	21	32	0.17	S. 19 4 53.5	2.36	6.22	0.1504183	23 23.2	222 0 39.5	N. 0 39 47.2	9.6499278					
26	15 41	46	22	0.17	19 33 26.3	2.35	6.19	0.1524204	23 25.7	224 58 34.8	N. 0 17 59.2	9.6529755					
27	15 48	12	92	0.17	20 1 3.7	2.34	6.17	0.1541881	23 28.2	227 54 7.0	S. 0 3 34.3	9.6557555					
28	15 54	41	46	0.17	20 27 43.8	2.33	6.15	0.1557578	23 30.8	230 47 31.8	0 24 51.5	9.6582687					
29	16 1	11	82	0.17	20 53 24.8	2.33	6.13	0.1571353	23 33.4	233 39 4.1	0 45 51.1	9.6605160					
30	16 7	44	03	0.17	21 18 5.1	2.32	6.11	0.1583254	23 36.0	236 28 58.3	1 6 31.8	9.6624983					
Dec. 1	16 14	18	08	0.17	S. 21 41 43.1	2.32	6.10	0.1593324	23 38.7	239 17 28.3	S. 1 26 52.3	9.6642168					
2	16 20	54	00	0.17	22 4 17.1	2.32	6.00	0.1601596	23 41.4	242 4 47.7	1 46 51.6	9.6656723					
3	16 27	31	77	0.17	22 25 45.8	2.31	6.08	0.1608104	23 44.1	244 51 9.5	2 6 28.5	9.6668657					
4	16 34	11	40	0.17	22 46 7.6	2.31	6.07	0.1612872	23 46.8	247 36 46.8	2 52 42.1	9.6677975					
5	16 40	52	89	0.17	23 5 20.9	2.31	6.07	0.1615917	23 49.6	250 21 52.2	2 44 31.2	9.6684687					
6	16 47	36	22	0.17	23 23 24.5	2.30	6.06	0.1617252	23 52.5	253 6 38.0	3 2 54.9	9.6688794					
7	16 54	21	37	0.17	S. 23 40 16.8	2.30	6.06	0.1616888	23 55.3	255 51 16.5	S. 3 20 52.1	9.6690301					
8	17 1	8	31	0.17	23 55 56.4	2.31	6.07	0.1614827	23 58.2	258 36 0.1	3 38 21.5	9.6689209					
9	17 7	57	02	0.17	24 10 21.9	2.31	6.07	0.1611062	*	261 21 0.9	3 55 22.1	9.6685517					
10	17 14	47	44	0.17	24 23 32.0	2.31	6.08	0.1605588	0 1.1	264 6 31.2	4 11 52.4	9.6679220					
11	17 21	39	52	0.17	24 35 25.3	2.32	6.09	0.1598388	0 4.0	266 52 43.1	4 27 51.1	9.6670318					
12	17 28	33	18	0.17	24 46 0.2	2.32	6.10	0.1589447	0 6.9	269 39 49.2	4 43 16.6	9.6658801					
13	17 35	28	36	0.17	S. 24 55 15.7	2.33	6.12	0.1578734	0 9.0	272 28 2.1	S. 4 58 7.3	9.6644665					
14	17 42	24	96	0.17	25 3 10.2	2.33	6.14	0.1566221	0 12.9	275 17 34.4	5 12 21.2	9.6627901					
15	17 49	22	87	0.17	25 9 42.4	2.34	6.16	0.1551872	0 16.0	278 8 39.4	5 25 56.3	9.6608500					
16	17 56	21	97	0.17	25 14 51.1	2.34	6.18	0.1535643	0 19.0	281 1 30.5	5 38 50.3	9.6586449					
17	18 3	22	13	0.17	25 18 35.1	2.35	6.20	0.1517485	0 22.1	283 56 21.4	5 51 0.9	9.6561741					
18	18 10	23	18	0.17	25 20 53.0	2.36	6.23	0.1497342	0 25.2	286 53 26.3	6 2 25.1	9.6534367					
19	18 17	24	95	0.17	S. 25 21 43.8	2.37	6.26	0.1475152	0 28.3	289 53 0.0	S. 6 12 59.9	9.6504318					
20	18 24	27	25	0.18	25 21 6.2	2.39	6.30	0.1450845	0 31.4	292 55 17.5	6 22 42.1	9.6471583					
21	18 31	29	87	0.18	25 18 59.4	2.41	6.34	0.1424345	0 34.5	296 0 34.8	6 31 27.9	9.6436162					
22	18 38	32	57	0.18	25 15 22.2	2.42	6.38	0.1395563	0 37.6	299 9 8.1	6 39 13.2	9.6398053					
23	18 45	35	08	0.18	25 10 13.8	2.44	6.43	0.1364408	0 40.7	302 21 14.4	6 45 53.7	9.6357261					
24	18 52	37	11	0.18	25 3 33.6	2.46	6.48	0.1330774	0 43.8	305 37 11.6	6 51 24.4	9.6313795					
25	18 59	38	35	0.18	S. 24 55 20.8	2.48	6.53	0.1294550	0 46.9	308 57 18.0	S. 6 55 40.0	9.6267676					
26	19 6	38	42	0.18	24 45 35.1	2.50	6.59	0.1255611	0 50.0	312 21 52.6	6 58 34.9	9.6218935					
27	19 13	36	92	0.18	24 34 16.3	2.52	6.65	0.1213826	0 53.0	315 51 15.3	7 0 2.6	9.6167612					
28	19 20	33	40	0.18	24 21 24.3	2.55	6.72	0.1169046	0 56.0	319 25 46.7	6 59 56.5	9.6113768					
29	19 27	27	37	0.19	24 6 59.5	2.58	6.80	0.1121119	0 58.9	323 5 47.8	6 58 9.4	9.6057478					
30	19 34	18	25	0.19	23 51 2.5	2.61	6.88	0.1069875	1 1.8	326 51 40.4	6 54 33.6	9.5998845					
31	19 41	5	40	0.19	S. 23 33 34.3	2.64	6.96	0.1015138	1 4.7	330 43 46.8	S. 6 49 1.0	9.5937994					
32	19 47	48	12	0.19	S. 23 14 36.5	2.68	7.06	0.0956717	1 7.5	331 42 20.2	S. 6 41 23.3	9.5875088					

VENUS, 1922.

	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.		
	h m s	° ' "	° ' "	0.2251080	h m	h m s	° ' "	° ' "	0.2340891	h m		
Jan.	1	18 4 27.08	S. 23 30 17.1	0.2251080	23 24.5	Feb. 16	22 5 44.31	S. 13 12 9.6	0.2340891	0 23.0		
	2	18 9 56.41	23 31 46.5	.2255331	23 26.1		17	22 10 33.83	12 46 17.5	.2340455	0 23.9	
	3	18 15 25.82	23 32 32.2	.2259475	23 27.6		18	22 15 22.28	12 20 4.9	.2339913	0 24.7	
	4	18 20 55.25	23 32 34.2	.2263512	23 29.2		19	22 20 9.69	11 53 32.4	.2339266	0 25.6	
	5	18 26 24.63	23 31 52.4	.2267443	23 30.7		20	22 24 56.08	11 26 40.8	.2338512	0 26.4	
	6	18 31 53.91	23 30 26.9	.2271269	23 32.3		21	22 29 41.48	10 59 30.9	.2337650	0 27.2	
	7	18 37 23.01	23 28 17.6	.2274992	23 33.8		22	22 34 25.92	10 32 3.5	.2336678	0 28.0	
	8	18 42 51.88	23 25 24.6	.2278612	23 35.3		23	22 39 9.42	10 4 19.3	.2335596	0 28.8	
	9	18 48 20.46	23 21 48.1	.2282129	23 36.9		24	22 43 52.02	9 36 19.2	.2334403	0 29.6	
	10	18 53 48.69	23 17 28.2	.2285545	23 38.4		25	22 48 33.75	9 8 3.8	.2333098	0 30.3	
	11	18 59 16.51	23 12 25.1	.2288861	23 39.9		26	22 53 14.63	8 39 33.9	.2331680	0 31.1	
	12	19 4 43.87	23 6 39.0	.2292078	23 41.4		27	22 57 54.71	8 10 50.4	.2330148	0 31.8	
	13	19 10 10.65	23 0 10.1	.2295196	23 42.9		28	23 2 34.01	7 41 53.9	.2328503	0 32.5	
	14	19 15 36.92	22 52 58.7	.2298216	23 44.4		Mar. 1	23 7 12.58	7 12 45.3	.2326742	0 33.2	
	15	19 21 2.54	22 45 5.0	.2301138	23 45.9			2	23 11 50.44	6 43 25.4	.2324867	0 33.9
	16	19 26 27.48	22 36 29.5	.2303961	23 47.4			3	23 16 27.63	6 13 54.8	.2322876	0 34.6
17	19 31 51.70	22 27 12.5	.2306685	23 48.8	4	23 21 4.19		5 44 14.4	.2320769	0 35.2		
18	19 37 15.15	22 17 14.3	.2309310	23 50.2	5	23 25 40.16		5 14 24.9	.2318546	0 35.9		
19	19 42 37.78	22 6 35.4	.2311834	23 51.7	6	23 30 15.57		4 44 27.0	.2316206	0 36.5		
20	19 47 59.55	21 55 16.2	.2314257	23 53.1	7	23 34 50.47		4 14 21.5	.2313749	0 37.2		
21	19 53 20.41	21 43 17.2	.2316578	23 54.5	8	23 39 24.90		3 44 9.2	.2311175	0 37.8		
22	19 58 40.33	21 30 38.8	.2318797	23 55.8	9	23 43 58.90		3 13 50.7	.2308484	0 38.4		
23	20 3 59.27	21 17 21.6	.2320914	23 57.2	10	23 48 32.51		2 43 26.9	.2305677	0 39.1		
24	20 9 17.19	21 3 26.2	.2322927	23 58.5	11	23 53 5.76		2 12 58.4	.2302754	0 39.7		
25	20 14 34.05	20 48 53.2	.2324837	23 59.8	12	23 57 38.71		1 42 25.9	.2299714	0 40.3		
26	20 19 49.83	20 33 43.0	.2326643	* *	13	0 2 11.40		1 11 50.3	.2296556	0 40.9		
27	20 25 4.50	20 17 56.4	.2328346	0 1.2	14	0 6 43.87		0 41 12.2	.2293280	0 41.5		
28	20 30 18.03	20 1 33.9	.2329945	0 2.4	15	0 11 16.18		S. 0 10 32.3	.2289886	0 42.1		
29	20 35 30.40	19 44 36.2	.2331440	0 3.7	16	0 15 48.36		N. 0 20 8.5	.2286372	0 42.7		
30	20 40 41.59	19 27 3.9	.2332832	0 5.0	17	0 20 20.46	0 50 49.7	.2282736	0 43.3			
31	20 45 51.57	19 8 57.6	.2334120	0 6.2	18	0 24 52.52	1 21 30.5	.2278977	0 43.9			
Feb.	1	20 51 0.34	18 50 18.2	.2335304	0 7.4	19	0 29 24.60	1 52 10.2	.2275095	0 44.4		
	2	20 56 7.87	18 31 6.2	.2336385	0 8.6	20	0 33 56.73	2 22 48.0	.2271086	0 45.0		
	3	21 1 14.18	18 11 22.4	.2337363	0 9.7	21	0 38 28.95	2 53 23.2	.2266950	0 45.6		
	4	21 6 19.24	17 51 7.5	.2338239	0 10.9	22	0 43 1.31	3 23 55.1	.2262685	0 46.2		
	5	21 11 23.05	17 30 22.2	.2339013	0 12.0	23	0 47 33.85	3 54 22.9	.2258289	0 46.8		
	6	21 16 25.61	17 9 7.2	.2339686	0 13.1	24	0 52 6.62	4 24 45.9	.2253760	0 47.4		
	7	21 21 26.92	16 47 23.3	.2340257	0 14.2	25	0 56 39.64	4 55 3.4	.2249097	0 48.0		
	8	21 26 27.00	16 25 11.3	.2340728	0 15.2	26	1 1 12.97	5 25 14.6	.2244299	0 48.7		
	9	21 31 25.84	16 2 31.8	.2341099	0 16.3	27	1 5 46.63	5 55 18.8	.2239365	0 49.3		
	10	21 36 23.46	15 39 25.5	.2341370	0 17.3	28	1 10 20.68	6 25 15.2	.2234293	0 49.9		
	11	21 41 19.87	15 15 53.3	.2341542	0 18.3	29	1 14 55.14	6 55 3.1	.2229083	0 50.5		
	12	21 46 15.08	14 51 56.0	.2341613	0 19.3	30	1 19 30.06	7 24 41.7	.2223732	0 51.2		
	13	21 51 9.11	14 27 34.1	.2341585	0 20.2	31	1 24 5.48	7 54 10.4	.2218239	0 51.8		
	14	21 56 1.97	14 2 48.6	.2341455	0 21.2	Apr. 1	1 28 41.42	8 23 28.3	.2212604	0 52.5		
	15	22 0 53.70	13 37 40.2	.2341124	0 22.1		2	1 33 17.93	8 52 34.7	.2206825	0 53.1	
	16	22 5 44.31	S. 13 12 9.6	0.2340891	0 23.0		3	1 37 55.03	N. 9 21 28.8	0.2200903	0 53.8	

		H. P.	S. D.			H. P.	S. D.			H. P.	S. D.				
Jan.	1	5.24	5.01	Jan.	25	5.15	4.92	Feb.	18	5.13	4.90				
	5	5.22	4.99		29	5.14	4.91		22	5.14	4.91	18	5.21	4.98	
	9	5.20	4.97		Feb.	2	5.14		4.91	26	5.14	4.91	22	5.23	5.00
	13	5.19	4.96		6	5.13	4.90		Mar.	2	5.15	4.92	26	5.25	5.02
	17	5.17	4.94		10	5.13	4.90			6	5.16	4.93	30	5.27	5.04
21	5.16	4.93	14	5.13	4.90	10	5.17	4.94	Apr.	3	5.30	5.07			

VENUS, 1922.

155

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "	0.2200903	h m		h m s	° ' "	0.1756383	h m
Apr. 3	1 37 55.03	N. 9 21 28.8	0.2200903	0 53.8	May 19	5 26 56.90	N. 24 20 5.8	0.1756383	1 41.5
4	1 42 32.77	9 50 10.0	.2194835	0 54.5	20	5 32 15.55	24 26 8.5	.1742549	1 42.9
5	1 47 11.18	10 18 37.4	.2188623	0 55.2	21	5 37 34.53	24 31 28.9	.1728519	1 44.3
6	1 51 50.28	10 46 50.3	.2182265	0 55.9	22	5 42 53.78	24 36 6.8	.1714291	1 45.7
7	1 56 30.12	11 14 48.0	.2175762	0 56.6	23	5 48 13.24	24 40 1.9	.1699863	1 47.1
8	2 1 10.72	11 42 29.7	.2169113	0 57.4	24	5 53 32.85	24 43 14.2	.1685233	1 48.5
9	2 5 52.12	12 9 54.7	.2162317	0 58.1	25	5 58 52.54	24 45 43.5	.1670400	1 49.8
10	2 10 34.35	12 37 2.2	.2155375	0 58.9	26	6 4 12.25	24 47 29.8	.1655362	1 51.2
11	2 15 17.44	13 3 51.5	.2148286	0 59.7	27	6 9 31.91	24 48 32.9	.1640117	1 52.6
12	2 20 1.42	13 30 21.8	.2141049	1 0.4	28	6 14 51.45	24 48 52.9	.1624663	1 54.0
13	2 24 46.31	13 56 32.5	.2133664	1 1.2	29	6 20 10.82	24 48 29.7	.1609000	1 55.4
14	2 29 32.15	14 22 22.7	.2126128	1 2.1	30	6 25 29.94	24 47 23.4	.1593125	1 56.8
15	2 34 18.97	14 47 51.6	.2118441	1 2.9	31	6 30 48.74	24 45 34.1	.1577038	1 58.1
16	2 39 6.78	15 12 58.7	.2110601	1 3.8	June 1	6 36 7.16	24 43 1.8	.1560738	1 59.5
17	2 43 55.60	15 37 43.1	.2102606	1 4.6	2	6 41 25.14	24 39 46.7	.1544224	2 0.9
18	2 48 45.46	16 2 4.0	.2094455	1 5.5	3	6 46 42.60	24 35 49.0	.1527497	2 2.2
19	2 53 36.37	16 26 0.8	.2086146	1 6.4	4	6 51 59.49	24 31 9.0	.1510556	2 3.5
20	2 58 28.35	16 49 39.0	.2077676	1 7.4	5	6 57 15.74	24 25 46.7	.1493400	2 4.9
21	3 3 21.40	17 12 37.7	.2069045	1 8.3	6	7 2 31.30	24 19 42.4	.1476029	2 6.2
22	3 8 15.55	17 35 19.0	.2060250	1 9.3	7	7 7 46.11	24 12 56.4	.1458443	2 7.5
23	3 13 10.80	17 57 31.8	.2051290	1 10.3	8	7 13 0.11	24 5 29.1	.1440643	2 8.8
24	3 18 7.15	18 19 16.8	.2042163	1 11.3	9	7 18 13.25	23 57 20.8	.1422626	2 10.1
25	3 23 4.60	18 40 33.2	.2032867	1 12.3	10	7 23 25.48	23 48 31.9	.1404394	2 11.3
26	3 28 3.16	19 1 20.4	.2023401	1 13.3	11	7 28 36.76	23 39 2.7	.1385945	2 12.6
27	3 33 2.82	19 21 37.5	.2013764	1 14.3	12	7 33 47.03	23 28 53.6	.1367279	2 13.8
28	3 38 3.58	19 41 24.0	.2003952	1 15.4	13	7 38 56.26	23 18 5.1	.1348393	2 15.0
29	3 43 5.43	20 0 39.1	.1993966	1 16.5	14	7 44 4.41	23 6 37.7	.1329288	2 16.2
30	3 48 8.35	20 19 22.1	.1983803	1 17.6	15	7 49 11.43	22 54 31.8	.1309960	2 17.4
May 1	3 53 12.33	20 37 32.4	.1973464	1 18.8	16	7 54 17.29	22 41 48.0	.1290409	2 18.5
2	3 58 17.36	20 55 9.3	.1962947	1 19.9	17	7 59 21.95	22 28 26.7	.1270632	2 19.6
3	4 3 23.42	21 12 12.1	.1952251	1 21.0	18	8 4 25.38	22 14 28.6	.1250628	2 20.8
4	4 8 30.49	21 28 40.2	.1941375	1 22.2	19	8 9 27.54	21 59 54.1	.1230396	2 21.9
5	4 13 38.54	21 44 33.0	.1930320	1 23.4	20	8 14 28.41	21 44 43.8	.1209933	2 22.9
6	4 18 47.55	21 59 50.0	.1919084	1 24.6	21	8 19 27.97	21 28 58.4	.1189237	2 24.0
7	4 23 57.50	22 14 30.5	.1907668	1 25.9	22	8 24 26.18	21 12 38.5	.1168307	2 25.0
8	4 29 8.35	22 28 33.9	.1896072	1 27.1	23	8 29 23.03	20 55 44.6	.1147139	2 26.0
9	4 34 20.07	22 41 59.7	.1884294	1 28.3	24	8 34 18.49	20 38 17.5	.1125732	2 27.0
10	4 39 32.63	22 54 47.4	.1872335	1 29.6	25	8 39 12.55	20 20 17.7	.1104084	2 27.9
11	4 44 46.00	23 6 56.5	.1860193	1 30.9	26	8 44 5.19	20 1 46.0	.1082193	2 28.9
12	4 50 0.13	23 18 26.5	.1847869	1 32.2	27	8 48 56.38	19 42 43.0	.1060056	2 29.8
13	4 55 14.98	23 29 16.9	.1835362	1 33.5	28	8 53 46.12	19 23 9.5	.1037671	2 30.7
14	5 0 30.52	23 39 27.3	.1822670	1 34.8	29	8 58 34.40	19 3 6.0	.1015039	2 31.5
15	5 5 46.70	23 48 57.3	.1809791	1 36.1	30	9 3 21.21	18 42 33.4	.0992156	2 32.4
16	5 11 3.48	23 57 46.5	.1796725	1 37.5	July 1	9 8 6.54	18 21 32.2	.0969022	2 33.2
17	5 16 20.81	24 5 54.5	.1783470	1 38.8	2	9 12 50.38	18 0 3.2	.0945637	2 34.0
18	5 21 38.63	24 13 21.1	.1770023	1 40.2	3	9 17 32.74	17 38 7.2	.0921999	2 34.7
19	5 26 56.90	N. 24 20 5.8	0.1756383	1 41.5	4	9 22 13.62	N. 17 15 44.8	0.0898109	2 35.5

		H. P.	S. D.			H. P.	S. D.			H. P.	S. D.
Apr. 3	5.30	5.07	Apr. 27	5.53	5.29	May 21	5.91	5.65	June 14	6.48	6.19
7	5.33	5.09	May 1	5.59	5.34	25	5.99	5.72	18	6.60	6.31
11	5.37	5.13	5	5.64	5.39	29	6.08	5.81	22	6.72	6.42
15	5.40	5.16	9	5.70	5.45	June 2	6.17	5.90	26	6.86	6.56
19	5.44	5.20	13	5.77	5.51	6	6.26	5.98	30	7.00	6.69
23	5.49	5.25	17	5.84	5.58	10	6.37	6.09	July 4	7.15	6.83

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
July 4	9 22 13.62	N. 17 15 44.8	0.0898109	2 35.5	Aug. 19	12 36 9.82	S. 4 27 57.2	9.9494133	2 47.9
5	9 26 53.02	16 52 56.8	0.0873965	2 36.2	20	12 40 4.02	4 58 5.8	9.9455983	2 47.9
6	9 31 30.94	16 29 43.9	0.0849568	2 36.9	21	12 43 57.80	5 28 9.0	9.9417450	2 47.9
7	9 36 7.39	16 6 6.7	0.0824917	2 37.5	22	12 47 51.20	5 58 6.1	9.9378527	2 47.8
8	9 40 42.39	15 42 6.1	0.0800011	2 38.2	23	12 51 44.21	6 27 56.7	9.9339207	2 47.8
9	9 45 15.95	15 17 42.6	0.0774849	2 38.9	24	12 55 36.85	6 57 40.0	9.9299485	2 47.7
10	9 49 48.09	14 52 57.1	0.0749431	2 39.4	25	12 59 29.12	7 27 15.5	9.9259354	2 47.6
11	9 54 18.82	14 27 50.1	0.0723754	2 39.9	26	13 3 21.03	7 56 42.5	9.9218806	2 47.5
12	9 58 48.16	14 2 22.4	0.0697817	2 40.5	27	13 7 12.58	8 26 0.5	9.9177839	2 47.5
13	10 3 16.13	13 36 34.7	0.0671618	2 41.0	28	13 11 3.76	8 55 8.8	9.9136446	2 47.4
14	10 7 42.76	13 10 27.7	0.0645156	2 41.5	29	13 14 54.59	9 24 6.7	9.9094624	2 47.3
15	10 12 8.06	12 44 2.1	0.0618429	2 42.0	30	13 18 45.05	9 52 53.7	9.9052368	2 47.2
16	10 16 32.05	12 17 18.7	0.0591433	2 42.4	31	13 22 35.15	10 21 29.2	9.9009673	2 47.1
17	10 20 54.76	11 50 18.1	0.0564167	2 42.9	Sept. 1	13 26 24.88	10 49 52.5	8.9665355	2 46.9
18	10 25 16.22	11 23 0.9	0.0536629	2 43.3	2	13 30 14.24	11 18 3.1	8.922950	2 46.8
19	10 29 36.45	10 55 28.0	0.0508815	2 43.6	3	13 34 3.22	11 46 0.4	8.878914	2 46.7
20	10 33 55.47	10 27 39.9	0.0480723	2 44.0	4	13 37 51.82	12 13 43.9	8.834421	2 46.6
21	10 38 13.31	9 59 37.4	0.0452350	2 44.4	5	13 41 40.02	12 41 12.9	8.789467	2 46.4
22	10 42 30.00	9 31 21.1	0.0423691	2 44.7	6	13 45 27.81	13 8 26.8	8.744046	2 46.3
23	10 46 45.57	9 2 51.7	0.0394744	2 45.0	7	13 49 15.18	13 35 25.1	8.698154	2 46.1
24	10 51 0.03	8 34 10.0	0.0365505	2 45.2	8	13 53 2.12	14 2 7.2	8.651785	2 46.0
25	10 55 13.41	8 5 16.6	0.0335970	2 45.6	9	13 56 48.61	14 28 32.6	8.604934	2 45.8
26	10 59 25.73	7 36 12.2	0.0306136	2 45.9	10	14 0 34.62	14 54 40.7	8.557594	2 45.6
27	11 3 37.02	7 6 57.5	0.0276000	2 46.1	11	14 4 20.14	15 20 31.0	8.509760	2 45.4
28	11 7 47.30	6 37 33.2	0.0245560	2 46.3	12	14 8 5.13	15 46 2.9	8.461425	2 45.2
29	11 11 56.59	6 7 59.9	0.0214811	2 46.5	13	14 11 49.57	16 11 15.9	8.412583	2 45.0
30	11 16 4.92	5 38 18.4	0.0183752	2 46.7	14	14 15 33.43	16 36 9.4	8.363227	2 44.8
31	11 20 12.31	5 8 29.3	0.0152382	2 46.9	15	14 19 16.67	17 0 43.0	8.313350	2 44.6
Aug. 1	11 24 18.79	4 38 33.3	0.0120698	2 47.1	16	14 22 59.25	17 24 56.0	8.262943	2 44.4
2	11 28 24.38	4 8 31.0	0.0088698	2 47.2	17	14 26 41.13	17 48 48.0	8.211998	2 44.1
3	11 32 29.10	3 38 23.1	0.0056382	2 47.4	18	14 30 22.25	18 12 18.5	8.160505	2 43.9
4	11 36 32.99	3 8 10.2	0.0023746	2 47.5	19	14 34 2.56	18 35 26.9	8.108456	2 43.6
5	11 40 36.07	2 37 52.9	9.9990789	2 47.6	20	14 37 42.00	18 58 12.8	8.055842	2 43.3
6	11 44 38.37	2 7 31.9	9.9957510	2 47.7	21	14 41 20.49	19 20 35.6	8.002653	2 43.0
7	11 48 39.92	1 37 7.9	9.9923905	2 47.8	22	14 44 57.95	19 42 34.9	7.948882	2 42.7
8	11 52 40.75	1 6 41.4	9.9889973	2 47.8	23	14 48 34.31	20 4 10.1	7.894518	2 42.3
9	11 56 40.88	0 36 13.1	9.9855711	2 47.9	24	14 52 9.48	20 25 20.7	7.839555	2 42.0
10	12 0 40.35	N. 0 54.36	9.9821114	2 47.9	25	14 55 43.35	20 46 6.2	7.783987	2 41.6
11	12 4 39.17	S. 0 24.46.6	9.9786180	2 48.0	26	14 59 15.82	21 6 26.2	7.727806	2 41.2
12	12 8 37.38	0 55 16.8	9.9750907	2 48.0	27	15 2 46.78	21 26 20.1	7.671008	2 40.8
13	12 12 35.00	1 25 46.3	9.9715290	2 48.0	28	15 6 16.12	21 45 47.4	7.613588	2 40.3
14	12 16 32.06	1 56 14.6	9.9679326	2 48.0	29	15 9 43.72	22 4 47.6	7.555543	2 39.8
15	12 20 28.59	2 26 41.1	9.9643011	2 48.0	30	15 13 9.46	22 23 20.4	7.496870	2 39.3
16	12 24 24.60	2 57 5.2	9.9606339	2 48.0	Oct. 1	15 16 33.21	22 41 25.2	7.437568	2 38.7
17	12 28 20.13	3 27 26.3	9.9569305	2 48.0	2	15 19 54.83	22 59 1.7	7.377636	2 38.2
18	12 32 15.20	3 57 43.8	9.9531905	2 48.0	3	15 23 14.18	23 16 9.3	7.317071	2 37.5
19	12 36 9.82	S. 4 27 57.2	9.9494133	2 47.9	4	15 26 31.11	S. 23 32.47.7	9.7245874	2 36.9

	H. P.	S. D.		H. P.	S. D.		H. P.	S. D.		H. P.	S. D.
July 4	7.15	6.83	July 28	8.32	7.95	Aug. 21	10.06	9.61	Sept. 14	12.83	12.26
8	7.32	7.00	Aug. 1	8.56	8.18	25	10.44	9.98	18	13.44	12.84
12	7.49	7.16	5	8.82	8.43	29	10.84	10.36	22	14.11	13.48
16	7.68	7.34	9	9.10	8.70	Sept. 2	11.28	10.78	26	14.85	14.14
20	7.88	7.53	13	9.40	8.98	6	11.75	11.23	30	15.66	14.97
24	8.09	7.73	17	9.72	9.29	10	12.27	11.73	Oct. 4	16.55	15.82

VENUS, 1922.

157

Mean Noon.	Apparent Right Ascension.			Apparent Declination.			Log. of True Dist. from the Earth.	Merid. Passage	Mean Noon.	Apparent Right Ascension.			Apparent Declination.			Log. of True Dist. from the Earth.	Merid. Passage.					
	h	m	s	°	'	"				°	'	"	h	m	s			°	'	"		
Oct. 4	15	26	31.11	S.	23	32	47.7	9.7255874	2	36.9	Nov. 19	16	11	46.35	S.	24	42	57.6	9.4334418	0	20.8	
5	15	29	45.47		23	48	56.4	.7194048	2	36.2	20	16	9	34.83		24	24	15.3	.4307865	0	14.7	
6	15	32	57.10		24	4	35.0	.7131592	2	35.4	21	16	7	19.30		24	4	43.6	.4285748	0	8.5	
7	15	36	5.82		24	19	43.2	.7068509	2	34.6	22	16	5	0.73		23	44	27.2	.4268213	{	0 23.3	
8	15	39	11.46		24	34	20.4	.7004802	2	33.7	23	16	2	40.10		23	23	31.2	.4255379	23	49.7	
9	15	42	13.85		24	48	26.3	.6940477	2	32.8	24	16	0	18.40		23	2	1.0	.4247337	23	43.4	
10	15	45	12.80		25	2	0.6	.6875539	2	31.9	25	15	57	56.69		22	40	2.9	.4244150	23	37.2	
11	15	48	8.10		25	15	2.7	.6809996	2	30.9	26	15	55	36.00		22	17	43.4	.4245848	23	30.9	
12	15	50	59.55		25	27	32.4	.6743858	2	29.8	27	15	53	17.34		21	55	9.7	.4252423	23	24.8	
13	15	53	46.95		25	39	29.2	.6677136	2	28.6	28	15	51	1.69		21	32	29.1	.4263829	23	18.7	
14	15	56	30.06		25	50	52.7	.6609839	2	27.4	29	15	48	49.99		21	9	49.0	.4280002	23	12.6	
15	15	59	8.67		26	1	42.6	.6541982	2	26.1	30	15	46	43.13		20	47	16.5	.4300845	23	6.7	
16	16	1	42.52		26	11	58.4	.6473580	2	24.7	Dec. 1	15	44	41.95		20	24	59.0	.4326219	23	0.8	
17	16	4	11.38		26	21	39.7	.6404652	2	23.2	2	15	42	47.21		20	3	3.6	.4355960	22	55.2	
18	16	6	34.98		26	30	45.9	.6335219	2	21.7	3	15	40	59.59		19	41	36.8	.4389887	22	49.5	
19	16	8	53.05		26	39	16.6	.6265306	2	20.0	4	15	39	19.68		19	20	44.7	.4427799	22	44.1	
20	16	11	5.30		26	47	11.1	.6194941	2	18.3	5	15	37	48.01		19	0	33.4	.4469487	22	38.8	
21	16	13	11.45		26	54	29.0	.6124159	2	16.4	6	15	36	25.04		18	41	8.2	.4514726	22	33.6	
22	16	15	11.20		27	1	9.6	.6052998	2	14.5	7	15	35	11.13		18	22	33.5	.4563270	22	28.6	
23	16	17	4.23		27	7	12.1	.5981504	2	12.4	8	15	34	6.55		18	4	53.0	.4614864	22	23.7	
24	16	18	50.22		27	12	35.8	.5909732	2	10.2	9	15	33	11.52		17	48	10.1	.4669264	22	19.0	
25	16	20	28.84		27	17	19.8	.5837742	2	7.9	10	15	32	26.18		17	32	27.8	.4726224	22	14.5	
26	16	21	59.79		27	21	23.3	.5765600	2	5.5	11	15	31	50.60		17	17	48.0	.4785502	22	10.1	
27	16	23	22.77		27	24	45.4	.5693379	2	2.9	12	15	31	24.80		17	4	12.0	.4846862	22	5.9	
28	16	24	37.45		27	27	24.8	.5621171	2	0.2	13	15	31	8.75		16	51	40.8	.4910081	22	1.9	
29	16	25	43.51		27	29	20.4	.5549075	1	57.4	14	15	31	2.38		16	40	14.8	.4974942	21	58.0	
30	16	26	40.67		27	30	31.0	.5477189	1	54.4	15	15	31	5.57		16	29	54.0	.5041235	21	54.3	
31	16	27	28.69		27	30	55.4	.5405623	1	51.2	16	15	31	18.14		16	20	37.8	.5108759	21	50.7	
Nov. 1	16	28	7.28		27	30	32.3	.5334504	1	47.9	17	15	31	39.92		16	12	25.5	.5177340	21	47.2	
2	16	28	36.18		27	29	20.1	.5263971	1	44.4	18	15	32	10.75		16	5	16.0	.5246815	21	43.9	
3	16	28	55.20		27	27	17.5	.5194171	1	40.8	19	15	32	50.40		15	59	7.9	.5317030	21	40.8	
4	16	29	4.16		27	24	22.9	.5125261	1	37.0	20	15	33	38.65		15	53	59.5	.5387841	21	37.8	
5	16	29	2.93		27	20	34.7	.5057409	1	33.0	21	15	34	35.27		15	49	48.9	.5459117	21	34.9	
6	16	28	51.38		27	15	51.2	.4990794	1	28.9	22	15	35	40.04		15	46	34.3	.5530737	21	32.2	
7	16	28	29.48		27	10	11.0	.4925610	1	24.6	23	15	36	52.74		15	44	13.6	.5602590	21	29.6	
8	16	27	57.22		27	3	32.7	.4862059	1	20.1	24	15	38	13.14		15	42	44.6	.5674576	21	27.1	
9	16	27	14.67		26	55	55.0	.4800351	1	15.5	25	15	39	41.01		15	42	5.1	.5746605	21	24.7	
10	16	26	21.95		26	47	16.5	.4740702	1	10.7	26	15	41	16.12		15	42	12.9	.5818593	21	22.5	
11	16	25	19.26		26	37	36.2	.4683339	1	5.7	27	15	42	58.26		15	43	5.6	.5890464	21	20.3	
12	16	24	6.85		26	26	53.5	.4628493	1	0.6	28	15	44	47.21		15	44	40.9	.5962147	21	18.3	
13	16	22	45.08		26	15	7.7	.4576397	0	55.3	29	15	46	42.76		15	46	56.4	.6033583	21	16.4	
14	16	21	14.38		26	2	18.8	.4527282	0	49.8	30	15	48	44.71		15	49	49.8	.6104719	21	14.6	
15	16	19	35.21		25	48	27.1	.4481383	0	44.3	31	15	50	52.85		15	53	18.8	.6175500	21	12.9	
16	16	17	48.13		25	33	33.5	.4438931	0	38.6	32	15	53	6.99	S.	15	57	21.0	9.6245884	21	11.2	
17	16	15	53.80		25	17	39.3	.4400146	0	32.7												
18	16	13	52.95		25	0	46.6	.4365241	0	26.8												
19	16	11	46.35	S.	24	42	57.6	9.4334418	0	20.8												

		H. P.	S. D.			H. P.	S. D.			H. P.	S. D.
Oct. 4	16.55	15.82	Oct. 28	24.12	23.05	Nov. 21	32.80	31.35	Dec. 15	27.56	26.34
8	17.54	16.76	Nov. 1	25.76	24.62	25	33.12	31.65	19	25.87	24.72
12	18.62	17.79	5	27.46	26.24	29	32.85	31.39	23	24.22	23.15
16	19.82	18.94	9	29.14	27.85	Dec. 3	32.03	30.61	27	22.67	21.67
20	21.13	20.19	13	30.68	29.32	7	30.77	29.41	31	21.23	20.29
24	22.57	21.57	17	31.95	30.53	11	29.24	27.94	35	19.91	19.03

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
h m s					h m s				
Jan. 1	14 6 54.01	S. 11 28 5.6	0.2471414	19 24.1	Feb. 16	15 47 38.12	S. 18 52 42.7	0.1167490	18 3.5
2	14 9 7.65	11 39 58.8	.2447881	19 22.4	17	15 49 44.32	18 59 51.0	.1133760	18 1.6
3	14 11 21.26	11 51 46.8	.2424147	19 20.7	18	15 51 50.12	19 6 52.6	.1099781	17 59.8
4	14 13 34.83	12 3 29.5	.2400215	19 19.0	19	15 53 55.50	19 13 47.6	.1065552	17 57.9
5	14 15 48.37	12 15 6.9	.2376082	19 17.2	20	15 56 0.44	19 20 36.0	.1031072	17 56.1
6	14 18 1.87	12 26 39.0	.2351749	19 15.5	21	15 58 4.91	19 27 17.8	.0996340	17 54.2
7	14 20 15.32	12 38 5.7	.2327215	19 13.8	22	16 0 8.90	19 33 53.0	.0961356	17 52.3
8	14 22 28.73	12 49 26.9	.2302478	19 12.1	23	16 2 12.39	19 40 21.7	.0926120	17 50.4
9	14 24 42.10	13 0 42.5	.2277540	19 10.4	24	16 4 15.35	19 46 43.8	.0890631	17 48.5
10	14 26 55.43	13 11 52.6	.2252397	19 8.7	25	16 6 17.77	19 52 59.4	.0854892	17 46.6
11	14 29 8.70	13 22 57.0	.2227052	19 6.9	26	16 8 19.63	19 59 8.6	.0818899	17 44.7
12	14 31 21.92	13 33 55.8	.2201498	19 5.2	27	16 10 20.91	20 5 11.4	.0782655	17 42.8
13	14 33 35.10	13 44 48.8	.2175738	19 3.5	28	16 12 21.58	20 11 7.8	.0746160	17 40.8
14	14 35 48.23	13 55 36.1	.2149769	19 1.8	Mar. 1	16 14 21.64	20 16 57.8	.0709414	17 38.9
15	14 38 1.30	14 6 17.5	.2123587	19 0.0	2	16 16 21.06	20 22 41.6	.0672418	17 36.9
16	14 40 14.31	14 16 53.1	.2097193	18 58.3	3	16 18 19.81	20 28 19.2	.0635172	17 35.0
17	14 42 27.24	14 27 22.7	.2070584	18 56.6	4	16 20 17.88	20 33 50.6	.0597677	17 33.0
18	14 44 40.10	14 37 46.4	.2043757	18 54.8	5	16 22 15.26	20 39 15.8	.0559933	17 31.0
19	14 46 52.88	14 48 4.0	.2016710	18 53.1	6	16 24 11.93	20 44 35.1	.0521940	17 29.0
20	14 49 5.57	14 58 15.6	.1989443	18 51.4	7	16 26 7.86	20 49 48.4	.0483700	17 27.0
21	14 51 18.14	15 8 20.8	.1961954	18 49.7	8	16 28 3.04	20 54 55.9	.0445212	17 24.9
22	14 53 30.61	15 18 19.9	.1934242	18 47.9	9	16 29 57.44	20 59 57.5	.0406473	17 22.9
23	14 55 42.95	15 28 12.8	.1906305	18 46.2	10	16 31 51.04	21 4 53.4	.0367485	17 20.8
24	14 57 55.17	15 37 59.4	.1878145	18 44.5	11	16 33 43.84	21 9 43.7	.0328248	17 18.8
25	15 0 7.24	15 47 39.6	.1849760	18 42.7	12	16 35 35.80	21 14 28.4	.0288757	17 16.7
26	15 2 19.16	15 57 13.4	.1821149	18 41.0	13	16 37 26.90	21 19 7.7	.0249014	17 14.6
27	15 4 30.92	16 6 40.8	.1792312	18 39.2	14	16 39 17.11	21 23 41.7	.0209015	17 12.5
28	15 6 42.50	16 16 1.8	.1763249	18 37.5	15	16 41 6.41	21 28 10.5	.0168761	17 10.4
29	15 8 53.90	16 25 16.2	.1733958	18 35.7	16	16 42 54.76	21 32 34.1	.0128249	17 8.2
30	15 11 5.12	16 34 24.1	.1704443	18 34.0	17	16 44 42.13	21 36 52.6	.0087479	17 6.0
31	15 13 16.13	16 43 25.4	.1674700	18 32.2	18	16 46 28.49	21 41 6.1	.0046453	17 3.9
Feb. 1	15 15 26.94	16 52 20.1	.1644731	18 30.4	19	16 48 13.80	21 45 14.8	0.0005168	17 1.7
2	15 17 37.53	17 1 8.2	.1614534	18 28.7	20	16 49 58.03	21 49 18.7	9.9963628	16 59.5
3	15 19 47.89	17 9 49.7	.1584110	18 26.9	21	16 51 41.13	21 53 18.1	.9921834	16 57.2
4	15 21 58.02	17 18 24.5	.1553458	18 25.1	22	16 53 23.08	21 57 12.9	.9879785	16 55.0
5	15 24 7.91	17 26 52.7	.1522577	18 23.4	23	16 55 3.85	22 1 3.4	.9837486	16 52.7
6	15 26 17.55	17 35 14.2	.1491468	18 21.6	24	16 56 43.39	22 4 49.6	.9794938	16 50.4
7	15 28 26.93	17 43 29.0	.1460130	18 19.8	25	16 58 21.66	22 8 31.6	.9752146	16 48.1
8	15 30 36.03	17 51 37.2	.1428559	18 18.0	26	16 59 58.63	22 12 9.6	.9709111	16 45.8
9	15 32 44.87	17 59 38.7	.1396758	18 16.2	27	17 1 34.25	22 15 43.7	.9665838	16 43.4
10	15 34 53.42	18 7 33.6	.1364722	18 14.4	28	17 3 8.52	22 19 14.1	.9622330	16 41.0
11	15 37 1.68	18 15 21.8	.1332452	18 12.6	29	17 4 41.37	22 22 40.9	.9578592	16 38.6
12	15 39 9.64	18 23 3.3	.1299945	18 10.8	30	17 6 12.77	22 26 4.2	.9534627	16 36.2
13	15 41 17.28	18 30 38.1	.1267197	18 9.0	31	17 7 42.69	22 29 24.2	.9490441	16 33.7
14	15 43 24.58	18 38 6.3	.1234207	18 7.1	Apr. 1	17 9 11.10	22 32 41.0	.9446039	16 31.2
15	15 45 31.54	18 45 27.8	.1200972	18 5.3	2	17 10 37.96	22 35 54.8	.9401424	16 28.7
16	15 47 38.12	S. 18 52 42.7	0.1167490	18 3.5	3	17 12 3.23	S. 22 39 5.7	9.9356603	16 26.2

	Hor. Par.	Semidiameter.		Hor. Par.	Semidiameter.		
January	1	4.98	2.65	February	20	6.94	3.69
	11	5.27	2.81	March	2	7.54	4.01
	21	5.60	2.98		12	8.23	4.38
	31	5.98	3.18		22	9.05	4.82
February	10	6.43	3.42	April	1	10.00	5.32

MARS, 1922.

159

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Apr. 3	17 12 3·23	S. 22 39 5·7	9·9356603	16 26·2	May 19	17 35 40·25	S. 24 56 31·7	9·7251158	13 47·5
4	17 13 26·87	22 42 13·9	·9311580	16 23·6	20	17 35 0·65	24 59 45·3	·7212116	13 42·9
5	17 14 48·85	22 45 19·6	·9266362	16 21·0	21	17 34 17·76	25 2 58·2	·7173879	13 38·2
6	17 16 9·14	22 48 23·0	·9220950	16 18·4	22	17 33 31·60	25 6 9·9	·7136492	13 33·5
7	17 17 27·69	22 51 24·2	·9175352	16 15·7	23	17 32 42·21	25 9 20·2	·7100003	13 28·7
8	17 18 44·48	22 54 23·3	·9129572	16 13·1	24	17 31 49·67	25 12 28·6	·7064459	13 23·9
9	17 19 59·45	22 57 20·6	·9083614	16 10·4	25	17 30 54·05	25 15 34·8	·7029904	13 19·0
10	17 21 12·57	23 0 16·3	·9037482	16 7·6	26	17 29 55·40	25 18 38·4	·6996385	13 14·1
11	17 22 23·79	23 3 10·4	·8991183	16 4·9	27	17 28 53·86	25 21 39·0	·6963945	13 9·1
12	17 23 33·06	23 6 3·2	·8944721	16 2·1	28	17 27 49·53	25 24 36·1	·6932630	13 4·1
13	17 24 40·33	23 8 54·9	·8898103	15 59·2	29	17 26 42·50	25 27 29·7	·6902477	12 59·0
14	17 25 45·55	23 11 45·6	·8851336	15 56·3	30	17 25 32·93	25 30 19·2	·6873532	12 53·9
15	17 26 48·66	23 14 35·5	·8804429	15 53·4	31	17 24 20·94	25 33 4·2	·6845829	12 48·8
16	17 27 49·61	23 17 24·7	·8757391	15 50·5	June 1	17 23 6·67	25 35 44·4	·6819404	12 43·6
17	17 28 48·34	23 20 13·4	·8710231	15 47·5	2	17 21 50·28	25 38 19·6	·6794290	12 38·4
18	17 29 44·79	23 23 1·8	·8662963	15 44·5	3	17 20 31·91	25 40 49·2	·6770521	12 33·2
19	17 30 38·90	23 25 50·1	·8615600	15 41·4	4	17 19 11·75	25 43 13·3	·6748123	12 27·9
20	17 31 30·61	23 28 38·4	·8568155	15 38·3	5	17 17 49·96	25 45 31·4	·6727121	12 22·6
21	17 32 19·88	23 31 26·9	·8520643	15 35·2	6	17 16 26·69	25 47 43·3	·6707540	12 17·3
22	17 33 6·65	23 34 15·6	·8473080	15 32·0	7	17 15 2·13	25 49 48·8	·6689400	12 11·9
23	17 33 50·86	23 37 4·7	·8425480	15 28·8	8	17 13 36·46	25 51 47·7	·6672722	12 6·6
24	17 34 32·45	23 39 54·4	·8377863	15 25·5	9	17 12 9·85	25 53 39·6	·6657524	12 1·2
25	17 35 11·38	23 42 44·7	·8330248	15 22·2	10	17 10 42·50	25 55 24·8	·6643824	11 55·8
26	17 35 47·59	23 45 35·8	·8282654	15 18·8	11	17 9 14·57	25 57 2·9	·6631635	11 50·4
27	17 36 21·03	23 48 27·6	·8235104	15 15·4	12	17 7 46·29	25 58 33·8	·6620969	11 45·0
28	17 36 51·66	23 51 20·6	·8187619	15 12·0	13	17 6 17·84	25 59 57·5	·6611834	11 39·6
29	17 37 19·43	23 54 14·6	·8140221	15 8·5	14	17 4 49·44	26 1 14·1	·6604236	11 34·2
30	17 37 44·29	23 57 9·8	·8092933	15 4·9	15	17 3 21·29	26 2 23·4	·6598180	11 28·8
May 1	17 38 6·22	24 0 6·3	·8045779	15 1·3	16	17 1 53·59	26 3 25·8	·6593664	11 23·4
2	17 38 25·16	24 3 4·0	·7998784	14 57·7	17	17 0 26·55	26 4 21·2	·6590687	11 18·1
3	17 38 41·08	24 6 3·1	·7951972	14 54·0	18	16 59 0·36	26 5 9·8	·6589243	11 12·7
4	17 38 53·95	24 9 3·5	·7905369	14 50·2	19	16 57 35·22	26 5 51·8	·6589324	11 7·4
5	17 39 3·74	24 12 5·3	·7859001	14 46·4	20	16 56 11·35	26 6 27·4	·6590916	11 2·1
6	17 39 10·40	24 15 8·5	·7812894	14 42·6	21	16 54 48·96	26 6 56·9	·6594004	10 56·8
7	17 39 13·92	24 18 13·1	·7767076	14 38·7	22	16 53 28·24	26 7 20·6	·6598569	10 51·6
8	17 39 14·26	24 21 19·1	·7721574	14 34·7	23	16 52 9·42	26 7 39·0	·6604590	10 46·3
9	17 39 11·37	24 24 26·4	·7676416	14 30·7	24	16 50 52·65	26 7 52·4	·6612039	10 41·1
10	17 39 5·25	24 27 35·0	·7631632	14 26·6	25	16 49 38·13	26 8 1·0	·6620888	10 36·0
11	17 38 55·84	24 30 44·9	·7587254	14 22·5	26	16 48 26·02	26 8 5·6	·6631106	10 30·9
12	17 38 43·15	24 33 56·0	·7543315	14 18·3	27	16 47 16·50	26 8 6·4	·6642660	10 25·8
13	17 38 27·12	24 37 8·0	·7499850	14 14·1	28	16 46 9·72	26 8 4·0	·6655509	10 20·8
14	17 38 7·74	24 40 20·9	·7456892	14 9·8	29	16 45 5·82	26 7 58·8	·6669614	10 15·8
15	17 37 44·99	24 43 34·5	·7414485	14 5·5	30	16 44 4·91	26 7 51·3	·6684934	10 10·9
16	17 37 18·87	24 46 48·6	·7372666	14 1·1	July 1	16 43 7·14	26 7 42·1	·6701419	10 6·1
17	17 36 49·36	24 50 3·0	·7331478	13 56·6	2	16 42 12·58	26 7 31·5	·6719034	10 1·3
18	17 36 16·49	24 53 17·5	·7290960	13 52·1	3	16 41 21·35	26 7 20·2	·6737735	9 56·5
19	17 35 40·25	S. 24 56 31·7	9·7251158	13 47·5	4	16 40 33·50	S. 26 7 8·3	9·6757480	9 51·8

		Hor. Par.	Semidiameter.		Hor. Par.	Semidiameter.	
April	11	11·10	5·90	May	31	18·19	9·68
	21	12·37	6·58	June	10	19·06	10·14
May	1	13·80	7·34		20	19·29	10·26
	11	15·34	8·16		30	18·88	10·04
	21	16·87	8·97	July	10	17·99	9·57

Mean Noon.	Apparent Right Ascension.			Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.			Log. of True Dist. from the Earth.	Merid. Passage.		
	h	m	s				h	m	s				
July	4	16 40	33.50	S. 26 7 8.3	9.6757480	9 51.8	Aug. 19	17 6	16.93	S. 26 37 5.7	9.8196966	7 17.9	
	5	16 39	49.11	26 6 56.5	.6778213	9 47.1		20	17 8	31.21	26 38 8.9	.8231007	7 15.7
	6	16 39	8.22	26 6 45.1	.6799899	9 42.5		21	17 10	17.78	26 39 9.5	.8264967	7 13.5
	7	16 38	30.89	26 6 34.4	.6822497	9 38.0		22	17 12	6.58	26 40 7.2	.8298839	7 11.4
	8	16 37	57.17	26 6 24.8	.6845967	9 33.6		23	17 13	57.56	26 41 1.8	.8332616	7 9.4
	9	16 37	27.07	26 6 16.7	.6870266	9 29.2		24	17 15	50.71	26 41 53.0	.8366290	7 7.3
	10	16 37	0.63	26 6 10.1	.6895356	9 24.8		25	17 17	45.96	26 42 40.5	.8399857	7 5.3
	11	16 36	37.88	26 6 5.6	.6921202	9 20.5		26	17 19	43.26	26 43 24.0	.8433307	7 3.3
	12	16 36	18.82	26 6 3.2	.6947762	9 16.3		27	17 21	42.58	26 44 3.3	.8466639	7 1.4
	13	16 36	3.47	26 6 3.3	.6975003	9 12.1		28	17 23	43.86	26 44 38.0	.8499845	6 59.5
	14	16 35	51.83	26 6 6.0	.7002886	9 8.0		29	17 25	47.05	26 45 8.0	.8532925	6 57.6
	15	16 35	43.92	26 6 11.4	.7031380	9 4.0		30	17 27	52.10	26 45 32.9	.8565871	6 55.8
	16	16 35	39.73	26 6 19.8	.7060046	9 0.0		31	17 29	58.96	26 45 52.6	.8598687	6 54.0
	17	16 35	39.26	26 6 31.3	.7090054	8 56.1		Sept. 1	17 32	7.61	26 46 6.5	.8631370	6 52.2
	18	16 35	42.50	26 6 45.9	.7120170	8 52.2		2	17 34	17.96	26 46 14.5	.8663920	6 50.4
	19	16 35	49.46	26 7 3.9	.7150763	8 48.4		3	17 36	29.98	26 46 16.3	.8696336	6 48.7
	20	16 36	0.10	26 7 25.2	.7181801	8 44.7		4	17 38	43.63	26 46 11.7	.8728618	6 47.0
	21	16 36	14.42	26 7 49.9	.7213254	8 41.0		5	17 40	58.89	26 46 0.3	.8760767	6 45.3
	22	16 36	32.38	26 8 18.0	.7245091	8 37.4		6	17 43	15.68	26 45 41.9	.8792782	6 43.6
	23	16 36	53.99	26 8 49.6	.7277282	8 33.9		7	17 45	33.98	26 45 16.3	.8824666	6 42.0
	24	16 37	19.22	26 9 24.6	.7309796	8 30.4		8	17 47	53.76	26 44 43.3	.8856419	6 40.4
	25	16 37	48.02	26 10 3.1	.7342605	8 27.0		9	17 50	14.99	26 44 2.5	.8888042	6 38.8
	26	16 38	20.36	26 10 44.9	.7375679	8 23.6		10	17 52	37.60	26 43 13.7	.8919536	6 37.2
	27	16 38	56.23	26 11 30.0	.7408990	8 20.3		11	17 55	1.58	26 42 16.7	.8950904	6 35.7
	28	16 39	35.54	26 12 13.4	.7442513	8 17.0		12	17 57	26.89	26 41 11.3	.8982145	6 34.2
	29	16 40	18.28	26 13 10.0	.7476220	8 13.8		13	17 59	53.51	26 39 57.2	.9013263	6 32.7
	30	16 41	4.40	26 14 4.5	.7510089	8 10.7		14	18 2	21.39	26 38 34.3	.9044256	6 31.2
	31	16 41	53.81	26 15 1.9	.7544096	8 7.6		15	18 4	50.52	26 37 2.3	.9075126	6 29.8
	Aug. 1	16 42	46.48	26 16 1.9	.7578222	8 4.5		16	18 7	20.86	26 35 20.9	.9105875	6 28.4
	2	16 43	42.34	26 17 4.4	.7612445	8 1.5		17	18 9	52.39	26 33 30.1	.9136500	6 27.0
	3	16 44	41.32	26 18 9.2	.7646748	7 58.6		18	18 12	25.08	26 31 29.7	.9167004	6 25.6
4	16 45	43.39	26 19 16.1	.7681117	7 55.7	19	18 14	58.89	26 29 19.4	.9197386	6 24.2		
5	16 46	48.47	26 20 24.7	.7715537	7 52.9	20	18 17	33.81	26 26 59.0	.9227642	6 22.8		
6	16 47	56.50	26 21 34.9	.7749994	7 50.1	21	18 20	9.78	26 24 28.5	.9257773	6 21.5		
7	16 49	7.43	26 22 46.3	.7784477	7 47.4	22	18 22	46.81	26 21 47.7	.9287777	6 20.2		
8	16 50	21.22	26 23 58.8	.7818976	7 44.7	23	18 25	24.83	26 18 56.4	.9317654	6 18.9		
9	16 51	37.80	26 25 12.1	.7853478	7 42.0	24	18 28	3.82	26 15 54.5	.9347402	6 17.6		
10	16 52	57.13	26 26 25.9	.7887978	7 39.4	25	18 30	43.73	26 12 41.7	.9377019	6 16.3		
11	16 54	19.16	26 27 40.0	.7922464	7 36.8	26	18 33	24.55	26 9 18.1	.9406509	6 15.1		
12	16 55	43.84	26 28 53.9	.7956929	7 34.3	27	18 36	6.21	26 5 43.4	.9435869	6 13.8		
13	16 57	11.11	26 30 7.5	.7991363	7 31.8	28	18 38	48.70	26 1 57.6	.9465099	6 12.6		
14	16 58	40.95	26 31 20.4	.8025760	7 29.4	29	18 41	31.96	25 58 0.6	.9494204	6 11.4		
15	17 0	13.29	26 32 32.4	.8060114	7 27.0	30	18 44	15.97	25 53 52.3	.9523181	6 10.2		
16	17 1	48.09	26 33 43.2	.8094417	7 24.7	Oct. 1	18 47	0.70	25 49 32.4	.9552035	6 9.0		
17	17 3	25.34	26 34 52.5	.8128664	7 22.4	2	18 49	46.11	25 45 0.9	.9580768	6 7.8		
18	17 5	4.96	26 36 0.2	.8162849	7 20.1	3	18 52	32.16	25 40 17.8	.9609380	6 6.6		
19	17 6	46.95	S. 26 37 5.7	9.8196966	7 17.9	4	18 55	18.83	S. 25 35 22.0	9.9637876	6 5.5		

	Hor. Par.	Semidiameter.		Hor. Par.	Semidiameter.		
July	20	16.84	8.95	September	8	11.45	6.09
	30	15.61	8.31		18	10.66	5.67
August	9	14.43	7.68		28	9.95	5.29
	19	13.33	7.09	October	8	9.32	4.96
	29	12.34	6.56		18	8.75	4.66

MARS, 1922.

161

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Oct. 4	18 55 18.83	S. 25 35 22.9	9.9637876	6 5.5	Nov. 19	21 7 43.05	S. 18 13 16.6	0.0843527	5 16.6
5	18 58 6.09	25 30 16.2	.9666257	6 4.3	20	21 10 35.19	17 59 18.7	.0867749	5 15.5
6	19 0 53.91	25 24 57.5	.9694524	6 3.2	21	21 13 27.13	17 45 11.6	.0891891	5 14.4
7	19 3 42.25	25 19 26.7	.9722682	6 2.0	22	21 16 18.85	17 30 55.2	.0915953	5 13.3
8	19 6 31.10	25 13 43.9	.9750732	6 0.9	23	21 19 10.36	17 16 29.8	.0939934	5 12.2
9	19 9 20.43	25 7 49.0	.9778677	5 59.8	24	21 22 1.64	17 1 55.4	.0963835	5 11.2
10	19 12 10.22	25 1 41.8	.9806517	5 58.7	25	21 24 52.68	16 47 12.3	.0987655	5 10.1
11	19 15 0.45	24 55 22.5	.9834257	5 57.6	26	21 27 43.48	16 32 20.6	.1011395	5 9.0
12	19 17 51.08	24 48 50.8	.9861896	5 56.5	27	21 30 34.03	16 17 20.6	.1035056	5 7.9
13	19 20 42.10	24 42 6.8	.9889437	5 55.4	28	21 33 24.32	16 2 12.3	.1058638	5 6.8
14	19 23 33.50	24 35 10.5	.9916879	5 54.3	29	21 36 14.36	15 46 56.0	.1082142	5 5.7
15	19 26 25.24	24 28 1.8	.9944226	5 53.2	30	21 39 4.13	15 31 31.8	.1105569	5 4.5
16	19 29 17.32	24 20 40.7	.9971478	5 52.1	Dec. 1	21 41 53.62	15 15 59.8	.1128919	5 3.4
17	19 32 9.71	24 13 7.2	9.9998636	5 51.1	2	21 44 42.84	15 0 20.3	.1152194	5 2.3
18	19 35 2.39	24 5 21.4	0.0025698	5 50.0	3	21 47 31.79	14 44 33.4	.1175395	5 1.2
19	19 37 55.34	23 57 23.1	.0052664	5 49.0	4	21 50 20.46	14 28 39.2	.1198522	5 0.0
20	19 40 48.55	23 49 12.5	.0079535	5 47.9	5	21 53 8.85	14 12 38.0	.1221577	4 58.9
21	19 43 42.00	23 40 49.6	.0106309	5 46.9	6	21 55 56.97	13 56 29.9	.1244560	4 57.8
22	19 46 35.66	23 32 14.3	.0132985	5 45.8	7	21 58 44.82	13 40 15.1	.1267473	4 56.6
23	19 49 29.50	23 23 26.8	.0159562	5 44.8	8	22 1 32.39	13 23 53.7	.1290316	4 55.5
24	19 52 23.50	23 14 27.1	.0186042	5 43.7	9	22 4 19.69	13 7 25.8	.1313091	4 54.3
25	19 55 17.64	23 5 15.2	.0212423	5 42.7	10	22 7 6.73	12 50 51.7	.1335796	4 53.2
26	19 58 11.90	22 55 51.2	.0238706	5 41.6	11	22 9 53.50	12 34 11.5	.1358432	4 52.0
27	20 1 6.24	22 46 15.2	.0264891	5 40.6	12	22 12 40.01	12 17 25.3	.1381000	4 50.8
28	20 4 0.66	22 36 27.2	.0290979	5 39.6	13	22 15 26.27	12 0 33.4	.1403498	4 49.7
29	20 6 55.12	22 26 27.3	.0316973	5 38.5	14	22 18 12.28	11 43 35.8	.1425925	4 48.5
30	20 9 49.61	22 16 15.6	.0342874	5 37.5	15	22 20 58.05	11 26 32.8	.1448282	4 47.3
31	20 12 44.11	22 5 52.1	.0368683	5 36.5	16	22 23 43.58	11 9 24.4	.1470566	4 46.1
Nov. 1	20 15 38.61	21 55 16.9	.0394401	5 35.4	17	22 26 28.87	10 52 11.0	.1492775	4 44.9
2	20 18 33.07	21 44 30.2	.0420030	5 34.4	18	22 29 13.94	10 34 52.6	.1514910	4 43.7
3	20 21 27.48	21 33 31.9	.0445574	5 33.4	19	22 31 58.76	10 17 29.4	.1536969	4 42.5
4	20 24 21.84	21 22 22.2	.0471032	5 32.3	20	22 34 43.35	10 0 1.7	.1558950	4 41.3
5	20 27 16.12	21 11 1.2	.0496407	5 31.3	21	22 37 27.71	9 42 29.5	.1580854	4 40.1
6	20 30 10.32	20 59 29.0	.0521700	5 30.3	22	22 40 11.83	9 24 53.2	.1602679	4 38.9
7	20 33 4.43	20 47 45.6	.0546912	5 29.2	23	22 42 55.73	9 7 12.9	.1624426	4 37.7
8	20 35 58.43	20 35 51.2	.0572046	5 28.2	24	22 45 39.40	8 49 28.8	.1646094	4 36.5
9	20 38 52.30	20 23 45.9	.0597102	5 27.1	25	22 48 22.84	8 31 40.9	.1667683	4 35.3
10	20 41 46.05	20 11 29.8	.0622082	5 26.1	26	22 51 6.05	8 13 49.6	.1689194	4 34.1
11	20 44 39.66	19 59 3.0	.0646986	5 25.0	27	22 53 49.04	7 55 55.0	.1710625	4 32.8
12	20 47 33.13	19 46 25.5	.0671816	5 24.0	28	22 56 31.82	7 37 57.3	.1731978	4 31.6
13	20 50 26.46	19 33 37.6	.0696570	5 22.9	29	22 59 14.37	7 19 56.5	.1753253	4 30.4
14	20 53 19.65	19 20 39.3	.0721252	5 21.9	30	23 1 56.70	7 1 53.0	.1774449	4 29.1
15	20 56 12.67	19 7 30.7	.0745859	5 20.8	31	23 4 38.83	6 43 46.9	.1795568	4 27.9
16	20 59 5.52	18 54 12.0	.0770391	5 19.8	32	23 7 20.75	S. 6 25 38.4	0.1816610	4 26.7
17	21 1 58.21	18 40 43.3	.0794847	5 18.7					
18	21 4 50.72	18 27 4.8	.0819226	5 17.6					
19	21 7 43.05	S. 18 13 16.6	0.0843527	5 16.6					

	Hor. Par.	Semidiameter.		Hor. Par.	Semidiameter.
October 28	8.23	4.38	December 7	6.57	3.50
November 7	7.76	4.13	17	6.24	3.32
17	7.33	3.90	27	5.93	3.16
27	6.93	3.69	37	5.65	3.01

JUPITER, 1922.

Mean Noon.	Apparent Right Ascension.			Apparent Declination.			Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.			Apparent Declination.			Log. of True Dist. from the Earth.	Merid. Passage.				
	h	m	s	°	'	"				°	'	"	h	m	s			°	'	"	h	m	s	°	'	"
Jan. 1	13	5	42.85	S.	5	35	11.4	0.7390304	18	21.5	Feb. 16	13	10	56.55	S.	5	54	50.7	0.6798105	15	25.5
2	13	6	4.33		5	37	8.6	.7377574	18	18.0	17	13	10	47.13		5	53	37.8	.6786631	15	21.4
3	13	6	25.22		5	39	2.1	.7364785	18	14.4	18	13	10	37.03		5	52	20.9	.6775295	15	17.3
4	13	6	45.53		5	40	51.8	.7351941	18	10.8	19	13	10	26.25		5	51	0.0	.6764102	15	13.2
5	13	7	5.25		5	42	37.7	.7339044	18	7.2	20	13	10	14.80		5	49	35.2	.6753059	15	9.1
6	13	7	24.37		5	44	19.7	.7326098	18	3.5	21	13	10	2.68		5	48	6.4	.6742170	15	4.9
7	13	7	42.88		5	45	57.8	.7313106	17	59.9	22	13	9	49.90		5	46	33.8	.6731441	15	0.8
8	13	8	0.78		5	47	32.0	.7300071	17	56.3	23	13	9	36.47		5	44	57.3	.6720879	14	56.6
9	13	8	18.07		5	49	2.3	.7286997	17	52.6	24	13	9	22.40		5	43	17.0	.6710488	14	52.5
10	13	8	34.74		5	50	28.6	.7273886	17	49.0	25	13	9	7.69		5	41	33.0	.6700274	14	48.3
11	13	8	50.78		5	51	51.0	.7260741	17	45.3	26	13	8	52.35		5	39	45.4	.6690242	14	44.1
12	13	9	6.19		5	53	9.4	.7247565	17	41.6	27	13	8	36.40		5	37	54.2	.6680399	14	39.9
13	13	9	20.97		5	54	23.7	.7234362	17	37.9	28	13	8	19.84		5	35	59.4	.6670748	14	35.7
14	13	9	35.11		5	55	34.1	.7221134	17	34.2	Mar. 1	13	8	2.68		5	34	1.2	.6661296	14	31.5
15	13	9	48.60		5	56	40.4	.7207885	17	30.5	2	13	7	44.93		5	31	59.6	.6652047	14	27.2
16	13	10	1.44		5	57	42.7	.7194618	17	26.7	3	13	7	26.61		5	29	54.7	.6643007	14	23.0
17	13	10	13.63		5	58	40.8	.7181338	17	23.0	4	13	7	7.73		5	27	46.6	.6634181	14	18.7
18	13	10	25.16		5	59	34.8	.7168047	17	19.3	5	13	6	48.30		5	25	35.3	.6625573	14	14.5
19	13	10	36.01		6	0	24.6	.7154749	17	15.5	6	13	6	28.33		5	23	20.9	.6617189	14	10.2
20	13	10	46.19		6	1	10.2	.7141448	17	11.7	7	13	6	7.84		5	21	3.5	.6609032	14	5.9
21	13	10	55.69		6	1	51.6	.7128149	17	8.0	8	13	5	46.85		5	18	43.2	.6601107	14	1.6
22	13	11	4.51		6	2	28.8	.7114855	17	4.2	9	13	5	25.36		5	16	20.1	.6593418	13	57.3
23	13	11	12.64		6	3	1.8	.7101571	17	0.4	10	13	5	3.39		5	13	54.3	.6585968	13	53.0
24	13	11	20.08		6	3	30.5	.7088301	16	56.5	11	13	4	40.95		5	11	25.9	.6578762	13	48.7
25	13	11	26.83		6	3	55.0	.7075050	16	52.7	12	13	4	18.06		5	8	54.9	.6571803	13	44.4
26	13	11	32.87		6	4	15.1	.7061823	16	48.9	13	13	3	54.74		5	6	21.5	.6565095	13	40.1
27	13	11	38.21		6	4	30.9	.7048624	16	45.0	14	13	3	30.99		5	3	45.7	.6558642	13	35.8
28	13	11	42.84		6	4	42.4	.7035458	16	41.1	15	13	3	6.84		5	1	7.7	.6552447	13	31.4
29	13	11	46.77		6	4	49.7	.7022330	16	37.3	16	13	2	42.29		4	58	27.5	.6546514	13	27.1
30	13	11	49.99		6	4	52.7	.7009244	16	33.4	17	13	2	17.36		4	55	45.2	.6540846	13	22.7
31	13	11	52.50		6	4	51.3	.6996206	16	29.5	18	13	1	52.07		4	53	1.0	.6535448	13	18.4
Feb. 1	13	11	54.30		6	4	45.7	.6983221	16	25.6	19	13	1	26.44		4	50	14.9	.6530323	13	14.0
2	13	11	55.39		6	4	35.7	.6970293	16	21.7	20	13	1	0.48		4	47	27.0	.6525474	13	9.7
3	13	11	55.77		6	4	21.5	.6957428	16	17.7	21	13	0	34.21		4	44	37.5	.6520904	13	5.3
4	13	11	55.44		6	4	2.9	.6944631	16	13.8	22	13	0	7.65		4	41	46.5	.6516617	13	0.9
5	13	11	54.40		6	3	40.0	.6931906	16	9.8	23	12	59	40.81		4	38	54.2	.6512614	12	56.5
6	13	11	52.65		6	3	12.9	.6919258	16	5.9	24	12	59	13.72		4	36	0.6	.6508899	12	52.2
7	13	11	50.19		6	2	41.5	.6906692	16	1.9	25	12	58	46.40		4	33	5.8	.6505474	12	47.8
8	13	11	47.03		6	2	5.9	.6894214	15	57.9	26	12	58	18.86		4	30	10.0	.6502341	12	43.4
9	13	11	43.16		6	1	26.1	.6881827	15	53.9	27	12	57	51.13		4	27	13.3	.6499503	12	39.0
10	13	11	38.58		6	0	42.1	.6869537	15	49.9	28	12	57	23.22		4	24	15.9	.6496961	12	34.6
11	13	11	33.31		5	59	53.9	.6857348	15	45.8	29	12	56	55.16		4	21	17.8	.6494716	12	30.2
12	13	11	27.35		5	59	1.5	.6845266	15	41.8	30	12	56	26.96		4	18	19.1	.6492770	12	25.8
13	13	11	20.69		5	58	5.0	.6833296	15	37.8	31	12	55	58.66		4	15	20.1	.6491123	12	21.4
14	13	11	13.33		5	57	4.3	.6821442	15	33.7	Apr. 1	12	55	30.27		4	12	20.9	.6489777	12	17.0
15	13	11	5.28		5	55	59.5	.6809710	15	29.6	2	12	55	1.81		4	9	21.6	.6488732	12	12.6
16	13	10	56.55	S.	5	54	50.7	0.6798105	15	25.5	3	12	54	33.30	S.	4	6	22.2	0.6487987	12	8.2

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
January	1	1.61	16.76	February	20	1.86	19.42
	11	1.65	17.27	March	2	1.90	19.87
	21	1.71	17.81		12	1.94	20.24
	31	1.76	18.35		22	1.96	20.50
February	10	1.81	18.89	April	1	1.98	20.63

JUPITER, 1922.

163

Mean Noon.	Apparent Right Ascension.		Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.		Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h	m					s	h				m	s
Apr. 3	12	54	33.30	S. 4 6 22.2	0.6487987	12	8.2				
	4	12	54 4.76	4 3 23.0	.6487544	12	3.8				
	5	12	53 36.22	4 0 24.1	.6487401	11	59.4				
	6	12	53 7.69	3 57 25.6	.6487559	11	55.0				
	7	12	52 39.19	3 54 27.6	.6488017	11	50.6				
	8	12	52 10.74	3 51 30.3	.6488773	11	46.2				
	9	12	51 42.37	3 48 33.7	.6489825	11	41.8				
	10	12	51 14.09	3 45 38.1	.6491172	11	37.4				
	11	12	50 45.91	3 42 43.5	.6492813	11	33.0				
	12	12	50 17.87	3 39 50.0	.6494748	11	28.6				
	13	12	49 49.98	3 36 57.7	.6496974	11	24.2				
	14	12	49 22.24	3 34 6.8	.6499491	11	19.8				
	15	12	48 54.69	3 31 17.3	.6502297	11	15.4				
	16	12	48 27.34	3 28 29.5	.6505390	11	11.0				
	17	12	48 0.21	3 25 43.4	.6508767	11	6.6				
	18	12	47 33.31	3 22 59.1	.6512426	11	2.3				
	19	12	47 6.67	3 20 16.7	.6516366	10	57.9				
	20	12	46 40.30	3 17 36.4	.6520583	10	53.5				
	21	12	46 14.22	3 14 58.3	.6525076	10	49.2				
22	12	45 48.45	3 12 22.4	.6529842	10	44.8					
23	12	45 23.00	3 9 48.9	.6534877	10	40.4					
24	12	44 57.90	3 7 17.9	.6540179	10	36.1					
25	12	44 33.16	3 4 49.5	.6545743	10	31.8					
26	12	44 8.79	3 2 23.8	.6551566	10	27.4					
27	12	43 44.82	3 0 0.8	.6557644	10	23.1					
28	12	43 21.25	2 57 40.7	.6563973	10	18.8					
29	12	42 58.11	2 55 23.6	.6570549	10	14.5					
30	12	42 35.41	2 53 9.6	.6577367	10	10.2					
May 1	12	42 13.16	2 50 58.7	.6584423	10	5.9					
2	12	41 51.38	2 48 51.0	.6591713	10	1.6					
3	12	41 30.08	2 46 46.7	.6599231	9	57.3					
4	12	41 9.27	2 44 45.7	.6606973	9	53.0					
5	12	40 48.97	2 42 48.2	.6614934	9	48.8					
6	12	40 29.18	2 40 54.2	.6623109	9	44.5					
7	12	40 9.92	2 39 3.8	.6631493	9	40.3					
8	12	39 51.19	2 37 17.0	.6640081	9	36.0					
9	12	39 33.00	2 35 34.0	.6648868	9	31.8					
10	12	39 15.36	2 33 54.7	.6657849	9	27.6					
11	12	38 58.29	2 32 19.2	.6667019	9	23.4					
12	12	38 41.78	2 30 47.5	.6676373	9	19.2					
13	12	38 25.84	2 29 19.7	.6685907	9	15.0					
14	12	38 10.49	2 27 55.8	.6695617	9	10.8					
15	12	37 55.74	2 26 35.9	.6705498	9	6.6					
16	12	37 41.58	2 25 20.0	.6715547	9	2.4					
17	12	37 28.02	2 24 8.1	.6725755	8	58.3					
18	12	37 15.07	2 23 0.3	.6736120	8	54.2					
19	12	37 2.75	S. 2 21 46.7	0.6746636	8	50.0					
May 19	12	37 2.75	S. 2 21 56.7	0.6746636	8	50.0					
20	12	36 51.05	2 20 57.3	.6757299	8	45.9					
21	12	36 39.97	2 20 2.0	.6768103	8	41.8					
22	12	36 29.54	2 19 10.9	.6779043	8	37.7					
23	12	36 19.74	2 18 24.1	.6790115	8	33.6					
24	12	36 10.59	2 17 41.5	.6801313	8	29.5					
25	12	36 2.09	2 17 3.2	.6812633	8	25.4					
26	12	35 54.24	2 16 29.2	.6824069	8	21.4					
27	12	35 47.05	2 15 59.5	.6835615	8	17.4					
28	12	35 40.52	2 15 34.1	.6847268	8	13.3					
29	12	35 34.65	2 15 13.1	.6859021	8	9.3					
30	12	35 29.45	2 14 56.4	.6870869	8	5.3					
31	12	35 24.92	2 14 44.1	.6882808	8	1.3					
June 1	12	35 21.05	2 14 36.1	.6894833	7	57.3					
2	12	35 17.85	2 14 32.4	.6906938	7	53.3					
3	12	35 15.32	2 14 33.1	.6919117	7	49.3					
4	12	35 13.45	2 14 38.1	.6931367	7	45.4					
5	12	35 12.24	2 14 47.4	.6943682	7	41.4					
6	12	35 11.70	2 15 1.0	.6956058	7	37.5					
7	12	35 11.82	2 15 18.8	.6968490	7	33.6					
8	12	35 12.60	2 15 40.9	.6980975	7	29.6					
9	12	35 14.03	2 16 7.2	.6993509	7	25.7					
10	12	35 16.12	2 16 37.8	.7006087	7	21.8					
11	12	35 18.87	2 17 12.5	.7018706	7	18.0					
12	12	35 22.27	2 17 51.5	.7031362	7	14.1					
13	12	35 26.32	2 18 34.6	.7044051	7	10.2					
14	12	35 31.01	2 19 21.9	.7056769	7	6.4					
15	12	35 36.35	2 20 13.3	.7069513	7	2.5					
16	12	35 42.34	2 21 8.9	.7082278	6	58.7					
17	12	35 48.97	2 22 8.5	.7095062	6	54.9					
18	12	35 56.24	2 23 12.2	.7107859	6	51.1					
19	12	36 4.14	2 24 19.9	.7120667	6	47.3					
20	12	36 12.68	2 25 31.7	.7133481	6	43.5					
21	12	36 21.85	2 26 47.5	.7146298	6	39.7					
22	12	36 31.65	2 28 7.2	.7159114	6	35.9					
23	12	36 42.08	2 29 30.9	.7171926	6	32.2					
24	12	36 53.14	2 30 58.5	.7184729	6	28.4					
25	12	37 4.81	2 32 30.0	.7197522	6	24.7					
26	12	37 17.10	2 34 5.4	.7210300	6	21.0					
27	12	37 30.00	2 35 44.6	.7223060	6	17.3					
28	12	37 43.51	2 37 27.6	.7235797	6	13.6					
29	12	37 57.62	2 39 14.4	.7248508	6	9.9					
30	12	38 12.33	2 41 4.8	.7261191	6	6.2					
July 1	12	38 27.63	2 42 58.9	.7273842	6	2.5					
2	12	38 43.50	2 44 56.6	.7286458	5	58.8					
3	12	38 59.96	2 46 57.9	.7299036	5	55.2					
4	12	39 17.00	S. 2 49 2.8	0.7311574	5	51.5					

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
April	11	1.97	20.61	May	31	1.80	18.84
	21	1.96	20.46		June	10	1.75	18.31
May	1	1.93	20.18	20		1.70	17.79
	11	1.90	19.80	30	1.65	17.27	
	21	1.85	19.34	July	10	1.61	16.78

JUPITER, 1922.

Mean Noon.	Apparent Right-Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
July 4	12 39 17.00	S. 2 49 2.8	0.7311574	5 51.5	Aug. 19	13 1 10.91	S. 5 17 21.5	0.7809067	3 12.5
5	12 39 34.60	2 51 11.2	.7324069	5 47.9	20	13 1 49.05	5 21 28.5	.7817556	3 9.2
6	12 39 52.76	2 53 23.0	.7336519	5 44.3	21	13 2 27.51	5 25 37.1	.7825927	3 5.9
7	12 40 11.48	2 55 38.2	.7348921	5 40.7	22	13 3 6.29	5 29 47.3	.7834178	3 2.6
8	12 40 30.75	2 57 56.9	.7361273	5 37.0	23	13 3 45.39	5 33 59.1	.7842309	2 59.4
9	12 40 50.56	3 0 18.9	.7373573	5 33.4	24	13 4 24.81	5 38 12.4	.7850319	2 56.1
10	12 41 10.92	3 2 44.2	.7385818	5 29.8	25	13 5 4.53	5 42 27.2	.7858206	2 52.8
11	12 41 31.81	3 5 12.8	.7398007	5 26.3	26	13 5 44.55	5 46 43.5	.7865969	2 49.5
12	12 41 53.24	3 7 44.6	.7410138	5 22.7	27	13 6 24.86	5 51 1.1	.7873608	2 46.3
13	12 42 15.19	3 10 19.6	.7422208	5 19.1	28	13 7 5.46	5 55 20.1	.7881122	2 43.0
14	12 42 37.67	3 12 57.8	.7434214	5 15.6	29	13 7 46.35	5 59 40.5	.7888510	2 39.8
15	12 43 0.66	3 15 39.1	.7446156	5 12.0	30	13 8 27.52	6 4 2.1	.7895773	2 36.5
16	12 43 24.17	3 18 23.5	.7458031	5 8.5	31	13 9 8.96	6 8 24.9	.7902909	2 33.3
17	12 43 48.18	3 21 11.0	.7469837	5 5.0	Sept. 1	13 9 50.67	6 12 49.0	.7909919	2 30.0
18	12 44 12.70	3 24 1.4	.7481572	5 1.4	2	13 10 32.65	6 17 14.2	.7916802	2 26.8
19	12 44 37.71	3 26 54.8	.7493235	4 57.9	3	13 11 14.89	6 21 40.5	.7923557	2 23.6
20	12 45 3.22	3 29 51.1	.7504822	4 54.4	4	13 11 57.38	6 26 8.0	.7930184	2 20.3
21	12 45 29.22	3 32 50.4	.7516332	4 50.9	5	13 12 40.13	6 30 36.5	.7936682	2 17.1
22	12 45 55.70	3 35 52.5	.7527763	4 47.4	6	13 13 23.12	6 35 6.0	.7943051	2 13.9
23	12 46 22.66	3 38 57.5	.7539113	4 43.9	7	13 14 6.36	6 39 36.5	.7949290	2 10.7
24	12 46 50.10	3 42 5.2	.7550379	4 40.5	8	13 14 49.83	6 44 8.0	.7955400	2 7.5
25	12 47 18.01	3 45 15.7	.7561559	4 37.0	9	13 15 33.54	6 48 40.4	.7961381	2 4.3
26	12 47 46.37	3 48 28.8	.7572651	4 33.5	10	13 16 17.48	6 53 13.7	.7967231	2 1.1
27	12 48 15.19	3 51 44.6	.7583654	4 30.1	11	13 17 1.64	6 57 47.8	.7972950	1 57.9
28	12 48 44.47	3 55 3.0	.7594566	4 26.6	12	13 17 46.03	7 2 22.7	.7978536	1 54.7
29	12 49 14.19	3 58 24.0	.7605386	4 23.2	13	13 18 30.64	7 6 58.4	.7983989	1 51.5
30	12 49 44.35	4 1 47.5	.7616111	4 19.8	14	13 19 15.47	7 11 34.8	.7989309	1 48.3
31	12 50 14.94	4 5 13.5	.7626741	4 16.3	15	13 20 0.50	7 16 12.0	.7994495	1 45.1
Aug. 1	12 50 45.95	4 8 41.9	.7637273	4 12.9	16	13 20 45.74	7 20 49.8	.7999547	1 41.9
2	12 51 17.39	4 12 12.7	.7647708	4 9.5	17	13 21 31.19	7 25 28.3	.8004464	1 38.8
3	12 51 49.23	4 15 45.8	.7658043	4 6.1	18	13 22 16.84	7 30 7.5	.8009246	1 35.6
4	12 52 21.48	4 19 21.2	.7668278	4 2.7	19	13 23 2.68	7 34 47.2	.8013891	1 32.4
5	12 52 54.14	4 22 58.9	.7678412	3 59.3	20	13 23 48.71	7 39 27.4	.8018399	1 29.3
6	12 53 27.19	4 26 38.8	.7688443	3 55.9	21	13 24 34.92	7 44 8.1	.8022769	1 26.1
7	12 54 0.64	4 30 20.8	.7698371	3 52.6	22	13 25 21.32	7 48 49.3	.8027000	1 22.9
8	12 54 34.47	4 34 5.0	.7708194	3 49.2	23	13 26 7.89	7 53 31.0	.8031092	1 19.8
9	12 55 8.69	4 37 51.3	.7717912	3 45.8	24	13 26 54.62	7 58 13.0	.8035045	1 16.6
10	12 55 43.28	4 41 39.6	.7727523	3 42.5	25	13 27 41.52	8 2 55.4	.8038858	1 13.5
11	12 56 18.25	4 45 30.0	.7737027	3 39.1	26	13 28 28.57	8 7 38.1	.8042531	1 10.3
12	12 56 53.59	4 49 22.4	.7746423	3 35.8	27	13 29 15.78	8 12 21.1	.8046064	1 7.2
13	12 57 29.29	4 53 16.8	.7755709	3 32.4	28	13 30 3.14	8 17 4.2	.8049457	1 4.0
14	12 58 5.35	4 57 13.0	.7764885	3 29.1	29	13 30 50.64	8 21 47.6	.8052710	1 0.9
15	12 58 41.77	5 1 11.1	.7773949	3 25.8	30	13 31 38.28	8 26 31.1	.8055823	0 57.7
16	12 59 18.54	5 5 11.0	.7782900	3 22.5	Oct. 1	13 32 26.06	8 31 14.8	.8058796	0 54.6
17	12 59 55.66	5 9 12.8	.7791738	3 19.2	2	13 33 13.97	8 35 58.5	.8061628	0 51.4
18	13 0 33.12	5 13 16.3	.7800461	3 15.8	3	13 34 2.01	8 40 42.3	.8064320	0 48.3
19	13 1 10.91	S. 5 17 21.5	0.7809067	3 12.5	4	13 34 50.17	S. 8 45 26.2	0.8066871	0 45.2

	Hor. Par.	Polar Semidiameter.		Hor. Par.	Polar Semidiameter.
July	20	1.56	September	8	1.41
	30	1.52		18	1.39
August	9	1.49		28	1.38
	19	1.46	October	8	1.37
	29	1.43		18	1.37

JUPITER, 1922.

165

Mean Noon.	Apparent			Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent			Log. of True Dist. from the Earth.	Merid. Passage.
	Right Ascension.	Declination.					Right Ascension.	Declination.			
	h m s	° ' "			h m		h m s	° ' "		h m	
Oct. 4	13 34 50.17	S. 8 45 20.2	0.8066871	0 45.2		Nov. 19	14 12 41.76	S. 12 14 41.1	0.8028157	22 18.8	
5	13 35 38.45	8 50 10.1	0.8069281	0 42.0		20	14 13 30.54	12 18 51.6	0.8023884	22 15.7	
6	13 36 26.84	8 54 54.0	0.8071550	0 38.9		21	14 14 19.21	12 23 0.7	0.8019466	22 12.6	
7	13 37 15.34	8 59 37.8	0.8073678	0 35.8		22	14 15 7.77	12 27 8.4	0.8014902	22 9.5	
8	13 38 3.95	9 4 21.6	0.8075664	0 32.7		23	14 15 56.20	12 31 14.5	0.8010193	22 6.3	
9	13 38 52.67	9 9 5.2	0.8077509	0 29.5		24	14 16 44.49	12 35 19.1	0.8005339	22 3.2	
10	13 39 41.48	9 13 48.6	0.8079211	0 26.4		25	14 17 32.65	12 39 22.1	0.8000342	22 0.1	
11	13 40 30.39	9 18 31.9	0.8080771	0 23.3		26	14 18 20.67	12 43 23.6	0.7995200	21 56.9	
12	13 41 19.39	9 23 15.0	0.8082188	0 20.2		27	14 19 8.54	12 47 23.6	0.7989916	21 53.8	
13	13 42 8.48	9 27 57.8	0.8083462	0 17.0		28	14 19 56.26	12 51 21.9	0.7984488	21 50.7	
14	13 42 57.65	9 32 40.4	0.8084591	0 13.9		29	14 20 43.82	12 55 18.6	0.7978918	21 47.5	
15	13 43 46.90	9 37 22.7	0.8085576	0 10.8		30	14 21 31.22	12 59 13.7	0.7973205	21 44.4	
16	13 44 36.23	9 42 4.6	0.8086417	0 7.7		Dec. 1	14 22 18.44	13 3 7.0	0.7967351	21 41.2	
17	13 45 25.63	9 46 46.1	0.8087113	0 4.6		2	14 23 5.49	13 6 58.6	0.7961356	21 38.1	
18	13 46 15.09	9 51 27.3	0.8087663	{ 23 58.4 } 0 1.5		3	14 23 52.36	13 10 48.5	0.7955221	21 34.9	
19	13 47 4.61	9 56 8.0	0.8088067	23 55.3		4	14 24 39.05	13 14 36.7	0.7948945	21 31.7	
20	13 47 54.19	10 0 48.3	0.8088325	23 52.2		5	14 25 25.54	13 18 23.1	0.7942530	21 28.6	
21	13 48 43.82	10 5 28.0	0.8088437	23 49.0		6	14 26 11.84	13 22 7.7	0.7935974	21 25.4	
22	13 49 33.48	10 10 7.2	0.8088403	23 45.9		7	14 26 57.94	13 25 50.5	0.7929278	21 22.2	
23	13 50 23.18	10 14 45.8	0.8088222	23 42.8		8	14 27 43.82	13 29 31.5	0.7922444	21 19.1	
24	13 51 12.92	10 19 23.9	0.8087895	23 39.7		9	14 28 29.49	13 33 10.5	0.7915470	21 15.9	
25	13 52 2.68	10 24 1.3	0.8087421	23 36.6		10	14 29 14.94	13 36 47.7	0.7908358	21 12.7	
26	13 52 52.47	10 28 38.0	0.8086800	23 33.5		11	14 30 0.15	13 40 22.9	0.7901108	21 9.5	
27	13 53 42.27	10 33 14.0	0.8086033	23 30.4		12	14 30 45.13	13 43 56.2	0.7893720	21 6.3	
28	13 54 32.09	10 37 49.3	0.8085120	23 27.3		13	14 31 29.87	13 47 27.6	0.7886194	21 3.1	
29	13 55 21.91	10 42 23.7	0.8084062	23 24.2		14	14 32 14.36	13 50 57.0	0.7878531	20 59.9	
30	13 56 11.74	10 46 57.4	0.8082858	23 21.1		15	14 32 58.59	13 54 24.4	0.7870731	20 56.7	
31	13 57 1.56	10 51 30.3	0.8081509	23 18.0		16	14 33 42.56	13 57 49.7	0.7862795	20 53.5	
Nov. 1	13 57 51.38	10 56 2.3	0.8080014	23 14.9		17	14 34 26.25	14 1 13.0	0.7854724	20 50.3	
2	13 58 41.19	11 0 33.5	0.8078374	23 11.8		18	14 35 9.66	14 4 34.2	0.7846518	20 47.1	
3	13 59 30.98	11 5 3.7	0.8076588	23 8.7		19	14 35 52.78	14 7 53.3	0.7838179	20 43.9	
4	14 0 20.75	11 9 33.0	0.8074655	23 5.6		20	14 36 35.61	14 11 10.3	0.7829707	20 40.7	
5	14 1 10.50	11 14 1.3	0.8072577	23 2.5		21	14 37 18.13	14 14 25.1	0.7821104	20 37.4	
6	14 2 0.22	11 18 28.6	0.8070354	22 59.3		22	14 38 0.34	14 17 37.7	0.7812371	20 34.2	
7	14 2 49.90	11 22 54.9	0.8067985	22 56.2		23	14 38 42.24	14 20 48.1	0.7803508	20 31.0	
8	14 3 39.55	11 27 20.1	0.8065471	22 53.1		24	14 39 23.81	14 23 56.3	0.7794517	20 27.7	
9	14 4 29.16	11 31 44.3	0.8062812	22 50.0		25	14 40 5.05	14 27 2.3	0.7785399	20 24.5	
10	14 5 18.72	11 36 7.4	0.8060007	22 46.9		26	14 40 45.95	14 30 6.0	0.7776155	20 21.2	
11	14 6 8.23	11 40 29.3	0.8057055	22 43.8		27	14 41 26.51	14 33 7.4	0.7766786	20 17.9	
12	14 6 57.69	11 44 50.1	0.8053956	22 40.7		28	14 42 6.71	14 36 6.6	0.7757293	20 14.7	
13	14 7 47.08	11 49 9.8	0.8050711	22 37.6		29	14 42 46.56	14 39 3.4	0.7747678	20 11.4	
14	14 8 36.40	11 53 28.2	0.8047319	22 34.5		30	14 43 26.04	14 41 57.9	0.7737942	20 8.1	
15	14 9 25.64	11 57 45.4	0.8043780	22 31.4		31	14 44 5.15	14 44 50.0	0.7728086	20 4.8	
16	14 10 14.81	12 2 1.3	0.8040094	22 28.3		32	14 44 43.88	S. 14 47 39.8	0.7718110	20 1.5	
17	14 11 3.89	12 6 15.9	0.8036262	22 25.1							
18	14 11 52.88	12 10 29.2	0.8032283	22 22.0							
19	14 12 41.76	S. 12 14 41.1	0.8028157	22 18.8							

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
October	28	1.37	14.29	December	7	1.42	14.81
November	7	1.37	14.34		17	1.44	15.06
	17	1.38	14.44		27	1.47	15.37
	27	1.40	14.60		37	1.51	15.73

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Jan. 1	12 30 48.89	S. 0 46 53.2	0.9738105	17 46.6	Feb. 16	12 29 2.81	S. 0 21 56.1	0.9420005	14 43.7
2	12 30 55.37	0 47 16.4	.9730453	17 42.7	17	12 28 51.92	0 20 31.3	.9414794	14 39.6
3	12 31 1.47	0 47 37.1	.9722798	17 38.9	18	12 28 40.72	0 19 4.8	.9409695	14 35.5
4	12 31 7.18	0 47 55.2	.9715140	17 35.1	19	12 28 29.21	0 17 36.6	.9404711	14 31.4
5	12 31 12.49	0 48 10.7	.9707483	17 31.2	20	12 28 17.41	0 16 6.8	.9399845	14 27.3
6	12 31 17.41	0 48 23.6	.9699829	17 27.4	21	12 28 5.32	0 14 35.3	.9395098	14 23.1
7	12 31 21.93	0 48 34.0	.9692181	17 23.5	22	12 27 52.94	0 13 2.2	.9390474	14 19.0
8	12 31 26.06	0 48 41.8	.9684542	17 19.6	23	12 27 40.29	0 11 27.6	.9385973	14 14.8
9	12 31 29.80	0 48 47.1	.9676914	17 15.7	24	12 27 27.36	0 9 51.6	.9381599	14 10.7
10	12 31 33.14	0 48 49.8	.9669299	17 11.8	25	12 27 14.17	0 8 14.1	.9377354	14 6.5
11	12 31 36.08	0 48 50.0	.9661700	17 7.9	26	12 27 0.72	0 6 35.2	.9373239	14 2.4
12	12 31 38.62	0 48 47.6	.9654118	17 4.1	27	12 26 47.03	0 4 55.0	.9369257	13 58.2
13	12 31 40.77	0 48 42.7	.9646556	17 0.2	28	12 26 33.10	0 3 13.6	.9365409	13 54.0
14	12 31 42.52	0 48 35.2	.9639016	16 56.3	Mar. 1	12 26 18.94	S. 0 1 30.9	.9361698	13 49.9
15	12 31 43.87	0 48 25.2	.9631500	16 52.4	2	12 26 4.55	N. 0 0 12.9	.9358124	13 45.7
16	12 31 44.82	0 48 12.6	.9624012	16 48.4	3	12 25 49.94	0 1 57.8	.9354690	13 41.5
17	12 31 45.38	0 47 57.4	.9616553	16 44.5	4	12 25 35.13	0 3 43.7	.9351396	13 37.4
18	12 31 45.54	0 47 39.8	.9609126	16 40.6	5	12 25 20.12	0 5 30.6	.9348246	13 33.2
19	12 31 45.30	0 47 19.6	.9601735	16 36.6	6	12 25 4.91	0 7 18.4	.9345239	13 29.0
20	12 31 44.65	0 46 56.9	.9594381	16 32.7	7	12 24 49.53	0 9 7.1	.9342378	13 24.8
21	12 31 43.61	0 46 31.7	.9587067	16 28.7	8	12 24 33.97	0 10 56.5	.9339664	13 20.6
22	12 31 42.17	0 46 4.0	.9579796	16 24.8	9	12 24 18.25	0 12 46.7	.9337097	13 16.4
23	12 31 40.33	0 45 33.8	.9572570	16 20.8	10	12 24 2.37	0 14 37.6	.9334678	13 12.2
24	12 31 38.09	0 45 1.1	.9565392	16 16.8	11	12 23 46.34	0 16 29.1	.9332408	13 8.0
25	12 31 35.46	0 44 25.9	.9558265	16 12.8	12	12 23 30.18	0 18 21.2	.9330289	13 3.8
26	12 31 32.43	0 43 48.3	.9551193	16 8.9	13	12 23 13.89	0 20 13.8	.9328320	12 59.6
27	12 31 29.01	0 43 8.2	.9544178	16 4.9	14	12 22 57.47	0 22 6.8	.9326503	12 55.4
28	12 31 25.20	0 42 25.7	.9537223	16 0.9	15	12 22 40.94	0 24 0.2	.9324839	12 51.2
29	12 31 21.00	0 41 40.9	.9530331	15 56.9	16	12 22 24.31	0 25 53.9	.9323328	12 47.0
30	12 31 16.41	0 40 53.7	.9523504	15 52.9	17	12 22 7.58	0 27 47.9	.9321970	12 42.8
31	12 31 11.45	0 40 4.1	.9516746	15 48.8	18	12 21 50.76	0 29 42.2	.9320767	12 38.6
Feb. 1	12 31 6.10	0 39 12.2	.9510059	15 44.8	19	12 21 33.86	0 31 36.6	.9319720	12 34.3
2	12 31 0.37	0 38 18.0	.9503445	15 40.8	20	12 21 16.89	0 33 31.0	.9318829	12 30.1
3	12 30 54.27	0 37 21.6	.9496908	15 36.7	21	12 20 59.86	0 35 25.5	.9318095	12 25.9
4	12 30 47.80	0 36 22.9	.9490450	15 32.7	22	12 20 42.78	0 37 20.0	.9317518	12 21.7
5	12 30 40.96	0 35 22.0	.9484073	15 28.7	23	12 20 25.66	0 39 14.4	.9317100	12 17.5
6	12 30 33.76	0 34 19.0	.9477780	15 24.6	24	12 20 8.50	0 41 8.6	.9316839	12 13.3
7	12 30 26.20	0 33 13.8	.9471574	15 20.5	25	12 19 51.32	0 43 2.6	.9316736	12 9.1
8	12 30 18.29	0 32 6.5	.9465457	15 16.5	26	12 19 34.13	0 44 56.3	.9316791	12 4.8
9	12 30 10.03	0 30 57.1	.9459431	15 12.4	27	12 19 16.94	0 46 49.7	.9317004	12 0.6
10	12 30 1.43	0 29 45.7	.9453499	15 8.3	28	12 18 59.76	0 48 42.6	.9317375	11 56.4
11	12 29 52.48	0 28 32.7	.9447663	15 4.2	29	12 18 42.59	0 50 35.1	.9317903	11 52.2
12	12 29 43.21	0 27 16.8	.9441926	15 0.1	30	12 18 25.45	0 52 27.0	.9318588	11 48.0
13	12 29 33.60	0 25 59.5	.9436289	14 56.1	31	12 18 8.35	0 54 18.4	.9319431	11 43.8
14	12 29 23.66	0 24 40.2	.9430755	14 52.0	Apr. 1	12 17 51.29	0 56 9.0	.9320429	11 39.5
15	12 29 13.39	0 23 19.1	.9425326	14 47.9	2	12 17 34.29	0 57 58.9	.9321583	11 35.3
16	12 29 2.81	S. 0 21 56.1	0.9420005	14 43.7	3	12 17 17.36	N. 0 50 48.1	0.9322891	11 31.1

	Hor. Par.	Polar Semidiameter.		Hor. Par.	Polar Semidiameter.
January 1	0.94	7.92	February 20	1.01	8.56
11	0.95	8.06	March 2	1.02	8.64
21	0.97	8.21	12	1.03	8.70
31	0.98	8.34	22	1.03	8.73
February 10	1.00	8.47	April 1	1.03	8.72

SATURN, 1922.

167

Mean Noon.	Apparent			Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent			Log. of True Dist. from the Earth.	Merid. Passage.
	Right Ascension.	Declination.					Right Ascension.	Declination.			
Apr. 3	h m s	N. 0 59 48.1	0.9322891	h m	May 19	h m s	N. 1 55 44.6	0.9525455	h m	8 20.8	
4	12 17 0.50	1 1 36.4	.9324353	11 26.9	20	12 7 38.08	1 56 8.2	.9532215	8 16.8		
5	12 16 43.72	1 3 23.8	.9325968	11 22.7	21	12 7 32.73	1 56 29.4	.9539039	8 12.8		
6	12 16 27.04	1 5 10.3	.9327735	11 18.5	22	12 7 27.74	1 56 48.2	.9545925	8 8.8		
7	12 16 10.46	1 6 55.8	.9329652	11 14.3	23	12 7 23.12	1 57 4.4	.9552869	8 4.8		
8	12 15 53.99	1 8 40.2	.9331719	11 10.1	24	12 7 18.86	1 57 18.2	.9559869	8 0.8		
9	12 15 37.64	1 10 23.4	.9333934	11 5.9	25	12 7 14.96	1 57 29.5	.9566924	7 56.8		
10	12 15 21.42	1 12 5.5	.9336296	11 1.7	26	12 7 11.43	1 57 38.3	.9574030	7 52.8		
11	12 15 5.33	1 13 46.5	.9338804	10 57.5	27	12 7 8.27	1 57 44.7	.9581185	7 48.8		
12	12 14 49.38	1 15 26.1	.9341456	10 53.3	28	12 7 5.48	1 57 48.6	.9588386	7 44.8		
13	12 14 33.58	1 17 4.3	.9344252	10 49.1	29	12 7 3.05	1 57 49.9	.9595631	7 40.9		
14	12 14 17.94	1 18 41.3	.9347190	10 44.9	30	12 7 1.00	1 57 48.8	.9602917	7 36.9		
15	12 14 2.46	1 20 16.8	.9350269	10 40.7	June 1	12 6 59.32	1 57 45.2	.9610241	7 32.9		
16	12 13 47.16	1 21 50.9	.9353487	10 36.5	2	12 6 58.02	1 57 39.1	.9617600	7 29.0		
17	12 13 32.04	1 23 23.5	.9356843	10 32.4	3	12 6 57.09	1 57 30.5	.9624993	7 25.0		
18	12 13 17.11	1 24 54.6	.9360335	10 28.2	4	12 6 56.53	1 57 19.5	.9632416	7 21.1		
19	12 13 2.37	1 26 24.0	.9363962	10 24.0	5	12 6 56.35	1 57 5.9	.9639868	7 17.2		
20	12 12 47.83	1 27 51.9	.9367722	10 19.9	6	12 6 56.54	1 56 49.9	.9647346	7 13.2		
21	12 12 33.51	1 29 18.0	.9371614	10 15.7	7	12 6 57.10	1 56 31.4	.9654848	7 9.3		
22	12 12 19.41	1 30 42.4	.9375636	10 11.5	8	12 6 58.03	1 56 10.5	.9662372	7 5.4		
23	12 12 5.54	1 32 5.1	.9379786	10 7.3	9	12 6 59.33	1 55 47.2	.9669915	7 1.5		
24	12 11 51.89	1 33 26.0	.9384063	10 3.2	10	12 7 1.00	1 55 21.5	.9677476	6 57.6		
25	12 11 38.49	1 34 44.9	.9388464	9 59.0	11	12 7 3.04	1 54 53.3	.9685053	6 53.7		
26	12 11 25.34	1 36 2.0	.9392987	9 54.9	12	12 7 5.45	1 54 22.7	.9692642	6 49.8		
27	12 11 12.44	1 37 17.1	.9397631	9 50.8	13	12 7 8.23	1 53 49.7	.9700243	6 45.9		
28	12 10 59.79	1 38 30.3	.9402392	9 46.6	14	12 7 11.37	1 53 14.3	.9707853	6 42.1		
29	12 10 47.42	1 39 41.5	.9407269	9 42.5	15	12 7 14.88	1 52 36.5	.9715471	6 38.2		
30	12 10 35.32	1 40 50.7	.9412260	9 38.3	16	12 7 18.76	1 51 56.3	.9723094	6 34.3		
May 1	12 10 23.51	1 41 57.7	.9417362	9 34.2	17	12 7 23.01	1 51 13.8	.9730719	6 30.4		
2	12 10 11.97	1 43 2.7	.9422573	9 30.1	18	12 7 27.62	1 50 28.9	.9738346	6 26.6		
3	12 10 0.73	1 44 5.6	.9427890	9 26.0	19	12 7 32.60	1 49 41.6	.9745973	6 22.8		
4	12 9 49.78	1 45 6.3	.9433310	9 21.9	20	12 7 37.93	1 48 52.0	.9753596	6 18.9		
5	12 9 39.14	1 46 4.9	.9438832	9 17.8	21	12 7 43.63	1 48 0.1	.9761215	6 15.1		
6	12 9 28.79	1 47 1.2	.9444453	9 13.7	22	12 7 49.69	1 47 5.9	.9768827	6 11.2		
7	12 9 18.76	1 47 55.3	.9450170	9 9.6	23	12 7 56.11	1 46 9.3	.9776430	6 7.4		
8	12 9 9.04	1 48 47.2	.9455982	9 5.5	24	12 8 2.89	1 45 10.5	.9784021	6 3.6		
9	12 8 59.64	1 49 36.8	.9461885	9 1.4	25	12 8 10.03	1 44 9.5	.9791600	5 59.8		
10	12 8 50.56	1 50 24.1	.9467878	8 57.3	26	12 8 17.52	1 43 6.2	.9799163	5 56.0		
11	12 8 41.80	1 51 9.1	.9473959	8 53.2	27	12 8 25.37	1 42 0.6	.9806709	5 52.2		
12	12 8 33.37	1 51 51.8	.9480123	8 49.1	28	12 8 33.56	1 40 52.9	.9814235	5 48.4		
13	12 8 25.27	1 52 32.2	.9486370	8 45.1	29	12 8 42.11	1 39 42.9	.9821740	5 44.6		
14	12 8 17.50	1 53 10.2	.9492697	8 41.0	30	12 8 51.00	1 38 30.7	.9829222	5 40.8		
15	12 8 10.07	1 53 45.9	.9499102	8 37.0	July 1	12 9 0.24	1 37 16.4	.9836679	5 37.0		
16	12 8 2.98	1 54 19.2	.9505582	8 32.9	2	12 9 9.82	1 35 59.9	.9844110	5 33.3		
17	12 7 56.23	1 54 50.1	.9512136	8 28.9	3	12 9 19.73	1 34 41.3	.9851512	5 29.5		
18	12 7 49.83	1 55 18.6	.9518761	8 24.9	4	12 9 29.98	1 33 20.6	.9858884	5 25.7		
19	12 7 43.78	N. 1 55 44.6	0.9525455	8 20.8			N. 1 31 57.8	0.9866223	5 22.0		

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
April	11	1.03	8.69	May	31	0.96	8.16
	21	1.02	8.62		June	10	0.95	8.02
May	1	1.01	8.52	20		0.93	7.88
	11	0.99	8.41	30	0.91	7.75	
	21	0.98	8.30	July	10	0.90	7.64

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
h m s	° ' "	° ' "		h m	h m s	° ' "	° ' "		h m
July 4	12 9 40.57	N. 1 31 57.8	0.9866223	5 22 0	Aug. 19	12 22 57.00	S. 0 2 39.1	1.0146109	2 34.4
5	12 9 51.48	1 30 33.0	.9873530	5 18.2	20	12 23 19.89	0 5 14.3	.0150516	2 30.8
6	12 10 2.72	1 29 6.1	.9880801	5 14.5	21	12 23 42.91	0 7 50.5	.0154838	2 27.3
7	12 10 14.28	1 27 37.2	.9888035	5 10.8	22	12 24 6.10	0 10 27.5	.0159072	2 23.7
8	12 10 26.17	1 26 6.4	.9895232	5 7.0	23	12 24 29.47	0 13 5.5	.0163219	2 20.2
9	12 10 38.37	1 24 33.6	.9902389	5 3.3	24	12 24 53.01	0 15 44.4	.0167277	2 16.6
10	12 10 50.89	1 22 58.8	.9909506	4 59.6	25	12 25 16.71	0 18 24.1	.0171245	2 13.1
11	12 11 3.73	1 21 22.1	.9916582	4 55.8	26	12 25 40.57	0 21 4.7	.0175124	2 9.6
12	12 11 16.87	1 19 43.5	.9923614	4 52.1	27	12 26 4.59	0 23 46.0	.0178913	2 6.0
13	12 11 30.32	1 18 2.9	.9930602	4 48.4	28	12 26 28.76	0 26 28.1	.0182611	2 2.5
14	12 11 44.08	1 16 20.5	.9937543	4 44.7	29	12 26 53.08	0 29 11.0	.0186218	1 59.0
15	12 11 58.14	1 14 36.3	.9944437	4 41.0	30	12 27 17.54	0 31 54.6	.0189734	1 55.4
16	12 12 12.51	1 12 50.2	.9951282	4 37.3	31	12 27 42.14	0 34 38.8	.0193158	1 51.9
17	12 12 27.17	1 11 2.3	.9958077	4 33.6	Sept. 1	12 28 6.88	0 37 23.7	.0196489	1 48.4
18	12 12 42.12	1 9 12.6	.9964820	4 30.0	2	12 28 31.75	0 40 9.2	.0199727	1 44.9
19	12 12 57.37	1 7 21.2	.9971510	4 26.3	3	12 28 56.76	0 42 55.3	.0202872	1 41.3
20	12 13 12.91	1 5 28.0	.9978146	4 22.6	4	12 29 21.89	0 45 42.0	.0205924	1 37.8
21	12 13 28.74	1 3 33.0	.9984726	4 19.0	5	12 29 47.14	0 48 29.3	.0208882	1 34.3
22	12 13 44.85	1 1 36.4	.9991249	4 15.3	6	12 30 12.52	0 51 17.1	.0211745	1 30.8
23	12 14 1.24	0 59 38.1	0.9997714	4 11.6	7	12 30 38.01	0 54 5.5	.0214514	1 27.3
24	12 14 17.91	0 57 38.1	1.0004119	4 8.0	8	12 31 3.61	0 56 54.3	.0217187	1 23.8
25	12 14 34.85	0 55 36.5	.0010462	4 4.3	9	12 31 29.32	0 59 43.6	.0219765	1 20.3
26	12 14 52.06	0 53 33.3	.0016743	4 0.7	10	12 31 55.14	1 2 33.3	.0222246	1 16.8
27	12 15 9.54	0 51 28.5	.0022960	3 57.0	11	12 32 21.05	1 5 23.4	.0224631	1 13.3
28	12 15 27.29	0 49 22.1	.0029111	3 53.4	12	12 32 47.07	1 8 13.9	.0226919	1 9.8
29	12 15 45.30	0 47 14.2	.0035197	3 49.8	13	12 33 13.18	1 11 4.7	.0229110	1 6.3
30	12 16 3.56	0 45 4.9	.0041215	3 46.1	14	12 33 39.39	1 13 55.9	.0231203	1 2.8
31	12 16 22.07	0 42 54.0	.0047165	3 42.5	15	12 34 5.68	1 16 47.4	.0233199	0 59.3
Aug. 1	12 16 40.83	0 40 41.7	.0053046	3 38.9	16	12 34 32.06	1 19 39.2	.0235995	0 55.8
2	12 16 59.84	0 38 28.0	.0058856	3 35.3	17	12 34 58.52	1 22 31.3	.0236893	0 52.3
3	12 17 19.09	0 36 12.9	.0064596	3 31.7	18	12 35 25.06	1 25 23.6	.0238591	0 48.8
4	12 17 38.57	0 33 56.4	.0070264	3 28.1	19	12 35 51.67	1 28 16.1	.0240189	0 45.3
5	12 17 58.29	0 31 38.6	.0075859	3 24.5	20	12 36 18.34	1 31 8.8	.0241687	0 41.8
6	12 18 18.24	0 29 19.4	.0081381	3 20.9	21	12 36 45.08	1 34 1.6	.0243084	0 38.3
7	12 18 38.41	0 26 59.0	.0086828	3 17.3	22	12 37 11.88	1 36 54.6	.0244380	0 34.9
8	12 18 58.80	0 24 37.3	.0092201	3 13.7	23	12 37 38.74	1 39 47.6	.0245575	0 31.4
9	12 19 19.41	0 22 14.3	.0097498	3 10.1	24	12 38 5.65	1 42 40.7	.0246667	0 27.9
10	12 19 40.24	0 19 50.1	.0102718	3 6.5	25	12 38 32.60	1 45 33.8	.0247658	0 24.4
11	12 20 1.29	0 17 24.7	.0107860	3 2.9	26	12 38 59.60	1 48 27.0	.0248547	0 20.9
12	12 20 22.56	0 14 58.1	.0112924	2 59.3	27	12 39 26.63	1 51 20.1	.0249333	0 17.4
13	12 20 44.04	0 12 30.3	.0117909	2 55.8	28	12 39 53.70	1 54 13.1	.0250018	0 14.0
14	12 21 5.72	0 10 1.4	.0122813	2 52.2	29	12 40 20.80	1 57 6.1	.0250602	0 10.5
15	12 21 27.60	0 7 31.5	.0127637	2 48.6	30	12 40 47.93	1 59 59.0	.0251084	0 7.0
16	12 21 49.68	0 5 0.4	.0132380	2 45.1	Oct. 1	12 41 15.08	2 2 51.7	.0251464	0 3.5
17	12 22 11.95	N. 0 2 28.2	.0137040	2 41.5	2	12 41 42.25	2 5 44.3	.0251742	{ 0 0.0 } { 23 58.5 }
18	12 22 34.41	S. 0 0 4.9	.0141617	2 37.9	3	12 42 9.43	2 8 36.7	.0251917	23 53.1
19	12 22 57.06	S. 0 2 39.1	1.0146109	2 34.4	4	12 42 36.63	S. 2 11 29.0	1.0251991	23 49.6

	Hor. Par.	Polar Semidiameter.		Hor. Par.	Polar Semidiameter.	
July	20	0.88	7.49	September 8	0.84	7.09
	30	0.87	7.39		0.83	7.06
August	9	0.86	7.29		0.83	7.04
	19	0.85	7.21	October 8	0.83	7.03
	29	0.84	7.14		0.83	7.05

SATURN, 1922.

169

Mean Noon.	Apparent Right Ascension.			Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.			Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h	m	s					h	m	h				m	s
Oct. 4	12 42	36.63		S. 2 11 29.0	1.0251991	23 49.6	Nov. 19	13 2 30.56		S. 4 12 16.3	1.0146283	21 8.5	
5	12 43	3.83		2 14 20.9	.0251962	23 46.1	20	13 2 53.68		4 14 29.3	.0141717	21 4.9	
6	12 43	31.04		2 17 12.6	.0251832	23 42.6	21	13 3 16.61		4 16 40.9	.0137063	21 1.3	
7	12 43	58.25		2 20 4.1	.0251600	23 39.2	22	13 3 39.34		4 18 50.9	.0132322	20 57.8	
8	12 44	25.46		2 22 55.3	.0251267	23 35.7	23	13 4 1.87		4 20 59.4	.0127494	20 54.2	
9	12 44	52.66		2 25 46.1	.0250832	23 32.2	24	13 4 24.20		4 23 6.4	.0122580	20 50.6	
10	12 45	19.85		2 28 36.5	.0250294	23 28.7	25	13 4 46.31		4 25 11.8	.0117581	20 47.1	
11	12 45	47.02		2 31 26.6	.0249654	23 25.3	26	13 5 8.21		4 27 15.7	.0112498	20 43.5	
12	12 46	14.18		2 34 16.3	.0248912	23 21.8	27	13 5 29.89		4 29 17.9	.0107333	20 40.0	
13	12 46	41.31		2 37 5.5	.0248066	23 18.3	28	13 5 51.35		4 31 18.5	.0102087	20 36.4	
14	12 47	8.42		2 39 54.2	.0247118	23 14.8	29	13 6 12.59		4 33 17.5	.0096761	20 32.8	
15	12 47	35.50		2 42 42.5	.0246067	23 11.3	30	13 6 33.59		4 35 14.8	.0091355	20 29.2	
16	12 48	2.55		2 45 30.3	.0244913	23 7.8	Dec. 1	13 6 54.36		4 37 10.4	.0085871	20 25.6	
17	12 48	29.56		2 48 17.6	.0243656	23 4.3	2	13 7 14.89		4 39 4.3	.0080308	20 22.0	
18	12 48	56.52		2 51 4.2	.0242296	23 0.8	3	13 7 35.18		4 40 56.4	.0074669	20 18.4	
19	12 49	23.44		2 53 50.3	.0240833	22 57.3	4	13 7 55.22		4 42 46.8	.0068954	20 14.8	
20	12 49	50.30		2 56 35.8	.0239268	22 53.8	5	13 8 15.02		4 44 35.4	.0063164	20 11.2	
21	12 50	17.11		2 59 20.6	.0237600	22 50.3	6	13 8 34.56		4 46 22.2	.0057300	20 7.6	
22	12 50	43.86		3 2 4.7	.0235830	22 46.9	7	13 8 53.85		4 48 7.3	.0051364	20 4.0	
23	12 51	10.54		3 4 48.1	.0233959	22 43.4	8	13 9 12.87		4 49 50.4	.0045356	20 0.3	
24	12 51	37.15		3 7 30.8	.0231986	22 39.9	9	13 9 31.63		4 51 31.7	.0039277	19 56.7	
25	12 52	3.68		3 10 12.7	.0229912	22 36.4	10	13 9 50.12		4 53 11.1	.0033129	19 53.1	
26	12 52	30.13		3 12 53.7	.0227737	22 32.9	11	13 10 8.33		4 54 48.6	.0026913	19 49.5	
27	12 52	56.50		3 15 34.0	.0225461	22 29.4	12	13 10 26.26		4 56 24.1	.0020630	19 45.8	
28	12 53	22.79		3 18 13.5	.0223084	22 25.9	13	13 10 43.91		4 57 57.7	.0014281	19 42.2	
29	12 53	48.98		3 20 52.0	.0220608	22 22.4	14	13 11 1.27		4 59 29.3	.0007867	19 38.5	
30	12 54	15.07		3 23 29.7	.0218033	22 18.9	15	13 11 18.34		5 0 58.9	1.0001389	19 34.9	
31	12 54	41.07		3 26 6.5	.0215359	22 15.4	16	13 11 35.11		5 2 26.5	0.9994850	19 31.2	
Nov. 1	12 55	6.96		3 28 42.3	.0212886	22 11.9	17	13 11 51.57		5 3 52.1	.9988251	19 27.6	
2	12 55	32.74		3 31 17.1	.0209715	22 8.4	18	13 12 7.73		5 5 15.6	.9981593	19 23.9	
3	12 55	58.41		3 33 50.9	.0206747	22 4.9	19	13 12 23.58		5 6 37.0	.9974878	19 20.2	
4	12 56	23.96		3 36 23.7	.0203681	22 1.4	20	13 12 39.12		5 7 56.4	.9968108	19 16.5	
5	12 56	49.40		3 38 55.4	.0200518	21 57.9	21	13 12 54.34		5 9 13.6	.9961284	19 12.8	
6	12 57	14.71		3 41 26.1	.0197259	21 54.4	22	13 13 9.24		5 10 28.7	.9954408	19 9.2	
7	12 57	39.89		3 43 55.7	.0193904	21 50.9	23	13 13 23.81		5 11 41.6	.9947482	19 5.5	
8	12 58	4.94		3 46 24.2	.0190453	21 47.3	24	13 13 38.06		5 12 52.4	.9940508	19 1.8	
9	12 58	29.86		3 48 51.6	.0186907	21 43.8	25	13 13 51.97		5 14 0.9	.9933487	18 58.1	
10	12 58	54.64		3 51 17.7	.0183265	21 40.3	26	13 14 5.55		5 15 7.3	.9926421	18 54.4	
11	12 59	19.27		3 53 42.7	.0179529	21 36.7	27	13 14 18.79		5 16 11.5	.9919312	18 50.6	
12	12 59	43.75		3 56 6.5	.0175698	21 33.2	28	13 14 31.69		5 17 13.4	.9912162	18 46.9	
13	13 0	8.08		3 58 29.0	.0171774	21 29.7	29	13 14 44.24		5 18 13.1	.9904972	18 43.2	
14	13 0	32.25		4 0 50.2	.0167756	21 26.2	30	13 14 56.45		5 19 10.6	.9897744	18 39.5	
15	13 0	56.26		4 3 10.1	.0163645	21 22.6	31	13 15 8.32		5 20 5.8	.9890481	18 35.7	
16	13 1	20.10		4 5 28.7	.0159441	21 19.1	32	13 15 19.83		S. 5 20 58.7	0.9883183	18 32.0	
17	13 1	43.77		4 7 46.0	.0155146	21 15.6							
18	13 2	7.26		4 10 1.9	.0150760	21 12.0							
19	13 2	30.56	S.	4 12 16.3	1.0146283	21 8.5							

		Hor. Par.	Polar Semidiameter.			Hor. Par.	Polar Semidiameter.
October	28	0.84	7.08	December	7	0.87	7.37
November	7	0.84	7.13		17	0.88	7.47
	17	0.85	7.19		27	0.90	7.59
	27	0.86	7.27		37	0.91	7.73

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Jan. 1	22 34 37.16	S. 9 46 42.3	1.3139301	3 52.6	July 4	23 0 24.68	S. 7 13 8.9	1.2918145	16 10.9
5	22 35 11.96	9 43 9.1	.3151173	3 37.4	8	23 0 12.54	7 14 33.3	.2905333	15 54.9
9	22 35 49.00	9 39 22.9	.3162413	3 22.3	12	22 59 57.77	7 16 13.8	.2893031	15 38.9
13	22 36 28.12	9 35 24.5	.3172981	3 7.2	16	22 59 40.47	7 18 9.5	.2881294	15 22.9
17	22 37 9.19	9 31 14.7	.3182840	2 52.2	20	22 59 20.73	7 20 19.8	.2870183	15 6.9
21	22 37 52.04	9 26 54.4	.3191954	2 37.2	24	22 58 58.66	7 22 44.0	.2859768	14 50.8
25	22 38 36.55	9 22 24.4	.3200285	2 22.2	28	22 58 34.40	7 25 21.1	.2850107	14 34.6
29	22 39 22.56	9 17 45.7	.3207800	2 7.2	Aug. 1	22 58 8.12	7 28 10.0	.2841257	14 18.5
Feb. 2	22 40 9.86	9 12 59.2	.3214467	1 52.3	5	22 57 39.99	7 31 9.6	.2833268	14 2.3
6	22 40 58.30	9 8 6.1	.3220265	1 37.4	9	22 57 10.19	7 34 18.8	.2826177	13 46.0
10	22 41 47.70	9 3 7.4	.3225181	1 22.5	13	22 56 38.88	7 37 36.4	.2820027	13 29.8
14	22 42 37.87	8 58 3.9	.3229202	1 7.6	17	22 56 6.29	7 41 1.0	.2814859	13 13.5
18	22 43 28.67	8 52 56.9	.3232316	0 52.7	21	22 55 32.58	7 44 31.6	.2810703	12 57.2
22	22 44 19.92	8 47 47.2	.3234512	0 37.8	25	22 54 57.99	7 48 6.6	.2807599	12 40.9
26	22 45 11.47	8 42 35.8	.3235777	0 22.9	29	22 54 22.76	7 51 44.6	.2805563	12 24.6
Mar. 2	22 46 3.11	8 37 23.9	.3236113	0 8.1	Sept. 2	22 53 47.13	7 55 23.9	.2804608	12 8.3
6	22 46 54.66	8 32 12.7	.3235522	23 49.5	6	22 53 11.33	7 59 3.3	.2804738	11 52.0
10	22 47 45.95	8 27 3.0	.3234008	23 34.6	10	22 52 35.60	8 2 41.4	.2805959	11 35.7
14	22 48 36.82	8 21 56.0	.3231587	23 19.7	14	22 52 0.15	8 6 16.6	.2808256	11 19.4
18	22 49 27.12	8 16 52.6	.3228274	23 4.8	18	22 51 25.22	8 9 47.6	.2811639	11 3.1
22	22 50 16.68	8 11 53.8	.3224072	22 49.9	22	22 50 51.06	8 13 12.8	.2816086	10 46.8
26	22 51 5.35	8 7 0.5	.3219000	22 35.0	26	22 50 17.92	8 16 30.9	.2821575	10 30.5
30	22 51 52.96	8 2 13.9	.3213077	22 20.0	30	22 49 46.03	8 19 40.5	.2828073	10 14.2
Apr. 3	22 52 39.33	7 57 34.9	.3206327	22 5.1	Oct. 4	22 49 15.60	8 22 40.3	.2835537	9 58.0
7	22 53 24.33	7 53 4.5	.3198779	21 50.1	8	22 48 46.84	8 25 29.2	.2843930	9 41.8
11	22 54 7.81	7 48 43.5	.3190471	21 35.1	12	22 48 19.92	8 28 6.1	.2853206	9 25.6
15	22 54 49.65	7 44 32.8	.3181432	21 20.1	16	22 47 55.03	8 30 29.8	.2863322	9 9.5
19	22 55 29.72	7 40 33.1	.3171695	21 5.0	20	22 47 32.37	8 32 39.5	.2874221	8 53.4
23	22 56 7.89	7 36 45.4	.3161289	20 49.9	24	22 47 12.09	8 34 34.1	.2885844	8 37.3
27	22 56 44.01	7 33 10.4	.3150261	20 34.7	28	22 46 54.36	8 36 12.6	.2898123	8 21.3
May 1	22 57 17.98	7 29 48.9	.3138649	20 19.5	Nov. 1	22 46 39.30	8 37 34.8	.2910985	8 5.3
5	22 57 49.66	7 26 41.8	.3126509	20 4.3	5	22 46 27.00	8 38 39.8	.2924366	7 49.4
9	22 58 18.97	7 23 49.3	.3113888	19 49.1	9	22 46 17.55	8 39 27.2	.2938193	7 33.5
13	22 58 45.83	7 21 12.3	.3100837	19 33.8	13	22 46 11.03	8 39 56.6	.2952399	7 17.7
17	22 59 10.15	7 18 51.1	.3087405	19 18.5	17	22 46 7.52	8 40 7.7	.2966917	7 1.9
21	22 59 31.86	7 16 46.3	.3073637	19 3.1	21	22 46 7.06	8 40 0.2	.2981665	6 46.2
25	22 59 50.85	7 14 58.4	.3059600	18 47.7	25	22 46 9.69	8 39 33.9	.2996565	6 30.5
29	23 0 7.09	7 13 27.7	.3045354	18 32.2	29	22 46 15.40	8 38 49.0	.3011542	6 14.9
June 2	23 0 20.51	7 12 14.6	.3030957	18 16.7	Dec. 3	22 46 24.20	8 37 45.5	.3026520	5 59.3
6	23 0 31.08	7 11 19.2	.3016479	18 1.1	7	22 46 36.04	8 36 23.7	.3041426	5 43.8
10	23 0 38.78	7 10 41.6	.3001981	17 45.5	11	22 46 50.86	8 34 43.8	.3056209	5 28.3
14	23 0 43.61	7 10 21.9	.2987522	17 29.8	15	22 47 8.66	8 32 46.0	.3070790	5 12.9
18	23 0 45.56	7 10 20.0	.2973168	17 14.1	19	22 47 29.38	8 30 30.8	.3085098	4 57.5
22	23 0 44.61	7 10 36.0	.2958981	16 58.4	23	22 47 52.92	8 27 58.6	.3099068	4 42.2
26	23 0 40.78	7 11 9.8	.2945034	16 42.6	27	22 48 19.20	8 25 10.0	.3112636	4 26.9
30	23 0 34.12	7 12 0.8	.2931398	16 26.8	31	22 48 48.11	S. 8 22 5.6	1.3125743	4 11.6
July 4	23 0 24.68	S. 7 13 8.9	1.2918145	16 10.9					

NEPTUNE, 1922.

171

Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.	Mean Noon.	Apparent Right Ascension.	Apparent Declination.	Log. of True Dist. from the Earth.	Merid. Passage.
	h m s	° ' "		h m		h m s	° ' "		h m
Jan. 1	9 11 51.38	N. 16 18 33.5	1.4663418	14 28.0	July 4	9 7 47.48	N. 16 38 11.3	1.4903518	2 20.6
5	9 11 29.98	16 20 12.3	.4657798	14 11.9	8	9 8 18.86	16 35 56.3	.4908363	2 5.4
9	9 11 7.33	16 21 56.1	.4652806	13 55.8	12	9 8 51.14	16 33 37.0	.4912667	1 50.2
13	9 10 43.60	16 23 44.7	.4648469	13 39.7	16	9 9 24.22	16 31 13.9	.4916419	1 35.0
17	9 10 18.93	16 25 37.1	.4644813	13 23.6	20	9 9 58.00	16 28 47.3	.4919596	1 19.8
21	9 9 53.47	16 27 32.8	.4641855	13 7.4	24	9 10 32.36	16 26 17.9	.4922181	1 4.7
25	9 9 27.38	16 29 31.0	.4639617	12 51.2	28	9 11 7.17	16 23 46.2	.4924177	0 49.5
29	9 9 0.84	16 31 30.8	.4638111	12 35.1	Aug. 1	9 11 42.32	16 21 12.6	.4925566	0 34.4
Feb. 2	9 8 34.02	16 33 31.4	.4637348	12 18.9	5	9 12 17.66	16 18 37.8	.4926338	0 19.2
6	9 8 7.13	16 35 32.1	.4637336	12 2.7	9	9 12 53.12	16 16 2.0	.4926496	10 4.1
10	9 7 40.31	16 37 32.2	.4638054	11 46.6	13	9 13 28.56	16 13 26.1	.4926055	23 45.2
14	9 7 13.78	16 39 30.7	.4639510	11 30.4	17	9 14 3.85	16 10 50.4	.4924993	23 30.0
18	9 6 47.65	16 41 27.1	.4641690	11 14.2	21	9 14 38.90	16 8 15.4	.4923317	23 14.9
22	9 6 22.12	16 43 20.7	.4644577	10 58.1	25	9 15 13.57	16 5 41.9	.4921032	22 59.7
26	9 5 57.34	16 45 10.6	.4648163	10 42.0	29	9 15 47.72	16 3 10.4	.4918146	22 44.6
Mar. 2	9 5 33.48	16 46 56.2	.4652421	10 25.8	Sept. 2	9 16 21.25	16 0 41.4	.4914665	22 29.4
6	9 5 10.71	16 48 36.8	.4657326	10 9.7	6	9 16 54.03	15 58 15.4	.4910608	22 14.2
10	9 4 49.15	16 50 12.0	.4662842	9 53.7	10	9 17 25.96	15 55 53.0	.4905991	21 59.0
14	9 4 28.97	16 51 41.1	.4668932	9 37.6	14	9 17 56.93	15 53 34.8	.4900822	21 43.8
18	9 4 10.24	16 53 3.6	.4675568	9 21.5	18	9 18 26.84	15 51 21.2	.4895122	21 28.5
22	9 3 53.09	16 54 19.3	.4682714	9 5.5	22	9 18 55.55	15 49 12.8	.4888903	21 13.3
26	9 3 37.63	16 55 27.5	.4690328	8 49.6	26	9 19 22.96	15 47 10.3	.4882196	20 58.0
30	9 3 23.96	16 56 27.9	.4698373	8 33.6	30	9 19 48.96	15 45 14.1	.4875027	20 42.7
Apr. 3	9 3 12.18	16 57 20.1	.4706799	8 17.7	Oct. 4	9 20 13.46	15 43 24.6	.4867423	20 27.4
7	9 3 2.34	16 58 3.9	.4715556	8 1.8	8	9 20 36.37	15 41 42.3	.4859418	20 12.0
11	9 2 54.51	16 58 39.1	.4724600	7 46.0	12	9 20 57.61	15 40 7.6	.4851040	19 56.6
15	9 2 48.71	16 59 5.6	.4733886	7 30.1	16	9 21 17.10	15 38 41.2	.4842320	19 41.2
19	9 2 44.98	16 59 23.2	.4743371	7 14.3	20	9 21 34.74	15 37 23.0	.4833292	19 25.8
23	9 2 43.37	16 59 31.7	.4753009	6 58.6	24	9 21 50.47	15 36 13.8	.4824000	19 10.3
27	9 2 43.88	16 59 31.2	.4762754	6 42.9	28	9 22 4.20	15 35 14.0	.4814484	18 54.8
May 1	9 2 46.53	16 59 21.5	.4772555	6 27.2	Nov. 1	9 22 15.91	15 34 23.4	.4804791	18 39.3
5	9 2 51.31	16 59 2.8	.4782365	6 11.6	5	9 22 25.54	15 33 42.5	.4794964	18 23.7
9	9 2 58.20	16 58 35.0	.4792137	5 56.0	9	9 22 33.07	15 33 11.6	.4785043	18 8.1
13	9 3 7.15	16 57 58.4	.4801830	5 40.4	13	9 22 38.45	15 32 50.6	.4775074	17 52.4
17	9 3 18.14	16 57 13.1	.4811404	5 24.8	17	9 22 41.66	15 32 39.8	.4765107	17 36.8
21	9 3 31.13	16 56 19.2	.4820823	5 9.3	21	9 22 42.70	15 32 39.2	.4755189	17 21.1
25	9 3 46.11	16 55 16.9	.4830035	4 53.8	25	9 22 41.56	15 32 48.7	.4745378	17 5.3
29	9 4 2.95	16 54 6.2	.4839017	4 38.4	29	9 22 38.26	15 33 8.3	.4735720	16 49.5
June 2	9 4 21.64	16 52 47.7	.4847711	4 23.0	Dec. 3	9 22 32.83	15 33 37.9	.4726269	16 33.7
6	9 4 42.10	16 51 21.4	.4856100	4 7.6	7	9 22 25.33	15 34 17.1	.4717069	16 17.8
10	9 5 4.23	16 49 48.0	.4864138	3 52.2	11	9 22 15.79	15 35 5.8	.4708165	16 1.9
14	9 5 27.95	16 48 7.5	.4871801	3 36.9	15	9 22 4.27	15 36 3.7	.4699605	15 46.0
18	9 5 53.19	16 46 20.1	.4879062	3 21.6	19	9 21 50.83	15 37 10.4	.4691446	15 30.1
22	9 6 19.87	16 44 26.6	.4885892	3 6.3	23	9 21 35.57	15 38 25.5	.4683731	15 14.1
26	9 6 47.87	16 42 27.0	.4892262	2 51.0	27	9 21 18.59	15 39 48.4	.4676503	14 58.1
30	9 7 17.12	16 40 21.6	.4898140	2 35.8	31	9 21 0.01	N. 15 41 18.6	1.4669804	14 42.0
July 4	9 7 47.48	N. 16 38 11.3	1.4903518	2 20.6					

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. pass Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. pass Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Jan. 1	18 9 48.30	0.36	S. 23 31 44.8	5.01	5.24	Feb. 16	22 5 48.94	0.34	S. 13 11 45.0	4.90	5.13
2	18 15 18.06	0.36	23 32 31.7	5.00	5.23	17	22 10 38.62	0.34	12 45 51.7	4.90	5.13
3	18 20 47.84	0.36	23 32 34.7	5.00	5.23	18	22 15 27.22	0.33	12 19 37.7	4.90	5.13
4	18 26 17.58	0.36	23 31 53.8	4.99	5.22	19	22 20 14.78	0.33	11 53 4.0	4.90	5.13
5	18 31 47.21	0.36	23 30 29.0	4.99	5.22	20	22 25 1.32	0.33	11 26 11.1	4.91	5.14
6	18 37 16.68	0.36	23 28 20.5	4.98	5.21	21	22 29 46.87	0.33	10 59 0.0	4.91	5.14
7	18 42 45.91	0.36	S. 23 25 28.2	4.98	5.21	22	22 34 31.44	0.33	S. 10 31 31.3	4.91	5.14
8	18 48 14.84	0.36	23 21 52.2	4.97	5.20	23	22 39 15.08	0.33	10 3 45.9	4.91	5.14
9	18 53 43.42	0.36	23 17 32.7	4.97	5.20	24	22 43 57.81	0.33	9 35 44.5	4.91	5.14
10	18 59 11.60	0.36	23 12 30.0	4.96	5.19	25	22 48 39.67	0.33	9 7 27.9	4.91	5.14
11	19 4 39.29	0.36	23 6 44.1	4.96	5.19	26	22 53 20.68	0.33	8 38 56.9	4.91	5.14
12	19 10 6.46	0.36	23 0 15.4	4.96	5.19	27	22 58 0.88	0.33	8 10 12.2	4.92	5.15
13	19 15 33.05	0.36	S. 22 53 4.0	4.95	5.18	28	23 2 40.31	0.33	S. 7 41 14.6	4.92	5.15
14	19 20 59.02	0.36	22 45 10.4	4.95	5.18	Mar. 1	23 7 18.99	0.33	7 12 4.9	4.92	5.15
15	19 26 24.30	0.36	22 36 34.8	4.95	5.18	2	23 11 56.97	0.33	6 42 43.9	4.92	5.15
16	19 31 48.85	0.36	22 27 17.6	4.94	5.17	3	23 16 34.27	0.33	6 13 12.2	4.92	5.15
17	19 37 12.64	0.36	22 17 19.1	4.94	5.17	4	23 21 10.95	0.33	5 43 30.7	4.93	5.16
18	19 42 35.60	0.36	22 6 39.9	4.94	5.17	5	23 25 47.03	0.33	5 13 40.2	4.93	5.16
19	19 47 57.69	0.35	S. 21 55 20.3	4.93	5.16	6	23 30 22.55	0.33	S. 4 43 41.3	4.93	5.16
20	19 53 18.87	0.35	21 43 20.8	4.93	5.16	7	23 34 57.56	0.33	4 13 34.8	4.94	5.17
21	19 58 39.10	0.35	21 30 41.8	4.93	5.16	8	23 39 32.10	0.33	3 43 21.5	4.94	5.17
22	20 3 58.35	0.35	21 17 24.0	4.93	5.16	9	23 44 6.21	0.33	3 13 2.1	4.94	5.17
23	20 9 16.57	0.35	21 3 27.9	4.92	5.15	10	23 48 39.92	0.33	2 42 37.4	4.95	5.18
24	20 14 33.73	0.35	20 48 54.1	4.92	5.15	11	23 53 13.28	0.33	2 12 7.9	4.95	5.18
25	20 19 49.80	0.35	S. 20 33 43.1	4.92	5.15	12	23 57 46.34	0.33	S. 1 41 34.6	4.95	5.18
26	20 25 4.76	0.35	20 17 55.6	4.92	5.15	13	0 2 19.13	0.33	1 10 58.1	4.96	5.19
27	20 30 18.56	0.35	20 1 32.2	4.92	5.15	14	0 6 51.71	0.33	0 40 19.2	4.96	5.19
28	20 35 31.20	0.35	19 44 33.5	4.91	5.14	15	0 11 24.13	0.33	S. 0 9 38.6	4.96	5.19
29	20 40 42.65	0.35	19 27 0.2	4.91	5.14	16	0 15 56.42	0.33	N. 0 21 3.1	4.97	5.20
30	20 45 52.90	0.35	19 8 52.9	4.91	5.14	17	0 20 28.63	0.33	0 51 45.0	4.97	5.20
31	20 51 1.91	0.35	S. 18 50 12.4	4.91	5.14	18	0 25 0.81	0.33	N. 1 22 26.5	4.98	5.21
Feb. 1	20 56 9.69	0.35	18 30 59.3	4.91	5.14	19	0 29 33.00	0.33	1 53 6.8	4.98	5.21
2	21 1 16.24	0.34	18 11 14.3	4.91	5.14	20	0 34 5.24	0.33	2 23 45.4	4.99	5.22
3	21 6 21.53	0.34	17 50 58.2	4.91	5.14	21	0 38 37.58	0.33	2 54 21.3	4.99	5.22
4	21 11 25.57	0.34	17 30 11.7	4.91	5.14	22	0 43 10.06	0.33	3 24 53.8	5.00	5.23
5	21 16 28.36	0.34	17 8 55.5	4.91	5.14	23	0 47 42.72	0.33	3 55 22.3	5.00	5.23
6	21 21 29.88	0.34	S. 16 47 10.4	4.90	5.13	24	0 52 15.60	0.33	N. 4 25 45.9	5.01	5.24
7	* * *	*	* * *	* *	*	25	0 56 48.76	0.33	4 56 3.9	5.01	5.24
8	21 26 30.16	0.34	16 24 57.0	4.90	5.13	26	1 1 22.21	0.34	5 26 15.7	5.02	5.25
9	21 31 29.21	0.34	16 2 16.2	4.90	5.13	27	1 5 56.00	0.34	5 56 20.4	5.03	5.26
10	21 36 27.02	0.34	15 39 8.7	4.90	5.13	28	1 10 30.18	0.34	6 26 17.3	5.03	5.26
11	21 41 23.62	0.34	15 15 35.3	4.90	5.13	29	1 15 4.78	0.34	6 56 5.7	5.04	5.27
12	21 46 19.01	0.34	S. 14 51 36.6	4.90	5.13	30	1 19 39.84	0.34	N. 7 25 44.7	5.04	5.27
13	21 51 13.22	0.34	14 27 13.4	4.90	5.13	31	1 24 15.39	0.34	7 55 13.8	5.05	5.28
14	21 56 6.26	0.34	14 2 26.6	4.90	5.13	Apr. 1	1 28 51.48	0.34	8 24 32.1	5.05	5.28
15	22 0 58.16	0.34	S. 13 37 16.9	4.90	5.13	2	1 33 28.14	0.34	N. 8 53 38.9	5.06	5.29

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semidiameter.	Hor. Par.
	h	m	s	s	°	'	"	"	"		h	m	s	s	°	'	"	"	"
July	4	9 22	43·85	0·48	N. 17 13	18·3	6·84	7·16		Aug. 19	12 36	37·15	0·63	S. 4 31	28·4	9·46	9·90		
	5	9 27	23·23	0·48	16 50	26·9	6·88	7·20		20	12 40	31·30	0·64	5 1	36·4	9·54	9·98		
	6	9 32	1·12	0·48	16 27	10·7	6·92	7·24		21	12 44	25·03	0·64	5 31	38·8	9·62	10·07		
	7	9 36	37·55	0·48	16 3	30·3	6·96	7·28		22	12 48	18·37	0·65	6 1	35·2	9·71	10·16		
	8	9 41	12·51	0·48	15 39	26·5	7·00	7·32		23	12 52	11·33	0·66	6 31	24·8	9·81	10·26		
	9	9 45	46·03	0·49	15 14	59·9	7·04	7·37		24	12 56	3·92	0·66	7 1	7·2	9·89	10·35		
	10	9 50	18·12	0·49	N. 14 50	11·3	7·08	7·41		25	12 59	56·13	0·67	S. 7 30	41·6	9·99	10·45		
	11	9 54	48·80	0·49	14 25	1·4	7·12	7·45		26	13 3	47·99	0·68	8 0	7·5	10·08	10·55		
	12	9 59	18·09	0·49	13 59	30·9	7·16	7·50		27	13 7	39·48	0·69	8 29	24·3	10·18	10·65		
	13	10 3	46·01	0·49	13 33	40·5	7·21	7·54		28	13 11	30·61	0·69	8 58	31·3	10·27	10·75		
	14	10 8	12·58	0·50	13 7	30·8	7·25	7·59		29	13 15	21·38	0·70	9 27	27·9	10·37	10·85		
	15	10 12	37·82	0·50	12 41	2·7	7·30	7·64		30	13 19	11·78	0·71	9 56	13·5	10·47	10·96		
	16	10 17	1·75	0·50	N. 12 14	16·8	7·35	7·69		31	13 23	1·82	0·72	S. 10 24	47·4	10·58	11·07		
	17	10 21	24·40	0·50	11 47	13·7	7·39	7·73		Sept. 1	13 26	51·49	0·73	10 53	9·2	10·68	11·18		
	18	10 25	45·79	0·51	11 19	54·3	7·44	7·78		2	13 30	40·79	0·73	11 21	18·1	10·79	11·29		
19	10 30	5·95	0·51	10 52	19·1	7·48	7·83		3	13 34	29·70	0·74	11 49	13·7	10·89	11·40			
20	10 34	24·90	0·51	10 24	29·0	7·53	7·88		4	13 38	18·23	0·75	12 16	55·4	11·01	11·52			
21	10 38	42·67	0·51	9 56	24·4	7·59	7·94		5	13 42	6·37	0·76	12 44	22·5	11·12	11·64			
22	10 42	59·29	0·52	N. 9 28	6·2	7·64	7·99		6	13 45	54·09	0·77	S. 13 11	34·5	11·24	11·76			
23	10 47	14·79	0·52	8 59	35·0	7·68	8·04		7	13 49	41·39	0·78	13 38	30·8	11·36	11·89			
24	10 51	29·18	0·52	8 30	51·6	7·73	8·09		8	13 53	28·25	0·79	14 5	10·8	11·49	12·02			
25	10 55	42·48	0·52	8 1	56·5	7·79	8·15		9	13 57	14·65	0·80	14 31	34·0	11·61	12·15			
26	10 59	54·73	0·53	7 32	50·6	7·85	8·21		10	14 1	0·58	0·81	14 57	39·9	11·74	12·28			
27	11 4	5·94	0·53	7 3	34·4	7·89	8·26		11	14 4	46·01	0·82	15 23	27·9	11·87	12·42			
28	11 8	16·15	0·53	N. 6 34	8·8	7·95	8·32		12	14 8	30·91	0·83	S. 15 48	57·5	12·00	12·56			
29	11 12	25·36	0·54	6 4	34·3	8·01	8·38		13	14 12	15·26	0·84	16 14	8·0	12·14	12·70			
30	11 16	33·62	0·54	5 34	51·6	8·07	8·44		14	14 15	59·02	0·85	16 38	59·1	12·28	12·85			
31	11 20	40·93	0·54	5 5	1·5	8·12	8·50		15	14 19	42·15	0·87	17 3	30·1	12·42	12·99			
Aug.	1	11 24	47·33	0·55	4 35	4·5	8·18	8·56		16	14 23	24·61	0·88	17 27	40·5	12·57	13·15		
	2	11 28	52·85	0·55	4 5	1·3	8·25	8·63		17	14 27	6·37	0·89	17 51	29·9	12·71	13·30		
	3	11 32	57·50	0·56	N. 3 34	52·6	8·31	8·69		18	14 30	47·36	0·90	S. 18 14	57·6	12·86	13·46		
	4	11 37	1·31	0·56	3 4	39·0	8·37	8·76		19	14 34	27·53	0·92	18 38	3·3	13·02	13·62		
	5	11 41	4·31	0·56	2 34	21·1	8·44	8·83		20	14 38	6·82	0·93	19 0	46·3	13·18	13·79		
	6	11 45	6·54	0·57	2 3	59·7	8·50	8·89		21	14 41	45·15	0·94	19 23	6·2	13·34	13·96		
	7	11 49	8·02	0·57	1 33	35·2	8·56	8·96		22	14 45	22·45	0·96	19 45	2·4	13·50	14·13		
	8	11 53	8·77	0·58	1 3	8·4	8·63	9·03		23	14 48	58·63	0·97	20 6	34·6	13·68	14·31		
	9	11 57	8·84	0·58	N. 0 32	39·8	8·71	9·11		24	14 52	33·60	0·99	S. 20 27	42·1	13·86	14·50		
	10	12 1	8·23	0·58	N. 0 2	10·1	8·77	9·18		25	14 56	7·26	1·00	20 48	24·4	14·03	14·68		
	11	12 5	6·99	0·59	S. 0 28	20·1	8·84	9·25		26	14 59	39·51	1·02	21 8	41·1	14·21	14·87		
	12	12 9	5·13	0·59	0 58	50·3	8·92	9·33		27	15 3	10·23	1·03	21 28	31·7	14·40	15·07		
	13	12 13	2·69	0·60	1 29	19·7	8·98	9·40		28	15 6	39·32	1·05	21 47	55·7	14·59	15·27		
	14	12 16	59·69	0·60	1 59	47·8	9·06	9·48		29	15 10	6·65	1·06	22 6	52·5	14·78	15·47		
	15	12 20	56·16	0·61	S. 2 30	14·1	9·14	9·56		30	15 13	32·10	1·08	S. 22 25	21·8	14·99	15·68		
16	12 24	52·11	0·62	3 0	37·9	9·21	9·64		Oct. 1	15 16	55·54	1·10	22 43	23·1	15·20	15·90			
17	12 28	47·58	0·62	3 30	58·6	9·30	9·73		2	15 20	16·84	1·12	23 0	56·0	15·41	16·12			
18	12 32	42·59	0·63	S. 4 1	15·6	9·38	9·81		3	15 23	35·84	1·13	S. 23 18	0·0	15·62	16·34			

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semidiameter.	Hor. Par.
	h	m	s		°	'	"				h	m	s		°	'	"		
Jan.	1	14 8	42.05	0.18	S. 11 37	42.5	2.66	5.00	Feb.	16	15 49	13.11	0.25	S. 18 58	5.6	3.60	6.76		
	2	14 10	55.50	0.18	11 49	30.7	2.67	5.02		17	15 51	18.85	0.26	19 5	8.3	3.63	6.82		
	3	14 13	8.93	0.18	12 1	13.6	2.69	5.05		18	15 53	24.18	0.26	19 12	4.4	3.66	6.87		
	4	14 15	22.31	0.18	12 12	51.2	2.70	5.08		19	15 55	29.07	0.26	19 18	53.9	3.68	6.92		
	5	14 17	35.66	0.19	12 24	23.5	2.72	5.11		20	15 57	33.50	0.26	19 25	36.9	3.71	6.98		
	6	14 19	48.96	0.19	12 35	50.4	2.73	5.14		21	15 59	37.45	0.26	19 32	13.2	3.74	7.03		
	7	14 22	2.22	0.19	S. 12 47	11.9	2.75	5.17		22	16 1.40	91	0.27	S. 19 38	43.0	3.77	7.09		
	8	14 24	15.44	0.19	12 58	27.9	2.77	5.20		23	16 3.43	85	0.27	19 45	6.3	3.81	7.15		
	9	14 26	28.62	0.19	13 9	38.2	2.79	5.23		24	16 5.46	24	0.27	19 51	23.1	3.84	7.21		
	10	14 28	41.75	0.19	13 20	43.0	2.80	5.26		25	16 7.48	09	0.27	19 57	33.5	3.87	7.27		
	11	14 30	54.83	0.19	13 31	42.2	2.82	5.29		26	16 9.49	36	0.28	20 3	37.4	3.90	7.33		
	12	14 33	7.85	0.19	13 42	35.6	2.83	5.32		27	16 11.50	03	0.28	20 9	35.0	3.94	7.40		
13	14 35	20.82	0.20	S. 13 53	23.3	2.85	5.35	28	16 13.50	09	0.28	S. 20 15	26.3	3.97	7.46				
14	14 37	33.74	0.20	14 4	5.1	2.86	5.38	Mar.	1	16 15.49	52	0.28	20 21	11.3	4.00	7.52			
15	14 39	46.60	0.20	14 14	41.1	2.88	5.41		2	16 17.48	29	0.29	20 26	50.0	4.04	7.59			
16	14 41	59.39	0.20	14 25	11.2	2.90	5.45		3	16 19.46	38	0.29	20 32	22.6	4.07	7.65			
17	14 44	12.11	0.20	14 35	35.4	2.91	5.48		4	16 21.43	79	0.29	20 37	49.1	4.10	7.72			
18	14 46	24.75	0.20	14 45	53.6	2.93	5.52		5	16 23.40	49	0.30	20 43	9.5	4.14	7.79			
19	14 48	37.30	0.20	S. 14 56	5.7	2.95	5.55		6	16 25.36	46	0.30	S. 20 48	23.9	4.18	7.86			
20	14 50	49.75	0.21	15 6	11.7	2.97	5.59		7	16 27.31	68	0.30	20 53	32.5	4.22	7.93			
21	14 53	2.07	0.21	15 16	11.4	2.99	5.63		8	16 29.26	13	0.30	20 58	35.3	4.25	8.00			
22	14 55	14.29	0.21	15 26	4.9	3.01	5.66		9	16 31.19	80	0.31	21 3	32.4	4.29	8.07			
23	14 57	26.37	0.21	15 35	52.1	3.03	5.70		10	16 33.12	65	0.31	21 8	23.8	4.33	8.14			
24	14 59	38.31	0.21	15 45	33.0	3.05	5.74		11	16 35.4	69	0.31	21 13	9.7	4.37	8.21			
25	15 1	50.11	0.21	S. 15 55	7.5	3.07	5.78		12	16 36.55	87	0.32	S. 21 17	50.1	4.41	8.29			
26	15 4	1.74	0.21	16 4	35.7	3.09	5.82	13	16 38.46	17	0.32	21 22	25.2	4.45	8.36				
27	15 6	13.21	0.22	16 13	57.4	3.12	5.86	14	16 40.35	57	0.32	21 26	55.0	4.49	8.44				
28	15 8	24.50	0.22	16 23	12.6	3.14	5.90	15	16 42.24	04	0.32	21 31	19.6	4.53	8.52				
29	15 10	35.59	0.22	16 32	21.3	3.16	5.94	16	16 44.11	53	0.33	21 35	39.2	4.57	8.60				
30	15 12	46.49	0.22	16 41	23.4	3.18	5.98	17	16 45.58	02	0.33	21 39	53.7	4.62	8.68				
31	15 14	57.18	0.22	S. 16 50	18.9	3.20	6.02	18	16 47.43	48	0.33	S. 21 44	3.4	4.66	8.76				
Feb.	1	15 17	7.66	0.22	16 59	7.9	3.22	6.06	19	16 49.27	86	0.34	21 48	8.3	4.71	8.85			
	2	15 19	17.92	0.23	17 7	50.3	3.24	6.10	20	16 51.11	14	0.34	21 52	8.6	4.75	8.93			
	3	15 21	27.95	0.23	17 16	26.0	3.26	6.14	21	16 52.53	27	0.35	21 56	4.4	4.80	9.01			
	4	15 23	37.73	0.23	17 24	55.1	3.29	6.18	22	16 54.34	23	0.35	21 59	55.8	4.84	9.10			
	5	15 25	47.27	0.23	17 33	17.5	3.32	6.23	23	16 56.13	98	0.35	22 3	42.9	4.89	9.19			
	6	15 27	56.55	0.23	S. 17 41	33.3	3.34	6.27	24	16 57.52	48	0.36	S. 22 7	25.8	4.94	9.28			
	7	15 30	5.55	0.24	17 49	42.5	3.36	6.32	25	16 59.29	69	0.36	22 11	4.7	4.99	9.38			
	8	15 32	14.29	0.24	17 57	45.0	3.38	6.36	26	17 1.5	57	0.36	22 14	39.6	5.04	9.47			
	9	15 34	22.75	0.24	18 5	40.9	3.41	6.41	27	17 2.40	09	0.37	22 18	10.8	5.09	9.57			
	10	15 36	30.92	0.24	18 13	30.0	3.44	6.46	28	17 4.13	22	0.37	22 21	38.3	5.15	9.67			
	11	15 38	38.79	0.24	18 21	12.5	3.47	6.51	29	17 5.44	91	0.37	22 25	2.2	5.20	9.77			
	12	15 40	46.35	0.25	S. 18 28	48.4	3.49	6.56	30	17 7.15	14	0.38	S. 22 28	22.9	5.25	9.87			
	13	15 42	53.58	0.25	18 36	17.7	3.52	6.61	31	17 8.43	86	0.38	22 31	40.3	5.30	9.97			
	14	15 45	0.46	0.25	18 43	40.3	3.54	6.66	Apr.	1	17 10.11	06	0.39	22 34	54.7	5.36	10.07		
	15	15 47	6.98	0.25	S. 18 50	56.2	3.57	6.71		2	17 11.36	68	0.39	S. 22 38	6.2	5.41	10.17		

MARS, 1922.

177

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. pass. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. pass. Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Apr. 3	17 13 0.69	0.40	S. 22 41 14.9	5.47	10.28	May 19	17 35 17.90	0.65	N. 24 58 23.1	8.85	16.65
4	17 14 23.05	0.40	22 44 21.0	5.53	10.39	20	17 34 36.54	0.66	25 1 35.7	8.93	16.80
5	17 15 43.73	0.40	22 47 24.8	5.58	10.50	21	17 33 51.93	0.66	25 4 47.3	9.01	16.95
6	17 17 2.70	0.41	22 50 26.3	5.64	10.61	22	17 33 4.09	0.67	25 7 57.6	9.09	17.09
7	17 18 19.92	0.41	22 53 25.8	5.70	10.72	23	17 32 13.08	0.68	25 11 6.2	9.17	17.23
8	17 19 35.35	0.42	22 56 23.4	5.76	10.83	24	17 31 18.99	0.68	25 14 12.8	9.24	17.37
9	17 20 48.93	0.42	S. 22 59 19.2	5.82	10.95	25	17 30 21.88	0.69	S. 25 17 17.0	9.31	17.51
10	17 22 0.64	0.43	23 2 13.4	5.88	11.06	26	17 29 21.82	0.69	25 20 18.4	9.38	17.64
11	17 23 10.42	0.43	23 5 6.3	5.95	11.18	27	17 28 18.94	0.70	25 23 16.6	9.45	17.77
12	17 24 18.23	0.44	23 7 58.0	6.01	11.30	28	17 27 13.36	0.70	25 26 11.1	9.52	17.89
13	17 25 24.00	0.44	23 10 48.7	6.07	11.42	29	17 26 5.17	0.71	25 29 1.9	9.58	18.01
14	17 26 27.70	0.45	23 13 38.5	6.14	11.55	30	17 24 54.53	0.71	25 31 48.4	9.65	18.13
15	17 27 29.26	0.45	S. 23 16 27.6	6.21	11.67	31	17 23 41.56	0.72	S. 25 34 30.3	9.71	18.25
16	17 28 28.63	0.46	23 19 16.1	6.28	11.80	June 1	17 22 26.42	0.72	25 37 7.4	9.77	18.36
17	17 29 25.74	0.46	23 22 4.2	6.35	11.93	2	17 21 9.25	0.73	25 39 39.2	9.82	18.46
18	17 30 20.55	0.47	23 24 52.2	6.41	12.06	3	17 19 50.20	0.73	25 42 5.3	9.87	18.56
19	17 31 12.99	0.47	23 27 40.1	6.48	12.19	4	17 18 29.46	0.73	25 44 25.8	9.92	18.65
20	17 32 3.00	0.48	23 30 28.1	6.56	12.33	5	17 17 7.19	0.74	25 46 40.2	9.96	18.74
21	17 32 50.54	0.48	S. 23 33 16.4	6.63	12.46	6	17 15 43.55	0.74	S. 25 48 48.4	10.01	18.82
22	17 33 35.56	0.49	23 36 5.0	6.70	12.60	7	17 14 18.71	0.74	25 50 50.1	10.05	18.89
23	17 34 17.99	0.49	23 38 54.0	6.77	12.74	8	17 12 52.86	0.75	25 52 45.1	10.08	18.96
24	17 34 57.78	0.50	23 41 43.7	6.85	12.88	9	17 11 26.19	0.75	25 54 33.2	10.12	19.03
25	17 35 34.88	0.50	23 44 34.2	6.92	13.02	10	17 9 58.86	0.75	25 56 14.5	10.15	19.09
26	17 36 9.25	0.51	23 47 25.4	7.00	13.16	11	17 8 31.06	0.75	25 57 48.6	10.18	19.14
27	17 36 40.83	0.52	S. 23 50 17.4	7.07	13.30	12	17 7 3.00	0.76	S. 25 59 15.7	10.21	19.19
28	17 37 9.58	0.52	23 53 10.6	7.15	13.45	13	17 5 34.88	0.76	26 0 35.6	10.23	19.23
29	17 37 35.46	0.53	23 56 5.0	7.23	13.60	14	17 4 6.90	0.76	26 1 48.5	10.24	19.26
30	17 37 58.41	0.53	23 59 0.5	7.31	13.75	15	17 2 39.27	0.76	26 2 54.1	10.24	19.27
May 1	17 38 18.43	0.54	24 1 57.4	7.39	13.90	16	17 1 12.18	0.76	26 3 52.9	10.25	19.28
2	17 38 35.45	0.55	24 4 55.5	7.47	14.05	17	16 59 45.84	0.76	26 4 44.9	10.25	19.28
3	17 38 49.43	0.55	S. 24 7 54.9	7.55	14.20	18	16 58 20.44	0.76	S. 26 5 30.2	10.25	19.28
4	17 39 0.37	0.56	24 10 55.7	7.63	14.35	19	16 56 56.18	0.76	26 6 9.0	10.26	19.29
5	17 39 8.22	0.56	24 13 57.9	7.71	14.50	20	16 55 33.27	0.76	26 6 41.6	10.26	19.29
6	17 39 12.94	0.57	24 17 1.5	7.80	14.66	21	16 54 11.92	0.76	26 7 8.4	10.25	19.28
7	17 39 14.51	0.58	24 20 6.4	7.88	14.81	22	16 52 52.32	0.76	26 7 29.6	10.24	19.26
8	17 39 12.90	0.58	24 23 12.7	7.96	14.96	23	16 51 34.69	0.76	26 7 45.6	10.22	19.23
9	17 39 8.06	0.59	S. 24 26 20.3	8.04	15.12	24	16 50 19.18	0.76	S. 26 7 56.8	10.20	19.19
10	17 38 59.99	0.60	24 29 29.2	8.12	15.27	25	16 49 5.97	0.76	26 8 3.6	10.18	19.14
11	17 38 48.64	0.60	24 32 39.2	8.21	15.43	26	16 47 55.23	0.75	26 8 6.4	10.15	19.09
12	17 38 34.00	0.61	24 35 50.3	8.29	15.59	27	16 46 47.13	0.75	26 8 5.7	10.12	19.03
13	17 38 16.03	0.62	24 39 2.3	8.38	15.75	28	16 45 41.81	0.75	26 8 2.1	10.09	18.97
14	17 37 54.72	0.62	24 42 15.1	8.46	15.90	29	16 44 39.40	0.75	26 7 55.8	10.06	18.91
15	17 37 30.07	0.63	S. 24 45 28.5	8.54	16.05	30	16 43 40.01	0.74	S. 26 7 47.6	10.03	18.85
16	17 37 2.05	0.63	24 48 42.1	8.62	16.20	July 1	16 42 43.78	0.74	26 7 37.8	9.99	18.78
17	17 36 30.67	0.64	24 51 56.0	8.70	16.35	2	16 41 50.78	0.74	26 7 26.8	9.95	18.71
18	17 35 55.95	0.64	S. 24 55 9.7	8.77	16.50	3	16 41 1.12	0.74	S. 26 7 15.2	9.91	18.63

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. pass Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. pass Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
July 4	16 40 14.83	0.73	S. 26 7 3.4	9.86	18.54	Aug. 19	17 7 18.40	0.53	S. 26 37 25.2	7.07	13.30
5	16 39 32.01	0.73	26 6 51.8	9.81	18.44	20	17 9 3.22	0.52	26 38 27.5	7.02	13.19
6	16 38 52.69	0.72	26 6 40.7	9.75	18.34	21	17 10 50.30	0.52	26 39 27.2	6.96	13.09
7	16 38 16.92	0.72	26 6 30.4	9.70	18.24	22	17 12 39.60	0.52	26 40 23.9	6.91	12.99
8	16 37 44.74	0.72	26 6 21.3	9.65	18.14	23	17 14 31.08	0.51	26 41 17.4	6.86	12.89
9	16 37 16.18	0.71	26 6 13.9	9.60	18.05	24	17 16 24.70	0.51	26 42 7.5	6.80	12.79
10	16 36 51.26	0.71	S. 26 6 8.1	9.55	17.95	25	17 18 20.39	0.50	S. 26 42 53.8	6.75	12.69
11	16 36 30.02	0.70	26 6 4.4	9.49	17.84	26	17 20 18.13	0.50	26 43 36.0	6.70	12.59
12	16 36 12.44	0.70	26 6 2.9	9.43	17.73	27	17 22 17.86	0.50	26 44 13.9	6.64	12.49
13	16 35 58.57	0.70	26 6 4.0	9.37	17.62	28	17 24 19.55	0.49	26 44 47.3	6.59	12.40
14	16 35 48.38	0.69	26 6 7.7	9.31	17.51	29	17 26 23.13	0.49	26 45 15.8	6.54	12.31
15	16 35 41.89	0.69	26 6 14.3	9.25	17.40	30	17 28 28.55	0.49	26 45 39.1	6.50	12.22
16	16 35 39.11	0.68	S. 26 6 23.8	9.19	17.28	31	17 30 35.76	0.48	S. 26 45 57.2	6.45	12.13
17	16 35 40.03	0.68	26 6 36.4	9.13	17.16	Sept. 1	17 32 44.74	0.48	26 46 9.4	6.40	12.04
18	16 35 44.63	0.67	26 6 52.2	9.06	17.04	2	17 34 55.42	0.48	26 46 15.7	6.36	11.95
19	16 35 52.93	0.67	26 7 11.3	9.00	16.92	3	17 37 7.75	0.47	26 46 15.6	6.31	11.86
20	16 36 4.89	0.66	26 7 33.8	8.93	16.80	4	17 39 21.70	0.47	26 46 9.1	6.26	11.77
21	16 36 20.50	0.66	26 7 59.7	8.87	16.68	5	17 41 37.23	0.46	26 45 55.8	6.21	11.68
22	16 36 39.73	0.65	S. 26 8 29.0	8.81	16.56	6	17 43 54.30	0.46	S. 26 45 35.5	6.17	11.59
23	16 37 2.58	0.65	26 9 1.7	8.74	16.44	7	17 46 12.86	0.46	26 45 7.8	6.12	11.51
24	16 37 29.02	0.64	26 9 37.9	8.68	16.32	8	17 48 32.89	0.45	26 44 32.7	6.08	11.43
25	16 37 59.00	0.64	26 10 17.4	8.61	16.19	9	17 50 54.34	0.45	26 43 49.8	6.03	11.34
26	16 38 32.50	0.63	26 11 0.3	8.54	16.06	10	17 53 17.18	0.45	26 42 58.8	5.99	11.26
27	16 39 9.49	0.63	26 11 46.5	8.48	15.93	11	17 55 41.38	0.44	26 41 59.6	5.95	11.18
28	16 39 49.91	0.62	S. 26 12 35.9	8.41	15.81	12	17 58 6.89	0.44	S. 26 40 51.9	5.90	11.10
29	16 40 33.71	0.62	26 13 28.4	8.35	15.69	13	18 0 33.71	0.44	26 39 35.5	5.86	11.02
30	16 41 20.87	0.62	26 14 23.8	8.28	15.57	14	18 3 1.79	0.43	26 38 10.2	5.82	10.94
31	16 42 11.28	0.61	26 15 21.9	8.22	15.45	15	18 5 31.10	0.43	26 36 35.8	5.78	10.86
Aug. 1	16 43 4.92	0.61	26 16 22.7	8.16	15.33	16	18 8 1.61	0.43	26 34 52.0	5.73	10.78
2	16 44 1.72	0.60	26 17 25.9	8.09	15.21	17	18 10 33.31	0.42	26 32 58.7	5.69	10.71
3	16 45 1.61	0.60	S. 26 18 31.2	8.03	15.09	18	18 13 6.16	0.42	S. 26 30 55.8	5.66	10.64
4	16 46 4.56	0.59	26 19 38.6	7.96	14.97	19	18 15 40.12	0.42	26 28 42.9	5.62	10.56
5	16 47 10.49	0.59	26 20 47.6	7.90	14.85	20	18 18 15.17	0.42	26 26 20.0	5.58	10.49
6	16 48 19.34	0.58	26 21 58.1	7.84	14.73	21	18 20 51.28	0.41	26 23 46.9	5.54	10.42
7	16 49 31.07	0.58	26 23 9.8	7.77	14.61	22	18 23 28.43	0.41	26 21 3.5	5.50	10.35
8	16 50 45.63	0.57	26 24 22.4	7.71	14.50	23	18 26 6.57	0.41	26 18 9.6	5.47	10.28
9	16 52 2.96	0.57	S. 26 25 35.7	7.65	14.39	24	18 28 45.66	0.40	S. 26 15 5.0	5.43	10.21
10	16 53 23.01	0.57	26 26 49.5	7.59	14.27	25	18 31 25.67	0.40	26 11 49.6	5.39	10.14
11	16 54 45.74	0.56	26 28 3.5	7.53	14.16	26	18 34 6.58	0.40	26 8 23.3	5.36	10.07
12	16 56 11.09	0.56	26 29 17.2	7.47	14.05	27	18 36 48.32	0.39	26 4 45.9	5.32	10.00
13	16 57 39.03	0.55	26 30 30.5	7.41	13.94	28	18 39 30.87	0.39	26 0 57.4	5.28	9.94
14	16 59 9.50	0.55	26 31 43.0	7.35	13.83	29	18 42 14.19	0.39	25 56 57.6	5.25	9.87
15	17 0 42.46	0.54	S. 26 32 54.5	7.30	13.72	30	18 44 58.25	0.39	S. 25 52 46.6	5.21	9.80
16	17 2 17.86	0.54	26 34 4.8	7.24	13.61	Oct. 1	18 47 43.02	0.38	25 48 24.0	5.18	9.73
17	17 3 55.69	0.53	26 35 13.5	7.18	13.50	2	18 50 28.46	0.38	25 43 49.7	5.15	9.67
18	17 5 35.88	0.53	S. 26 36 20.4	7.13	13.40	3	18 53 14.53	0.38	S. 25 39 3.8	5.11	9.61

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.			Sid. Time of Semid. pass Merid.	Apparent Declination.			Semidiameter.	Hor. Par.
	h	m	s	s	°	'	"	"	"		h	m	s	s	°	'	"	"	"
Oct. 4	18	56	1.22	0.37	S. 25	34	6.2	5.07	9.54	Nov. 19	21	8	20.91	0.27	S. 18	10	13.2	3.85	7.24
5	18	58	48.50	0.37	25	28	56.7	5.04	9.48	20	21	11	12.87	0.27	17	56	13.9	3.83	7.20
6	19	1	36.31	0.37	25	23	35.2	5.01	9.42	21	21	14	4.64	0.27	17	42	5.4	3.81	7.16
7	19	4	24.65	0.37	25	18	1.7	4.98	9.36	22	21	16	56.19	0.26	17	27	47.7	3.79	7.12
8	19	7	13.49	0.36	25	12	16.1	4.95	9.30	23	21	19	47.52	0.26	17	13	20.9	3.77	7.08
9	19	10	2.81	0.36	25	6	18.4	4.91	9.24	24	21	22	38.62	0.26	16	58	45.3	3.74	7.04
10	19	12	52.58	0.36	S. 25	0	8.5	4.88	9.18	25	21	25	29.48	0.26	S. 16	44	1.0	3.72	7.00
11	19	15	42.78	0.36	24	53	46.4	4.85	9.12	26	21	28	20.09	0.26	16	29	8.2	3.70	6.96
12	19	18	33.38	0.35	24	47	11.9	4.82	9.06	27	21	31	10.46	0.26	16	14	7.1	3.68	6.92
13	19	21	24.37	0.35	24	40	25.2	4.79	9.01	28	21	34	0.57	0.25	15	58	57.8	3.66	6.88
14	19	24	15.72	0.35	24	33	26.2	4.76	8.95	29	21	36	50.42	0.25	15	43	40.5	3.64	6.84
15	19	27	7.42	0.35	24	26	14.7	4.72	8.89	30	21	39	40.00	0.25	15	28	15.3	3.62	6.81
16	19	29	59.45	0.34	S. 24	18	50.9	4.70	8.84	Dec. 1	21	42	29.30	0.25	S. 15	12	42.4	3.60	6.77
17	19	32	51.78	0.34	24	11	14.8	4.67	8.78	2	21	45	18.34	0.25	14	57	2.1	3.58	6.74
18	19	35	44.41	0.34	24	3	26.3	4.64	8.73	3	21	48	7.09	0.25	14	41	14.4	3.56	6.70
19	19	38	37.30	0.34	23	55	25.4	4.61	8.67	4	21	50	55.57	0.24	14	25	19.5	3.54	6.66
20	19	41	30.43	0.33	23	47	12.1	4.58	8.62	5	21	53	43.77	0.24	14	9	17.6	3.52	6.63
21	19	44	23.81	0.33	23	38	46.6	4.56	8.57	6	21	56	31.69	0.24	13	53	8.9	3.50	6.59
22	19	47	17.39	0.33	S. 23	30	8.7	4.53	8.52	7	21	59	19.36	0.24	S. 13	36	53.5	3.48	6.56
23	19	50	11.14	0.33	23	21	18.7	4.51	8.47	8	22	2	6.74	0.24	13	20	31.5	3.47	6.52
24	19	53	5.05	0.32	23	12	16.5	4.48	8.42	9	22	4	53.86	0.24	13	4	3.1	3.45	6.49
25	19	55	59.10	0.32	23	3	2.1	4.45	8.37	10	22	7	40.70	0.23	12	47	28.6	3.43	6.45
26	19	58	53.26	0.32	22	53	35.7	4.42	8.32	11	22	10	27.29	0.23	12	30	47.9	3.41	6.42
27	20	1	47.49	0.32	22	43	57.2	4.40	8.27	12	22	13	13.61	0.23	12	14	1.4	3.40	6.39
28	20	4	41.80	0.32	S. 22	34	6.8	4.37	8.22	13	22	15	59.69	0.23	S. 11	57	9.1	3.38	6.35
29	20	7	36.14	0.31	22	24	4.5	4.35	8.17	14	22	18	45.51	0.23	11	40	11.3	3.36	6.32
30	20	10	30.51	0.31	22	13	50.5	4.32	8.12	15	22	21	31.10	0.23	11	23	8.0	3.34	6.29
31	20	13	24.89	0.31	22	3	24.7	4.29	8.07	16	22	24	16.44	0.23	11	5	59.5	3.33	6.26
Nov. 1	20	16	19.26	0.31	21	52	47.3	4.26	8.02	17	22	27	1.55	0.22	10	48	45.9	3.31	6.23
2	20	19	13.58	0.30	21	41	58.3	4.24	7.98	18	22	29	46.43	0.22	10	31	27.4	3.30	6.20
3	20	22	7.85	0.30	S. 21	30	57.9	4.21	7.93	19	22	32	31.07	0.22	S. 10	14	4.2	3.28	6.17
4	20	25	2.07	0.30	21	19	46.0	4.19	7.88	20	22	35	15.48	0.22	9	56	36.4	3.26	6.14
5	20	27	56.21	0.30	21	8	22.9	4.17	7.84	21	22	37	59.65	0.22	9	39	4.4	3.25	6.11
6	20	30	50.26	0.30	20	56	48.6	4.14	7.79	22	22	40	43.60	0.22	9	21	28.2	3.23	6.08
7	20	33	44.22	0.29	20	45	3.2	4.12	7.75	23	22	43	27.32	0.22	9	3	48.0	3.22	6.05
8	20	36	38.06	0.29	20	33	6.9	4.09	7.70	24	22	46	10.80	0.22	8	46	4.0	3.20	6.02
9	20	39	31.78	0.29	S. 20	20	59.6	4.07	7.66	25	22	48	54.06	0.22	S. 8	28	16.4	3.19	5.99
10	20	42	25.37	0.29	20	8	41.6	4.05	7.61	26	22	51	37.09	0.21	8	10	25.4	3.17	5.96
11	20	45	18.83	0.29	19	56	12.9	4.03	7.57	27	22	54	19.90	0.21	7	52	31.0	3.15	5.93
12	20	48	12.14	0.28	19	43	33.7	4.01	7.53	28	22	57	2.49	0.21	7	34	33.6	3.14	5.90
13	20	51	5.31	0.28	19	30	44.0	3.98	7.48	29	22	59	44.86	0.21	7	16	33.2	3.12	5.87
14	20	53	58.33	0.28	19	17	43.9	3.96	7.44	30	23	2	27.02	0.21	6	58	30.2	3.10	5.84
15	20	56	51.19	0.28	S. 19	4	33.6	3.94	7.40	31	23	5	8.97	0.21	S. 6	40	24.6	3.09	5.81
16	20	59	43.89	0.28	18	51	13.3	3.92	7.36	32	23	7	50.71	0.21	S. 6	22	16.6	3.08	5.79
17	21	2	36.41	0.27	18	37	43.0	3.89	7.32										
18	21	5	28.75	0.27	S. 18	24	2.9	3.87	7.28										

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass ^s Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass ^s Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Jan. 1	13 59:33	1.21	S. 5 36 41.4	16.80	1.61	Feb. 16	13 10 50.58	1.38	S. 5 54 4.3	19.25	1.84
2	13 620:31	1.21	5 38 35.5	16.85	1.61	17	13 10 40.75	1.39	5 52 49.1	19.30	1.84
3	13 640:71	1.21	5 40 25.8	16.90	1.62	18	13 10 30.24	1.39	5 51 29.9	19.35	1.85
4	13 7 0:52	1.22	5 42 12.4	16.95	1.62	19	13 10 19.06	1.40	5 50 6.7	19.40	1.86
5	13 7 19:74	1.22	5 43 55.1	17.00	1.63	20	13 10 7.23	1.40	5 48 39.6	19.44	1.86
6	13 7 38:36	1.22	5 45 33.9	17.05	1.63	21	13 9 54.73	1.40	5 47 8.6	19.49	1.87
7	13 7 56:36	1.23	S. 5 47 8.8	17.10	1.64	22	13 9 41.57	1.41	S. 5 45 33.8	19.54	1.87
8	13 8 13:76	1.23	5 48 39.8	17.15	1.64	23	13 9 27.78	1.41	5 43 55.2	19.59	1.87
9	13 8 30:54	1.23	5 50 7.0	17.20	1.65	24	13 9 13.36	1.41	5 42 13.0	19.64	1.88
10	13 8 46:70	1.24	5 51 30.2	17.25	1.65	25	13 8 58.30	1.41	5 40 27.0	19.68	1.88
11	13 9 2:24	1.24	5 52 49.4	17.31	1.66	26	13 8 42.63	1.42	5 38 37.5	19.73	1.89
12	13 9 17:15	1.24	5 54 4.6	17.36	1.66	27	13 8 26.35	1.42	5 36 44.4	19.77	1.89
13	13 9 31:42	1.25	S. 5 55 15.9	17.42	1.67	28	13 8 9.48	1.42	S. 5 34 47.9	19.82	1.90
14	13 9 45:05	1.25	5 56 23.1	17.47	1.67	Mar. 1	13 7 52.01	1.43	5 32 47.9	19.86	1.90
15	13 9 58:04	1.26	5 57 26.2	17.53	1.68	2	13 7 33.97	1.43	5 30 44.7	19.90	1.90
16	13 10 10:37	1.26	5 58 25.3	17.58	1.68	3	13 7 15.36	1.43	5 28 38.3	19.94	1.91
17	13 10 22:05	1.27	5 59 20.3	17.63	1.69	4	13 6 56.20	1.43	5 26 28.7	19.97	1.91
18	13 10 33:06	1.27	6 0 11.1	17.69	1.69	5	13 6 36.51	1.44	5 24 15.9	20.01	1.92
19	13 10 43:40	1.27	S. 6 0 57.8	17.74	1.70	6	13 6 16.30	1.44	S. 5 22 0.1	20.05	1.92
20	13 10 53:07	1.28	6 1 40.3	17.80	1.70	7	13 5 55.57	1.44	5 19 41.4	20.08	1.92
21	13 11 2:06	1.28	6 2 18.6	17.85	1.71	8	13 5 34.35	1.44	5 17 19.9	20.12	1.93
22	13 11 10:37	1.28	6 2 52.8	17.91	1.71	9	13 5 12.64	1.44	5 14 55.6	20.15	1.93
23	13 11 17:98	1.29	6 3 22.6	17.96	1.72	10	13 4 50.46	1.45	5 12 28.7	20.19	1.93
24	13 11 24:91	1.29	6 3 48.2	18.02	1.72	11	13 4 27.83	1.45	5 9 59.2	20.22	1.94
25	13 11 31:15	1.29	S. 6 4 9.5	18.07	1.73	12	13 4 4.76	1.45	S. 5 7 27.3	20.25	1.94
26	13 11 36:68	1.30	6 4 26.6	18.12	1.73	13	13 3 41.26	1.45	5 4 53.1	20.28	1.94
27	13 11 41:52	1.30	6 4 39.4	18.17	1.74	14	13 3 17.35	1.45	5 2 16.5	20.31	1.95
28	13 11 45:65	1.31	6 4 48.0	18.23	1.74	15	13 2 53.05	1.46	4 59 37.7	20.34	1.95
29	13 11 49:08	1.31	6 4 52.2	18.28	1.75	16	13 2 28.36	1.46	4 56 56.8	20.37	1.95
30	13 11 51:80	1.32	6 4 52.2	18.34	1.76	17	13 2 3.31	1.46	4 54 13.9	20.40	1.95
31	13 11 53:81	1.32	S. 6 4 47.9	18.39	1.76	18	13 1 37.90	1.46	S. 4 51 29.1	20.43	1.95
Feb. 1	13 11 55:12	1.33	6 4 39.3	18.44	1.77	19	13 1 12.16	1.46	4 48 42.5	20.45	1.96
2	13 11 55:73	1.33	6 4 26.5	18.50	1.77	20	13 0 46.11	1.47	4 45 54.2	20.47	1.96
3	13 11 55:63	1.33	6 4 9.3	18.55	1.78	21	13 0 19.76	1.47	4 43 4.4	20.49	1.96
4	13 11 54:81	1.34	6 3 47.9	18.61	1.78	22	12 59 53.12	1.47	4 40 13.2	20.51	1.96
5	13 11 53:30	1.34	6 3 22.2	18.66	1.79	23	12 59 26.23	1.47	4 37 20.7	20.53	1.97
6	13 11 51:08	1.34	S. 6 2 52.3	18.72	1.79	24	12 58 59.10	1.47	S. 4 34 27.0	20.55	1.97
7	13 11 48:16	1.35	6 2 18.2	18.77	1.79	25	12 58 31.74	1.47	4 31 32.2	20.57	1.97
8	13 11 44:54	1.35	6 1 39.9	18.83	1.80	26	12 58 4.18	1.47	4 28 36.4	20.59	1.97
9	13 11 40:21	1.36	6 0 57.4	18.88	1.80	27	12 57 36.44	1.47	4 25 39.9	20.60	1.97
10	13 11 35:19	1.36	6 0 10.8	18.94	1.81	28	12 57 8.53	1.47	4 22 42.6	20.61	1.97
11	13 11 29:47	1.36	5 59 20.0	19.00	1.82	29	12 56 40.48	1.47	4 19 44.8	20.62	1.97
12	13 11 23:07	1.37	S. 5 58 25.0	19.05	1.82	30	12 56 12.31	1.48	S. 4 16 46.5	20.62	1.97
13	13 11 15:98	1.37	5 57 25.9	19.10	1.83	31	12 55 44.05	1.48	4 13 47.9	20.63	1.97
14	13 11 8:19	1.38	5 56 22.8	19.15	1.83	Apr. 1	12 55 15.71	1.48	4 10 49.1	20.63	1.97
15	13 10 59:73	1.38	S. 5 55 15.6	19.20	1.84	2	12 54 47.31	1.48	S. 4 7 50.3	20.63	1.98

JUPITER, 1922.

181

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.			Sid. Time of Equat. Semid. pass Merid.	Apparent Declination.			Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.			Sid. Time of Equat. Semid. pass Merid.	Apparent Declination.			Polar Semidiameter.	Hor. Par.
	h	m	s	s	°	'	"	"	"		h	m	s	s	°	'	"	"	"
Apr.	3	12 54	18.87	1.48	S. 4	4 51.6	20.63	1.98		May	19	12 36	58.37	1.39	S. 2	21 34.3	19.42	1.86	
	4	12 53	50.42	1.48		4 1 53.1	20.64	1.98		20	12 36	46.93	1.38		2 20 36.6	19.38	1.86		
	5	12 53	21.96	1.48		3 58 54.9	20.64	1.98		21	12 36	36.12	1.38		2 19 43.0	19.33	1.85		
	6	12 52	53.53	1.48		3 55 57.1	20.64	1.98		22	12 36	25.94	1.38		2 18 53.6	19.28	1.85		
	7	12 52	25.14	1.48		3 53 0.0	20.63	1.98		23	12 36	16.40	1.37		2 18 8.4	19.23	1.84		
	8	12 51	56.81	1.48		3 50 3.6	20.63	1.98		24	12 36	7.51	1.37		2 17 27.5	19.18	1.84		
	9	12 51	28.57	1.48	S.	3 47 8.0	20.62	1.97		25	12 35	59.26	1.37	S.	2 16 50.8	19.13	1.83		
	10	12 51	0.43	1.48		3 44 13.4	20.62	1.97		26	12 35	51.66	1.36		2 16 18.4	19.08	1.83		
	11	12 50	32.40	1.48		3 41 19.8	20.61	1.97		27	12 35	44.72	1.36		2 15 50.3	19.03	1.82		
	12	12 50	4.51	1.47		3 38 27.4	20.60	1.97		28	12 35	38.43	1.36		2 15 26.5	18.98	1.82		
	13	12 49	36.78	1.47		3 35 36.3	20.59	1.97		29	12 35	32.81	1.35		2 15 7.0	18.93	1.81		
	14	12 49	9.21	1.47		3 32 46.6	20.57	1.97		30	12 35	27.85	1.35		2 14 51.8	18.88	1.81		
	15	12 48	41.83	1.47	S.	3 29 58.4	20.56	1.97		31	12 35	23.55	1.35	S.	2 14 41.0	18.82	1.80		
	16	12 48	14.67	1.47		3 27 11.9	20.54	1.97		June	1	12 35	19.92	1.34		2 14 34.4	18.77	1.80	
17	12 47	47.73	1.47		3 24 27.1	20.53	1.97		2	12 35	16.94	1.34		2 14 32.2	18.72	1.79			
18	12 47	21.02	1.47		3 21 44.2	20.51	1.96		3	12 35	14.63	1.34		2 14 34.3	18.67	1.79			
19	12 46	54.58	1.47		3 19 3.2	20.49	1.96		4	12 35	12.99	1.33		2 14 40.6	18.62	1.78			
20	12 46	28.42	1.46		3 16 24.4	20.47	1.96		5	12 35	12.00	1.33		2 14 51.3	18.56	1.78			
21	12 46	2.56	1.46	S.	3 13 47.7	20.45	1.96		6	12 35	11.67	1.33	S.	2 15 6.2	18.51	1.77			
22	12 45	37.01	1.46		3 11 13.3	20.43	1.96		7	12 35	11.99	1.32		2 15 25.3	18.46	1.77			
23	12 45	11.79	1.46		3 8 41.4	20.40	1.95		8	12 35	12.98	1.32		2 15 48.7	18.41	1.76			
24	12 44	46.92	1.46		3 6 12.0	20.38	1.95		9	12 35	14.61	1.31		2 16 16.3	18.36	1.76			
25	12 44	22.42	1.45		3 3 45.2	20.35	1.95		10	12 35	16.90	1.31		2 16 48.0	18.30	1.75			
26	12 43	58.30	1.45		3 1 21.1	20.32	1.95		11	12 35	19.83	1.31		2 17 23.9	18.25	1.75			
27	12 43	34.57	1.45	S.	2 58 59.8	20.29	1.94		12	12 35	23.42	1.30	S.	2 18 4.1	18.19	1.74			
28	12 43	11.26	1.45		2 56 41.4	20.26	1.94		13	12 35	27.65	1.30		2 18 48.3	18.14	1.74			
29	12 42	48.37	1.45		2 54 26.0	20.23	1.94		14	12 35	32.53	1.29		2 19 36.7	18.09	1.73			
30	12 42	25.92	1.44		2 52 13.7	20.20	1.93		15	12 35	38.05	1.29		2 20 29.2	18.03	1.73			
May	1	12 42	3.93	1.44		2 50 4.5	20.17	1.93		16	12 35	44.20	1.28		2 21 25.8	17.98	1.72		
	2	12 41	42.42	1.44		2 47 58.6	20.14	1.93		17	12 35	51.00	1.28		2 22 26.5	17.93	1.72		
	3	12 41	21.39	1.44	S.	2 45 56.1	20.10	1.92		18	12 35	58.43	1.28	S.	2 23 31.1	17.88	1.71		
	4	12 41	0.85	1.43		2 43 56.9	20.06	1.92		19	12 36	6.50	1.27		2 24 39.8	17.83	1.71		
	5	12 40	40.82	1.43		2 42 1.1	20.02	1.92		20	12 36	15.19	1.27		2 25 52.5	17.77	1.70		
	6	12 40	21.30	1.43		2 40 8.9	19.98	1.91		21	12 36	24.51	1.27		2 27 9.2	17.71	1.70		
	7	12 40	2.31	1.43		2 38 20.3	19.94	1.91		22	12 36	34.46	1.26		2 28 29.8	17.65	1.69		
	8	12 39	43.85	1.42		2 36 35.4	19.90	1.91		23	12 36	45.03	1.26		2 29 54.4	17.60	1.69		
	9	12 39	25.93	1.42	S.	2 34 54.1	19.86	1.90		24	12 36	56.23	1.26	S.	2 31 22.8	17.55	1.68		
	10	12 39	8.57	1.42		2 33 16.6	19.82	1.90		25	12 37	8.04	1.25		2 32 55.1	17.50	1.68		
	11	12 38	51.76	1.41		2 31 42.9	19.78	1.89		26	12 37	20.46	1.25		2 34 31.3	17.45	1.67		
	12	12 38	35.52	1.41		2 30 13.0	19.74	1.89		27	12 37	33.49	1.24		2 36 11.2	17.40	1.67		
	13	12 38	19.86	1.41		2 28 46.9	19.70	1.89		28	12 37	47.11	1.24		2 37 55.0	17.35	1.66		
	14	12 38	4.78	1.40		2 27 24.8	19.66	1.88		29	12 38	1.34	1.23		2 39 42.4	17.30	1.66		
	15	12 37	50.29	1.40	S.	2 26 6.6	19.61	1.88		30	12 38	16.17	1.23	S.	2 41 33.5	17.25	1.65		
	16	12 37	36.40	1.40		2 24 52.4	19.56	1.87		July	1	12 38	31.57	1.23		2 43 28.2	17.20	1.65	
	17	12 37	23.11	1.39		2 23 42.2	19.51	1.87		2	12 38	47.55	1.22		2 45 26.5	17.15	1.64		
	18	12 37	10.43	1.39	S.	2 22 36.2	19.47	1.86		3	12 39	4.11	1.22	S.	2 47 28.4	17.10	1.64		

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass# Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass# Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
July 4	12 39 21.25	1.22	S. 2 49 33.8	17.05	1.63	July 21	12 45 34.53	1.16	S. 3 33 26.9	16.26	1.56
5	12 39 38.94	1.21	2 51 42.7	17.01	1.63	22	12 46 1.04	1.16	3 36 29.2	16.22	1.56
6	12 39 57.19	1.21	2 53 55.0	16.96	1.62	23	12 46 28.04	1.16	3 39 34.3	16.18	1.55
7	12 40 15.99	1.21	2 56 10.7	16.91	1.62	24	12 46 55.50	1.16	3 42 42.1	16.14	1.55
8	12 40 35.34	1.20	2 58 29.8	16.86	1.61	25	12 47 23.43	1.15	3 45 52.6	16.10	1.54
9	12 40 55.23	1.20	3 0 52.2	16.81	1.61	26	12 47 51.81	1.15	3 49 5.8	16.06	1.54
10	12 41 15.66	1.20	S. 3 3 18.0	16.77	1.61	27	12 48 20.65	1.15	S. 3 52 21.7	16.02	1.53
11	12 41 36.62	1.19	3 5 46.9	16.72	1.60	28	12 48 49.94	1.15	3 55 40.1	15.98	1.53
12	12 41 58.11	1.19	3 8 19.0	16.68	1.60	29	12 49 19.67	1.14	3 59 1.1	15.94	1.53
13	12 42 20.13	1.19	3 10 54.4	16.63	1.59	30	12 49 49.84	1.14	4 2 24.5	15.91	1.52
14	12 42 42.66	1.18	3 13 32.9	16.58	1.59	31	12 50 20.43	1.14	4 5 50.4	15.87	1.52
15	12 43 5.71	1.18	3 16 14.5	16.54	1.58	Aug. 1	12 50 51.44	1.14	4 9 18.7	15.83	1.52
16	12 43 29.27	1.18	S. 3 18 59.2	16.49	1.58	2	12 51 22.87	1.13	S. 4 12 49.4	15.79	1.51
17	12 43 53.34	1.17	3 21 46.8	16.45	1.57	3	12 51 54.71	1.13	4 16 22.5	15.75	1.51
18	12 44 17.90	1.17	3 24 37.4	16.40	1.57	4	12 52 26.96	1.13	4 19 57.8	15.72	1.50
19	12 44 42.95	1.17	3 27 31.0	16.36	1.56	5	12 52 59.61	1.12	S. 4 23 35.3	15.68	1.50
20	12 45 8.50	1.17	S. 3 30 27.5	16.31	1.56						

SATURN, 1922.

183

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass# Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass# Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Jan. 1	12 30 53.73	0.59	S. 0 47 10.7	7.93	0.94	Feb. 16	12 28 56.16	0.63	S. 0 21 4.3	8.53	1.01
2	12 30 59.91	0.59	0 47 31.9	7.94	0.94	17	12 28 45.11	0.64	0 19 38.7	8.54	1.01
3	12 31 5.70	0.59	0 47 50.6	7.96	0.94	18	12 28 33.76	0.64	0 18 11.4	8.55	1.01
4	12 31 11.11	0.59	0 48 6.8	7.97	0.94	19	12 28 22.11	0.64	0 16 42.4	8.56	1.01
5	12 31 16.12	0.59	0 48 20.4	7.99	0.94	20	12 28 10.16	0.64	0 15 11.9	8.57	1.01
6	12 31 20.74	0.60	0 48 31.4	8.00	0.94	21	12 27 57.93	0.64	0 13 39.7	8.58	1.01
7	12 31 24.96	0.60	S. 0 48 39.9	8.01	0.95	22	12 27 45.42	0.64	S. 0 12 6.0	8.59	1.01
8	12 31 28.80	0.60	0 48 45.9	8.03	0.95	23	12 27 32.64	0.64	0 10 30.8	8.60	1.01
9	12 31 32.24	0.60	0 48 49.3	8.04	0.95	24	12 27 19.60	0.64	0 8 54.2	8.61	1.02
10	12 31 35.29	0.60	0 48 50.3	8.06	0.95	25	12 27 6.30	0.64	0 7 16.1	8.61	1.02
11	12 31 37.94	0.60	0 48 48.6	8.07	0.95	26	12 26 52.74	0.64	0 5 36.8	8.62	1.02
12	12 31 40.19	0.60	0 48 44.4	8.08	0.95	27	12 26 38.95	0.64	0 3 56.1	8.63	1.02
13	12 31 42.05	0.60	S. 0 48 37.6	8.10	0.96	28	12 26 24.93	0.64	S. 0 2 14.3	8.64	1.02
14	12 31 43.52	0.60	0 48 28.4	8.11	0.96	Mar. 1	12 26 10.67	0.64	S. 0 0 31.2	8.65	1.02
15	12 31 44.58	0.61	0 48 16.6	8.13	0.96	2	12 25 56.20	0.64	N. 0 1 12.9	8.65	1.02
16	12 31 45.26	0.61	0 48 2.2	8.14	0.96	3	12 25 41.52	0.64	0 2 58.1	8.66	1.02
17	12 31 45.54	0.61	0 47 45.3	8.15	0.96	4	12 25 26.63	0.64	0 4 44.3	8.67	1.02
18	12 31 45.42	0.61	0 47 26.0	8.17	0.96	5	12 25 11.55	0.65	0 6 31.4	8.67	1.02
19	12 31 44.90	0.61	S. 0 47 4.2	8.18	0.96	6	12 24 56.29	0.65	N. 0 8 19.4	8.67	1.02
20	12 31 43.98	0.61	0 46 39.8	8.20	0.97	7	12 24 40.85	0.65	0 10 8.2	8.68	1.02
21	12 31 42.67	0.61	0 46 13.0	8.21	0.97	8	12 24 25.25	0.65	0 11 57.7	8.68	1.02
22	12 31 40.96	0.61	0 45 43.6	8.22	0.97	9	12 24 9.48	0.65	0 13 48.0	8.69	1.03
23	12 31 38.85	0.61	0 45 11.8	8.24	0.97	10	12 23 53.57	0.65	0 15 38.9	8.69	1.03
24	12 31 36.35	0.62	0 44 37.5	8.25	0.97	11	12 23 37.52	0.65	0 17 30.4	8.70	1.03
25	12 31 33.46	0.62	S. 0 44 0.8	8.27	0.98	12	12 23 21.33	0.65	N. 0 19 22.4	8.70	1.03
26	12 31 30.17	0.62	0 43 21.6	8.28	0.98	13	12 23 5.02	0.65	0 21 14.9	8.71	1.03
27	12 31 26.50	0.62	0 42 40.1	8.29	0.98	14	12 22 48.59	0.65	0 23 7.8	8.71	1.03
28	12 31 22.44	0.62	0 41 56.1	8.31	0.98	15	12 22 32.05	0.65	0 25 1.1	8.71	1.03
29	12 31 17.99	0.62	0 41 9.8	8.32	0.98	16	12 22 15.41	0.65	0 26 54.6	8.72	1.03
30	12 31 13.17	0.62	0 40 21.1	8.34	0.98	17	12 21 58.68	0.65	0 28 48.4	8.72	1.03
31	12 31 7.97	0.62	S. 0 39 30.2	8.35	0.99	18	12 21 41.86	0.65	N. 0 30 42.4	8.72	1.03
Feb. 1	12 31 2.39	0.62	0 38 36.9	8.37	0.99	19	12 21 24.98	0.65	0 32 36.5	8.72	1.03
2	12 30 56.43	0.62	0 37 41.3	8.38	0.99	20	12 21 8.03	0.65	0 34 30.7	8.73	1.03
3	12 30 50.11	0.62	0 36 43.6	8.39	0.99	21	12 20 51.02	0.65	0 36 24.8	8.73	1.03
4	12 30 43.41	0.63	0 35 43.7	8.40	0.99	22	12 20 33.96	0.65	0 38 18.9	8.73	1.03
5	12 30 36.36	0.63	0 34 41.6	8.41	0.99	23	12 20 16.87	0.65	0 40 12.9	8.73	1.03
6	12 30 28.94	0.63	S. 0 33 37.4	8.43	0.99	24	12 19 59.75	0.65	N. 0 42 6.7	8.73	1.03
7	12 30 21.18	0.63	0 32 31.0	8.44	0.99	25	12 19 42.62	0.65	0 44 0.2	8.73	1.03
8	12 30 13.07	0.63	0 31 22.6	8.45	1.00	26	12 19 25.48	0.65	0 45 53.5	8.73	1.03
9	12 30 4.62	0.63	0 30 12.1	8.46	1.00	27	12 19 8.34	0.65	0 47 46.3	8.73	1.03
10	12 29 55.83	0.63	0 28 59.6	8.47	1.00	28	12 18 51.22	0.65	0 49 38.6	8.72	1.03
11	12 29 46.70	0.63	0 27 45.1	8.48	1.00	29	12 18 34.11	0.65	0 51 30.5	8.72	1.03
12	12 29 37.24	0.63	S. 0 26 28.6	8.49	1.00	30	12 18 17.04	0.65	N. 0 53 21.9	8.72	1.03
13	12 29 27.45	0.63	0 25 10.3	8.50	1.00	31	12 18 0.01	0.65	0 55 12.6	8.72	1.03
14	12 29 17.34	0.63	0 23 50.1	8.51	1.00	Apr. 1	12 17 43.02	0.65	0 57 2.5	8.72	1.03
15	12 29 6.91	0.63	S. 0 22 28.1	8.52	1.01	2	12 17 26.10	0.65	N. 0 58 51.8	8.72	1.03

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
Apr. 3	12 17 9.25	0.65	N. 1 0 40.2	8.71	1.03	May 19	12 7 41.76	0.62	N. 1 55 53.1	8.32	0.98
4	12 16 52.48	0.65	1 2 27.8	8.71	1.03	20	12 7 36.20	0.62	1 56 15.8	8.31	0.98
5	12 16 35.80	0.65	1 4 14.4	8.71	1.03	21	12 7 30.99	0.62	1 56 36.1	8.29	0.98
6	12 16 19.21	0.65	1 6 0.1	8.70	1.03	22	12 7 26.13	0.62	1 56 54.0	8.28	0.98
7	12 16 2.74	0.65	1 7 44.8	8.70	1.03	23	12 7 21.64	0.62	1 57 9.3	8.26	0.97
8	12 15 46.37	0.65	1 9 28.4	8.69	1.03	24	12 7 17.52	0.62	1 57 22.2	8.25	0.97
9	12 15 30.12	0.65	N. 1 11 10.8	8.69	1.03	25	12 7 13.75	0.61	N. 1 57 32.7	8.23	0.97
10	12 15 14.01	0.65	1 12 52.1	8.68	1.02	26	12 7 10.35	0.61	1 57 40.7	8.22	0.97
11	12 14 58.03	0.65	1 14 32.1	8.68	1.02	27	12 7 7.32	0.61	1 57 46.2	8.21	0.97
12	12 14 42.19	0.65	1 16 10.8	8.67	1.02	28	12 7 4.66	0.61	1 57 49.3	8.19	0.97
13	12 14 26.51	0.65	1 17 48.2	8.67	1.02	29	12 7 2.36	0.61	1 57 49.9	8.18	0.96
14	12 14 10.99	0.64	1 19 24.2	8.66	1.02	30	12 7 0.43	0.61	1 57 48.0	8.17	0.96
15	12 13 55.63	0.64	N. 1 20 58.9	8.66	1.02	31	12 6 58.87	0.61	N. 1 57 43.6	8.15	0.96
16	12 13 40.45	0.64	1 22 32.1	8.65	1.02	June 1	12 6 57.69	0.61	1 57 36.7	8.14	0.96
17	12 13 25.46	0.64	1 24 3.7	8.65	1.02	2	12 6 56.88	0.61	1 57 27.4	8.12	0.96
18	12 13 10.65	0.64	1 25 33.8	8.64	1.02	3	12 6 56.44	0.60	1 57 15.6	8.11	0.96
19	12 12 56.04	0.64	1 27 2.3	8.64	1.02	4	12 6 56.37	0.60	1 57 1.3	8.09	0.96
20	12 12 41.64	0.64	1 28 29.2	8.63	1.02	5	12 6 56.67	0.60	1 56 44.6	8.08	0.95
21	12 12 27.45	0.64	N. 1 29 54.3	8.62	1.02	6	12 6 57.33	0.60	N. 1 56 25.4	8.07	0.95
22	12 12 13.49	0.64	1 31 17.8	8.61	1.02	7	12 6 58.37	0.60	1 56 3.9	8.06	0.95
23	12 11 59.75	0.64	1 32 39.4	8.60	1.02	8	12 6 59.78	0.60	1 55 39.9	8.05	0.95
24	12 11 46.25	0.64	1 33 59.3	8.59	1.01	9	12 7 1.55	0.60	1 55 13.5	8.04	0.95
25	12 11 32.99	0.64	1 35 17.2	8.58	1.01	10	12 7 3.69	0.60	1 54 44.7	8.02	0.95
26	12 11 19.98	0.64	1 36 33.3	8.57	1.01	11	12 7 6.20	0.60	1 54 13.5	8.01	0.94
27	12 11 7.22	0.64	N. 1 37 47.4	8.56	1.01	12	12 7 9.08	0.60	N. 1 53 40.0	7.99	0.94
28	12 10 54.72	0.64	1 38 59.6	8.55	1.01	13	12 7 12.32	0.59	1 53 4.0	7.98	0.94
29	12 10 42.49	0.64	1 40 9.7	8.54	1.01	14	12 7 15.92	0.59	1 52 25.6	7.97	0.94
30	12 10 30.54	0.64	1 41 17.8	8.53	1.01	15	12 7 19.89	0.59	1 51 44.9	7.95	0.94
May 1	12 10 18.87	0.64	1 42 23.9	8.52	1.01	16	12 7 24.23	0.59	1 51 1.9	7.94	0.94
2	12 10 7.49	0.63	1 43 27.9	8.51	1.00	17	12 7 28.92	0.59	1 50 16.4	7.92	0.93
3	12 9 56.39	0.63	N. 1 44 29.7	8.50	1.00	18	12 7 33.98	0.59	N. 1 49 28.7	7.90	0.93
4	12 9 45.59	0.63	1 45 29.5	8.49	1.00	19	12 7 39.40	0.59	1 48 38.6	7.88	0.93
5	12 9 35.09	0.63	1 46 27.0	8.48	1.00	20	12 7 45.17	0.59	1 47 46.2	7.87	0.93
6	12 9 24.90	0.63	1 47 22.3	8.47	1.00	21	12 7 51.31	0.59	1 46 51.5	7.85	0.93
7	12 9 15.01	0.63	1 48 15.4	8.46	1.00	22	12 7 57.81	0.59	1 45 54.6	7.84	0.93
8	12 9 5.44	0.63	1 49 6.2	8.45	1.00	23	12 8 4.66	0.58	1 44 55.3	7.82	0.92
9	12 8 56.19	0.63	N. 1 49 54.8	8.44	1.00	24	12 8 11.87	0.58	N. 1 43 53.9	7.81	0.92
10	12 8 47.25	0.63	1 50 41.1	8.43	0.99	25	12 8 19.43	0.58	1 42 50.2	7.80	0.92
11	12 8 38.64	0.63	1 51 25.2	8.41	0.99	26	12 8 27.34	0.58	1 41 44.3	7.78	0.92
12	12 8 30.35	0.63	1 52 6.9	8.40	0.99	27	12 8 35.60	0.58	1 40 36.1	7.77	0.92
13	12 8 22.40	0.63	1 52 46.3	8.39	0.99	28	12 8 44.21	0.58	1 39 25.8	7.76	0.92
14	12 8 14.77	0.62	1 53 23.4	8.38	0.99	29	12 8 53.16	0.58	1 38 13.3	7.75	0.91
15	12 8 7.48	0.62	N. 1 53 58.1	8.37	0.99	30	12 9 2.45	0.58	N. 1 36 58.7	7.74	0.91
16	12 8 0.54	0.62	1 54 30.5	8.35	0.99	July 1	12 9 12.08	0.58	1 35 41.9	7.72	0.91
17	12 7 53.93	0.62	1 55 0.4	8.34	0.98	2	12 9 22.05	0.58	1 34 23.0	7.71	0.91
18	12 7 47.67	0.62	N. 1 55 28.0	8.33	0.98	3	12 9 32.35	0.57	N. 1 33 2.1	7.69	0.91

SATURN, 1922.

185

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Equat. Semid. pass Merid.	Apparent Declination.	Polar Semidiameter.	Hor. Par.
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"
July 4	12 9 42.98	0.57	N. 1 31 39.0	7.68	0.91	July 16	12 12 15.31	0.56	N. 1 12 29.5	7.54	0.89
5	12 9 53.94	0.57	1 30 14.0	7.67	0.91	17	12 12 29.99	0.56	1 10 41.6	7.52	0.89
6	12 10 5.22	0.57	1 28 46.9	7.65	0.90	18	12 12 44.96	0.56	1 8 51.9	7.51	0.89
7	12 10 16.82	0.57	1 27 17.8	7.64	0.90	19	12 13 0.22	0.56	1 7 0.4	7.50	0.89
8	12 10 28.75	0.57	1 25 46.8	7.63	0.90	20	12 13 15.78	0.56	1 5 7.1	7.49	0.88
9	12 10 40.98	0.57	1 24 13.8	7.62	0.90	21	12 13 31.62	0.56	1 3 12.2	7.48	0.88
10	12 10 53.53	0.57	N. 1 22 38.8	7.61	0.90	22	12 13 47.74	0.56	N. 1 1 15.5	7.46	0.88
11	12 11 6.40	0.57	1 21 2.0	7.59	0.90	23	12 14 4.13	0.56	0 59 17.2	7.45	0.88
12	12 11 19.58	0.56	1 19 23.2	7.58	0.90	24	12 14 20.81	0.55	0 57 17.3	7.44	0.88
13	12 11 33.06	0.56	1 17 42.6	7.57	0.89	25	12 14 37.75	0.55	0 55 15.7	7.43	0.88
14	12 11 46.84	0.56	1 16 0.0	7.56	0.89	26	12 14 54.97	0.55	0 53 12.5	7.42	0.88
15	12 12 0.92	0.56	N. 1 14 15.7	7.55	0.89	27	12 15 12.45	0.55	N. 0 51 7.8	7.41	0.88
Dec. 8	13 9 28.53	0.55	S. 4 51 15.0	7.39	0.87	Dec. 21	13 13 6.30	0.56	S. 5 10 13.9	7.53	0.89
9	13 9 47.02	0.55	4 52 54.4	7.40	0.87	22	13 13 20.90	0.56	5 11 27.1	7.54	0.89
10	13 10 5.23	0.55	4 54 32.0	7.41	0.87	23	13 13 35.18	0.57	5 12 38.1	7.56	0.89
11	13 10 23.17	0.56	4 56 7.6	7.42	0.88	24	13 13 49.12	0.57	5 13 46.9	7.57	0.89
12	13 10 40.82	0.56	4 57 41.3	7.43	0.88	25	13 14 2.73	0.57	5 14 53.6	7.58	0.89
13	13 10 58.19	0.56	4 59 13.1	7.44	0.88	26	13 14 16.01	0.57	5 15 58.1	7.59	0.90
14	13 11 15.26	0.56	S. 5 0 42.8	7.45	0.88	27	13 14 28.95	0.57	S. 5 17 0.3	7.60	0.90
15	13 11 32.04	0.56	5 2 10.5	7.46	0.88	28	13 14 41.54	0.57	5 18 0.3	7.62	0.90
16	13 11 48.52	0.56	5 3 36.3	7.47	0.88	29	13 14 53.79	0.57	5 18 58.1	7.63	0.90
17	13 12 4.70	0.56	5 5 0.0	7.48	0.88	30	13 15 5.70	0.57	5 19 53.7	7.65	0.90
18	13 12 20.57	0.56	5 6 21.6	7.50	0.89	31	13 15 17.26	0.57	5 20 47.0	7.66	0.90
19	13 12 36.13	0.56	5 7 41.1	7.51	0.89	32	13 15 28.47	0.57	S. 5 21 37.9	7.67	0.91
20	13 12 51.37	0.56	S. 5 8 58.5	7.52	0.89						

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. pass ^r Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. pass ^r Merid.	Apparent Declination.	Semidiameter.	Hor. Par.
July 22	h m s	s	° ' "	"	"	Sept. 6	h m s	s	° ' "	"	"
23	22 59 6.51	0.12	S. 7 21 52.9	1.8	0.5	7	22 53 6.90	0.12	S. 7 59 30.4	1.8	0.5
24	22 58 55.05	0.12	7 22 29.8	1.8	0.5	8	22 52 57.98	0.12	8 0 24.9	1.8	0.5
25	22 58 49.11	0.12	7 23 7.5	1.8	0.5	9	22 52 49.07	0.12	8 1 19.3	1.8	0.5
26	22 58 43.05	0.12	7 23 46.0	1.8	0.5	10	22 52 40.18	0.12	8 2 13.5	1.8	0.5
27	22 58 36.86	0.12	7 24 25.3	1.8	0.5	11	22 52 31.30	0.12	8 3 7.6	1.8	0.5
28	22 58 30.54	0.12	7 25 5.3	1.8	0.5	12	22 52 22.44	0.12	8 4 1.5	1.8	0.5
29	22 58 24.09	0.12	S. 7 25 46.0	1.8	0.5	13	22 52 13.60	0.12	S. 8 4 55.1	1.8	0.5
30	22 58 17.52	0.12	7 26 27.5	1.8	0.5	14	22 52 4.78	0.12	8 5 48.5	1.8	0.5
31	22 58 10.84	0.12	7 27 9.7	1.8	0.5	15	22 51 56.00	0.12	8 6 41.7	1.8	0.5
Aug. 1	22 58 4.04	0.12	7 27 52.6	1.8	0.5	16	22 51 47.24	0.12	8 7 34.7	1.8	0.5
2	22 57 57.12	0.12	7 28 36.1	1.8	0.5	17	22 51 38.53	0.12	8 8 27.3	1.8	0.5
3	22 57 50.10	0.12	7 29 20.3	1.8	0.5	18	22 51 29.86	0.12	8 9 19.6	1.8	0.5
4	22 57 42.97	0.12	S. 7 30 5.2	1.8	0.5	19	22 51 21.24	0.12	S. 8 10 11.6	1.8	0.5
5	22 57 35.73	0.12	7 30 50.7	1.8	0.5	20	22 51 12.67	0.12	8 11 3.1	1.8	0.5
6	22 57 28.39	0.12	7 31 36.7	1.8	0.5	21	22 51 4.15	0.12	8 11 54.3	1.8	0.5
7	22 57 20.95	0.12	7 32 23.4	1.8	0.5	22	22 50 55.68	0.12	8 12 45.1	1.8	0.5
8	22 57 13.42	0.12	7 33 10.6	1.8	0.5	23	22 50 47.28	0.12	8 13 35.4	1.8	0.5
9	22 57 5.79	0.12	7 33 58.3	1.8	0.5	24	22 50 38.95	0.12	8 14 25.3	1.8	0.5
10	22 56 58.06	0.12	S. 7 34 46.7	1.8	0.5	25	22 50 30.68	0.12	S. 8 15 14.7	1.8	0.5
11	22 56 50.25	0.12	7 35 35.5	1.8	0.5	26	22 50 22.49	0.12	8 16 3.7	1.8	0.5
12	22 56 42.35	0.12	7 36 24.8	1.8	0.5	27	22 50 14.36	0.12	8 16 52.1	1.8	0.5
13	22 56 34.37	0.12	7 37 14.5	1.8	0.5	28	22 50 6.32	0.12	8 17 40.0	1.8	0.5
14	22 56 26.31	0.12	7 38 4.8	1.8	0.5	29	22 49 58.37	0.12	8 18 27.3	1.8	0.5
15	22 56 18.18	0.12	7 38 55.4	1.8	0.5	30	22 49 50.50	0.12	8 19 14.0	1.8	0.5
16	22 56 9.98	0.12	S. 7 39 46.4	1.8	0.5	Oct. 1	22 49 42.71	0.12	S. 8 20 0.2	1.8	0.5
17	22 56 1.71	0.12	7 40 37.9	1.8	0.5	2	22 49 35.02	0.12	8 20 45.7	1.8	0.5
18	22 55 53.36	0.12	7 41 29.7	1.8	0.5	3	22 49 27.42	0.12	8 21 30.6	1.8	0.5
19	22 55 44.95	0.12	7 42 21.9	1.8	0.5	4	22 49 19.93	0.12	8 22 14.8	1.8	0.5
20	22 55 36.48	0.12	7 43 14.4	1.8	0.5	5	22 49 12.53	0.12	8 22 58.4	1.8	0.5
21	22 55 27.96	0.12	7 44 7.3	1.8	0.5	6	22 49 5.24	0.12	8 23 41.3	1.8	0.5
22	22 55 19.38	0.12	S. 7 45 0.4	1.8	0.5	7	22 48 58.06	0.12	S. 8 24 23.4	1.8	0.5
23	22 55 10.75	0.12	7 45 53.7	1.8	0.5	8	22 48 50.99	0.12	8 25 4.9	1.8	0.5
24	22 55 2.08	0.12	7 46 47.3	1.8	0.5	9	22 48 44.04	0.12	8 25 45.6	1.8	0.5
25	22 54 53.37	0.12	7 47 41.2	1.8	0.5	10	22 48 37.19	0.12	8 26 25.6	1.8	0.5
26	22 54 44.62	0.12	7 48 35.3	1.8	0.5	11	22 48 30.47	0.12	8 27 4.8	1.8	0.5
27	22 54 35.83	0.12	7 49 29.5	1.8	0.5	12	22 48 23.86	0.12	8 27 43.2	1.8	0.5
28	22 54 27.01	0.12	S. 7 50 23.9	1.8	0.5	13	22 48 17.38	0.12	S. 8 28 20.8	1.8	0.5
29	22 54 18.17	0.12	7 51 18.4	1.8	0.5	14	22 48 11.03	0.12	8 28 57.6	1.8	0.5
30	22 54 9.31	0.12	7 52 12.9	1.8	0.5	15	22 48 4.81	0.12	8 29 33.5	1.8	0.5
31	22 54 0.42	0.12	7 53 7.5	1.8	0.5	16	22 47 58.72	0.12	8 30 8.6	1.8	0.5
Sept. 1	22 53 51.52	0.12	7 54 2.2	1.8	0.5	17	22 47 52.77	0.12	8 30 42.8	1.8	0.5
2	22 53 42.61	0.12	7 54 56.9	1.8	0.5	18	22 47 46.96	0.12	8 31 16.2	1.8	0.5
3	22 53 33.69	0.12	S. 7 55 51.7	1.8	0.5	19	22 47 41.29	0.12	S. 8 31 48.6	1.8	0.5
4	22 53 24.76	0.12	7 56 46.4	1.8	0.5	20	22 47 35.76	0.12	8 32 20.2	1.8	0.5
5	22 53 15.83	0.12	7 57 41.1	1.8	0.5	21	22 47 30.39	0.12	8 32 50.8	1.8	0.5
			S. 7 58 35.8	1.8	0.5				8 33 20.5	1.8	0.5

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Sid. Time of Semid. pass ^r Merid.	Apparent Declination.	Semidiameter.	Hor. Par.	Date.	Apparent Right Ascension.	Sid. Time of Semid. pass ^r Merid.	Apparent Declination.	Semidiameter.	Hor. Par.			
	h m s	s	° ' "	"	"		h m s	s	° ' "	"	"			
Oct. 22	22 47 20	08	S. 8 33 49	2	1.8	0.5	Nov. 27	22 46 12	55	0.12	S. 8 39 10	7	1.7	0.4
23	22 47 15	16	8 34 16	9	1.8	0.5	28	22 46 14	12	0.12	8 38 58	7	1.7	0.4
24	22 47 10	39	8 34 43	6	1.8	0.5	29	22 46 15	88	0.12	8 38 45	5	1.7	0.4
25	22 47 5	79	8 35 9	3	1.8	0.5	30	22 46 17	84	0.12	8 38 31	0	1.7	0.4
26	22 47 1	34	8 35 34	0	1.8	0.5	Dec. 1	22 46 19	99	0.12	8 38 15	5	1.7	0.4
27	22 46 57	06	8 35 57	7	1.8	0.5	2	22 46 22	33	0.12	8 37 58	8	1.7	0.4
28	22 46 52	94	S. 8 36 20	4	1.8	0.5	3	22 46 24	85	0.12	S. 8 37 40	9	1.7	0.4
29	22 46 48	99	8 36 42	1	1.8	0.5	4	22 46 27	57	0.12	8 37 22	0	1.7	0.4
30	22 46 45	21	8 37 2	8	1.8	0.5	5	22 46 30	47	0.11	8 37 1	9	1.7	0.4
31	22 46 41	60	8 37 22	4	1.8	0.5	6	22 46 33	57	0.11	8 36 40	6	1.7	0.4
Nov. 1	22 46 38	16	8 37 41	0	1.8	0.5	7	22 46 36	84	0.11	8 36 18	2	1.7	0.4
2	22 46 34	89	8 37 58	4	1.8	0.5	8	22 46 40	30	0.11	8 35 54	8	1.7	0.4
3	22 46 31	79	S. 8 38 14	8	1.8	0.5	9	22 46 43	95	0.11	S. 8 35 30	2	1.7	0.4
4	22 46 28	87	8 38 30	1	1.7	0.5	10	22 46 47	78	0.11	8 35 4	4	1.7	0.4
5	22 46 26	12	8 38 44	3	1.7	0.5	11	22 46 51	80	0.11	8 34 37	6	1.7	0.4
6	22 46 23	55	8 38 57	4	1.7	0.4	12	22 46 56	00	0.11	8 34 9	6	1.7	0.4
7	22 46 21	16	8 39 9	4	1.7	0.4	13	22 47 0	39	0.11	8 33 40	5	1.7	0.4
8	22 46 18	96	8 39 20	4	1.7	0.4	14	22 47 4	96	0.11	8 33 10	3	1.7	0.4
9	22 46 16	93	S. 8 39 30	2	1.7	0.4	15	22 47 9	71	0.11	S. 8 32 39	1	1.7	0.4
10	22 46 15	08	8 39 38	8	1.7	0.4	16	22 47 14	65	0.11	8 32 6	8	1.7	0.4
11	22 46 13	42	8 39 46	4	1.7	0.4	17	22 47 19	76	0.11	8 31 33	4	1.7	0.4
12	22 46 11	95	8 39 52	8	1.7	0.4	18	22 47 25	06	0.11	8 30 58	9	1.7	0.4
13	22 46 10	66	8 39 58	1	1.7	0.4	19	22 47 30	53	0.11	8 30 23	3	1.7	0.4
14	22 46 9	56	8 40 2	2	1.7	0.4	20	22 47 36	17	0.11	8 29 46	7	1.7	0.4
15	22 46 8	65	S. 8 40 5	2	1.7	0.4	21	22 47 41	99	0.11	S. 8 29 9	1	1.7	0.4
16	22 46 7	92	8 40 7	1	1.7	0.4	22	22 47 47	98	0.11	8 28 30	4	1.7	0.4
17	22 46 7	38	8 40 7	8	1.7	0.4	23	22 47 54	15	0.11	8 27 50	7	1.7	0.4
18	22 46 7	04	8 40 7	3	1.7	0.4	24	22 48 0	48	0.11	8 27 10	0	1.7	0.4
19	22 46 6	88	8 40 5	7	1.7	0.4	25	22 48 6	98	0.11	8 26 28	2	1.7	0.4
20	22 46 6	92	8 40 2	9	1.7	0.4	26	22 48 13	65	0.11	8 25 45	5	1.7	0.4
21	22 46 7	14	S. 8 39 59	0	1.7	0.4	27	22 48 20	48	0.11	S. 8 25 1	8	1.7	0.4
22	22 46 7	56	8 39 53	8	1.7	0.4	28	22 48 27	48	0.11	8 24 17	1	1.7	0.4
23	22 46 8	18	8 39 47	5	1.7	0.4	29	22 48 34	64	0.11	8 23 31	4	1.7	0.4
24	22 46 8	98	8 39 40	1	1.7	0.4	30	22 48 41	96	0.11	8 22 44	8	1.7	0.4
25	22 46 9	98	8 39 31	5	1.7	0.4	31	22 48 49	43	0.11	8 21 57	2	1.7	0.4
26	22 46 11	17	S. 8 39 21	7	1.7	0.4	32	22 48 57	06	0.11	S. 8 21 8	7	1.7	0.4

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Apparent Declination.	Hor. Par.	Date.	Apparent Right Ascension.	Apparent Declination.	Hor. Par.
Jan. 1	h m s 9 11 48.24	N. 16 18 48.0	0.3	Feb. 16	h m s 9 6 57.56	N. 16 40 43.0	0.3
2	9 11 42.98	16 19 12.3	0.3	17	9 6 51.07	16 41 11.9	0.3
3	9 11 37.63	16 19 37.0	0.3	18	9 6 44.62	16 41 40.6	0.3
4	9 11 32.21	16 20 2.0	0.3	19	9 6 38.21	16 42 9.1	0.3
5	9 11 26.70	16 20 27.3	0.3	20	9 6 31.84	16 42 37.5	0.3
6	9 11 21.12	16 20 52.9	0.3	21	9 6 25.52	16 43 5.6	0.3
7	9 11 15.47	N. 16 21 18.8	0.3	22	9 6 19.25	N. 16 43 33.5	0.3
8	9 11 9.74	16 21 45.1	0.3	23	9 6 13.01	16 44 1.2	0.3
9	9 11 3.95	16 22 11.6	0.3	24	9 6 6.83	16 44 28.6	0.3
10	9 10 58.09	16 22 38.4	0.3	25	9 6 0.70	16 44 55.7	0.3
11	9 10 52.17	16 23 5.5	0.3	26	9 5 54.63	16 45 22.6	0.3
12	9 10 46.19	16 23 32.9	0.3	27	9 5 48.62	16 45 49.3	0.3
13	9 10 40.14	N. 16 24 0.5	0.3	28	9 5 42.66	N. 16 46 15.6	0.3
14	9 10 34.04	16 24 28.3	0.3	Mar. 1	9 5 36.77	16 46 41.7	0.3
15	9 10 27.88	16 24 56.4	0.3	2	9 5 30.95	16 47 7.4	0.3
16	9 10 21.67	16 25 24.6	0.3	3	9 5 25.20	16 47 32.8	0.3
17	9 10 15.42	16 25 53.0	0.3	4	9 5 19.51	16 47 57.9	0.3
18	9 10 9.11	16 26 21.7	0.3	5	9 5 13.90	16 48 22.7	0.3
19	9 10 2.76	N. 16 26 50.6	0.3	6	9 5 8.37	N. 16 48 47.2	0.3
20	9 9 56.37	16 27 19.6	0.3	7	9 5 2.90	16 49 11.3	0.3
21	9 9 49.94	16 27 48.8	0.3	8	9 4 57.52	16 49 35.1	0.3
22	9 9 43.46	16 28 18.2	0.3	9	9 4 52.22	16 49 58.5	0.3
23	9 9 36.95	16 28 47.7	0.3	10	9 4 47.01	16 50 21.5	0.3
24	9 9 30.42	16 29 17.3	0.3	11	9 4 41.88	16 50 44.2	0.3
25	9 9 23.85	N. 16 29 47.0	0.3	12	9 4 36.84	N. 16 51 6.4	0.3
26	9 9 17.25	16 30 16.7	0.3	13	9 4 31.89	16 51 28.3	0.3
27	9 9 10.63	16 30 46.6	0.3	14	9 4 27.02	16 51 49.7	0.3
28	9 9 3.99	16 31 16.6	0.3	15	9 4 22.25	16 52 10.7	0.3
29	9 8 57.34	16 31 46.6	0.3	16	9 4 17.57	16 52 31.3	0.3
30	9 8 50.66	16 32 16.6	0.3	17	9 4 12.99	16 52 51.5	0.3
31	9 8 43.97	N. 16 32 46.7	0.3	18	9 4 8.50	N. 16 53 11.3	0.3
Feb. 1	9 8 37.28	16 33 16.8	0.3	19	9 4 4.11	16 53 30.7	0.3
2	9 8 30.57	16 33 46.9	0.3	20	9 3 59.82	16 53 49.6	0.3
3	9 8 23.87	16 34 17.0	0.3	21	9 3 55.63	16 54 8.1	0.3
4	9 8 17.17	16 34 47.1	0.3	22	9 3 51.55	16 54 26.1	0.3
5	9 8 10.46	16 35 17.2	0.3	23	9 3 47.58	16 54 43.6	0.3
6	9 8 3.76	N. 16 35 47.2	0.3	24	9 3 43.71	N. 16 55 0.7	0.3
7	9 7 57.06	16 36 17.2	0.3	25	9 3 39.95	16 55 17.3	0.3
8	9 7 50.37	16 36 47.2	0.3	26	9 3 36.30	16 55 33.4	0.3
9	9 7 43.69	16 37 17.1	0.3	27	9 3 32.76	16 55 49.0	0.3
10	9 7 37.04	16 37 46.8	0.3	28	9 3 29.33	16 56 4.1	0.3
11	9 7 30.40	16 38 16.5	0.3	29	9 3 26.02	16 56 18.8	0.3
12	9 7 23.79	N. 16 38 46.1	0.3	30	9 3 22.83	N. 16 56 32.9	0.3
13	9 7 17.20	16 39 15.5	0.3	31	9 3 19.75	16 56 46.5	0.3
14	9 7 10.63	16 39 44.8	0.3	Apr. 1	9 3 16.80	16 56 59.6	0.3
15	9 7 4.08	N. 16 40 14.0	0.3	2	9 3 13.96	N. 16 57 12.2	0.3

NEPTUNE, 1922.

189

AT TRANSIT AT GREENWICH.

Date.	Apparent Right Ascension.	Apparent Declination.	Hor. Par.	Date.	Apparent Right Ascension.	Apparent Declination.	Hor. Par.
	h m s	° ' "	"		h m s	° ' "	"
Apr. 3	9 3 11.25	N. 16 57 24.2	0.3	May 6	9 2 53.25	N. 16 58 55.1	0.3
4	9 3 8.66	16 57 35.7	0.3	7	9 2 54.94	16 58 48.3	0.3
5	9 3 6.18	16 57 46.7	0.3	8	9 2 56.75	16 58 40.9	0.3
6	9 3 3.83	16 57 57.2	0.3	9	9 2 58.69	16 58 33.0	0.3
7	9 3 1.61	16 58 7.2	0.3	10	9 3 0.76	16 58 24.5	0.3
8	9 2 59.51	16 58 16.6	0.3	11	9 3 2.96	16 58 15.5	0.3
9	9 2 57.54	N. 16 58 25.5	0.3	12	9 3 5.29	N. 16 58 6.0	0.3
10	9 2 55.69	16 58 33.8	0.3	13	9 3 7.74	16 57 56.0	0.3
11	9 2 53.96	16 58 41.6	0.3	14	9 3 10.32	16 57 45.4	0.3
12	9 2 52.37	16 58 48.8	0.3	15	9 3 13.03	16 57 34.2	0.3
13	9 2 50.90	16 58 55.5	0.3	16	9 3 15.86	16 57 22.5	0.3
14	9 2 49.56	16 59 1.7	0.3	17	9 3 18.82	16 57 10.3	0.3
15	9 2 48.34	N. 16 59 7.3	0.3	18	9 3 21.90	N. 16 56 57.5	0.3
16	9 2 47.26	16 59 12.4	0.3	19	9 3 25.11	16 56 44.2	0.3
17	9 2 46.30	16 59 16.9	0.3	20	9 3 28.43	16 56 30.4	0.3
18	9 2 45.48	16 59 20.8	0.3	21	9 3 31.88	16 56 16.1	0.3
19	9 2 44.78	16 59 24.2	0.3	22	9 3 35.46	16 56 1.2	0.3
20	9 2 44.22	16 59 27.0	0.3	23	9 3 39.16	16 55 45.8	0.3
21	9 2 43.80	N. 16 59 29.2	0.3	24	9 3 42.98	N. 16 55 29.9	0.3
22	9 2 43.50	16 59 30.9	0.3	25	9 3 46.91	16 55 13.5	0.3
23	9 2 43.34	16 59 32.0	0.3	26	9 3 50.97	16 54 56.5	0.3
24	9 2 43.30	16 59 32.5	0.3	27	9 3 55.13	16 54 39.0	0.3
25	9 2 43.40	16 59 32.5	0.3	28	9 3 59.41	16 54 21.0	0.3
26	9 2 43.63	16 59 32.0	0.3	29	9 4 3.81	16 54 2.6	0.3
27	9 2 43.99	N. 16 59 30.8	0.3	30	9 4 8.32	N. 16 53 43.7	0.3
28	9 2 44.49	16 59 29.1	0.3	31	9 4 12.95	16 53 24.2	0.3
29	9 2 45.12	16 59 26.8	0.3	June 1	9 4 17.69	16 53 4.3	0.3
30	9 2 45.89	16 59 24.0	0.3	2	9 4 22.54	16 52 43.9	0.3
May 1	9 2 46.79	16 59 20.5	0.3	3	9 4 27.50	16 52 23.0	0.3
2	9 2 47.82	16 59 16.5	0.3	4	9 4 32.57	16 52 1.6	0.3
3	9 2 48.98	N. 16 59 12.0	0.3	5	9 4 37.74	N. 16 51 39.8	0.3
4	9 2 50.27	16 59 6.9	0.3	6	9 4 43.02	16 51 17.5	0.3
5	9 2 51.69	N. 16 59 1.3	0.3	7	9 4 48.40	N. 16 50 54.8	0.3

Dec. 27	9 21 15.80	N. 15 40 2.0	0.3	Dec. 30	9 21 1.86	N. 15 41 9.7	0.3
28	9 21 11.25	15 40 24.1	0.3	31	9 20 57.03	15 41 33.0	0.3
29	9 21 6.60	N. 15 40 46.7	0.3	32	9 20 52.11	N. 15 41 56.8	0.3

Date.	X, True Eq ² of Date.		Red. to M. Eq ² of 1922-0	Y, True Eq ² of Date.		Red. to M. Eq ² of 1922-0	Z, True Eq ² of Date.		Red. to M. Eq ² of 1922-0
	Noon.	Midnight.		Noon.	Midnight.		Noon.	Midnight.	
Jan. 1	+ 0.1761737	+ 0.1847733	- 219	0.8875243	0.8860472	+ 142	0.3849233	0.3842829	- 428
2	.1933582	.2019278	226	.8845009	.8828856	136	.3836126	.3829123	428
3	.2104813	.2190181	233	.8812015	.8794487	130	.3821822	.3814223	428
4	.2275374	.2360387	240	.8776274	.8757377	124	.3806326	.3798133	429
5	.2445213	.2529845	246	.8737799	.8717541	117	.3789644	.3780861	429
6	0.2614277	0.2698501	- 253	0.8696605	0.8674993	+ 110	0.3771785	0.3762416	- 430
7	.2782511	.2866301	259	.8652707	.8629750	103	.3752754	.3742801	430
8	.2949865	.3033196	265	.8606124	.8581831	96	.3732557	.3722024	430
9	.3116289	.3199137	271	.8556873	.8531253	88	.3711202	.3700093	430
10	.3281734	.3364074	276	.8504972	.8478034	80	.3688697	.3677015	430
11	0.3446151	0.3527959	- 281	0.8450440	0.8422193	+ 72	0.3665049	0.3652799	- 430
12	.3609493	.3690747	287	.8393295	.8363749	64	.3640267	.3627453	430
13	.3771715	.3852392	292	.8333556	.8302720	55	.3614359	.3600984	430
14	.3932771	.4012847	296	.8271242	.8239125	46	.3587331	.3573400	430
15	.4092615	.4172068	301	.8206370	.8172980	37	.3559192	.3544708	430
16	0.4251200	0.4330006	- 305	0.8138957	0.8104304	+ 27	0.3529949	0.3514917	- 430
17	.4408480	.4486616	308	.8069022	.8033114	18	.3499613	.3484037	430
18	.4564408	.4641850	312	.7996583	.7959430	+ 8	.3468190	.3452073	429
19	.4718935	.4795658	316	.7921658	.7883269	- 2	.3435688	.3419035	429
20	.4872013	.4947993	319	.7844267	.7804654	12	.3402116	.3384933	428
21	0.5023593	0.5098806	- 321	0.7764432	0.7723605	- 22	0.3367486	0.3349777	- 428
22	.5173625	.5248045	324	.7682176	.7640148	33	.3331806	.3313576	427
23	.5322060	.5395663	326	.7597523	.7554305	43	.3295088	.3276343	427
24	.5468848	.5541609	328	.7510498	.7466105	54	.3257342	.3238088	426
25	.5613942	.5685839	330	.7421130	.7375576	65	.3218581	.3198824	425
26	0.5757294	0.5828302	- 331	0.7329446	0.7282745	- 76	0.3178818	0.3158565	- 424
27	.5898857	.5968953	332	.7235477	.7187646	87	.3138066	.3117322	423
28	.6038584	.6107745	333	.7139255	.7090308	98	.3096336	.3075110	422
29	.6176431	.6244636	333	.7040811	.6990767	109	.3053645	.3031944	421
30	.6312354	.6379581	333	.6940181	.6889056	121	.3010007	.2987837	420
31	0.6446311	0.6512539	- 333	0.6837397	0.6785209	- 132	0.2965435	0.2942804	- 419
Feb. 1	.6578259	.6643467	333	.6732496	.6679263	144	.2919945	.2896861	418
2	.6708159	.6772329	332	.6625514	.6571253	155	.2873553	.2850023	416
3	.6835972	.6899083	331	.6516486	.6461217	167	.2826274	.2802306	415
4	.6961658	.7023692	329	.6405452	.6349195	178	.2778123	.2753727	413
5	0.7085182	0.7146122	- 327	0.6292450	0.6235222	- 190	0.2729119	0.2704302	- 412
6	.7206509	.7266639	325	.6177517	.6119338	202	.2679277	.2654047	410
7	.7325607	.7384309	323	.6060692	.6001583	213	.2628613	.2602978	409
8	.7442441	.7500000	321	.5942015	.5881994	225	.2577144	.2551113	407
9	.7556982	.7613384	318	.5821525	.5760612	237	.2524886	.2498466	405
10	0.7669201	0.7724430	- 314	0.5699259	0.5637472	- 248	0.2471856	0.2445057	- 403
11	.7779068	.7833111	311	.5575254	.5512611	260	.2418071	.2390900	401
12	.7886555	.7939397	307	.5449546	.5386065	271	.2363546	.2336011	399
13	.7991634	.8043261	303	.5322171	.5257870	283	.2308297	.2280406	397
14	.8094275	.8144672	299	.5193166	.5128064	294	.2252340	.2224101	395
15	0.8194448	0.8243600	- 294	0.5062567	0.4996681	- 305	0.2195691	0.2167112	- 393
	+ +	+ +		- -	- -		- -	- -	

SUN'S CO-ORDINATES, 1922.

191

Date.	X, True Eq ^s of Date.		Red. to M. Eq ^r of 1922-0	Y, True Eq ^s of Date.		Red. to M. Eq ^r of 1922-0	Z, True Eq ^s of Date.		Red. to M. Eq ^r of 1922-0
	Noon.	Midnight.		Noon.	Midnight.		Noon.	Midnight.	
	+	+	-	-	-	-	-	-	
Feb. 16	0° 8292124	0° 8340016	- 289	0° 4930410	0° 4863759	- 317	0° 2138366	0° 2109455	- 390
17	·8387272	·8433889	284	·4796733	·4729337	328	·2080382	·2051149	388
18	·8479862	·8525188	278	·4661575	·4593453	339	·2021758	·1992210	385
19	·8569864	·8613885	273	·4524976	·4456149	350	·1962509	·1932657	383
20	·8657248	·8699950	267	·4386978	·4317467	361	·1902655	·1872506	380
21	0° 8741987	0° 8783355	- 260	0° 4247622	0° 4177449	- 372	0° 1842213	0° 1811778	- 377
22	·8824052	·8864074	254	·4106954	·4036141	383	·1781204	·1750492	375
23	·8903418	·8942080	247	·3965017	·3893587	394	·1719646	·1688667	372
24	·8980058	·9017349	240	·3821858	·3749834	404	·1657559	·1626323	369
25	·9053950	·9089858	233	·3677522	·3604928	414	·1594963	·1563480	366
26	0° 9125071	0° 9159585	- 225	0° 3532057	0° 3458915	- 425	0° 1531878	0° 1500159	- 363
27	·9193399	·9226509	217	·3385509	·3311844	435	·1468325	·1436379	359
28	·9258914	·9290610	210	·3237927	·3163764	445	·1404324	·1372162	356
Mar. 1	·9321597	·9351872	202	·3089361	·3014723	455	·1339895	·1307527	353
2	·9381433	·9410278	193	·2939856	·2864767	465	·1275060	·1242497	349
3	0° 9438406	0° 9465814	- 184	0° 2789464	0° 2713951	- 474	0° 1209840	0° 1177092	- 346
4	·9492501	·9518466	176	·2638234	·2562320	484	·1144256	·1111334	342
5	·9543707	·9568223	167	·2486214	·2409923	493	·1078328	·1045242	338
6	·9592012	·9615074	158	·2333453	·2256810	502	·1012078	·0978838	335
7	·9637407	·9659011	148	·2180001	·2103031	511	·0945526	·0912143	331
8	0° 9679885	0° 9700028	- 138	0° 2025906	0° 1948632	- 520	0° 0878693	0° 0845178	- 327
9	·9719439	·9738118	129	·1871215	·1793660	528	·0811600	·0777963	323
10	·9756063	·9773275	119	·1715974	·1638162	537	·0744268	·0710517	319
11	·9789754	·9805498	109	·1560229	·1482181	545	·0676714	·0642861	314
12	·9820507	·9834780	98	·1404024	·1325763	553	·0608960	·0575014	310
13	0° 9848317	0° 9861117	- 88	0° 1247403	0° 1168950	- 561	0° 0541025	0° 0506995	- 306
14	·9873180	·9884505	77	·1090409	·1011785	569	·0472927	·0438824	301
15	·9895951	·9904937	67	·0933084	·0854311	577	·0406887	·0370519	297
16	·9914043	·9922408	56	·0775472	·0696572	584	·0336322	·0302098	292
17	·9930032	·9936913	45	·0617617	·0538612	591	·0267851	·0233583	288
18	0° 9943051	0° 9948445	- 33	0° 0459564	0° 0380477	- 598	0° 0199297	0° 0164994	- 283
19	·9953095	·9957000	22	·0301358	·0222213	605	·0130678	·0096350	278
20	·9960161	·9962576	- 11	·0143047	·0063867	612	·0062014	·0027672	273
21	·9964246	·9965169	+ 1	·0015321	·0094512	619	·0006673	·0041019	268
22	·9965346	·9964777	13	·0173699	·0252877	625	·0075363	·0109702	263
23	0° 9963461	0° 9961399	+ 25	0° 0332039	0° 0411179	- 631	0° 0144034	0° 0178357	- 258
24	·9958592	·9955039	37	·0490290	·0569368	637	·0212667	·0246962	253
25	·9950741	·9945698	49	·0648405	·0727395	643	·0281238	·0315494	247
26	·9939911	·9933381	61	·0806333	·0885212	649	·0349727	·0383934	242
27	·9926108	·9918093	73	·0964025	·1042767	654	·0418113	·0452261	236
28	0° 9909337	0° 9899840	+ 86	0° 1121432	0° 1200013	- 659	0° 0486376	0° 0520454	- 231
29	·9889604	·9878629	99	·1278505	·1356900	664	·0554494	·0588492	225
30	·9866918	·9854472	111	·1435193	·1513378	669	·0622445	·0656351	219
31	·9841292	·9827379	124	·1591448	·1669398	674	·0690208	·0724013	214
Apr. 1	·9812736	·9797364	137	·1747221	·1824912	678	·0757764	·0791457	208
2	0° 9781264	0° 9764439	+ 150	0° 1902465	0° 1979873	- 683	0° 0825090	0° 0858661	- 202
	+	+		+	+		+	+	

Date.	X, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	Y, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	Z, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	
	Noon.	Midnight.		Noon.	Midnight.		Noon.	Midnight.		
Apr. 3	+	+	+	+	+	-	+	+	-	
	0.9746890	0.9728620	163	0.2057130	0.2134231	687	0.0892167	0.0925606	196	
	4	0.9709630	0.9689924	176	0.2211171	0.2287944	691	0.0958976	0.0992273	190
	5	0.9669503	0.9648369	189	0.2364543	0.2440964	694	0.1025496	0.1058642	183
	6	0.9626526	0.9603975	203	0.2517201	0.2593249	698	0.1091708	0.1124693	177
	7	0.9580719	0.9556759	216	0.2669102	0.2744755	701	0.1157593	0.1190407	171
	8	0.9532099	0.9506742	229	0.2820204	0.2895443	704	0.1223133	0.1255768	164
	9	0.9480689	0.9453943	243	0.2970468	0.3045273	707	0.1288311	0.1320759	158
	10	0.9426507	0.9398382	257	0.3119854	0.3194205	710	0.1353109	0.1385359	151
	11	0.9369571	0.9340077	271	0.3268322	0.3342200	713	0.1417508	0.1449553	145
	12	0.9309901	0.9279045	284	0.3415834	0.3489220	715	0.1481492	0.1513323	138
	13	+	+	+	+	+	-	+	+	-
0.9247512		0.9215304	298	0.3562353	0.3635228	717	0.1545045	0.1576655	131	
14		0.9182424	0.9148874	312	0.3707839	0.3780182	719	0.1608150	0.1639529	124
15		0.9114655	0.9079770	326	0.3852252	0.3924044	721	0.1670788	0.1701926	117
16		0.9044221	0.9008011	340	0.3995553	0.4066773	722	0.1732941	0.1763831	110
17		0.8971142	0.8933617	354	0.4137700	0.4208329	724	0.1794593	0.1825226	103
18		0.8895439	0.8856610	369	0.4278654	0.4348670	725	0.1855726	0.1886091	96
19		0.8817132	0.8777009	383	0.4418372	0.4487754	726	0.1916320	0.1946410	89
20		0.8736243	0.8694838	397	0.4556812	0.4625540	726	0.1976359	0.2006165	82
21		0.8652797	0.8610122	412	0.4693934	0.4761987	727	0.2035826	0.2065339	74
22		0.8566817	0.8522885	426	0.4829695	0.4897053	727	0.2094701	0.2123912	67
23		+	+	+	+	+	-	+	+	-
	0.8478330	0.8433155	441	0.4964056	0.5030699	727	0.2152968	0.2181868	59	
	24	0.8387363	0.8340958	455	0.5096976	0.5162883	727	0.2210609	0.2239190	52
	25	0.8293944	0.8246324	470	0.5228414	0.5293565	726	0.2267608	0.2295861	44
	26	0.8198101	0.8149280	485	0.5358330	0.5422705	725	0.2323947	0.2351863	37
	27	0.8099865	0.8049860	499	0.5486685	0.5550265	724	0.2379608	0.2407180	29
	28	0.7999236	0.7948096	514	0.5613440	0.5676205	723	0.2434577	0.2461797	21
	29	0.7896349	0.7844023	529	0.5738556	0.5800489	722	0.2488337	0.2515695	13
	30	0.7791131	0.7737674	544	0.5861998	0.5923080	720	0.2542160	0.2568860	6
	May 1	+	+	+	+	+	-	+	+	-
		0.7683658	0.7629087	559	0.5983729	0.6043941	718	0.2595373	0.2621278	2
		2	0.7573965	0.7518297	573	0.6103713	0.6163040	716	0.2647202	0.2672933	10
3		0.7462089	0.7405344	588	0.6221919	0.6280345	713	0.2698470	0.2723811	18
4		0.7348068	0.7290265	603	0.6338315	0.6395825	711	0.2748955	0.2773899	27
5		0.7231939	0.7173096	618	0.6452871	0.6509450	708	0.2798643	0.2823184	35
6		0.7113741	0.7053878	633	0.6565558	0.6621192	704	0.2847522	0.2871654	43
7		0.6993511	0.6932645	648	0.6676348	0.6731023	701	0.2895579	0.2919295	51
8		0.6871285	0.6809436	663	0.6785215	0.6838919	697	0.2942802	0.2966097	59
9		0.6747101	0.6684286	678	0.6892133	0.6944854	693	0.2989180	0.3012048	67
10		0.6620994	0.6557230	693	0.6997078	0.7048803	689	0.3034701	0.3057137	76
11		0.6492998	0.6428303	708	0.7100024	0.7150739	684	0.3079355	0.3101353	84
12	0.6363150	0.6297542	723	0.7200944	0.7250637	679	0.3123129	0.3144683	93	
13	+	+	+	+	+	-	+	+	-	
	0.6231483	0.6164978	738	0.7299814	0.7348472	674	0.3166012	0.3187116	101	
	14	0.6098032	0.6030649	753	0.7396607	0.7444217	668	0.3207993	0.3228642	109
	15	0.5962833	0.5894589	768	0.7491297	0.7537845	662	0.3249060	0.3269247	118
	16	0.5825922	0.5756836	782	0.7583857	0.7629330	656	0.3289201	0.3308921	127
	17	0.5687336	0.5617427	797	0.7674260	0.7718644	649	0.3328405	0.3347653	135
	18	0.5547114	0.5476402	812	0.7762479	0.7805762	642	0.3366662	0.3385432	144
		+	+		+	+		+	+	

SUN'S CO-ORDINATES, 1922.

193

Date.	X, True Eq ^r of Date.		Red. to M. Eq ^r of 1922-0 Noon.	Y, True Eq ^r of Date.		Red. to M. Eq ^r of 1922-0 Noon.	Z, True Eq ^r of Date.		Red. to M. Eq ^r of 1922-0 Noon.
	Noon.	Midnight.		Noon.	Midnight.		Noon.	Midnight.	
	+	+		+	+		+	+	
May 19	0° 5405295	0° 5333799	+ 827	0° 7848489	0° 7890657	- 635	0° 3403960	0° 3422246	+ 152
20	5261919	5189659	841	7932263	7973304	628	3440287	3458083	161
21	5117026	5044025	856	8013777	8053678	620	3475632	3492934	170
22	4970660	4896937	870	8093005	8131754	612	3509986	3526788	178
23	4822862	4748439	885	8169923	8207509	603	3543338	3559636	187
24	0° 4673675	0° 4598575	+ 899	0° 8244509	0° 8280919	- 595	0° 3575679	0° 3591467	+ 196
25	4523145	4447390	913	8316738	8351962	585	3606999	3622273	204
26	4371317	4294931	928	8386589	8420616	576	3637288	3652043	213
27	4218238	4141244	942	8454040	8486859	566	3666538	3680771	222
28	4063955	3986377	956	8519072	8550676	556	3694741	3708447	231
29	0° 3908517	0° 3830380	+ 969	0° 8581668	0° 8612047	- 545	0° 3721888	0° 3735064	+ 239
30	3751972	3673299	983	8641811	8670957	534	3747973	3760615	248
31	3594369	3515187	996	8699485	8727392	523	3772989	3785095	257
June 1	3435758	3356089	1010	8754677	8781339	511	3796931	3808497	266
2	3276186	3196055	1023	8807376	8832787	499	3819792	3830816	274
3	0° 3115702	0° 3035132	+ 1036	0° 8857572	0° 8881728	- 487	0° 3841568	0° 3852048	+ 283
4	2954352	2873367	1049	8905255	8928152	475	3862255	3872189	292
5	2792182	2710804	1062	8950417	8972050	462	3881849	3891235	301
6	2629238	2547489	1074	8993049	9013414	448	3900345	3909180	309
7	2465564	2383468	1086	9033144	9052238	434	3917739	3926023	318
8	0° 2301205	0° 2218781	+ 1098	0° 9070696	0° 9088516	- 420	0° 3934030	0° 3941760	+ 327
9	2136202	2053473	1110	9105696	9122236	406	3949213	3956387	335
10	1970599	1887586	1122	9138136	9153394	391	3963283	3969901	344
11	1804439	1721164	1133	9168009	9181980	376	3976239	3982298	353
12	1637766	1554250	1144	9195306	9207986	361	3988077	3993575	362
13	0° 1470623	0° 1386890	+ 1155	0° 9220019	0° 9231404	- 345	0° 3998792	0° 4003727	+ 370
14	1303056	1219127	1166	9242139	9252224	328	4008381	4012752	379
15	1135109	1051007	1176	9261658	9270440	312	4016841	4020647	387
16	0966828	0882577	1186	9278570	9286047	295	4024170	4027409	396
17	0798261	0713884	1196	9292869	9299035	278	4030365	4033036	404
18	0° 0629454	0° 0544976	+ 1205	0° 9304546	0° 9309400	- 260	0° 4035423	0° 4037525	+ 413
19	0460455	0375898	1214	9313597	9317137	243	4039341	4040873	421
20	0291311	0206700	1223	9320018	9322240	224	4042119	4043080	429
21	0122072	0037432	1231	9323803	9324706	206	4043756	4044146	438
22	0047213	0131857	1239	9324950	9324533	187	4044249	4044067	446
23	0° 0216493	0° 0301116	+ 1247	0° 9323456	0° 9321718	- 168	0° 4043598	0° 4042843	+ 454
24	0385718	0470294	1254	9319320	9316261	149	4041802	4040475	462
25	0554836	0639339	1261	9312542	9308163	129	4038862	4036964	471
26	0723796	0808200	1268	9303125	9297427	109	4034780	4032311	479
27	0892546	0976826	1274	9291071	9284057	89	4029556	4026516	487
28	0° 1061034	0° 1145163	+ 1280	0° 9276387	0° 9268061	- 68	0° 4023192	0° 4019584	+ 495
29	1229208	1313163	1286	9259080	9249446	47	4015692	4011516	503
30	1397021	1480776	1291	9239159	9228221	26	4007058	4002317	510
July 1	1564423	1647955	1295	9216633	9204396	- 5	3997295	3991992	518
2	1731367	1814652	1299	9191512	9177982	+ 17	3986408	3980544	526
3	0° 1897806	0° 1980823	+ 1303	0° 9163807	0° 9148990	+ 39	0° 3974400	0° 3967977	+ 533
	-	-		+	+		+	+	

Date.	X, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	Y, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	Z, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0
	Noon.	Midnight.		Noon.	Midnight.		Noon.	Midnight.	
July 4	0° 2063697	0° 2146422	+ 1306	0° 9133531	0° 9117432	+ 61	0° 3961275	0° 3954296	+ 541
5	2228994	2311407	1309	9100695	9083320	83	3947039	3939506	548
6	2393655	2475733	1312	9065309	9046664	105	3931697	3923612	556
7	2557636	2639359	1314	9027386	9007476	128	3915252	3906617	563
8	2720896	2802242	1315	8986936	8965767	151	3897709	3888527	570
9	0° 2883392	0° 2964340	+ 1316	0° 8943970	0° 8921547	+ 174	0° 3879073	0° 3869348	+ 577
10	3045081	3125610	1317	8898500	8874829	197	3859351	3849083	584
11	3205921	3286009	1317	8850536	8825622	220	3838545	3827737	591
12	3365869	3445495	1317	8800088	8773936	244	3816661	3805317	598
13	3524881	3604022	1316	8747168	8719786	268	3793705	3781826	605
14	0° 3682913	0° 3761549	+ 1314	0° 8691790	0° 8663182	+ 292	0° 3769681	0° 3755270	+ 612
15	3839923	3918030	1312	8633964	8604137	315	3744595	3731656	618
16	3995865	4073422	1310	8573704	8542666	339	3718454	3704990	625
17	4150695	4227679	1307	8511024	8478781	364	3691264	3677277	631
18	4304368	4380757	1304	8445938	8412498	388	3663031	3648526	638
19	0° 4456840	0° 4532611	+ 1300	0° 8378462	0° 8343832	+ 412	0° 3633763	0° 3618743	+ 644
20	4608065	4683196	1295	8308611	8272801	437	3603466	3587934	650
21	4757997	4832464	1290	8236403	8199420	461	3572147	3556107	656
22	4906590	4980370	1284	8161855	8123710	485	3539815	3523272	661
23	5053798	5126868	1278	8084987	8045690	510	3506479	3489437	667
24	0° 5199574	0° 5271911	+ 1272	0° 8005821	0° 7965383	+ 534	0° 3472147	0° 3454611	+ 673
25	5343874	5415456	1265	7924379	7882813	559	3436830	3418806	678
26	5486651	5557454	1257	7840687	7798006	583	3400539	3382032	683
27	5627861	5697866	1249	7754772	7710989	608	3363285	3344300	689
28	5767464	5836649	1240	7666660	7621789	632	3325078	3305622	694
29	0° 5905418	0° 5973765	+ 1231	0° 7576380	0° 7530437	+ 656	0° 3285932	0° 3266010	+ 699
30	6041685	6109174	1221	7483963	7436961	681	3245858	3225477	703
31	6176228	6242841	1211	7389436	7341390	705	3204868	3184034	708
Aug. 1	6309009	6374728	1200	7292828	7243753	729	3162975	3141693	713
2	6439994	6504802	1189	7194168	7144078	753	3120190	3098467	717
3	0° 6569149	0° 6633030	+ 1177	0° 7093486	0° 7042395	+ 777	0° 3076526	0° 3054369	+ 721
4	6696440	6759377	1164	6990809	6938732	801	3031996	3009410	725
5	6821835	6883810	1151	6886166	6833116	824	2986611	2963602	729
6	6945299	7006297	1138	6779584	6725575	848	2940384	2916958	733
7	7066800	7126804	1124	6671091	6616137	871	2893326	2869490	737
8	0° 7186306	0° 7245300	+ 1110	0° 6560716	0° 6504831	+ 894	0° 2845451	0° 2821211	+ 740
9	7303782	7361750	1095	6448486	6391684	917	2796771	2772133	743
10	7419198	7476122	1079	6334428	6276723	940	2747298	2722268	747
11	7532518	7588382	1063	6218573	6159981	963	2697045	2671630	750
12	7643710	7698498	1047	6100950	6041484	985	2646025	2620231	752
13	0° 7752742	0° 7806438	+ 1030	0° 5981587	0° 5921264	+ 1007	0° 2594250	0° 2568085	+ 755
14	7859581	7912167	1013	5860517	5799351	1029	2541736	2515206	758
15	7964193	8015654	995	5737769	5675775	1051	2488495	2461606	760
16	8066546	8116865	976	5613374	5550570	1073	2434541	2407301	762
17	8166607	8215767	957	5487366	5423767	1094	2379888	2352304	764
18	0° 8264342	0° 8312327	+ 938	0° 5359778	0° 5295402	+ 1115	0° 2324551	0° 2296631	+ 766
	-	-		+	+		+	+	

SUN'S CO-ORDINATES, 1922.

195

Date.	X, True Eq ^r of Date.		Red. to M. Eq ^r of 1922°0	Y, True Eq ^r of Date.		Red. to M. Eq ^r of 1922°0	Z, True Eq ^r of Date.		Red. to M. Eq ^r of 1922°0.
	Noon.	Midnight.		Noon.	Midnight.		Noon.	Midnight.	
	—	—		+	+		+	+	
Aug. 19	0.8359719	0.8406513	+ 919	0.5230644	0.5165508	+ 1135	0.2268546	0.2240298	+ 768
20	.8452706	.8408292	898	.5099999	.5034122	1155	.2211888	.2183319	769
21	.8543269	.8587633	878	.4967881	.4901282	1175	.2154592	.2125710	770
22	.8631379	.8674504	857	.4834329	.4767028	1195	.2096675	.2067489	772
23	.8717004	.8758875	835	.4699384	.4631402	1215	.2038155	.2008674	773
24	0.8800114	0.8840719	+ 813	0.4563087	0.4494445	+ 1234	0.1979049	0.1949282	+ 773
25	.8880686	.8920012	791	.4425480	.4356199	1252	.1919376	.1889332	774
26	.8958693	.8996728	769	.4286606	.4216708	1271	.1859153	.1828841	774
27	.9034113	.9070846	746	.4146510	.4076017	1289	.1798399	.1767828	775
28	.9106925	.9142347	722	.4005235	.3934168	1306	.1737132	.1706312	775
29	0.9177110	0.9211212	+ 698	0.3862821	0.3791201	+ 1323	0.1675371	0.1644311	+ 774
30	.9244650	.9277422	674	.3719312	.3647160	1340	.1613133	.1581841	774
31	.9309527	.9340962	650	.3574749	.3502084	1357	.1550436	.1518920	774
Sept. 1	.9371724	.9401812	625	.3429171	.3356015	1373	.1487296	.1455567	773
2	.9431225	.9459960	600	.3282620	.3208992	1388	.1423734	.1391800	772
3	0.9488014	0.9515386	+ 574	0.3135136	0.3061057	+ 1404	0.1359766	0.1327635	+ 771
4	.9542074	.9568076	548	.2986759	.2912248	1419	.1295409	.1263090	769
5	.9593391	.9618017	522	.2837529	.2762606	1433	.1230680	.1198182	768
6	.9641951	.9665191	496	.2687484	.2612169	1447	.1165598	.1132930	766
7	.9687735	.9709583	469	.2536666	.2460979	1461	.1100180	.1067351	764
8	0.9730731	0.9751178	+ 442	0.2385114	0.2309076	+ 1474	0.1034444	0.1001462	+ 762
9	.9770923	.9789963	415	.2232870	.2156501	1486	.0968408	.0935283	760
10	.9808297	.9825922	388	.2079973	.2003293	1499	.0902089	.0868829	757
11	.9842838	.9859042	360	.1926465	.1849495	1511	.0835506	.0802121	754
12	.9874533	.9889309	332	.1772389	.1695151	1522	.0768677	.0735177	751
13	0.9903368	0.9916709	+ 304	0.1617786	0.1540300	+ 1533	0.0701622	0.0668015	+ 748
14	.9929329	.9941228	275	.1462698	.1384986	1543	.0634358	.0600654	745
15	.9952403	.9962854	246	.1307169	.1229253	1553	.0566904	.0533112	742
16	.9972578	.9981574	217	.1151243	.1073146	1563	.0499279	.0465409	738
17	0.9989841	0.9997377	188	.0994967	.0916712	1572	.0431503	.0397565	734
18	1.0004181	1.0010252	+ 159	0.0838386	0.0759996	+ 1581	0.0363598	0.0329603	+ 730
19	.0015588	.0020188	130	.0681548	.0603048	1589	.0295583	.0261540	725
20	.0024052	.0027179	100	.0524503	.0445918	1597	.0227478	.0193399	721
21	.0029568	.0031218	70	.0367301	.0288657	1604	.0159305	.0125199	716
22	.0032130	.0032303	40	.0209992	.0131313	1611	.0091085	.0056965	711
23	1.0031736	1.0030430	+ 10	0.0052626	0.0026062	+ 1617	0.0022841	0.0011283	+ 706
24	.0028386	.0025603	- 20	.0104746	.0183419	1623	.0045406	.0079524	700
25	.0022082	.0017823	51	.0262075	.0340708	1628	.0113636	.0147738	695
26	.0012827	1.0007093	81	.0419312	.0497881	1633	.0181828	.0215904	689
27	1.0000623	0.9993418	111	.0576410	.0654893	1637	.0249962	.0284001	683
28	0.9985478	0.9976804	- 142	0.0733323	0.0811696	+ 1641	0.0318017	0.0352009	+ 677
29	.9967397	.9957257	173	.0890005	.0968245	1644	.0385973	.0419908	670
30	.9946386	.9934784	204	.1046411	.1124496	1647	.0453810	.0487678	664
Oct. 1	.9922451	.9909389	234	.1202495	.1280404	1650	.0521510	.0555303	657
2	.9895598	.9881080	265	.1358217	.1435927	1652	.0589054	.0622761	650
3	0.9865835	0.9849864	- 296	0.1513530	0.1591019	+ 1653	0.0656421	0.0690033	+ 643

Date.	X, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	Y, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	Z, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	
	Noon.	Midnight.		Noon.	Midnight.		Noon.	Midnight.		
Oct. 4	0° 9833169	0° 9815749	- 327	0° 1668390	0° 1745638	+ 1654	0° 0723593	0° 0757099	+ 635	
	5	9797607	9778743	358	1822756	1899740	1655	0790549	0823941	627
	6	9759158	9738854	389	1976583	2053281	1655	0857272	0890540	619
	7	9717831	9696090	421	2129829	2206220	1654	0923743	0956877	611
	8	9673633	9650461	452	2282450	2358513	1653	0989941	1022933	603
	9	9626574	9601974	- 483	2434404	2510116	+ 1652	01055849	01088688	+ 595
	10	9576663	9550641	514	2585645	2660985	1650	1121447	1154123	586
	11	9523909	9496470	545	2736130	2811075	1647	1186715	1219220	577
	12	9468324	9439473	576	2885815	2960344	1645	1251635	1283959	568
	13	9409917	9379659	607	3034656	3108746	1641	1316188	1348320	559
	14	9348699	9317040	- 639	3182608	3256236	+ 1637	01380353	01412284	+ 549
	15	9284683	9251630	670	3329624	3402767	1633	1444110	1475830	540
	16	9217882	9183441	701	3475658	3548292	1628	1504740	1538939	530
17	9148309	9112489	732	3620663	3692764	1623	1570323	1601590	520	
18	9075983	9038792	762	3764590	3836134	1617	1632738	1663763	510	
19	9000920	8962369	- 793	3907391	3978354	+ 1611	01694664	01725437	+ 499	
20	8923142	8883241	824	4049018	4119376	1604	1756081	1786593	489	
21	8842670	8801431	855	4189423	4259153	1597	1816970	1847209	478	
22	8759529	8716966	885	4328559	4397637	1589	1877309	1907266	467	
23	8673746	8629872	916	4466380	4534784	1581	1937079	1966745	456	
24	8585347	8540176	- 946	4602842	4670550	+ 1572	01996261	02025626	+ 444	
25	8494363	8447910	977	4737903	4804895	1563	2054837	2083892	433	
26	8400822	8353102	1007	4871521	4937776	1553	2112789	2141525	421	
27	8304754	8255782	1037	5003656	5069155	1543	2170099	2198508	409	
28	8206189	8155979	1067	5134269	5198993	1532	2226750	2254823	397	
29	8105157	8053725	- 1096	5263321	5327250	+ 1521	02282725	02310454	+ 385	
30	8001688	7949049	1126	5390774	5453890	1510	2338008	2365385	373	
31	7895813	7841983	1156	5516592	5578876	1498	2392582	2419598	361	
Nov. 1	7787562	7732555	1185	5640738	5702172	1485	2446430	2473077	348	
	2	7676966	7620799	1214	5763175	5823742	1472	2499538	2525810	335
	3	7564057	7506745	- 1243	5883869	5943551	+ 1458	02551890	02577777	+ 322
	4	7448866	7390425	1272	6002784	6061563	1444	2603469	2628964	309
	5	7331426	7271872	1301	6119885	6177744	1430	2654260	2679356	296
	6	7211767	7151116	1329	6235137	6292059	1415	2704249	2728937	282
	7	7089922	7028189	1357	6348506	6404474	1399	2753419	2777693	269
	8	6965922	6903126	- 1385	6459959	6514955	+ 1383	02801756	02825607	+ 255
	9	6839803	6775957	1413	6569459	6623467	1366	2849245	2872667	241
	10	6711594	6646718	1440	6676973	6729974	1349	2895871	2918856	227
	11	6581333	6515443	1468	6782464	6834440	1332	2941619	2964159	213
	12	6449052	6382166	1495	6885898	6936833	1314	2986473	3008560	199
13	6314788	6246924	- 1522	6987240	7037115	+ 1295	03030418	03052045	+ 185	
14	6178579	6109756	1548	7086453	7135250	1277	3073439	3094599	171	
15	6040462	5970701	1574	7183502	7231204	1256	3115522	3136207	156	
16	5900479	5829801	1600	7278352	7324941	1236	3156651	3176853	141	
17	5758673	5687100	1626	7370968	7416427	1216	3196812	3216525	126	
18	5615087	5542260	- 1652	7461315	7505628	+ 1195	03235990	03255206	+ 111	

SUN'S CO-ORDINATES, 1922.

197

Date.	X, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	Y, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0	Z, True Eq ^s of Date.		Red. to M. Eq ^s of 1922-0
	Noon.	Midnight.		Noon.	Midnight.		Noon.	Midnight.	
	—			—			—		
Nov. 19	0.5469766	0.5396471	-1677	0.7549362	0.7592514	+1173	0.3274172	0.3292885	+ 96
20	.5322760	.5248639	1701	.7635079	.7677054	1151	.3311344	.3329547	81
21	.5174115	.5099194	1726	.7718435	.7759220	1128	.3347494	.3365182	66
22	.5023881	.4948184	1750	.7799404	.7838985	1105	.3382611	.3399778	51
23	.4872108	.4795659	1774	.7877960	.7916326	1081	.3416683	.3433324	36
24	0.4718844	0.4641669	-1797	0.7954080	0.7991220	+1057	0.3449699	0.3465808	+ 20
25	.4564139	.4486261	1820	.8027742	.8063644	1033	.3481650	.3497223	+ 5
26	.4408041	.4329485	1842	.8098924	.8133578	1008	.3512526	.3527559	- 11
27	.4250598	.4171388	1864	.8167605	.8201001	982	.3542319	.3556806	27
28	.4091860	.4012021	1886	.8233764	.8265893	956	.3571018	.3584955	42
29	0.3931875	0.3851429	-1908	0.8297385	0.8328238	+ 929	0.3598616	0.3612000	- 58
30	.3770690	.3689664	1929	.8358449	.8388016	902	.3625105	.3637930	74
Dec. 1	.3608356	.3526772	1949	.8416938	.8445212	874	.3650476	.3662741	90
2	.3444919	.3362802	1969	.8472835	.8499806	847	.3674723	.3686422	106
3	.3280428	.3197802	1988	.8526124	.8551786	818	.3697838	.3708968	122
4	0.3114931	0.3031820	-2007	0.8576791	0.8601135	+ 789	0.3719813	0.3730372	- 138
5	.2948476	.2864903	2026	.8624818	.8647838	759	.3740643	.3750627	154
6	.2781109	.2697099	2044	.8670193	.8691881	729	.3760321	.3769725	170
7	.2612880	.2528456	2062	.8712899	.8733246	699	.3778839	.3787662	186
8	.2443835	.2359022	2079	.8752921	.8771922	668	.3796193	.3804431	202
9	0.2274024	0.2188846	-2095	0.8790246	0.8807892	+ 637	0.3812375	0.3820025	- 219
10	.2103494	.2017976	2111	.8824857	.8841140	605	.3827379	.3834438	235
11	.1932297	.1846464	2127	.8856740	.8871654	573	.3841200	.3847664	251
12	.1760484	.1674363	2141	.8885880	.8899417	540	.3853830	.3859697	267
13	.1588108	.1501725	2156	.8912263	.8924417	507	.3865265	.3870533	283
14	0.1415222	0.1328604	-2169	0.8935877	0.8946642	+ 474	0.3875500	0.3880166	- 300
15	.1241880	.1155056	2182	.8956710	.8966080	439	.3884529	.3888590	316
16	.1068140	.0981138	2195	.8974750	.8982720	405	.3892348	.3895803	332
17	.0894058	.0806907	2206	.8989988	.8996554	370	.3898954	.3901801	348
18	.0719693	.0632423	2217	.9002417	.9007577	335	.3904344	.3906582	364
19	0.0545104	0.0457743	-2228	0.9012034	0.9015786	+ 300	0.3908515	0.3910143	- 380
20	.0370347	.0282924	2238	.9018834	.9021177	264	.3911466	.3912484	396
21	.0195481	.0108026	2247	.9022816	.9023750	228	.3913197	.3913604	412
22	.0020565	.0066895	2255	.9023979	.9023505	191	.3913706	.3913502	428
23	.0154346	.0241782	2263	.9022327	.9020446	154	.3912994	.3912181	444
24	0.0329196	0.0416581	-2270	0.9017862	0.9014576	+ 117	0.3911064	0.3909642	- 460
25	.0503930	.0591236	2276	.9010588	.9005899	79	.3907915	.3905884	476
26	.0678492	.0765692	2282	.9000509	.8994420	41	.3903549	.3900911	491
27	.0852828	.0939894	2286	.8987631	.8980144	+ 3	.3897970	.3894726	507
28	.1026884	.1113791	2290	.8971960	.8963079	- 35	.3891180	.3887331	523
29	0.1200608	0.1287329	-2294	0.8953503	0.8943233	- 74	0.3883180	0.3878727	- 538
30	.1373948	.1460457	2296	.8932270	.8920614	113	.3873974	.3868920	554
31	.1546850	.1633121	2298	.8908267	.8895230	152	.3863567	.3857914	569
32	0.1719264	0.1805272	-2299	0.8881505	0.8867093	- 192	0.3851962	0.3845711	- 584
	+	+		-	-		-	-	

198 PRECESSION, NUTATION, &C., 1922.

Mean Noon.	LONGITUDE.			Appar-ent Obliquity.	OBLIQUITY.			Mean Noon.	LONGITUDE.			Appar-ent Obliquity.	OBLIQUITY.		
	Pre-cession from 1922 ^o	Nutation.			Nutation.	Pre-cession from 1922 ^o	Nutation.		Nutation.						
		ΔL	$d L$				$\Delta \omega$			$d \omega$	ΔL		$d L$	$\Delta \omega$	$d \omega$
		+		23°26'	-				+		23°26'	-			
Jan. 1	0.05	4.62	+ .16	48.39	9.57	+ .01		Feb. 16	6.38	4.71	- .08	49.00	8.89	+ .04	
2	0.19	4.65	+ .13	48.39	9.56	+ .03		17	6.52	4.68	- .11	49.02	8.88	+ .01	
3	0.32	4.68	+ .07	48.40	9.55	+ .05		18	6.65	4.65	- .09	49.03	8.86	- .03	
4	0.46	4.70	- .01	48.40	9.55	+ .06		19	6.79	4.61	- .04	49.05	8.84	- .06	
5	0.60	4.73	- .09	48.41	9.54	+ .06		20	6.93	4.57	+ .03	49.06	8.83	- .07	
6	0.74	4.76	- .16	48.41	9.53	+ .05		21	7.07	4.53	+ .10	49.07	8.81	- .07	
7	0.88	4.78	- .22	48.42	9.52	+ .03		22	7.21	4.49	+ .16	49.08	8.80	- .05	
8	1.01	4.81	- .25	48.43	9.51	.00		23	7.34	4.45	+ .19	49.10	8.78	- .03	
9	1.15	4.83	- .24	48.44	9.50	- .03		24	7.48	4.40	+ .19	49.11	8.77	.00	
10	1.29	4.86	- .19	48.45	9.49	- .06		25	7.62	4.36	+ .17	49.12	8.76	+ .02	
11	1.43	4.88	- .10	48.46	9.48	- .07		26	7.76	4.32	+ .12	49.14	8.75	+ .04	
12	1.56	4.90	.00	48.47	9.47	- .07		27	7.89	4.27	+ .06	49.15	8.73	+ .06	
13	1.70	4.92	+ .09	48.48	9.46	- .06		28	8.03	4.22	- .02	49.16	8.72	+ .07	
14	1.84	4.94	+ .16	48.49	9.45	- .02	Mar. 1	8.17	4.17	- .10	49.17	8.71	+ .06		
15	1.98	4.95	+ .19	48.50	9.43	+ .02	2	8.31	4.12	- .17	49.18	8.70	+ .05		
16	2.11	4.97	+ .17	48.51	9.42	+ .05	3	8.44	4.07	- .22	49.19	8.69	+ .02		
17	2.25	4.98	+ .11	48.53	9.41	+ .07	4	8.58	4.02	- .25	49.19	8.68	- .01		
18	2.39	5.00	+ .03	48.54	9.39	+ .08	5	8.72	3.96	- .23	49.20	8.67	- .04		
19	2.53	5.01	- .05	48.55	9.38	+ .06	6	8.86	3.91	- .18	49.21	8.66	- .06		
20	2.66	5.02	- .10	48.57	9.36	+ .03	7	8.99	3.86	- .09	49.22	8.65	- .07		
21	2.80	5.03	- .11	48.58	9.35	.00	8	9.13	3.80	.00	49.22	8.65	- .07		
22	2.94	5.04	- .08	48.59	9.33	- .04	9	9.27	3.74	+ .08	49.23	8.64	- .05		
23	3.08	5.04	- .03	48.61	9.31	- .06	10	9.41	3.69	+ .14	49.23	8.63	- .01		
24	3.21	5.05	+ .04	48.63	9.30	- .07	11	9.54	3.63	+ .15	49.24	8.63	+ .03		
25	3.35	5.05	+ .11	48.64	9.28	- .07	12	9.68	3.57	+ .12	49.24	8.62	+ .06		
26	3.49	5.05	+ .16	48.66	9.27	- .05	13	9.82	3.51	+ .05	49.24	8.62	+ .08		
27	3.63	5.05	+ .18	48.67	9.25	- .03	14	9.96	3.46	- .01	49.25	8.62	+ .07		
28	3.76	5.05	+ .18	48.69	9.23	.00	15	10.09	3.40	- .08	49.25	8.61	+ .05		
29	3.90	5.05	+ .15	48.70	9.21	+ .03	16	10.23	3.34	- .11	49.25	8.61	+ .02		
30	4.04	5.04	+ .09	48.72	9.20	+ .05	17	10.37	3.28	- .10	49.25	8.61	- .02		
31	4.18	5.04	+ .02	48.74	9.18	+ .06	18	10.51	3.22	- .06	49.25	8.61	- .05		
Feb. 1	4.32	5.03	- .06	48.76	9.16	+ .07	19	10.65	3.16	+ .01	49.25	8.61	- .07		
2	4.45	5.02	- .14	48.77	9.14	+ .06	20	10.78	3.10	+ .09	49.25	8.61	- .07		
3	4.59	5.01	- .20	48.79	9.12	+ .04	21	10.92	3.04	+ .15	49.24	8.61	- .06		
4	4.73	5.00	- .24	48.81	9.10	+ .01	22	11.06	2.98	+ .19	49.24	8.61	- .05		
5	4.87	4.98	- .25	48.82	9.09	- .02	23	11.20	2.92	+ .20	49.24	8.61	- .01		
6	5.00	4.96	- .22	48.84	9.07	- .05	24	11.33	2.86	+ .19	49.23	8.62	+ .01		
7	5.14	4.95	- .15	48.86	9.05	- .07	25	11.47	2.80	+ .15	49.23	8.62	+ .04		
8	5.28	4.93	- .05	48.87	9.03	- .07	26	11.61	2.74	+ .09	49.22	8.62	+ .05		
9	5.42	4.91	+ .04	48.89	9.01	- .06	27	11.75	2.68	+ .01	49.22	8.63	+ .06		
10	5.55	4.88	+ .12	48.91	9.00	- .03	28	11.88	2.62	- .06	49.21	8.63	+ .06		
11	5.69	4.86	+ .16	48.92	8.98	.00	29	12.02	2.56	- .14	49.20	8.64	+ .05		
12	5.83	4.83	+ .16	48.94	8.96	+ .04	30	12.16	2.50	- .20	49.19	8.65	+ .03		
13	5.97	4.81	+ .12	48.96	8.94	+ .07	31	12.30	2.44	- .23	49.18	8.66	.00		
14	6.10	4.78	+ .05	48.97	8.93	+ .08	Apr. 1	12.43	2.38	- .22	49.17	8.66	- .03		
15	6.24	4.75	- .03	48.99	8.91	+ .07	2	12.57	2.33	- .18	49.16	8.67	- .05		
16	6.38	4.71	- .08	49.00	8.89	+ .04	3	12.71	2.27	- .11	49.15	8.68	- .07		

PRECESSION, NUTATION, &c., 1922. 199

Mean Noon.	LONGITUDE.				Apparent Obliquity.	OBLIQUITY.		Mean Noon.	LONGITUDE.				Apparent Obliquity.	OBLIQUITY.	
	Precession from 1922·0	Nutation.		Nutation.		Δ ω	d ω		Precession from 1922·0	Nutation.		Nutation.		Δ ω	d ω
		Δ L	d L							Δ L	d L				
		+		23°26'	-				+		23°26'	-			
Apr. 3	12·71	2·27	-·11	49·15	8·68	-·07	May 19	19·04	0·89	+·13	48·30	9·47	+·04		
4	12·85	2·22	-·03	49·14	8·69	-·07	20	19·18	0·89	+·07	48·28	9·49	+·06		
5	12·98	2·16	+·06	49·13	8·70	-·05	21	19·31	0·90	-·01	48·27	9·51	+·06		
6	13·12	2·11	+·12	49·12	8·71	-·02	22	19·45	0·90	-·09	48·25	9·53	+·06		
7	13·26	2·05	+·14	49·10	8·73	+·01	23	19·59	0·90	-·15	48·23	9·54	+·05		
8	13·40	2·00	+·12	49·09	8·74	+·05	24	19·73	0·91	-·20	48·21	9·56	+·02		
9	13·54	1·95	+·06	49·08	8·75	+·07	25	19·87	0·92	-·22	48·19	9·57	-·01		
10	13·67	1·90	-·01	49·06	8·76	+·08	26	20·00	0·93	-·20	48·18	9·59	-·04		
11	13·81	1·85	-·08	49·05	8·78	+·06	27	20·14	0·94	-·15	48·16	9·61	-·06		
12	13·95	1·80	-·12	49·03	8·79	+·03	28	20·28	0·95	-·06	48·15	9·62	-·07		
13	14·09	1·75	-·12	49·02	8·81	·00	29	20·42	0·96	+·03	48·13	9·63	-·07		
14	14·22	1·71	-·09	49·00	8·82	-·04	30	20·55	0·97	+·10	48·11	9·65	-·05		
15	14·36	1·66	-·02	48·98	8·84	-·06	31	20·69	0·98	+·15	48·10	9·66	-·01		
16	14·50	1·62	+·06	48·97	8·85	-·07	June 1	20·83	1·00	+·16	48·09	9·67	+·02		
17	14·64	1·57	+·13	48·95	8·87	-·07	2	20·97	1·01	+·12	48·07	9·69	+·06		
18	14·77	1·53	+·18	48·93	8·89	-·05	3	21·10	1·03	+·04	48·06	9·70	+·07		
19	14·91	1·49	+·21	48·91	8·90	-·02	4	21·24	1·04	-·04	48·05	9·71	+·07		
20	15·05	1·45	+·20	48·89	8·92	+·01	5	21·38	1·06	-·11	48·04	9·72	+·05		
21	15·19	1·41	+·17	48·87	8·94	+·03	6	21·52	1·08	-·14	48·02	9·73	+·02		
22	15·32	1·37	+·11	48·85	8·96	+·05	7	21·65	1·10	-·14	48·01	9·74	-·02		
23	15·46	1·34	+·04	48·83	8·98	+·06	8	21·79	1·12	-·09	48·00	9·75	-·05		
24	15·60	1·30	-·03	48·82	8·99	+·06	9	21·93	1·14	-·02	47·99	9·76	-·07		
25	15·74	1·27	-·11	48·80	9·01	+·06	10	22·07	1·16	+·06	47·98	9·77	-·07		
26	15·87	1·24	-·17	48·78	9·03	+·04	11	22·20	1·18	+·13	47·97	9·77	-·06		
27	16·01	1·21	-·21	48·75	9·05	+·01	12	22·34	1·20	+·18	47·97	9·78	-·04		
28	16·15	1·18	-·22	48·73	9·07	-·02	13	22·48	1·22	+·20	47·96	9·79	-·01		
29	16·29	1·15	-·19	48·71	9·09	-·05	14	22·62	1·24	+·19	47·95	9·79	+·01		
30	16·42	1·12	-·13	48·69	9·11	-·07	15	22·76	1·27	+·15	47·95	9·80	+·04		
May 1	16·56	1·10	-·04	48·67	9·13	-·07	16	22·89	1·29	+·09	47·94	9·80	+·05		
2	16·70	1·08	+·04	48·65	9·15	-·06	17	23·03	1·31	+·01	47·93	9·81	+·06		
3	16·84	1·05	+·11	48·63	9·17	-·04	18	23·17	1·34	-·07	47·93	9·81	+·06		
4	16·98	1·04	+·14	48·61	9·19	·00	19	23·31	1·36	-·14	47·93	9·81	+·05		
5	17·11	1·01	+·13	48·59	9·21	+·04	20	23·44	1·38	-·19	47·92	9·81	+·03		
6	17·25	1·00	+·08	48·57	9·23	+·07	21	23·58	1·41	-·22	47·92	9·82	·00		
7	17·39	0·98	+·01	48·54	9·25	+·08	22	23·72	1·43	-·21	47·92	9·82	-·03		
8	17·53	0·97	-·07	48·52	9·27	+·07	23	23·86	1·45	-·17	47·92	9·82	-·06		
9	17·66	0·95	-·13	48·50	9·29	+·04	24	23·99	1·48	-·10	47·92	9·82	-·07		
10	17·80	0·94	-·14	48·48	9·31	+·01	25	24·13	1·50	-·01	47·92	9·81	-·07		
11	17·94	0·93	-·12	48·46	9·33	-·03	26	24·27	1·52	+·08	47·92	9·81	-·06		
12	18·08	0·92	-·06	48·44	9·34	-·06	27	24·41	1·55	+·14	47·92	9·81	-·03		
13	18·21	0·91	+·02	48·42	9·36	-·07	28	24·54	1·57	+·17	47·92	9·81	+·01		
14	18·35	0·91	+·10	48·40	9·38	-·07	29	24·68	1·59	+·15	47·92	9·80	+·05		
15	18·49	0·90	+·16	48·38	9·40	-·06	30	24·82	1·61	+·09	47·92	9·80	+·07		
16	18·63	0·90	+·20	48·36	9·42	-·03	July 1	24·96	1·64	+·01	47·92	9·80	+·08		
17	18·76	0·89	+·21	48·34	9·44	·00	2	25·09	1·66	-·07	47·93	9·79	+·06		
18	18·90	0·89	+·18	48·32	9·46	+·02	3	25·23	1·68	-·12	47·93	9·78	+·03		
19	19·04	0·89	+·13	48·30	9·47	+·04	4	25·37	1·70	-·14	47·94	9·78	·00		

200 PRECESSION, NUTATION, &C., 1922.

Mean Noon.	LONGITUDE.				OBLIQUITY.			Mean Noon.	LONGITUDE.				OBLIQUITY.		
	Pre-cession from 1922·0	Nutation.		Appar-ent Obliquity.	Nutation.		Appar-ent Obliquity.		Pre-cession from 1922·0	Nutation.		Appar-ent Obliquity.	Nutation.		
		ΔL	$d L$		$\Delta \omega$	$d \omega$				ΔL	$d L$		$\Delta \omega$	$d \omega$	
		+		23° 26'	-						23° 26'	-			
July 4	25·37	1·70	-·14	47·94	9·78	·00	Aug. 19	31·70	+1·53	·00	48·57	9·09	-·07		
5	25·51	1·72	-·11	47·95	9·77	-·04	20	31·84	1·50	+·08	48·58	9·08	-·05		
6	25·64	1·74	-·05	47·95	9·76	-·06	21	31·98	1·46	+·13	48·60	9·06	-·02		
7	25·78	1·76	+·03	47·96	9·76	-·07	22	32·11	1·43	+·15	48·61	9·04	+·02		
8	25·92	1·77	+·11	47·97	9·75	-·07	23	32·25	1·39	+·12	48·63	9·03	+·05		
9	26·06	1·79	+·17	47·97	9·74	-·05	24	32·39	+1·35	+·06	48·64	9·01	+·07		
10	26·20	1·81	+·20	47·98	9·73	-·02	25	32·53	1·31	-·02	48·66	9·00	+·07		
11	26·33	1·82	+·19	47·99	9·72	+·01	26	32·66	1·27	-·08	48·67	8·98	+·06		
12	26·47	1·84	+·16	48·00	9·71	+·03	27	32·80	1·23	-·11	48·68	8·97	+·03		
13	26·61	1·85	+·10	48·01	9·70	+·05	28	32·94	1·18	-·11	48·70	8·95	-·01		
14	26·75	1·86	+·03	48·02	9·68	+·06	29	33·08	+1·14	-·07	48·71	8·94	-·05		
15	26·88	1·88	-·05	48·03	9·67	+·06	30	33·21	1·09	·00	48·72	8·92	-·07		
16	27·02	1·89	-·12	48·04	9·66	+·06	31	33·35	1·04	+·08	48·73	8·91	-·07		
17	27·16	1·90	-·19	48·05	9·65	+·04	Sept. 1	33·49	1·00	+·15	48·75	8·90	-·06		
18	27·30	1·91	-·22	48·07	9·63	+·01	2	33·63	0·95	+·20	48·76	8·88	-·04		
19	27·43	1·92	-·23	48·08	9·62	-·02	3	33·76	+0·90	+·22	48·77	8·87	-·01		
20	27·57	1·92	-·20	48·09	9·61	-·05	4	33·90	0·85	+·20	48·78	8·86	+·02		
21	27·71	1·93	-·14	48·10	9·59	-·07	5	34·04	0·79	+·15	48·79	8·85	+·04		
22	27·85	1·93	-·05	48·12	9·58	-·07	6	34·18	0·74	+·09	48·80	8·84	+·06		
23	27·98	1·94	+·04	48·13	9·56	-·06	7	34·31	0·69	+·01	48·81	8·83	+·06		
24	28·12	1·94	+·12	48·15	9·55	-·04	8	34·45	+0·63	-·07	48·82	8·82	+·06		
25	28·26	1·94	+·16	48·16	9·53	·00	9	34·59	0·58	-·14	48·82	8·81	+·05		
26	28·40	1·94	+·16	48·17	9·51	+·03	10	34·73	0·52	-·20	48·83	8·80	+·03		
27	28·53	1·94	+·11	48·19	9·50	+·06	11	34·86	0·47	-·23	48·84	8·79	·00		
28	28·67	1·94	+·04	48·20	9·48	+·07	12	35·00	0·41	-·23	48·84	8·78	-·03		
29	28·81	1·93	-·04	48·22	9·46	+·07	13	35·14	+0·35	-·19	48·85	8·78	-·05		
30	28·95	1·93	-·10	48·24	9·45	+·05	14	35·28	0·29	-·13	48·85	8·77	-·07		
31	29·09	1·92	-·13	48·25	9·43	+·01	15	35·42	0·23	-·04	48·86	8·76	-·07		
Aug. 1	29·22	1·91	-·11	48·27	9·41	-·02	16	35·55	0·18	+·04	48·86	8·76	-·06		
2	29·36	1·90	-·06	48·28	9·40	-·05	17	35·69	0·12	+·10	48·86	8·76	-·03		
3	29·50	1·89	+·02	48·30	9·38	-·07	18	35·83	+0·06	+·13	48·87	8·75	+·01		
4	29·64	1·88	+·10	48·32	9·36	-·07	19	35·97	0·00	+·11	48·87	8·75	+·04		
5	29·77	1·87	+·16	48·33	9·34	-·05	20	36·10	-0·06	+·06	48·87	8·75	+·07		
6	29·91	1·85	+·20	48·35	9·33	-·03	21	36·24	0·12	-·01	48·87	8·75	+·08		
7	30·05	1·84	+·20	48·37	9·31	·00	22	36·38	0·18	-·07	48·87	8·74	+·06		
8	30·19	1·82	+·18	48·38	9·29	+·02	23	36·52	-0·24	-·12	48·87	8·74	+·04		
9	30·32	1·80	+·13	48·40	9·27	+·04	24	36·65	0·31	-·12	48·87	8·74	·00		
10	30·46	1·78	+·06	48·42	9·25	+·06	25	36·79	0·37	-·09	48·87	8·74	-·04		
11	30·60	1·76	-·02	48·43	9·23	+·07	26	36·93	0·43	-·02	48·86	8·75	-·06		
12	30·74	1·73	-·10	48·45	9·22	+·06	27	37·07	0·49	+·06	48·86	8·75	-·07		
13	30·87	1·71	-·17	48·47	9·20	+·04	28	37·20	-0·55	+·14	48·86	8·75	-·07		
14	31·01	1·68	-·22	48·48	9·18	+·02	29	37·34	0·61	+·20	48·85	8·75	-·05		
15	31·15	1·66	-·24	48·50	9·16	-·01	30	37·48	0·67	+·23	48·85	8·76	-·02		
16	31·29	1·63	-·22	48·52	9·15	-·04	Oct. 1	37·62	0·73	+·22	48·84	8·76	+·01		
17	31·42	1·60	-·17	48·53	9·13	-·06	2	37·75	0·78	+·18	48·83	8·77	+·03		
18	31·56	1·57	-·09	48·55	9·11	-·07	3	37·89	-0·84	+·12	48·83	8·77	+·05		
19	31·70	1·53	·00	48·57	9·09	-·07	4	38·03	-0·90	+·05	48·82	8·78	+·06		

202 MEAN PLACES OF STARS, 1922.

FOR JANUARY $\alpha^d.642$

Star's Name.	Mag.	Spect.	Right Ascension.	Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h m s	s	s			
α Andromedæ	2.2	A o p	0 4 21.126	+ 3.0866	+ .0107	N.28 39 35.38	+ 20.042	- .163
β Cassiopeïæ	2.4	F 5	0 5 0.365	3.1208	+ .0681	N.58 43 10.58	20.040	- .180
γ Pegasi	2.9	B 2	0 9 13.028	+ 3.0869	+ .0003	N.14 44 59.95	20.029	- .010
δ Octantis	7.2	A o	0 12 17.505	- 0.3375	+ .0057	S. 88 47 47.81	20.016	+ .006
ϵ Ceti	3.8	K o	0 15 27.243	+ 3.0581	- .0013	S. 9 15 22.32	20.000	- .030
ζ Tucanæ	4.3	F 8	0 16 1.206	+ 2.8695	+ .2736	S. 65 19 58.10	+ 19.996	+ 1.172
δ Piscium	5.6	K o	0 16 34.991	3.0860	+ .0003	N. 7 45 25.91	19.993	+ .016
44 Piscium	6.0	G 5	0 21 24.208	3.0760	- .0014	N. 1 30 27.87	19.957	- .023
β Hydri	2.9	G o	0 21 40.591	2.4942	+ .6957	S. 77 41 36.72	19.956	+ .318
α Phœnicis	2.4	K o	0 22 25.974	2.9521	+ .0188	S. 42 43 46.47	19.949	- .403
12 Ceti	6.0	K 5	0 26 3.507	+ 3.0611	+ .0011	S. 4 23 17.07	+ 19.915	.000
ϵ Andromedæ	4.5	G 5	0 34 25.761	3.1831	- .0173	N.28 53 18.32	19.819	- .251
δ Andromedæ	3.5	K o	0 35 9.164	3.1927	+ .0110	N.30 26 3.14	19.810	- .097
α Cassiopeïæ	var.	K o	0 36 4.220	3.3846	+ .0063	N.56 6 35.24	19.797	- .032
β Ceti	2.2	K o	0 39 40.505	2.9961	+ .0160	S. 18 24 51.91	19.746	+ .041
δ Piscium	4.6	K 5	0 44 38.006	+ 3.1052	+ .0052	N. 7 9 38.85	+ 19.666	- .046
20 Ceti	4.9	K o	0 49 1.197	3.0650	- .0005	S. 1 34 2.53	19.588	- .003
γ Cassiopeïæ	2.3	B o p	0 51 59.238	3.5995	+ .0036	N.60 17 40.88	19.531	- .005
μ Andromedæ	3.9	A 2	0 52 25.073	3.3101	+ .0132	N.38 4 35.58	19.523	+ .030
α Sculptoris	4.4	B 5	0 54 50.820	2.8915	- .0018	S. 29 46 44.38	19.474	- .013
ϵ Piscium	4.5	K o	0 58 53.588	+ 3.1173	- .0054	N. 7 28 13.82	+ 19.386	+ .026
72 Piscium	5.7	F 2	1 0 58.114	3.1639	- .0001	N.14 31 36.88	19.339	+ .054
β Phœnicis	3.4	K o	1 2 36.201	2.6843	- .0057	S 47 8 11.65	19.301	- .024
β Andromedæ	2.4	M a	1 5 21.523	3.3380	+ .0148	N.35 12 26.46	19.235	- .117
ζ^1 Piscium	5.6	A 5	1 9 39.259	3.1230	+ .0096	N. 7 9 47.75	19.126	- .052
θ Ceti	3.8	K o	1 20 7.434	+ 3.0036	- .0057	S. 8.35 7.57	+ 18.833	- .215
δ Cassiopeïæ	2.8	A 5	1 20 41.965	3.8656	+ .0407	N.59 49 50.19	18.815	- .037
γ Phœnicis	3.4	K 5	1 24 58.704	2.6097	- .0038	S. 43 43 3.42	18.683	- .218
η Piscium	3.7	G 5	1 27 18.368	3.2054	+ .0015	N.14 56 39.11	18.608	- .003
α Ursæ Minoris	2.1	F 8	1 32 41.459	30.1578	+ .1504	N.88 53 15.91	18.428	+ .001
α Eridani	0.6	B 5	1 34 48.631	+ 2.2252	+ .0103	S. 57 37 58.08	+ 18.354	- .041
ν Piscium	4.7	K o	1 37 22.204	3.1218	- .0017	N. 5 5 35.99	18.263	+ .002
δ Piscium	4.5	K o	1 41 16.344	3.1609	+ .0049	N. 8 45 56.30	18.119	+ .045
ζ Ceti	3.9	K o	1 47 36.585	2.9583	+ .0020	S. 10 43 11.16	17.876	- .027
ϵ Cassiopeïæ	3.4	B 3	1 48 45.932	4.2862	+ .0053	N.63 17 12.31	17.830	- .015
β Arietis	2.7	A 5	1 50 19.603	+ 3.3032	+ .0064	N.20 25 38.35	+ 17.767	- .111
α Hydri	3.0	F o	1 56 18.253	1.8540	+ .0276	S. 61 56 56.64	17.519	+ .026
ν Ceti	4.2	K 5	1 56 19.746	2.8175	+ .0082	S. 21 27 18.56	17.518	- .009
γ Andromedæ	2.3	K o	1 59 6.228	3.6694	+ .0046	N.41 57 22.23	17.399	- .051
α Arietis	2.2	K 2	2 2 46.314	3.3636	+ .0139	N.23 5 39.49	17.237	- .144
β Trianguli	3.1	A 5	2 4 53.780	+ 3.5509	+ .0127	N.34 37 8.50	+ 17.141	- .044
ζ^1 Ceti	4.5	G 5	2 8 51.797	3.1791	- .0013	N. 8 28 52.84	16.958	- .016
67 Ceti	5.7	G 5	2 13 5.488	2.9856	+ .0054	S. 6 46 51.76	16.758	- .110
ϕ Eridani	3.8	B 8	2 13 43.329	+ 2.1347	+ .0081	S. 51 52 22.52	+ 16.729	- .036

PROPER NAMES.— γ Pegasi - *Algenib*. α Ursæ Minoris - *Polaris*. α Eridani - *Achernar*.
 VARIABLE STARS.— α Cassiopeïæ. The limits of magnitude are 2.2 and 2.8. Period irregular.

MEAN PLACES OF STARS, 1922. 203

FOR JANUARY 0d.64z

Star's Name.	Mag.	Spect.	Right Ascension.	Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h m s	s	s			
θ Arietis	- 5.7	A 0	2 13 46.975	+ 3.3342	- .0010	N. 19 32 27.60	+ 16.726	- .002
κ Fornacis	- 5.4	F 5	2 18 58.402	2.7310	+ .0142	S. 24 10 12.88	16.471	- .063
δ Hydri	- 4.3	A 2	2 20 21.315	1.0702	- .0097	S. 69 0 50.36	16.401	+ .020
ξ^2 Ceti	- 4.3	A 0	2 24 0.552	3.1847	+ .0025	N. 8 6 40.27	16.216	- .007
ν Ceti	- 5.0	G 5	2 31 46.695	+ 3.1484	- .0025	N. 5 15 13.34	15.806	- .018
ρ B Octantis	- 7.8	F 0	2 32 7.876	- 8.8982	- .0203	S. 86 3 56.00	+ 15.789	+ .006
δ Ceti	- 4.0	B 2	2 35 28.975	+ 3.0726	+ .0011	S. 0 0 25.66	15.607	+ .004
γ Ceti	- 3.6	A 0	2 39 15.400	3.1162	- .0098	N. 2 54 28.16	15.397	- .148
π Ceti	- 4.4	B 5	2 40 24.538	2.8552	- .0012	S. 14 11 17.87	15.332	- .011
β Fornacis	- 4.5	K 0	2 45 49.577	2.5041	+ .0080	S. 32 43 58.63	15.022	+ .156
σ Arietis	- 5.5	B 5	2 47 10.971	+ 3.3075	+ .0016	N. 14 45 40.90	+ 14.942	- .034
ι B Octantis	8.4	G 5	2 51 37.695	- 31.3288	- .0618	S. 88 29 6.36	14.682	- .025
ϵ Arietis (mean)	4.6	A 2	2 54 44.866	+ 3.4277	- .0009	N. 21 1 45.14	14.493	- .010
θ Eridani	- 3.1	A 2	2 55 18.348	2.2792	- .0025	S. 40 36 59.88	14.461	+ .024
α Ceti	- 2.8	M a	2 58 11.991	3.1348	- .0009	N. 3 47 4.38	14.285	- .078
γ Persei	- 3.1	F 5 p	2 59 8.190	+ 4.3312	+ .0010	N. 53 12 7.91	+ 14.227	- .004
μ Horologii	- 5.2	F 0	3 1 46.218	1.4208	- .0123	S. 60 2 22.80	14.064	- .054
β Persei	- var.	B 8	3 3 5.199	3.8951	+ .0008	N. 40 39 22.37	13.982	- .002
δ Arietis	- 4.5	K 0	3 7 9.923	3.4163	+ .0110	N. 19 25 57.86	13.724	+ .001
τ^1 Arietis	- 5.2	B 3	3 16 43.229	3.4583	+ .0023	N. 20 52 0.39	13.101	- .033
α Persei	- 1.9	F 5	3 18 44.691	+ 4.2694	+ .0030	N. 49 35 5.21	+ 12.968	- .028
σ Tauri	- 3.8	G 5	3 20 36.793	3.2308	- .0046	N. 8 45 19.22	12.844	- .074
f Tauri	- 4.3	K 0	3 26 33.852	3.3083	+ .0016	N. 12 40 13.36	12.440	+ .002
ϵ Eridani	- 3.8	K o p	3 29 15.269	2.8916	- .0660	S. 9 43 16.76	12.254	+ .027
45 G Horologii	5.6	K 0	3 30 14.952	1.7790	+ .0048	S. 50 38 34.00	12.185	+ .081
τ^5 Eridani	- 4.3	B 8	3 30 20.444	+ 2.6462	+ .0023	S. 21 53 37.70	+ 12.177	- .039
11 Tauri	- 6.2	A 0	3 36 6.569	3.5789	+ .0014	N. 25 4 42.14	11.772	- .008
δ Persei	- 3.1	B 5	3 37 21.813	4.2593	+ .0035	N. 47 32 21.98	11.685	- .036
δ Eridani	- 3.7	K 0	3 39 30.627	2.8795	- .0064	S. 10 1 35.58	11.532	+ .747
17 Tauri	- 3.8	B 5	3 40 14.396	3.5575	+ .0017	N. 23 52 9.10	11.480	- .044
η Tauri	- 3.0	B 5	3 42 50.654	+ 3.5612	+ .0016	N. 23 51 53.98	+ 11.293	- .050
γ Hydri	- 3.2	M a	3 48 25.712	- 0.9675	+ .0097	S. 74 28 41.94	10.886	+ .117
ζ Persei	- 2.9	B 1	3 49 13.469	+ 3.7661	+ .0010	N. 31 39 11.35	10.827	- .014
ϵ Persei	- 3.0	B 1	3 52 36.888	4.0181	+ .0031	N. 39 47 9.03	10.577	- .027
γ Eridani	- 3.2	K 5	3 54 23.383	2.7941	+ .0047	S. 13 43 46.21	10.445	- .111
A Tauri	- 4.5	K 0	4 0 4.858	+ 3.5373	+ .0069	N. 21 52 11.80	+ 10.014	- .058
43 Tauri	- 5.7	G 5	4 4 37.162	3.4851	+ .0079	N. 19 24 14.20	9.668	- .044
σ^1 Eridani	- 4.1	F 5	4 8 3.427	2.9270	+ .0007	S. 7 2 23.75	9.406	+ .086
α Horologii	- 3.8	K 0	4 11 25.009	1.9836	+ .0040	S. 42 29 11.09	9.146	- .231
α Reticuli	- 3.4	G 5	4 13 24.901	0.7617	+ .0048	S. 62 40 7.82	8.990	+ .044
ν^4 Eridani	- 3.6	B 9	4 14 56.402	+ 2.2648	+ .0025	S. 33 59 16.20	+ 8.870	.000
γ Tauri	- 3.9	K 0	4 15 21.121	3.4040	+ .0082	N. 15 26 25.17	8.838	- .027
ϵ Tauri	- 3.6	K 0	4 24 3.592	3.4933	+ .0082	N. 19 0 31.06	8.148	- .034
α Tauri	- 1.1	K 5	4 31 26.560	+ 3.4360	+ .0047	N. 16 21 13.19	+ 7.554	- .189

PROPER NAMES.— β Persei - *Algol*.

α Tauri - *Altebaran*.

VARIABLE STARS.— β Persei. The limits of magnitude are 2.1 and 3.2. Period 2^d 21^h.

NOTE.— ϵ Eridani. The apparent places are affected with a parallax of 0".32.

204 MEAN PLACES OF STARS, 1922.

FOR JANUARY 0d.642

Star's Name.	Mag.	Spect.	Right Ascension.	Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h m s	s	s			
α Doradus -	3.5	A o p	4 32 18.584	+ 1.2886	+ .0067	S. 55 12 21.48	+ 7.484	- .011
53 Eridani -	4.0	K o	4 34 36.375	2.7519	- .0061	S. 14 27 19.65	7.297	- .154
τ Tauri -	4.3	B 5	4 37 33.688	3.5987	+ .0007	N. 22 48 30.58	7.056	- .020
μ Eridani -	4.2	B 5	4 41 36.083	2.9980	+ .0013	S. 3 23 47.84	6.724	- .012
π^3 Orionis -	3.3	F 8	4 45 36.259	3.2244	+ .0312	N. 6 49 34.88	6.391	+ .023
ι Aurigæ -	2.9	K 2	4 51 54.678	+ 3.9039	+ .0009	N. 33 2 38.20	+ 5.868	- .021
ϵ Aurigæ -	var.	F 5 p	4 56 22.130	4.3013	+ .0012	N. 43 42 33.59	5.494	- .013
η Aurigæ -	3.3	B 3	5 1 2.550	4.2013	+ .0039	N. 41 7 49.53	5.100	- .072
ϵ Leporis -	3.3	K 5	5 2 9.505	2.5374	+ .0012	S. 22 28 29.48	5.006	- .064
β Eridani -	2.9	A 2	5 4 0.894	2.9551	- .0056	S. 5 11 10.10	4.848	- .074
μ Leporis -	3.3	A o p	5 9 25.632	+ 2.6915	+ .0027	S. 16 17 48.62	+ 4.386	- .028
β Orionis -	0.3	B 8 p	5 10 47.304	2.8825	.0000	S. 8 17 26.44	4.271	.000
α Aurigæ -	0.2	G o	5 10 55.453	4.4212	+ .0086	N. 45 55 12.90	4.260	- .429
θ Orionis -	4.6	B 3	5 17 46.763	3.0623	- .0001	S. 0 27 29.86	3.670	+ .005
η Orionis (mean)	3.4	B 1	5 20 33.290	3.0160	+ .0005	S. 2 28 4.15	3.433	+ .001
γ Orionis -	1.7	B 2	5 20 56.796	+ 3.2176	- .0004	N. 6 16 48.54	+ 3.399	- .017
β Tauri -	1.8	B 8	5 21 21.593	3.7893	+ .0025	N. 28 32 34.52	3.364	- .177
β Leporis -	3.0	G o	5 24 54.196	2.5705	+ .0004	S. 20 49 14.86	3.058	- .093
20 G Pictoris -	5.5	G 5	5 28 0.713	1.6469	- .0005	S. 47 8 2.30	2.788	- .188
δ Orionis -	2.5	B o	5 28 1.259	3.0645	.0000	S. 0 21 20.71	2.787	- .002
α Leporis -	2.7	F o	5 29 17.385	+ 2.6456	+ .0003	S. 17 52 37.82	+ 2.678	.000
ι Orionis -	2.9	O e 5	5 31 37.031	2.9343	+ .0001	S. 5 57 36.25	2.476	- .002
ϵ Orionis -	1.7	B o	5 32 15.294	3.0438	.0000	S. 1 15 2.04	2.421	+ .001
β Doradus -	3.8	F 5	5 32 56.902	0.5191	+ .0002	S. 62 32 27.81	2.361	- .026
ζ Tauri -	3.0	B 3	5 32 58.946	3.5847	+ .0006	N. 21 5 46.09	2.358	- .032
ζ Orionis -	2.0	B o	5 36 49.363	+ 3.0267	+ .0005	S. 1 58 58.37	+ 2.022	- .014
α Columbæ -	2.7	B 5 p	5 36 49.472	2.1721	+ .0006	S. 34 6 54.03	2.023	- .038
130 Tauri -	5.5	F o	5 42 53.303	3.4981	+ .0004	N. 17 42 4.15	1.495	- .006
κ Orionis -	2.2	B o	5 44 3.411	+ 2.8450	+ .0001	S. 9 41 46.66	1.393	- .045
31 G Mensæ -	6.2	A o	5 45 16.372	- 11.6601	- .0120	S. 84 49 40.23	1.287	+ .087
β Columbæ -	3.2	K o	5 48 12.527	+ 2.1104	+ .0034	S. 35 47 48.62	+ 1.031	+ .404
α Orionis -	var.	M a	5 50 56.922	3.2460	+ .0020	N. 7 23 37.38	0.792	+ .009
β Aurigæ -	2.1	A o p	5 53 48.474	4.4058	- .0038	N. 44 56 27.97	0.541	- .006
θ Aurigæ -	2.7	A o p	5 54 24.144	4.0871	+ .0047	N. 37 12 30.63	0.490	- .091
1 Geminorum -	4.3	G 5	5 59 22.743	+ 3.6474	+ .0002	N. 23 16 7.63	+ 0.052	- .109
12 B Octantis -	6.8	K o	6 0 23.118	- 15.7221	- .0265	S. 85 55 59.05	- 0.034	+ .005
ν Orionis -	4.4	B 2	6 3 7.143	+ 3.4253	+ .0012	N. 14 46 44.37	0.273	- .025
η Geminorum -	var.	M a	6 10 10.212	3.6266	- .0039	N. 22 31 50.45	0.889	- .016
ζ Canis Maj. -	3.1	B 3	6 17 19.039	2.3026	- .0006	S. 30 1 41.67	1.514	- .023
μ Geminorum -	3.2	M a	6 18 14.540	3.6261	+ .0046	N. 22 33 17.82	1.594	- .114
β Canis Maj. -	2.0	B 1	6 19 15.863	+ 2.6423	- .0006	S. 17 54 58.03	- 1.683	+ .004
α Argus -	-0.9	F o	6 22 13.225	1.3298	+ .0022	S. 52 39 9.68	1.941	+ .009
ν Geminorum -	4.1	B 5	6 24 19.919	3.5633	- .0005	N. 20 15 46.12	2.127	- .016
γ Geminorum -	1.9	A o	6 33 12.398	3.4636	+ .0033	N. 16 28 1.42	- 2.894	- .048

PROPER NAMES.— β Orionis - *Rigel*. α Aurigæ - *Capella*. γ Orionis - *Bellatrix*.
 α Orionis - *Betelgeuse*. α Argus - *Canopus*.
 VARIABLE STARS.— ϵ Aurigæ - The limits of magnitude are 3.4 and 4.1.
 α Orionis - The limits of magnitude are 1.0 and 1.4. Period irregular.
 η Geminorum - The limits of magnitude are 3.2 and 4.2. Period 231.4 days.

MEAN PLACES OF STARS, 1922. 205

FOR JANUARY $\text{od}^{\cdot}642$

Star's Name.	Mag.	Spect.	Right Ascension.	Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h m s	s	s	S. $^{\circ}$ ' "		
ν Argûs -	- 3.2	B 8	6 35 22.566	+ 1.8360	+ .0008	S. 43 7 37.04	- 3.082	- .019
ϵ Geminorum -	- 3.2	G 5	6 39 8.053	3.6927	- .0001	N. 25 12 34.90	3.406	- .018
ξ Geminorum -	- 3.4	F 5	6 40 54.738	3.3758	- .0076	N. 12 58 51.33	3.559	- .193
α Canis Maj. -	- 1.6	A 0	6 41 42.651	2.6808	- .0374	S. 16 36 29.52	3.629	- 1.206
α Pictoris -	- 3.3	A 5	6 47 23.563	0.6277	- .0104	S. 61 51 27.28	4.116	+ .238
τ Argûs -	- 2.8	K 0	6 48 0.023	+ 1.4859	+ .0029	S. 50 31 16.89	- 4.168	- .096
θ Canis Maj. -	- 4.3	K 2	6 50 33.987	2.7971	- .0091	S. 11 56 23.17	4.387	- .007
ϵ Canis Maj. -	- 1.6	B 1	6 55 33.604	2.3576	- .0001	S. 28 51 54.10	4.812	+ .003
22 Canis Maj. -	- 3.7	K 5	6 58 36.701	2.3905	- .0006	S. 27 49 19.89	5.072	+ .002
ζ Geminorum -	var.	G 0	6 59 29.050	3.5605	- .0002	N. 20 41 9.36	5.145	- .007
o^2 Canis Maj. -	- 3.1	B 5 p	6 59 46.040	+ 2.5055	- .0002	S. 23 43 6.50	- 5.168	.000
γ Canis Maj. -	- 4.1	B 5	7 0 13.794	2.7145	+ .0003	S. 15 31 1.32	5.207	- .010
51 H Cephei -	- 5.3	M a	7 4 29.540	29.0816	- .0581	N. 87 10 27.24	5.567	- .034
δ Canis Maj. -	- 2.0	F 8 p	7 5 13.122	2.4397	- .0015	S. 26 16 6.45	5.627	+ .003
51 Geminorum	- 5.3	M b	7 8 53.656	3.4457	+ .0019	N. 16 17 33.16	5.937	- .042
π Argûs -	- 2.7	K 5	7 14 23.275	+ 2.1198	- .0008	S. 36 57 24.92	- 6.392	- .010
δ Geminorum -	- 3.5	F 0	7 15 28.016	+ 3.5870	- .0010	N. 22 7 37.93	6.481	- .015
δ Volantis -	- 4.0	F 5	7 16 52.856	- 0.0216	+ .0004	S. 67 48 52.36	6.599	- .006
η Canis Maj. -	- 2.4	B 5 p	7 21 0.575	+ 2.3735	- .0005	S. 29 9 0.04	6.939	+ .013
β Canis Min. -	- 3.1	B 8	7 22 55.325	3.2583	- .0032	N. 8 26 51.27	7.095	- .047
σ Argûs -	- 3.3	K 5	7 26 45.309	+ 1.9091	- .0072	S. 43 8 34.19	- 7.407	+ .180
α Geminorum -	- 2.0	A 0	7 29 37.565	3.8466	- .0144	N. 32 3 40.52	7.640	- .082
Q Carinæ -	- 4.9	K 5	7 33 43.643	1.4829	- .0045	S. 52 21 34.53	7.973	- .052
α Canis Min. -	- 0.5	F 5	7 35 13.185	+ 3.1889	- .0472	N. 5 25 32.78	8.090	- 1.037
A Octantis	- 7.8	A 0	7 36 7.763	- 47.8699	- .0399	S. 88 37 39.22	8.163	+ .009
26 Monocerotis	- 4.1	K 0	7 37 31.225	+ 2.8719	- .0057	S. 9 22 5.66	- 8.274	- .021
β Geminorum -	- 1.2	K 0	7 40 32.745	3.7218	- .0470	N. 28 12 56.84	8.515	- .054
ξ Argûs -	- 3.5	G 0	7 46 0.828	2.5237	- .0004	S. 24 39 47.25	8.947	.000
χ Geminorum -	- 5.0	K 0	7 58 43.887	3.6905	- .0012	N. 28 0 50.78	9.926	- .053
ζ Argûs -	- 2.3	O d	8 0 50.506	2.1112	- .0044	S. 39 46 58.60	10.086	- .005
ρ Argûs -	- 2.9	F 5	8 4 13.310	+ 2.5612	- .0065	S. 24 4 42.59	- 10.340	+ .052
γ Argûs -	- 2.2	O a p	8 7 7.796	1.8501	- .0003	S. 47 6 22.58	10.558	- .011
20 Puppis -	- 5.1	G 5	8 9 44.861	2.7588	- .0009	S. 15 33 8.29	10.751	+ .001
β Cancri -	- 3.8	K 2	8 12 17.192	3.2587	- .0035	N. 9 25 37.03	10.939	- .052
d^1 Cancri -	- 5.9	F 0	8 18 54.008	3.4420	- .0038	N. 18 35 1.11	11.420	- .031
4 B Ursæ Min.	- 7.0	A 0	8 20 43.867	+ 58.3297	- .0384	N. 88 52 3.51	- 11.550	+ .017
ϵ Argûs -	- 1.7	K o p	8 20 54.881	1.2373	- .0042	S. 59 15 29.32	11.563	+ .008
30 Monocerotis	- 4.0	A 0	8 21 45.865	3.0033	- .0039	S. 3 39 3.59	11.624	- .019
o Ursæ Maj. -	- 3.5	G 0	8 23 47.974	5.0228	- .0160	N. 60 58 49.45	11.768	- .112
η Cancri -	- 5.5	K 0	8 28 12.078	3.4759	- .0025	N. 20 42 25.51	12.077	- .055
γ Cancri -	- 4.7	A 0	8 38 46.536	+ 3.4829	- .0071	N. 21 44 59.99	- 12.804	- .043
α Mali -	- 3.7	B 2	8 40 27.440	2.4115	- .0003	S. 32 54 16.17	12.915	+ .011
δ Argûs -	- 2.0	A 0	8 42 32.760	+ 1.6551	- .0035	S. 54 25 20.22	- 13.054	- .100

PROPER NAMES.— α Canis Majoris - *Sirius*.
 α Canis Minoris - *Procyon*.

α Geminorum - *Castor*.
 β Geminorum - *Pollux*.

VARIABLE STARS.— ζ Geminorum. The limits of magnitude are 3.7 and 4.3. Period 10.2 days.

NOTES.— α Canis Majoris. The mean place is that of the centre of the orbit; the apparent places, those of the brighter star. The apparent places are affected with a parallax of $0''.38$.

α Geminorum. Both mean and apparent places refer to the brighter star.

α Canis Minoris. The mean place is that of the centre of the orbit; the apparent places, those of the brighter star. The apparent places are affected with a parallax of $0''.33$.

206 MEAN PLACES OF STARS, 1922.

FOR JANUARY 0d.642

Star's Name.	Mag.	Spect.	Right Ascension.	Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h m s	s	s			
ε Hydæ - - 3.5	F 8	8 42 38.831	+ 3.1919	- .0126	N. 6 42 21.19	- 13.061	- .050	
ζ Hydæ - - 3.3	K 0	8 51 16.374	3.1799	- .0060	N. 6 14 35.76	13.624	+ .007	
ι Ursæ Maj. - 3.1	A 5	8 53 52.562	4.1631	- .0435	N. 48 20 56.10	13.790	- .248	
α Cancrī - - 4.3	A 3	8 54 13.414	3.2815	+ .0024	N. 12 9 37.70	13.812	- .042	
κ Cancrī - - 5.1	B 8	9 3 31.485	3.2533	- .0013	N. 10 58 58.51	14.392	- .013	
ξ Cancrī - - 5.2	G 5	9 4 52.722	+ 3.4530	+ .0011	N. 22 21 42.71	- 14.474	+ .002	
λ Argûs - - 2.2	K 5	9 5 7.582	2.2080	- .0015	S. 43 7 2.24	14.487	- .007	
β Argûs - - 1.8	A 0	9 12 21.006	0.6984	- .0310	S. 69 23 44.94	14.917	+ .094	
83 Cancrī - - 6.6	F 5	9 14 37.896	3.3602	- .0076	N. 18 2 12.44	15.050	- .136	
ι Argûs - - 2.3	F 0	9 15 0.099	1.6094	- .0035	S. 58 56 51.17	15.071	+ .002	
40 Lyncis - - 3.3	K 5	9 16 18.516	+ 3.6795	- .0178	N. 34 43 23.77	- 15.145	+ .012	
h Mali - - 4.9	M a	9 18 2.141	2.6564	- .0048	S. 25 37 59.77	15.245	- .032	
κ Argûs - - 2.6	B 3	9 19 41.793	1.8586	- .0033	S. 54 40 38.64	15.338	- .018	
α Hydæ - - 2.2	K 2	9 23 45.294	2.9496	- .0010	S. 8 19 11.06	15.564	+ .033	
ψ Argûs - - 3.6	F 5	9 27 37.480	2.3779	- .0181	S. 40 7 30.14	15.775	+ .038	
θ Ursæ Maj. - 3.3	F 8	9 27 39.054	+ 4.1291	- .1026	N. 52 2 1.55	- 15.777	- .542	
ξ Leonis - - 5.1	G 5	9 27 44.629	3.2425	- .0063	N. 11 38 45.60	15.783	- .084	
N Velorum - 3.0	K 5	9 28 51.111	1.8267	- .0036	S. 56 41 23.09	15.841	+ .001	
κ Hydæ - - 5.0	B 3	9 36 34.014	2.8779	- .0018	S. 13 58 39.64	16.246	- .011	
o Leonis - - 3.8	F 5 p	9 36 59.394	3.2139	- .0094	N. 10 14 52.39	16.268	- .037	
ε Leonis - - 3.1	G o p	9 41 25.644	+ 3.4131	- .0034	N. 24 8 2.49	- 16.491	- .022	
μ Leonis - - 4.1	K 0	9 48 19.885	3.4328	- .0162	N. 26 22 30.09	16.827	- .056	
π Leonis - - 4.9	M a	9 56 5.579	3.1746	- .0029	N. 8 25 8.66	17.186	- .027	
α Leonis - - 1.3	B 8	10 4 13.209	3.2144	- .0169	N. 12 20 56.31	17.541	- .002	
q Velorum - 4.1	A 2	10 11 27.454	2.5290	- .0153	S. 41 44 6.29	17.838	+ .032	
22 Sextantis - 5.4	F 0	10 13 45.273	+ 2.9922	- .0106	S. 7 40 44.06	- 17.930	+ .004	
q Carinæ - - 3.4	K 5	10 14 28.533	2.0042	- .0045	S. 60 56 31.79	17.958	+ .001	
γ Leonis (1st *) 2.6	K 0	10 15 40.493	3.2892	+ .0212	N. 20 14 11.96	18.005	- .152	
μ Ursæ Maj. - 3.2	K 5	10 17 41.368	3.5902	- .0068	N. 41 53 32.50	18.080	+ .027	
μ Hydæ - - 4.1	K 5	10 22 19.040	2.9097	- .0089	S. 16 26 15.30	18.252	- .079	
α Antliæ - - 4.4	K 5	10 23 34.829	+ 2.7491	- .0060	S. 30 40 14.13	- 18.297	- .023	
ρ Leonis - - 3.9	B o p	10 28 42.346	+ 3.1614	- .0006	N. 9 42 30.35	18.476	- .005	
ι G Octantis - 6.7	A 0	10 35 45.132	- 3.2952	- .0096	S. 85 41 13.78	18.706	- .023	
34 Sextantis - 6.6	F 5	10 38 35.892	+ 3.1052	- .0059	N. 3 59 28.19	18.795	+ .028	
θ Argûs - - 3.0	B 0	10 40 10.155	2.1381	- .0043	S. 63 59 10.03	18.841	- .027	
η Argûs - - var.	Pec	10 42 1.843	+ 2.3227	- .0002	S. 59 16 27.09	- 18.897	- .009	
μ Argûs - - 2.8	G 5	10 43 24.631	2.5683	+ .0066	S. 49 0 29.01	18.936	- .081	
l Leonis - - 5.3	A 0	10 45 9.567	3.1558	+ .0001	N. 10 57 29.59	18.986	- .033	
v Hydæ - - 3.3	K 0	10 45 46.518	2.9525	+ .0066	S. 15 47 6.64	19.003	+ .195	
ι Antliæ - - 4.7	K 0	10 53 4.779	2.7858	+ .0062	S. 36 43 5.54	19.197	- .137	
d Leonis - - 5.1	K 0	10 56 31.976	+ 3.0985	+ .0004	N. 4 2 11.58	- 19.282	- .022	
β Ursæ Maj. - 2.4	A 0	10 57 8.784	3.6258	+ .0105	N. 56 48 3.02	19.296	+ .026	
α Ursæ Maj. - 2.0	K 0	10 58 55.757	+ 3.7394	- .0164	N. 62 10 20.67	19.337	- .071	
η Octantis - 6.3	A 0	10 59 53.418	- 0.3232	- .0577	S. 84 10 27.43	19.359	- .005	
χ Leonis - - 4.7	F 0	11 0 59.684	+ 3.1191	- .0234	N. 7 45 29.27	- 19.384	- .041	

PROPER NAMES.—α Leonis - *Regulus*.

α Ursæ Majoris - *Dubhe*.

VARIABLE STARS.—η Argûs. The limits of magnitude are > 1, and 7.4. Period irregular.

MEAN PLACES OF STARS, 1922. 207

FOR JANUARY *od.642*

Star's Name.	Mag.	Spect.	Right Ascension.	Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h m s	s	s			
ψ Ursæ Maj.	- 3.2	K o	11 5 17.155	+ 3.3879	- .0053	N.44 55 19.27	- 19.476	- .033
β Crateris	- 4.5	A 2	11 7 49.166	2.9484	.0000	S. 22 23 59.56	19.528	- .106
δ Leonis	- 2.6	A 2	11 9 57.797	3.1835	+ .0108	N.20 57 4.47	19.569	- .141
θ Leonis	- 3.4	A o	11 10 8.910	3.1547	- .0049	N.15 51 22.04	19.572	- .085
δ Crateris	- 3.8	K o	11 15 26.364	3.0067	- .0088	S. 14 21 22.54	19.667	+ .195
τ Leonis	- 5.2	K o	11 23 55.584	+ 3.0848	+ .0008	N. 3 17 9.61	- 19.797	- .017
λ Draconis	- 4.1	M a	11 26 47.587	3.5961	- .0072	N.69 45 42.28	19.835	- .021
ξ Hydræ	- 3.7	G 5	11 29 9.739	2.9632	- .0158	S. 31 25 33.60	19.863	- .055
λ Centauri	- 3.3	B 9	11 32 10.403	2.7606	- .0073	S. 62 35 17.49	19.897	- .027
ν Leonis	- 4.5	K o	11 32 57.299	3.0716	.0000	S. 0 23 34.67	19.906	+ .039
ν Virginis	- 4.2	M a	11 41 51.057	+ 3.0857	- .0015	N. 6 57 59.68	- 19.983	- .186
β Leonis	- 2.2	A 2	11 45 4.963	3.0960	- .0341	N.15 0 29.32	20.003	- .118
β Virginis	- 3.8	F 8	11 46 37.936	3.0758	+ .0494	N. 2 12 15.74	20.011	- .275
B Centauri	- 4.7	K o	11 47 14.252	2.9991	- .0111	S. 44 44 22.79	20.014	- .046
γ Ursæ Maj.	- 2.5	A o	11 49 44.193	3.1555	+ .0115	N.54 7 42.37	20.025	+ .004
π Virginis	- 4.6	A 3	11 56 52.551	+ 3.0750	- .0009	N. 7 2 57.35	- 20.043	- .032
ο Virginis	- 4.2	G 5	12 1 14.192	3.0716	- .0148	N. 9 9 57.88	20.044	+ .032
δ Centauri	- 2.9	B 3 p	12 4 18.472	3.1029	- .0050	S. 50 17 17.55	20.041	- .030
ε Corvi	- 3.2	K o	12 6 6.616	3.0873	- .0051	S. 22 11 9.77	20.038	+ .003
δ Crucis	- 3.1	B 3	12 10 59.618	3.1766	- .0051	S. 58 18 54.72	20.022	- .027
δ Ursæ Maj.	- 3.4	A 2	12 11 34.532	+ 2.9670	+ .0149	N.57 27 57.43	- 20.019	+ .005
γ Corvi	- 2.8	B 8	12 11 47.529	3.0939	- .0112	S. 17 6 32.18	20.018	+ .017
β Chamæleontis	4.4	B 5	12 13 44.106	3.4799	- .0188	S. 78 52 44.90	20.009	+ .017
6 B Ursæ Min.	6.3	F o	12 14 30.387	0.4805	- .0708	N.88 7 56.35	20.005	+ .058
η Virginis	- 4.0	A o	12 15 54.915	3.0731	- .0036	S. 0 14 0.43	19.997	- .027
α Crucis	- 1.6	B 1	12 22 14.757	+ 3.3233	- .0064	S. 62 40 1.38	- 19.951	- .039
δ Corvi	- 3.1	A o	12 25 49.574	3.1160	- .0140	S. 16 4 52.82	19.917	- .149
γ Crucis	- 1.6	M b	12 26 49.722	3.3101	+ .0026	S. 56 40 36.01	19.908	- .278
β Corvi	- 2.8	G 5	12 30 17.136	3.1474	- .0008	S. 22 57 56.07	19.871	- .061
α Muscæ	- 2.9	B 3	12 32 30.804	3.5575	- .0088	S. 68 42 21.55	19.843	- .029
γ Centauri	- 2.4	A o	12 37 12.435	+ 3.3172	- .0196	S. 48 31 54.10	- 19.781	- .020
γ Virginis(mean)	2.9	F o	12 37 42.413	3.0767	- .0375	S. 1 1 18.74	19.774	+ .005
ρ Virginis	- 5.0	A o	12 37 56.234	3.0312	+ .0059	N.10 39 54.49	19.770	- .107
β Muscæ	- 3.3	B 3	12 41 28.825	3.6587	- .0053	S. 67 40 53.08	19.718	- .031
β Crucis	- 1.5	B 1	12 43 9.073	3.4943	- .0064	S. 59 15 45.77	19.691	- .033
35 Virginis	- 6.7	M a	12 43 53.104	+ 3.0550	- .0004	N. 3 59 54.27	- 19.678	- .012
31 Comæ	- 5.1	G o	12 47 54.024	2.9256	- .0023	N.27 57 53.34	19.609	- .024
ψ Virginis	- 4.9	M b	12 50 17.654	3.1195	- .0024	S. 9 6 56.40	19.564	- .028
ε Ursæ Maj.	- 1.7	A o p	12 50 36.171	2.6325	+ .0138	N.56 22 58.60	19.558	- .013
δ Virginis	- 3.7	M a	12 51 40.413	3.0528	- .0318	N. 3 49 15.79	19.538	- .060
12 Canum Ven.	2.9	A o p	12 52 22.906	+ 2.8299	- .0203	N.38 44 21.60	- 19.524	+ .049
ε Virginis	- 3.0	K o	12 58 17.646	3.0050	- .0186	N.11 22 41.02	19.400	+ .015
θ Virginis	- 4.4	A o	13 5 54.553	3.1067	- .0029	S. 5 7 22.59	19.222	- .040
γ Hydræ	- 3.3	G 5	13 14 40.620	3.2522	+ .0046	S. 22 45 37.44	18.990	- .053
ι Centauri	- 2.9	A 2	13 16 12.281	+ 3.3932	- .0294	S. 36 18 4.64	- 18.947	- .097

PROPER NAMES.—β Leonis - *Denebola*.

NOTE.—α Crucis. Both mean and apparent places are those of the brighter star.

208 MEAN PLACES OF STARS, 1922.

FOR JANUARY 0^d.642

Star's Name.	Mag.	Spect.	Right Ascension.	Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h m s	s	s			
ζ ¹ Ursæ Maj.	- 2.4	A o p	13 20 47.356	+ 2.4056	+ .0153	N. 55 19 56.45	- 18.812	- .030
α Virginis -	- 1.2	B 2	13 21 4.878	3.1607	- .0028	S. 10 45 16.39	18.804	- .032
ι Virginis -	- 5.6	K 2	13 22 35.736	3.1755	- .0096	S. 12 18 7.58	18.757	- .023
ζ Virginis -	- 3.4	A 2	13 30 43.009	3.0745	- .0195	S. 0 11 51.07	18.495	+ .039
ε Centauri	- 2.6	B 1	13 34 56.043	3.7883	- .0039	S. 53 4 13.88	18.350	- .039
m Virginis -	- 5.2	M a	13 37 30.929	+ 3.1533	- .0073	S. 8 18 35.71	- 18.256	+ .032
τ Boötis -	- 4.5	F 5	13 43 33.325	2.8849	- .0341	N. 17 50 41.73	18.033	+ .026
η Ursæ Maj.	- 1.9	B 3	13 44 28.179	2.3791	- .0118	N. 49 42 7.45	17.998	- .023
μ Centauri -	- 3.3	B 2 p	13 44 54.578	3.6061	- .0028	S. 42 5 8.15	17.981	- .019
ζ Centauri	- 3.1	B 2 p	13 50 39.862	3.7359	- .0070	S. 46 54 18.51	17.753	- .064
η Boötis -	- 2.8	G o	13 50 58.252	+ 2.8611	- .0044	N. 18 47 17.43	- 17.741	- .363
τ Virginis -	- 4.3	A 2	13 57 40.526	3.0508	+ .0010	N. 1 55 17.08	17.460	- .029
β Centauri	- 0.9	B 1	13 58 18.281	4.2151	- .0033	S. 59 59 50.89	17.433	- .033
π Hydræ -	- 3.5	K o	14 1 55.472	3.4079	+ .0030	S. 26 18 26.44	17.275	- .153
θ Centauri -	- 2.3	K o	14 2 5.124	3.5656	- .0437	S. 35 59 12.83	17.268	- .525
94 Virginis -	- 6.6	A o	14 2 9.765	+ 3.1745	- .0010	S. 8 31 12.28	- 17.263	+ .009
α Draconis -	- 3.6	A o	14 2 16.676	1.6319	- .0071	N. 64 44 53.76	17.259	+ .011
κ Virginis -	- 4.3	K o	14 8 43.942	3.1971	+ .0006	S. 9 54 40.78	16.965	+ .132
α Boötis -	- 0.2	K o	14 12 6.179	2.8136	- .0779	N. 19 35 16.31	16.806	- 2.004
2 Libræ -	- 6.3	K o	14 19 13.599	3.2261	- .0014	S. 11 21 30.56	16.457	- .067
f Boötis -	- 5.4	A 5	14 22 49.654	+ 2.7954	- .0052	N. 19 34 36.77	- 16.276	+ .015
ρ Boötis -	- 3.8	K o	14 28 28.140	2.5937	- .0073	N. 30 42 47.35	15.983	+ .113
γ Boötis -	- 3.0	F o	14 28 56.285	2.4261	- .0091	N. 38 38 55.81	15.959	+ .145
η Centauri -	- 2.7	B 3 p	14 30 32.817	3.8028	- .0032	S. 41 48 57.49	15.873	- .032
α Centauri	- 0.3	G o	14 34 17.342	4.5463	- .4865	S. 60 30 51.50	15.671	+ .721
α Circini -	- 3.4	F o	14 36 10.930	+ 4.8485	- .0320	S. 64 38 11.44	- 15.568	- .238
α Lupi -	- 2.9	B 2	14 36 43.984	3.9799	- .0020	S. 47 3 15.90	15.537	- .036
ε Boötis -	- 2.7	K o p	14 41 34.836	2.6238	- .0035	N. 27 24 8.26	15.265	+ .009
α Libræ -	- 2.9	A 2	14 46 33.580	+ 3.3226	- .0078	S. 15 43 6.53	14.980	- .077
β Ursæ Min.	- 2.2	K 5	14 50 55.059	- 0.1912	- .0065	N. 74 28 27.21	14.725	+ .003
ξ ² Libræ -	- 5.6	K o	14 52 31.936	+ 3.2520	- .0006	S. 11 5 44.71	- 14.627	- .001
β Lupi -	- 2.8	B 2 p	14 53 24.753	3.9228	- .0070	S. 42 49 15.29	14.576	- .062
κ Centauri -	- 3.4	B 3	14 54 4.767	3.8953	- .0021	S. 41 47 31.96	14.535	- .033
β Boötis -	- 3.6	G 5	14 59 0.482	2.2636	- .0036	N. 40 41 51.04	14.235	- .040
γ Scorpii -	- 3.4	M a	14 59 30.041	3.5119	- .0056	S. 24 58 34.50	14.205	- .048
ψ Boötis -	- 4.7	K o	15 1 6.186	+ 2.5837	- .0133	N. 27 15 3.60	- 14.105	- .014
57 B Ursæ Min.	7.2	K o	15 2 5.004	- 19.0627	- .0070	N. 87 32 0.69	14.044	+ .031
ζ Lupi -	- 3.5	K o	15 6 40.289	+ 4.3081	- .0126	S. 51 48 11.80	13.755	- .066
ι Libræ -	- 4.7	A o p	15 7 46.268	3.4185	- .0032	S. 19 29 51.16	13.685	- .047
γ Triang. Aust.	3.1	A o	15 11 36.156	5.5762	- .0137	S. 68 23 34.65	13.438	- .042
δ Boötis -	- 3.5	K o	15 12 21.503	+ 2.4119	+ .0075	N. 33 36 17.98	- 13.390	- .125
β Libræ -	- 2.7	B 8	15 12 48.420	3.2322	- .0066	S. 9 5 45.69	13.360	- .024
o ² Libræ -	- 6.7	K 2	15 18 40.554	+ 3.3431	- .0005	S. 14 51 24.03	12.972	+ .003
γ ² Ursæ Min.	- 3.1	A 2	15 20 50.497	- 0.1086	- .0020	N. 72 6 41.42	12.828	+ .013
ι Draconis -	- 3.5	K o	15 23 11.662	+ 1.3329	+ .0014	N. 59 14 19.65	- 12.670	+ .010

PROPER NAMES.—α Virginis - *Spica*.

α Boötis - *Arcturus*.

NOTE.—α Centauri. The mean place is that of the centre of gravity of the system: the apparent places, those of the brighter star. The apparent places are affected with a parallax of 0".75.

MEAN PLACES OF STARS, 1922. 209

FOR JANUARY *od.642*

Star's Name.	Mag.	Spect.	Right Ascension.			Annual Precession.		Declination.	Annual Precession.	Annual Proper Motion.		
			h	m	s	s	s					
32 Libræ -	5.9	K 0	15 23 51.250	+	3.3792	+	0.006	S. 16° 26' 44".08	-	12.623	-	.043
ρ Octantis -	5.7	A 2	15 25 3.593		13.3513	+	0.843	S. 84 12 32.89		12.543	+	.081
113 G Lupi -	3.0	B 3	15 29 56.171		3.9912	-	0.020	S. 40 54 21.37		12.207	-	.049
α Coronæ Bor.	2.3	A 0	15 31 23.089		2.5306	+	0.090	N. 26 58 34.74		12.106	-	.100
α Serpentes	2.8	K 0	15 40 25.468		2.9446	+	0.089	N. 6 40 12.33		11.467	+	.043
μ Serpentes	3.6	A 0	15 45 32.850	+	3.1348	-	0.058	S. 3 11 33.05	-	11.097	-	.028
ζ Ursæ Min.	4.3	A 2	15 46 48.717	-	2.1980	+	0.082	N. 78 2 6.36		11.004	-	.004
ε Serpentes	3.8	A 0	15 46 55.568	+	2.9807	+	0.081	N. 4 42 42.18		10.996	+	.070
β Triang. Aust.	3.0	F 0	15 48 15.311		5.2922	-	0.290	S. 63 11 29.53		10.899	-	.408
γ Serpentes	3.9	F 8	15 52 50.947		2.7489	+	0.212	N. 15 54 54.56		10.559	-	1.295
π Scorpil	3.0	B 2 p	15 54 7.723	+	3.6260	-	0.015	S. 25 53 27.00	-	10.464	-	.037
δ Scorpil	2.5	B 1 p	15 55 43.046		3.5445	-	0.011	S. 22 24 3.14		10.345	-	.035
β ¹ Scorpil	2.9	B 1	16 0 53.861		3.4856	-	0.011	S. 19 35 34.97		9.954	-	.028
δ Ophiuchi	3.0	M a	16 10 15.365		3.1452	-	0.031	S. 3 29 40.16		9.236	-	.144
γ ² Normæ	4.1	K 0	16 13 59.563		4.4962	-	0.216	S. 49 57 56.39		8.944	-	.064
ε Ophiuchi	3.3	K 0	16 14 11.532	+	3.1670	+	0.054	S. 4 30 12.34	-	8.929	+	.037
σ Scorpil	3.1	B 1	16 16 26.622		3.6438	-	0.011	S. 25 24 25.00		8.752	-	.033
γ Herculis	3.8	F 0	16 18 28.704		2.6491	-	0.034	N. 19 20 7.06		8.592	+	.037
η Draconis	2.9	G 5	16 22 55.934		0.8111	-	0.020	N. 61 41 25.54		8.238	+	.058
α Scorpil	1.2	M a p	16 24 37.297		3.6758	-	0.006	S. 26 15 36.48		8.104	-	.028
β Herculis	2.8	K 0	16 26 51.919	+	2.5853	-	0.076	N. 21 39 30.72	-	7.923	-	.025
λ Ophiuchi	3.9	A 0	16 26 58.670		3.0266	-	0.023	N. 2 9 12.27		7.914	-	.090
τ Scorpil	2.9	B 0	16 31 1.386		3.7320	-	0.011	S. 28 3 19.91		7.588	-	.033
ζ Ophiuchi	2.7	B 0	16 32 51.700		3.3007	+	0.007	S. 10 24 36.81		7.439	+	.022
24 Scorpil	5.0	K 0	16 37 3.553		3.4690	-	0.019	S. 17 35 32.63		7.097	-	.003
ζ Herculis	3.0	G 0	16 38 20.725	+	2.2980	-	0.364	N. 31 44 35.84	-	6.990	+	.390
η Herculis	3.6	K 0	16 40 13.264		2.0529	+	0.031	N. 39 4 11.08		6.838	-	.093
α Triang. Aust.	1.9	K 2	16 40 23.393		6.3269	+	0.028	S. 68 53 11.94		6.824	-	.049
ε Scorpil	2.4	K 0	16 45 6.430		3.9313	-	0.055	S. 34 9 11.27		6.434	-	.264
ζ Aræ	3.1	K 5	16 52 9.230	+	4.9583	-	0.016	S. 55 52 7.44		5.847	-	.049
ε Ursæ Min.	4.4	G 5	16 53 54.271	-	6.2410	+	0.057	N. 82 10 4.35	-	5.701	-	.001
κ Ophiuchi	3.4	K 0	16 53 58.507	+	2.8584	-	0.199	N. 9 29 42.82		5.695	-	.011
30 Ophiuchi	5.0	K 0	16 56 56.815		3.1652	-	0.018	S. 4 6 24.23		5.443	-	.076
ε Herculis	3.9	A 0	16 57 18.279		2.2984	-	0.036	N. 31 2 25.31		5.415	+	.023
η Ophiuchi	2.6	A 0	17 5 54.139		3.4362	+	0.017	S. 15 37 46.28		4.687	+	.091
ζ Draconis	3.2	B 5	17 8 33.492	+	0.1724	-	0.021	N. 65 48 38.05	-	4.462	+	.018
α Herculis	var.	M b	17 11 5.403		2.7355	-	0.008	N. 14 28 41.34		4.245	+	.029
δ Herculis	3.2	A 0	17 11 49.612		2.4653	-	0.019	N. 24 55 48.86		4.183	-	.158
π Herculis	3.4	K 2	17 12 19.758		2.0911	-	0.025	N. 36 53 46.41		4.139	-	.001
θ Ophiuchi	3.4	B 3	17 17 13.031		3.6829	-	0.006	S. 24 55 22.98		3.720	-	.036
β Aræ	2.8	K 2	17 18 48.734	+	4.9828	-	0.004	S. 55 27 27.93	-	3.583	-	.027
σ Ophiuchi	4.4	K 0	17 22 38.632		2.9757	+	0.002	N. 4 12 25.62		3.251	+	.008
ν Scorpil	2.8	B 3	17 25 27.389		4.0769	-	0.024	S. 37 14 6.15		3.010	-	.039
α Aræ	3.0	B 3 p	17 25 48.541	+	4.6374	-	0.036	S. 49 48 57.61	-	2.980	-	.083

PROPER NAMES.—α Scorpil - *Antares*.

VARIABLE STARS.—α Herculis. The limits of magnitude are 3.1 and 3.9. Period irregular.

210 MEAN PLACES OF STARS, 1922.

FOR JANUARY *od.642*

Star's Name.	Mag.	Spec.	Right Ascension.	Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h m s	s	s	S. 37 2 53.63		
λ Scorpii -	1.7	B 2	17 28 18.589	+ 4.0718	- .0003	S. 37 2 53.63	- 2.763	- .027
β Draconis -	3.0	G 0	17 28 40.165	1.3563	- .0017	N. 52 21 30.82	2.732	+ .009
α Ophiuchi -	2.1	A 5	17 31 18.777	2.7760	+ .0080	N. 12 36 56.40	2.502	- .235
θ Scorpii -	2.0	F 0	17 31 42.623	4.3072	- .0008	S. 42 56 58.83	2.468	- .009
κ Scorpii -	2.5	B 2	17 37 5.362	4.1492	- .0015	S. 38 59 28.21	2.000	- .026
η Pavonis -	3.6	K 0	17 38 4.330	+ 5.8854	- .0027	S. 64 41 19.14	- 1.915	- .080
ν Ophiuchi -	2.9	K 0	17 39 37.128	2.9657	- .0026	N. 4 35 55.64	1.781	+ .158
ι^1 Scorpii -	3.1	F 5 <i>p</i>	17 42 7.610	4.1946	- .0011	S. 40 5 53.30	1.562	- .003
μ Herculis -	3.5	G 5	17 43 24.309	2.3711	- .0238	N. 27 45 55.38	1.451	- .749
89 Herculis -	5.5	F 2	17 52 16.414	2.4196	+ .0013	N. 26 3 41.36	0.674	+ .006
ν Ophiuchi -	3.5	K 0	17 54 43.904	+ 3.3026	- .0006	S. 9 45 54.89	- 0.460	- .120
γ Draconis -	2.4	K 5	17 54 47.680	+ 1.3933	- .0006	N. 51 29 50.93	0.455	- .024
δ Ursæ Min. -	4.4	A 0	17 57 23.820	- 19.5124	+ .0171	N. 86 36 50.63	- 0.228	+ .048
γ Sagittarii -	3.1	K 0	18 0 47.742	+ 3.8576	- .0055	S. 30 25 35.27	+ 0.070	- .198
72 Ophiuchi -	3.7	A 2	18 3 39.064	2.8479	- .0045	N. 9 33 6.40	0.319	+ .087
μ Sagittarii -	4.0	B 8 <i>p</i>	18 9 5.878	+ 3.5874	- .0004	S. 21 4 49.94	+ 0.796	- .002
η Sagittarii -	3.2	M b	18 12 20.904	4.0705	- .0117	S. 36 47 11.28	1.080	- .163
δ Sagittarii -	2.8	K 0	18 16 0.023	3.8382	+ .0027	S. 29 51 45.38	1.398	- .032
η Serpentis -	3.4	K 0	18 17 16.362	3.1407	- .0378	S. 2 55 12.42	1.509	- .692
ϵ Sagittarii -	2.0	A 0	18 18 59.662	3.9854	- .0041	S. 34 25 21.94	1.659	- .122
α Telescopii -	3.8	B 3	18 21 11.414	+ 4.4513	- .0017	S. 46 0 46.85	+ 1.850	- .068
λ Sagittarii -	2.9	K 0	18 23 9.401	3.7059	- .0037	S. 25 27 58.07	2.022	- .188
α Lyræ -	0.1	A 0	18 34 17.852	2.0138	+ .0177	N. 38 42 36.92	2.989	+ .280
4 H Scuti -	4.7	F 0	18 38 0.250	3.2845	+ .0020	S. 9 7 42.20	3.311	- .006
ϕ Sagittarii -	3.3	B 8	18 40 47.006	3.7450	+ .0034	S. 27 4 20.15	3.551	- .006
λ Pavonis -	4.4	B 2	18 44 59.611	+ 5.5670	- .0030	S. 62 16 43.70	+ 3.910	- .022
30 Sagittarii -	6.2	F 0	18 46 9.102	3.6085	- .0041	S. 22 15 8.97	4.012	- .024
β Lyræ -	var.	B 2 <i>p</i>	18 47 11.993	2.2144	+ .0004	N. 33 16 16.54	4.099	- .005
σ Sagittarii -	2.1	B 3	18 50 25.713	3.7200	- .0003	S. 26 23 42.22	4.375	- .075
ξ Sagittarii -	3.6	K 0	18 53 4.632	3.5775	+ .0018	S. 21 12 37.72	4.601	- .016
γ Lyræ -	3.3	A 0	18 56 1.515	+ 2.2442	- .0006	N. 32 34 53.93	+ 4.852	- .006
ϵ Aquilæ -	4.2	K 0	18 56 4.907	+ 2.7253	- .0042	N. 14 57 40.60	4.856	- .080
λ Ursæ Min. -	6.6	M b	18 56 36.628	- 73.0219	- .1122	N. 89 1 27.98	4.901	+ .005
ζ Sagittarii -	2.7	A 2	18 57 38.984	+ 3.8198	- .0021	S. 29 59 34.36	4.989	+ .002
ζ Aquilæ -	3.0	A 0	19 1 49.482	2.7577	- .0008	N. 13 44 47.29	5.342	- .099
τ Sagittarii -	3.4	K 0	19 2 4.306	+ 3.7512	- .0046	S. 27 47 8.67	+ 5.365	- .254
λ Aquilæ -	3.6	A 0	19 2 6.568	3.1854	- .0020	S. 5 0 1.84	5.366	- .083
α Coronæ Aust. -	4.1	A 2	19 4 9.970	4.0772	+ .0051	S. 38 1 39.30	5.539	- .118
π Sagittarii -	3.0	F 2	19 5 7.556	3.5689	- .0005	S. 21 8 55.76	5.620	- .036
ψ Sagittarii -	4.9	F 5	19 10 45.528	3.6771	+ .0025	S. 25 23 32.74	6.093	- .035
δ Draconis -	3.2	K 0	19 12 32.521	+ 0.0032	+ .0175	N. 67 31 27.48	+ 6.239	+ .088
ω Aquilæ -	5.1	A 5	19 14 9.315	2.8160	- .0002	N. 11 27 13.38	6.374	+ .014
59 G Telescopii -	5.6	K 2	19 21 32.637	4.8276	- .0009	S. 54 28 59.16	6.986	- .044
δ Aquilæ -	3.4	F 0	19 21 33.943	+ 3.0080	+ .0168	N. 2 57 29.49	+ 6.984	+ .082

PROPER NAMES.— α Lyræ - *Vega*.

VARIABLE STARS.— β Lyræ. The limits of magnitude are 3.4 and 4.1. Period 12.9 days.

MEAN PLACES OF STARS, 1922. 211

FOR JANUARY *od.642*

Star's Name.	Mag.	Spect.	Right Ascension.	Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h m s	s	s			
6 Vulpeculæ -	4.6	M a	19 25 27.555	+ 2.5055	- .0097	N. 24 30 21.68	+ 7.305	- .110
β Cygni -	3.2	K o p	19 27 34.521	2.4192	- .0002	N. 27 47 41.69	7.475	- .010
μ Aquilæ -	4.7	K o	19 30 16.769	2.9166	+ .0145	N. 7 12 44.79	7.695	- .146
h Sagittarii -	4.7	B 9	19 31 57.722	3.6478	+ .0045	S. 25 3 25.24	7.829	- .027
σ Octantis -	5.5	F o	19 35 29.770	92.1185	+ .1063	S. 89 12 49.57	8.113	.000
54 Sagittarii -	5.5	K o	19 36 15.358	+ 3.4336	+ .0046	S. 16 28 23.74	+ 8.176	- .047
44 G Octantis	6.3	K o	19 41 43.924	11.1948	- .0055	S. 81 32 54.51	8.608	+ .009
f Sagittarii -	5.1	K o	19 41 48.801	3.5107	- .0099	S. 19 56 58.98	8.617	- .088
δ Cygni -	3.0	A o	19 42 32.277	1.8705	+ .0055	N. 44 56 22.79	8.672	+ .044
γ Aquilæ -	2.8	K 2	19 42 33.077	2.8512	+ .0007	N. 10 25 19.79	8.673	- .003
α Aquilæ -	0.9	A 5	19 46 58.659	+ 2.8910	+ .0360	N. 8 39 40.54	+ 9.020	+ .379
ι Sagittarii -	4.2	K o	19 49 52.922	4.1430	- .0017	S. 42 4 28.30	9.249	+ .045
β Aquilæ -	3.9	K o	19 51 28.909	2.9442	+ .0025	N. 6 12 39.48	9.371	- .481
g Sagittarii -	5.1	A o	19 53 31.689	3.4032	+ .0004	S. 15 41 57.34	9.531	- .081
c Sagittarii -	4.6	M b	19 57 51.860	3.6895	+ .0021	S. 27 55 40.22	9.860	+ .018
δ Pavonis -	3.6	G 5	20 1 5.074	+ 5.7121	+ .1923	S. 66 22 56.39	+ 10.104	- 1.129
θ Aquilæ -	3.4	A o	20 7 16.850	3.0937	+ .0020	S. 1 3 13.65	10.568	+ .006
4 Capricorni -	6.0	K o	20 13 26.524	3.5248	+ .0012	S. 22 3 7.05	11.025	- .033
α ² Capricorni -	3.8	K o	20 13 43.696	3.3258	+ .0040	S. 12 47 15.34	11.044	+ .008
β Capricorni -	3.3	G o p	20 16 37.824	3.3697	+ .0023	S. 15 1 43.38	11.255	+ .006
γ Cygni -	2.3	F 8 p	20 19 25.711	+ 2.1524	+ .0004	N. 40 0 22.72	+ 11.456	+ .001
α Pavonis -	2.1	B 3	20 19 29.146	4.7601	.0000	S. 56 59 11.10	11.460	- .092
48 G Octantis	7.1	A o	20 24 14.606	14.6642	+ .0296	S. 84 40 32.37	11.799	+ .034
ρ Capricorni -	5.0	F o	20 24 24.810	3.4251	- .0014	S. 18 4 20.99	11.811	- .016
ε Delphini -	4.0	B 5	20 29 29.209	2.8656	+ .0007	N. 11 2 14.07	12.167	- .025
α Indi -	3.2	K o	20 32 5.100	+ 4.2242	+ .0027	S. 47 33 53.30	+ 12.347	+ .053
α Delphini -	3.9	B 8	20 36 0.922	2.7821	+ .0047	N. 15 38 10.74	12.616	+ .017
β Pavonis -	3.6	A 5	20 37 56.871	5.4429	- .0079	S. 66 29 6.25	12.746	- .003
α Cygni -	1.3	A 2 p	20 38 46.343	2.0445	+ .0004	N. 45 0 3.36	12.802	- .002
ε Cygni -	2.6	K o	20 43 3.307	2.3983	+ .0294	N. 33 40 38.52	13.088	+ .327
ε Aquarii -	3.8	A o	20 43 27.298	+ 3.2470	+ .0017	S. 9 46 55.79	+ 13.115	- .030
μ Aquarii -	4.8	A 3	20 48 26.893	3.2346	+ .0025	S. 9 16 37.20	13.444	- .039
32 Vulpeculæ	5.2	K 2	20 51 14.120	2.5568	- .0003	N. 27 45 37.01	13.622	+ .004
γ Microscopii	4.7	G 5	20 56 30.687	3.6852	- .0004	S. 32 33 48.84	13.958	- .004
θ Capricorni -	4.2	A o	21 1 33.876	3.3693	+ .0051	S. 17 32 37.57	14.272	- .066
61 Cygni (1st *)	5.6	K 5	21 3 23.893	+ 2.3360	+ .3496	N. 38 21 54.25	+ 14.383	+ 3.250
ξ Cygni -	3.4	K o	21 9 36.937	2.5526	- .0002	N. 29 54 22.47	14.756	- .061
α Equulei -	4.1	F 8 p	21 11 55.501	+ 2.9956	+ .0034	N. 4 55 28.60	14.892	- .085
B.A.C. 7504 -	7.4	A 3	21 15 14.023	- 12.2684	+ .0300	N. 86 43 0.13	15.084	+ .030
θ ¹ Microscopii	4.9	A 2 p	21 15 46.682	+ 3.8395	+ .0070	S. 41 8 23.87	15.115	+ .014
α Cephei -	2.6	A 5	21 16 43.196	+ 1.4121	+ .0224	N. 62 15 17.01	+ 15.169	+ .050
ι Capricorni -	4.3	K o	21 17 54.369	3.3409	+ .0022	S. 17 10 3.15	15.238	+ .004
γ Pavonis -	4.3	F 8	21 20 0.846	4.9768	+ .0153	S. 65 43 13.62	15.356	+ .784
ξ Capricorni -	3.9	G 5 p	21 22 13.041	+ 3.4288	+ .0004	S. 22 44 59.94	+ 15.479	+ .020

PROPER NAMES.—α Aquilæ - *Altair*.

α Cygni - *Deneb*.

NOTES.—α Aquilæ. The apparent places are affected with a parallax of *o'.23*.

61 Cygni. The apparent places are affected with a parallax of *o'.30*.

212 MEAN PLACES OF STARS, 1922.

FOR JANUARY $\text{od}^{\text{d}}642$

Star's Name.	Mag.	Spect.	Right Ascension.			Annual Precession.	Annual Proper Motion.	Declination.	Annual Precession.	Annual Proper Motion.
			h	m	s					
β Aquarii	3.1	G 0	21 27 27.240	+	3.1582	+0012	S. 5 54 54.37	+15.767	-0011	
β Cephei	3.3	B 1	21 27 39.654		0.7809	+0026	N.70 13 5.13	15.778	+005	
ξ Aquarii	4.8	A 5	21 33 36.066		3.1876	+0075	S. 8 12 16.97	16.094	-023	
ϵ Pegasi	2.5	K 0	21 40 21.284		2.9445	+0016	N. 9 31 0.14	16.437	000	
δ Capricorni	3.0	A 5	21 42 44.266		3.2956	+0176	S. 16 28 55.00	16.556	-297	
γ Gruis	3.2	B 8	21 49 12.614	+	3.6313	+0077	S. 37 43 56.98	+16.869	-021	
16 Pegasi	5.1	B 3	21 49 30.725		2.7283	+0005	N.25 33 27.63	16.883	+006	
α Aquarii	3.2	G 0	22 1 46.704		3.0808	+0010	S. 0 41 57.47	17.436	-002	
α Gruis	2.2	B 5	22 3 19.434		3.7795	+0110	S. 47 20 22.82	17.503	-174	
ι Pegasi	4.0	F 5	22 3 22.706		2.7697	+0219	N.24 57 48.75	17.505	+022	
ζ Cephei	3.6	K 0	22 8 8.758	+	2.0771	+0018	N.57 48 59.21	+17.705	+010	
θ Aquarii	4.3	K 0	22 12 43.129		3.1593	+0074	S. 8 10 19.80	17.888	-018	
α Tucanæ	2.9	K 2	22 13 10.150		4.1408	-0118	S. 60 38 55.72	17.907	-035	
ν Octantis	5.7	K 0	22 17 9.823		12.1997	-0400	S. 86 21 56.56	18.061	+074	
γ Aquarii	4.0	A 0	22 17 37.680		3.0907	+0081	S. 1 46 50.78	18.079	+015	
σ Aquarii	4.9	A 0	22 26 31.274	+	3.1765	0000	S. 11 4 39.02	+18.402	-026	
η Aquarii	4.1	B 8	22 31 20.919		3.0773	+0057	S. 0 31 11.76	18.564	+053	
κ Aquarii	5.3	K 0	22 33 43.071		3.1126	-0049	S. 4 37 50.67	18.642	-113	
ζ Pegasi	3.6	B 8	22 37 34.283		2.9862	+0054	N.10 25 25.39	18.763	-014	
β Gruis	2.2	M b	22 38 1.010		3.5797	+0133	S. 47 17 35.24	18.776	-026	
η Pegasi	3.1	G 0	22 39 20.614	+	2.8088	+0011	N.29 48 45.93	+18.816	-037	
ϵ Gruis	3.7	A 2	22 43 51.014		3.6252	+0093	S. 51 43 38.34	18.949	-059	
μ Pegasi	3.7	K 0	22 46 14.197		2.8829	+0109	N.24 11 21.62	19.016	-041	
λ Aquarii	3.8	M a	22 48 32.766		3.1303	+0002	S. 7 59 42.15	19.079	+035	
δ Aquarii	3.5	A 2	22 50 30.736		3.1889	-0034	S. 16 14 9.60	19.131	-026	
α Piscis Aust.	1.3	A 3	22 53 20.649	+	3.2943	+0252	S. 30 2 9.84	+19.203	-171	
β Piscium	4.6	B 5	22 59 54.455		3.0521	+0008	N. 3 23 59.40	19.300	-006	
β Pegasi	var.	M a	22 59 59.436		2.8914	+0146	N.27 39 33.70	19.362	+135	
α Pegasi	2.6	A 0	23 0 52.436		2.9828	+0040	N.14 47 7.11	19.381	-039	
ϵ^2 Aquarii	3.8	K 0	23 5 17.383		3.1978	+0032	S. 21 35 46.07	19.477	+041	
γ Tucanæ	4.1	F 2	23 12 53.135	+	3.5208	-0057	S. 58 39 50.36	+19.623	+060	
γ Piscium	3.9	K 0	23 13 7.279		3.0592	+0503	N. 2 51 20.85	19.627	+018	
ψ^3 Aquarii	5.2	A 0	23 14 54.312		3.1190	+0027	S. 10 2 14.86	19.659	-001	
τ Pegasi	4.7	A 5	23 16 46.417		2.9648	+0018	N.23 18 47.24	19.690	-012	
κ Piscium	4.9	A 2 p	23 22 56.035	+	3.0696	+0056	N. 0 49 42.51	19.784	-093	
39 H Cephei	5.6	F 0	23 27 42.693	-	0.3668	+0644	N.86 52 38.23	+19.846	+020	
ι Phœnicis	4.8	A 2 p	23 30 52.951	+	3.2307	+0008	S. 43 2 47.71	19.884	-004	
ι Piscium	4.3	G 0	23 35 56.248		3.0600	+0246	N. 5 12 12.26	19.934	-436	
γ Cephei	3.4	K 0	23 36 8.069		2.4614	-0173	N.77 11 49.29	19.937	+157	
λ Piscium	4.6	A 5	23 38 3.962		3.0698	-0092	N. 1 21 2.32	19.954	-154	
δ Sculptoris	4.6	A 0	23 44 51.876	+	3.1207	+0059	S. 28 33 43.54	+20.001	-133	
ϕ Pegasi	5.2	M a	23 48 31.023		3.0501	-0013	N.18 41 13.30	20.020	-039	
27 Piscium	5.1	K 0	23 54 40.780		3.0749	-0037	S. 3 59 19.51	20.040	-068	
ω Piscium	4.0	F 5	23 55 18.296		3.0697	+0102	N. 6 25 53.58	20.041	-108	
2 Ceti	4.6	A 0	23 59 44.702	+	3.0732	+0012	S. 17 46 12.68	+20.045	-004	

PROPER NAMES.— α Piscis Australis - *Fomalhaut*.

α Pegasi - *Markab*.

VARIABLE STARS.— β Pegasi. The limits of magnitude are 2.2 and 2.7. Period irregular.

APPARENT PLACES OF STARS, 1922. 213

Mean Midnight.		<i>t</i>	BESSEL'S DAY NUMBERS.			
			Log. A.	Log. B.	Log. C.	Log. D.
Jan.	1	0.00235	+8.97465	+0.98057	-0.54743	+1.30332
	6	0.01604	9.04442	0.97900	0.71199	1.29414
	11	0.02973	9.10305	0.97670	0.82835	1.28123
	16	0.04342	9.15299	0.97380	0.91723	1.26437
	21	0.05711	+9.19604	+0.97033	-0.98804	+1.24327
	26	0.07080	9.23331	0.96645	1.04587	1.21749
Feb.	31	0.08449	9.26581	0.96227	1.09379	1.18648
	5	0.09818	9.29430	0.95789	1.13378	1.14945
	10	0.11187	+9.31928	+0.95361	-1.16721	+1.10530
	15	0.12555	9.34137	0.94939	1.19504	1.05245
	20	0.13924	9.36099	0.94550	1.21796	0.98849
	25	0.15293	9.37850	0.94209	1.23649	0.90964
Mar.	2	0.16662	+9.39433	+0.93920	-1.25100	+0.80930
	7	0.18031	9.40878	0.93697	1.26179	0.67450
	12	0.19400	9.42219	0.93556	1.26905	0.47350
	17	0.20769	9.43482	0.93485	1.27293	+0.08138
	22	0.22138	+9.44695	+0.93505	-1.27352	-9.75420
	27	0.23507	9.45882	0.93606	1.27085	0.36784
Apr.	1	0.24876	9.47060	0.93795	1.26491	0.61007
	6	0.26245	9.48250	0.94052	1.25564	0.76199
	11	0.27614	+9.49466	+0.94374	-1.24292	-0.87156
	16	0.28983	9.50714	0.94751	1.22657	0.95616
	21	0.30352	9.52004	0.95171	1.20634	1.02409
	26	0.31721	9.53336	0.95617	1.18186	1.07992
May	1	0.33090	+9.54715	+0.96083	-1.15266	-1.12647
	6	0.34459	9.56136	0.96553	1.11810	1.16555
	11	0.35828	9.57591	0.97009	1.07728	1.19847
	16	0.37197	9.59076	0.97449	1.02886	1.22614
	21	0.38566	+9.60583	+0.97850	-0.97099	-1.24920
	26	0.39935	9.62098	0.98216	0.90076	1.26815
June	31	0.41303	9.63616	0.98527	0.81340	1.28334
	5	0.42672	9.65125	0.98784	0.70024	1.29505
	10	0.44041	+9.66615	+0.98985	-0.54273	-1.30349
	15	0.45410	9.68078	0.99121	0.28796	1.30879
	20	0.46779	9.69503	0.99185	-9.57921	1.31103
	25	0.48148	9.70886	0.99183	+0.07309	1.31026
July	30	0.49517	+9.72217	+0.99114	+0.43726	-1.30646
	5	0.50886	+9.73492	+0.98976	+0.63052	-1.29959

214 APPARENT PLACES OF STARS, 1922.

Mean Midnight.		<i>t</i>	BESSEL'S DAY NUMBERS.			
			Log. A.	Log. B.	Log. C.	Log. D.
July	5	0.50886	+9.73492	+0.98976	+0.63052	-1.29959
	10	0.52255	9.74708	0.98780	0.76159	1.28954
	15	0.53624	9.75862	0.98527	0.85981	1.27616
	20	0.54993	9.76950	0.98221	0.93739	1.25923
	25	0.56362	+9.77969	+0.97875	+1.00065	-1.23846
Aug.	30	0.57731	9.78922	0.97497	1.05323	1.21342
	4	0.59100	9.79809	0.97090	1.09744	1.18360
	9	0.60469	9.80632	0.96666	1.13485	1.14827
	14	0.61838	+9.81393	+0.96242	+1.16652	-1.10637
	19	0.63207	9.82098	0.95830	1.19325	1.05650
Sept.	24	0.64576	9.82749	0.95437	1.21555	0.99651
	29	0.65945	9.83352	0.95080	1.23387	0.92311
	3	0.67314	+9.83913	+0.94765	+1.24851	-0.83073
	8	0.68683	9.84439	0.94512	1.25968	0.70880
	13	0.70052	9.84937	0.94320	1.26755	0.53343
Oct.	18	0.71421	9.85415	0.94204	1.27220	-0.22696
	23	0.72790	+9.85881	+0.94166	+1.27368	+8.77305
	28	0.74159	9.86341	0.94204	1.27198	0.25744
	3	0.75527	9.86805	0.94333	1.26705	0.55023
	8	0.76896	9.87279	0.94525	1.25879	0.72180
Nov.	13	0.78265	+9.87770	+0.94792	+1.24704	+0.84236
	18	0.79634	9.88283	0.95122	1.23156	0.93426
	23	0.81003	9.88824	0.95501	1.21207	1.00751
	28	0.82372	9.89395	0.95914	1.18814	1.06745
	2	0.83741	+9.90000	+0.96355	+1.15926	+1.11730
Dec.	7	0.85110	9.90639	0.96806	1.12463	1.15913
	12	0.86479	9.91311	0.97255	1.08325	1.19431
	17	0.87848	9.92016	0.97685	1.03364	1.22381
	22	0.89217	+9.92748	+0.98085	+0.97366	+1.24831
	27	0.90586	9.93504	0.98439	0.89994	1.26833
Dec.	2	0.91955	9.94278	0.98742	0.80674	1.28423
	7	0.93324	9.95066	0.98981	0.68320	1.29631
	12	0.94693	+9.95858	+0.99154	+0.50446	+1.30474
	17	0.96062	9.96649	0.99249	+0.18772	1.30965
	22	0.97431	9.97434	0.99264	-9.10278	1.31111
Dec.	27	0.98800	9.98204	0.99196	0.25373	1.30913
	32	1.00169	+9.98953	+0.99047	-0.53745	+1.30368
	37	1.01538	+9.99677	+0.98836	-0.70526	+1.29467

APPARENT PLACES OF STARS, 1922. 215

BESSEL'S DAY NUMBERS.

Mean Midnight.	Log. A.	Log. B.	Log. C.	Log. D.	Log. A'.	Log. B'.	
Jan.	1	+ 8.9747	+ 0.9806	- 0.5474	+ 1.3033	+ 7.472	- 8.342
	2	8.9897	0.9803	0.5860	1.3018	+ 7.295	- 8.643
	3	9.0041	0.9800	0.6213	1.3001	+ 6.790	- 8.763
	4	9.0180	0.9797	0.6539	1.2982	- 6.962	- 8.806
	5	9.0314	0.9794	0.6840	1.2962	- 7.392	- 8.771
	6	+ 9.0444	+ 0.9790	- 0.7120	+ 1.2941	- 7.582	- 8.633
	7	9.0569	0.9786	0.7382	1.2918	- 7.670	- 8.255
	8	9.0691	0.9781	0.7628	1.2894	- 7.690	+ 8.079
	9	9.0808	0.9777	0.7859	1.2868	- 7.634	+ 8.623
	10	9.0921	0.9772	0.8077	1.2841	- 7.460	+ 8.799
	11	+ 9.1031	+ 0.9767	- 0.8283	+ 1.2812	- 6.989	+ 8.857
	12	9.1137	0.9762	0.8479	1.2782	+ 6.998	+ 8.799
	13	9.1240	0.9756	0.8665	1.2750	+ 7.423	+ 8.580
	14	9.1339	0.9750	0.8842	1.2716	+ 7.557	+ 7.477
	15	9.1436	0.9744	0.9011	1.2681	+ 7.554	- 8.519
	16	+ 9.1530	+ 0.9738	- 0.9172	+ 1.2644	+ 7.442	- 8.785
	17	9.1621	0.9731	0.9326	1.2605	+ 7.125	- 8.869
	18	9.1710	0.9724	0.9474	1.2565	- 6.413	- 8.833
	19	9.1796	0.9717	0.9615	1.2523	- 7.180	- 8.653
	20	9.1879	0.9710	0.9750	1.2479	- 7.332	- 8.114
	21	+ 9.1960	+ 0.9703	- 0.9880	+ 1.2433	- 7.299	+ 8.322
	22	9.2039	0.9696	1.0005	1.2385	- 7.062	+ 8.699
	23	9.2116	0.9688	1.0125	1.2336	+ 6.077	+ 8.820
	24	9.2190	0.9680	1.0241	1.2284	+ 7.180	+ 8.833
	25	9.2263	0.9672	1.0352	1.2231	+ 7.433	+ 8.756
	26	+ 9.2333	+ 0.9664	- 1.0459	+ 1.2175	+ 7.532	+ 8.568
	27	9.2402	0.9656	1.0562	1.2117	+ 7.562	+ 8.041
	28	9.2468	0.9648	1.0661	1.2058	+ 7.514	- 8.176
	29	9.2533	0.9640	1.0757	1.1996	+ 7.382	- 8.580
	30	9.2597	0.9631	1.0849	1.1931	+ 7.077	- 8.732
Feb.	31	+ 9.2658	+ 0.9623	- 1.0938	+ 1.1865	- 6.475	- 8.799
	1	9.2718	0.9614	1.1024	1.1796	- 7.286	- 8.785
	2	9.2776	0.9605	1.1107	1.1724	- 7.535	- 8.690
	3	9.2833	0.9597	1.1186	1.1650	- 7.653	- 8.447
	4	9.2889	0.9588	1.1263	1.1574	- 7.699	+ 7.000
	5	+ 9.2943	+ 0.9579	- 1.1338	+ 1.1494	- 7.676	+ 8.505
	6	9.2996	0.9570	1.1410	1.1412	- 7.569	+ 8.763
	7	9.3047	0.9562	1.1479	1.1327	- 7.308	+ 8.851
	8	9.3097	0.9553	1.1546	1.1239	- 5.998	+ 8.833
	9	9.3145	0.9545	1.1610	1.1148	+ 7.239	+ 8.681
	10	+ 9.3193	+ 0.9536	- 1.1672	+ 1.1053	+ 7.469	+ 8.204
	11	9.3239	0.9528	1.1732	1.0955	+ 7.554	- 8.322
	12	9.3284	0.9519	1.1790	1.0853	+ 7.457	- 8.724
	13	9.3329	0.9511	1.1845	1.0748	+ 7.223	- 8.857
	14	9.3372	0.9502	1.1899	1.0638	+ 6.299	- 8.857
	15	+ 9.3414	+ 0.9494	- 1.1950	+ 1.0524	- 7.055	- 8.740
16	+ 9.3455	+ 0.9486	- 1.2000	+ 1.0406	- 7.295	- 8.398	

216 APPARENT PLACES OF STARS, 1922.

BESSEL'S DAY NUMBERS.

Mean Midnight.	Log. A.	Log. B.	Log. C.	Log. D.	Log. A'.	Log. B'.
Feb. 16	+ 9·3455	+ 0·9486	- 1·2000	+ 1·0406	- 7·295	- 8·398
17	9·3495	0·9478	1·2048	1·0284	- 7·303	+ 8·000
18	9·3534	0·9470	1·2093	1·0156	- 7·112	+ 8·623
19	9·3573	0·9462	1·2137	1·0023	- 5·998	+ 8·792
20	9·3610	0·9455	1·2180	0·9885	+ 7·125	+ 8·833
21	+ 9·3646	+ 0·9448	- 1·2220	+ 0·9741	+ 7·416	+ 8·785
22	9·3682	0·9440	1·2259	0·9590	+ 7·545	+ 8·633
23	9·3717	0·9434	1·2296	0·9433	+ 7·587	+ 8·279
24	9·3751	0·9427	1·2331	0·9269	+ 7·564	- 7·845
25	9·3785	0·9421	1·2365	0·9097	+ 7·475	- 8·491
26	+ 9·3818	+ 0·9414	- 1·2397	+ 0·8916	+ 7·263	- 8·699
27	9·3850	0·9408	1·2428	0·8726	+ 6·600	- 8·785
28	9·3882	0·9403	1·2457	0·8526	- 7·077	- 8·799
Mar. 1	9·3913	0·9397	1·2484	0·8316	- 7·436	- 8·732
2	9·3943	0·9392	1·2510	0·8093	- 7·602	- 8·544
3	+ 9·3973	+ 0·9387	- 1·2535	+ 0·7857	- 7·677	- 7·845
4	9·4003	0·9382	1·2558	0·7606	- 7·683	+ 8·342
5	9·4031	0·9377	1·2579	0·7339	- 7·613	+ 8·699
6	9·4060	0·9373	1·2599	0·7053	- 7·436	+ 8·833
7	9·4088	0·9370	1·2618	0·6745	- 6·971	+ 8·851
8	+ 9·4115	+ 0·9366	- 1·2635	+ 0·6413	+ 6·952	+ 8·756
9	9·4143	0·9363	1·2651	0·6052	+ 7·352	+ 8·462
10	9·4170	0·9360	1·2666	0·5657	+ 7·463	- 7·845
11	9·4196	0·9358	1·2679	0·5221	+ 7·433	- 8·623
12	9·4222	0·9356	1·2691	0·4735	+ 7·234	- 8·826
13	+ 9·4248	+ 0·9354	- 1·2701	+ 0·4187	+ 6·578	- 8·869
14	9·4273	0·9352	1·2710	0·3558	- 6·980	- 8·799
15	9·4298	0·9350	1·2718	0·2822	- 7·295	- 8·556
16	9·4323	0·9349	1·2724	0·1933	- 7·344	- 7·000
17	9·4348	0·9348	1·2729	0·0814	- 7·218	+ 8·505
18	+ 9·4373	+ 0·9348	- 1·2733	+ 9·9300	- 6·697	+ 8·756
19	9·4397	0·9348	1·2736	9·6957	+ 6·980	+ 8·833
20	9·4421	0·9349	1·2737	+ 9·1508	+ 7·378	+ 8·813
21	9·4445	0·9350	1·2737	- 9·3290	+ 7·542	+ 8·699
22	9·4469	0·9351	1·2735	9·7542	+ 7·609	+ 8·431
23	+ 9·4493	+ 0·9352	- 1·2732	- 9·9647	+ 7·600	+ 7·000
24	9·4517	0·9353	1·2728	0·1057	+ 7·535	- 8·380
25	9·4541	0·9355	1·2723	0·2118	+ 7·378	- 8·653
26	9·4565	0·9358	1·2716	0·2969	+ 7·015	- 8·771
27	9·4588	0·9361	1·2708	0·3678	- 6·697	- 8·799
28	+ 9·4612	+ 0·9364	- 1·2699	- 0·4286	- 7·303	- 8·756
29	9·4635	0·9367	1·2689	0·4818	- 7·529	- 8·623
30	9·4659	0·9371	1·2677	0·5291	- 7·634	- 8·230
31	9·4682	0·9375	1·2664	0·5715	- 7·663	+ 8·114
Apr. 1	9·4706	0·9379	1·2649	0·6101	- 7·619	+ 8·613
2	+ 9·4730	+ 0·9384	- 1·2633	- 0·6453	- 7·481	+ 8·799
3	+ 9·4754	+ 0·9389	- 1·2616	- 0·6778	- 7·150	+ 8·851

APPARENT PLACES OF STARS, 1922. 217

BESSEL'S DAY NUMBERS.

Mean Midnight.	Log. A.	Log. B.	Log. C.	Log. D.	Log. A'.	Log. B'.	
Apr.	3	+ 9.4754	+ 0.9389	- 1.2616	- 0.6778	- 7.150	+ 8.851
	4	9.4777	0.9394	1.2598	0.7079	+ 6.554	+ 8.799
	5	9.4801	0.9399	1.2578	0.7359	+ 7.263	+ 8.591
	6	9.4825	0.9405	1.2556	0.7620	+ 7.423	+ 7.699
	7	9.4849	0.9411	1.2534	0.7865	+ 7.416	- 8.491
	8	+ 9.4873	+ 0.9417	- 1.2510	- 0.8096	+ 7.253	- 8.778
	9	9.4898	0.9423	1.2484	0.8314	+ 6.679	- 8.869
	10	9.4922	0.9430	1.2457	0.8520	- 6.989	- 8.839
	11	9.4947	0.9437	1.2429	0.8716	- 7.324	- 8.672
	12	9.4971	0.9444	1.2399	0.8901	- 7.410	- 8.146
	13	+ 9.4996	+ 0.9451	- 1.2368	- 0.9078	- 7.344	+ 8.301
	14	9.5021	0.9459	1.2336	0.9247	- 7.070	+ 8.690
	15	9.5046	0.9467	1.2302	0.9408	+ 6.529	+ 8.820
	16	9.5071	0.9475	1.2266	0.9562	+ 7.277	+ 8.833
	17	9.5097	0.9483	1.2229	0.9709	+ 7.500	+ 8.756
	18	+ 9.5122	+ 0.9491	- 1.2190	- 0.9850	+ 7.600	+ 8.544
	19	9.5148	0.9500	1.2149	0.9986	+ 7.621	+ 7.954
	20	9.5174	0.9508	1.2107	1.0116	+ 7.576	- 8.230
	21	9.5200	0.9517	1.2063	1.0241	+ 7.457	- 8.591
	22	9.5227	0.9526	1.2018	1.0361	+ 7.202	- 8.740
	23	+ 9.5253	+ 0.9535	- 1.1971	- 1.0477	+ 5.998	- 8.799
	24	9.5280	0.9543	1.1922	1.0588	- 7.156	- 8.778
25	9.5307	0.9552	1.1871	1.0696	- 7.451	- 8.672	
26	9.5334	0.9562	1.1819	1.0799	- 7.587	- 8.415	
27	9.5361	0.9571	1.1764	1.0899	- 7.639	+ 7.301	
28	+ 9.5388	+ 0.9580	- 1.1708	- 1.0995	- 7.617	+ 8.505	
29	9.5416	0.9590	1.1649	1.1088	- 7.506	+ 8.756	
30	9.5444	0.9599	1.1589	1.1178	- 7.244	+ 8.845	
May	1	9.5472	0.9608	1.1527	1.1265	- 5.299	+ 8.833
	2	9.5500	0.9617	1.1462	1.1348	+ 7.202	+ 8.699
	3	+ 9.5528	+ 0.9627	- 1.1395	- 1.1429	+ 7.420	+ 8.279
	4	9.5556	0.9637	1.1326	1.1507	+ 7.454	- 8.255
	5	9.5585	0.9646	1.1255	1.1583	+ 7.344	- 8.708
	6	9.5614	0.9655	1.1181	1.1656	+ 6.962	- 8.851
	7	9.5642	0.9664	1.1105	1.1726	- 6.818	- 8.857
	8	+ 9.5671	+ 0.9674	- 1.1026	- 1.1794	- 7.308	- 8.749
	9	9.5701	0.9683	1.0944	1.1860	- 7.445	- 8.415
	10	9.5730	0.9692	1.0860	1.1923	- 7.439	+ 7.954
	11	9.5759	0.9701	1.0773	1.1985	- 7.286	+ 8.613
	12	9.5789	0.9710	1.0683	1.2044	- 6.697	+ 8.799
	13	+ 9.5818	+ 0.9719	- 1.0589	- 1.2101	+ 7.055	+ 8.845
	14	9.5848	0.9727	1.0492	1.2156	+ 7.416	+ 8.799
	15	9.5878	0.9736	1.0392	1.2210	+ 7.564	+ 8.643
	16	9.5908	0.9745	1.0289	1.2261	+ 7.615	+ 8.255
	17	9.5938	0.9753	1.0181	1.2311	+ 7.591	- 7.954
	18	+ 9.5968	+ 0.9761	- 1.0070	- 1.2359	+ 7.503	- 8.519
	19	+ 9.5998	+ 0.9769	- 0.9954	- 1.2405	+ 7.308	- 8.708

218 APPARENT PLACES OF STARS, 1922.

BESSEL'S DAY NUMBERS.

Mean Midnight.	Log. A.	Log. B.	Log. C.	Log. D.	Log. A'.	Log. B'.	
May	19	+ 9.5998	+ 0.9769	- 0.9954	- 1.2405	+ 7.308	- 8.708
	20	9.6028	0.9777	0.9834	1.2449	+ 6.761	- 8.785
	21	9.6058	0.9785	0.9710	1.2492	- 6.980	- 8.792
	22	9.6089	0.9793	0.9581	1.2533	- 7.382	- 8.724
	23	9.6119	0.9801	0.9446	1.2572	- 7.552	- 8.531
	24	+ 9.6149	+ 0.9808	- 0.9306	- 1.2610	- 7.627	- 7.903
	25	9.6180	0.9815	0.9160	1.2647	- 7.627	+ 8.342
	26	9.6210	0.9822	0.9008	1.2682	- 7.542	+ 8.690
	27	9.6240	0.9828	0.8849	1.2715	- 7.324	+ 8.826
	28	9.6271	0.9835	0.8682	1.2747	- 6.554	+ 8.845
	29	+ 9.6301	+ 0.9841	- 0.8508	- 1.2777	+ 7.138	+ 8.756
	30	9.6331	0.9847	0.8326	1.2806	+ 7.420	+ 8.477
June	31	9.6362	0.9853	0.8134	1.2833	+ 7.498	- 7.699
	1	9.6392	0.9858	0.7932	1.2859	+ 7.445	- 8.602
	2	9.6422	0.9864	0.7719	1.2884	+ 7.213	- 8.813
	3	+ 9.6452	+ 0.9869	- 0.7494	- 1.2908	+ 5.600	- 8.863
	4	9.6482	0.9874	0.7256	1.2930	- 7.180	- 8.799
	5	9.6512	0.9878	0.7002	1.2951	- 7.413	- 8.580
	6	9.6542	0.9883	0.6732	1.2970	- 7.466	- 7.477
	7	9.6572	0.9887	0.6442	1.2988	- 7.378	+ 8.491
	8	+ 9.6602	+ 0.9892	- 0.6131	- 1.3005	- 7.077	+ 8.756
	9	9.6632	0.9895	0.5794	1.3021	+ 6.578	+ 8.845
	10	9.6661	0.9899	0.5427	1.3035	+ 7.290	+ 8.820
	11	9.6691	0.9902	0.5026	1.3048	+ 7.509	+ 8.699
	12	9.6720	0.9905	0.4582	1.3060	+ 7.589	+ 8.415
	13	+ 9.6750	+ 0.9907	- 0.4086	- 1.3070	+ 7.596	+ 6.000
	14	9.6779	0.9910	0.3525	1.3080	+ 7.529	- 8.415
	15	9.6808	0.9912	0.2880	1.3088	+ 7.371	- 8.663
	16	9.6837	0.9914	0.2120	1.3095	+ 6.998	- 8.771
	17	9.6865	0.9915	0.1196	1.3101	- 6.730	- 8.792
	18	+ 9.6894	+ 0.9916	- 0.0021	- 1.3105	- 7.316	- 8.740
	19	9.6922	0.9918	9.8402	1.3108	- 7.529	- 8.602
	20	9.6950	0.9919	9.5792	1.3110	- 7.625	- 8.230
	21	9.6978	0.9919	- 8.8235	1.3111	- 7.643	+ 8.079
	22	9.7006	0.9919	+ 9.3909	1.3111	- 7.591	+ 8.613
	23	+ 9.7034	+ 0.9919	+ 9.7472	- 1.3109	- 7.436	+ 8.799
24	9.7061	0.9919	9.9401	1.3107	- 7.031	+ 8.851	
25	9.7089	0.9918	0.0731	1.3103	+ 6.890	+ 8.806	
26	9.7116	0.9917	0.1747	1.3097	+ 7.371	+ 8.613	
27	9.7143	0.9916	0.2568	1.3091	+ 7.509	+ 7.845	
28	+ 9.7169	+ 0.9915	+ 0.3258	- 1.3083	+ 7.506	- 8.447	
29	9.7196	0.9913	0.3852	1.3075	+ 7.378	- 8.763	
30	9.7222	0.9911	0.4373	1.3065	+ 6.980	- 8.863	
July	1	9.7248	0.9909	0.4837	1.3053	- 6.831	- 8.839
	2	9.7274	0.9907	0.5255	1.3041	- 7.308	- 8.681
	3	+ 9.7299	+ 0.9904	+ 0.5635	- 1.3027	- 7.433	- 8.204
	4	+ 9.7324	+ 0.9901	+ 0.5984	- 1.3012	- 7.406	+ 8.279

APPARENT PLACES OF STARS, 1922. 219

BESSEL'S DAY NUMBERS.

Mean Midnight.	Log. A.	Log. B.	Log. C.	Log. D.	Log. A'.	Log. B'.	
July	4	+ 9.7324	+ 0.9901	+ 0.5984	- 1.3012	- 7.406	+ 8.279
	5	9.7349	0.9898	0.6305	1.2996	- 7.202	+ 8.699
	6	9.7374	0.9894	0.6603	1.2978	- 6.202	+ 8.826
	7	9.7399	0.9891	0.6881	1.2960	+ 7.150	+ 8.839
	8	9.7423	0.9887	0.7141	1.2940	+ 7.448	+ 8.748
	9	+ 9.7447	+ 0.9883	+ 0.7386	- 1.2918	+ 7.569	+ 8.531
	10	9.7471	0.9878	0.7616	1.2895	+ 7.594	+ 7.845
	11	9.7494	0.9873	0.7833	1.2871	+ 7.549	- 8.279
	12	9.7518	0.9868	0.8039	1.2846	+ 7.429	- 8.602
	13	9.7541	0.9863	0.8235	1.2819	+ 7.132	- 8.748
	14	+ 9.7564	+ 0.9858	+ 0.8421	- 1.2791	- 6.202	- 8.799
	15	9.7586	0.9853	0.8598	1.2762	- 7.223	- 8.771
	16	9.7608	0.9847	0.8767	1.2731	- 7.492	- 8.663
	17	9.7630	0.9841	0.8929	1.2698	- 7.619	- 8.398
	18	9.7652	0.9835	0.9084	1.2664	- 7.663	+ 7.477
	19	+ 9.7674	+ 0.9829	+ 0.9232	- 1.2629	- 7.639	+ 8.505
	20	9.7695	0.9822	0.9374	1.2592	- 7.537	+ 8.748
	21	9.7716	0.9816	0.9510	1.2554	- 7.277	+ 8.839
	22	9.7737	0.9809	0.9642	1.2514	- 5.600	+ 8.833
	23	9.7757	0.9802	0.9768	1.2472	+ 7.218	+ 8.708
	24	+ 9.7777	+ 0.9795	+ 0.9890	- 1.2429	+ 7.460	+ 8.322
	25	9.7797	0.9788	1.0007	1.2385	+ 7.519	- 8.176
	26	9.7817	0.9780	1.0119	1.2338	+ 7.445	- 8.681
	27	9.7836	0.9773	1.0228	1.2290	+ 7.208	- 8.839
	28	9.7855	0.9766	1.0333	1.2240	+ 5.776	- 8.857
	29	+ 9.7874	+ 0.9758	+ 1.0434	- 1.2188	- 7.138	- 8.763
	30	9.7892	0.9750	1.0532	1.2134	- 7.364	- 8.447
	31	9.7911	0.9742	1.0627	1.2079	- 7.382	+ 7.845
Aug.	1	9.7929	0.9734	1.0718	1.2021	- 7.228	+ 8.602
	2	9.7946	0.9726	1.0807	1.1962	- 6.641	+ 8.792
	3	+ 9.7964	+ 0.9717	+ 1.0892	- 1.1900	+ 7.055	+ 8.851
	4	9.7981	0.9709	1.0974	1.1836	+ 7.410	+ 8.799
	5	9.7998	0.9701	1.1054	1.1770	+ 7.559	+ 8.633
	6	9.8015	0.9692	1.1131	1.1702	+ 7.609	+ 8.204
	7	9.8031	0.9684	1.1206	1.1631	+ 7.582	- 8.041
	8	+ 9.8047	+ 0.9675	+ 1.1279	- 1.1558	+ 7.484	- 8.544
	9	9.8063	0.9667	1.1349	1.1483	+ 7.268	- 8.716
	10	9.8079	0.9658	1.1416	1.1405	+ 6.600	- 8.792
	11	9.8095	0.9650	1.1482	1.1324	- 7.070	- 8.785
	12	9.8110	0.9641	1.1545	1.1240	- 7.426	- 8.708
	13	+ 9.8125	+ 0.9633	+ 1.1606	- 1.1153	- 7.589	- 8.505
	14	9.8139	0.9624	1.1665	1.1064	- 7.661	- 7.845
	15	9.8154	0.9616	1.1723	1.0971	- 7.666	+ 8.342
	16	9.8168	0.9608	1.1778	1.0875	- 7.607	+ 8.690
	17	9.8182	0.9599	1.1831	1.0775	- 7.439	+ 8.820
	18	+ 9.8196	+ 0.9591	+ 1.1883	- 1.0672	- 6.998	+ 8.845
	19	+ 9.8210	+ 0.9583	+ 1.1933	- 1.0565	+ 6.879	+ 8.763

220 APPARENT PLACES OF STARS, 1922.

BESSEL'S DAY NUMBERS.

Mean Midnight.	Log. A.	Log. B.	Log. C.	Log. D.	Log. A'.	Log. B'.
Aug. 19	+ 9·8210	+ 0·9583	+ 1·1933	- 1·0565	+ 6·879	+ 8·763
20	9·8223	0·9575	1·1981	1·0454	+ 7·336	+ 8·491
21	9·8236	0·9567	1·2027	1·0339	+ 7·457	- 7·602
22	9·8249	0·9559	1·2071	1·0219	+ 7·439	- 8·580
23	9·8262	0·9551	1·2114	1·0095	+ 7·263	- 8·806
24	+ 9·8275	+ 0·9544	+ 1·2155	- 0·9965	+ 6·641	- 8·869
25	9·8287	0·9536	1·2195	0·9830	- 6·998	- 8·813
26	9·8300	0·9529	1·2233	0·9690	- 7·299	- 8·602
27	9·8312	0·9522	1·2270	0·9544	- 7·364	- 7·778
28	9·8324	0·9515	1·2305	0·9391	- 7·258	+ 8·462
29	+ 9·8335	+ 0·9508	+ 1·2339	- 0·9231	- 6·818	+ 8·748
30	9·8347	0·9501	1·2371	0·9064	+ 6·933	+ 8·839
31	9·8358	0·9495	1·2402	0·8889	+ 7·378	+ 8·820
Sept. 1	9·8369	0·9489	1·2431	0·8705	+ 7·557	+ 8·708
2	9·8380	0·9482	1·2459	0·8511	+ 7·627	+ 8·415
3	+ 9·8391	+ 0·9476	+ 1·2485	- 0·8307	+ 7·623	- 7·301
4	9·8402	0·9471	1·2510	0·8092	+ 7·552	- 8·447
5	9·8413	0·9466	1·2534	0·7864	+ 7·392	- 8·681
6	9·8423	0·9461	1·2556	0·7622	+ 7·015	- 8·778
7	9·8434	0·9456	1·2577	0·7364	- 6·790	- 8·792
8	+ 9·8444	+ 0·9451	+ 1·2597	- 0·7088	- 7·312	- 8·732
9	9·8454	0·9447	1·2615	0·6792	- 7·524	- 8·580
10	9·8464	0·9443	1·2632	0·6473	- 7·631	- 8·176
11	9·8474	0·9439	1·2648	0·6127	- 7·661	+ 8·114
12	9·8484	0·9435	1·2662	0·5749	- 7·627	+ 8·613
13	+ 9·8494	+ 0·9432	+ 1·2675	- 0·5334	- 7·509	+ 8·799
14	9·8503	0·9429	1·2687	0·4873	- 7·239	+ 8·851
15	9·8513	0·9426	1·2698	0·4356	- 5·299	+ 8·806
16	9·8523	0·9424	1·2707	0·3767	+ 7·156	+ 8·623
17	9·8532	0·9422	1·2715	0·3084	+ 7·371	+ 8·000
18	+ 9·8541	+ 0·9420	+ 1·2722	- 0·2270	+ 7·396	- 8·415
19	9·8551	0·9419	1·2728	0·1265	+ 7·263	- 8·748
20	9·8560	0·9418	1·2732	9·9954	+ 6·761	- 8·857
21	9·8569	0·9417	1·2735	9·8063	- 6·922	- 8·845
22	9·8579	0·9417	1·2737	- 9·4633	- 7·299	- 8·699
23	+ 9·8588	+ 0·9417	+ 1·2737	+ 8·7730	- 7·396	- 8·255
24	9·8597	0·9417	1·2736	9·6120	- 7·340	+ 8·255
25	9·8607	0·9417	1·2734	9·8805	- 7·055	+ 8·681
26	9·8616	0·9418	1·2731	0·0451	+ 6·621	+ 8·820
27	9·8625	0·9419	1·2726	0·1641	+ 7·320	+ 8·839
28	+ 9·8634	+ 0·9421	+ 1·2720	+ 0·2574	+ 7·542	+ 8·756
29	9·8643	0·9422	1·2713	0·3341	+ 7·639	+ 8·544
30	9·8653	0·9424	1·2704	0·3992	+ 7·657	+ 7·845
Oct. 1	9·8662	0·9427	1·2694	0·4557	+ 7·609	- 8·301
2	9·8671	0·9430	1·2683	0·5056	+ 7·487	- 8·633
3	+ 9·8681	+ 0·9433	+ 1·2671	+ 0·5502	+ 7·234	- 8·756
4	+ 9·8690	+ 0·9437	+ 1·2657	+ 0·5906	+ 6·299	- 8·792

APPARENT PLACES OF STARS, 1922. 221

BESSEL'S DAY NUMBERS.

Mean Midnight.	Log. A.	Log. B.	Log. C.	Log. D.	Log. A'.	Log. B'.	
Oct.	4	+ 9·8690	+ 0·9437	+ 1·2657	+ 0·5906	+ 6·299	— 8·792
	5	9·8699	0·9440	1·2642	0·6275	— 7·132	— 8·763
	6	9·8709	0·9444	1·2625	0·6614	— 7·439	— 8·643
	7	9·8718	0·9448	1·2607	0·6927	— 7·580	— 8·362
	8	9·8728	0·9452	1·2588	0·7218	— 7·636	+ 7·477
	9	+ 9·8737	+ 0·9457	+ 1·2567	+ 0·7490	— 7·621	+ 8·491
	10	9·8747	0·9462	1·2545	0·7745	— 7·532	+ 8·740
	11	9·8757	0·9468	1·2522	0·7984	— 7·324	+ 8·839
	12	9·8767	0·9473	1·2497	0·8210	— 6·714	+ 8·833
	13	9·8777	0·9479	1·2470	0·8424	+ 6·989	+ 8·716
	14	+ 9·8787	+ 0·9485	+ 1·2442	+ 0·8626	+ 7·303	+ 8·342
	15	9·8797	0·9492	1·2413	0·8819	+ 7·371	— 8·146
	16	9·8807	0·9498	1·2382	0·9002	+ 7·268	— 8·663
	17	9·8818	0·9505	1·2350	0·9176	+ 6·855	— 8·839
	18	9·8828	0·9512	1·2316	0·9343	— 6·867	— 8·863
	19	+ 9·8839	+ 0·9519	+ 1·2280	+ 0·9502	— 7·312	— 8·763
	20	9·8850	0·9527	1·2243	0·9654	— 7·448	— 8·477
	21	9·8860	0·9535	1·2204	0·9800	— 7·442	+ 7·776
	22	9·8871	0·9542	1·2163	0·9940	— 7·272	+ 8·591
	23	9·8882	0·9550	1·2121	1·0075	— 6·554	+ 8·799
	24	+ 9·8894	+ 0·9558	+ 1·2077	+ 1·0204	+ 7·150	+ 8·857
	25	9·8905	0·9566	1·2031	1·0329	+ 7·481	+ 8·806
	26	9·8916	0·9574	1·1983	1·0448	+ 7·619	+ 8·633
	27	9·8928	0·9583	1·1933	1·0563	+ 7·666	+ 8·230
28	9·8940	0·9591	1·1881	1·0675	+ 7·645	— 8·041	
29	+ 9·8951	+ 0·9600	+ 1·1828	+ 1·0782	+ 7·554	— 8·568	
30	9·8963	0·9609	1·1772	1·0885	+ 7·364	— 8·732	
31	9·8975	0·9617	1·1715	1·0984	+ 6·912	— 8·799	
Nov.	1	9·8988	0·9626	1·1655	1·1080	— 6·879	— 8·785
	2	9·9000	0·9636	1·1593	1·1173	— 7·336	— 8·690
	3	+ 9·9012	+ 0·9645	+ 1·1528	+ 1·1263	— 7·517	— 8·477
	4	9·9025	0·9654	1·1461	1·1349	— 7·598	— 7·778
	5	9·9038	0·9663	1·1392	1·1433	— 7·606	+ 8·342
	6	9·9051	0·9672	1·1321	1·1513	— 7·540	+ 8·681
	7	9·9064	0·9681	1·1246	1·1591	— 7·364	+ 8·820
	8	+ 9·9077	+ 0·9690	+ 1·1169	+ 1·1667	— 6·901	+ 8·845
	9	9·9090	0·9699	1·1090	1·1739	+ 6·879	+ 8·763
	10	9·9104	0·9708	1·1007	1·1810	+ 7·290	+ 8·519
	11	9·9118	0·9717	1·0922	1·1878	+ 7·392	— 7·000
	12	9·9131	0·9726	1·0833	1·1943	+ 7·340	— 8·556
	13	+ 9·9145	+ 0·9734	+ 1·0741	+ 1·2006	+ 7·055	— 8·799
	14	9·9159	0·9743	1·0645	1·2067	— 6·578	— 8·863
	15	9·9173	0·9751	1·0546	1·2126	— 7·272	— 8·813
	16	9·9187	0·9760	1·0443	1·2183	— 7·466	— 8·623
	17	9·9202	0·9769	1·0336	1·2238	— 7·500	— 7·903
	18	+ 9·9216	+ 0·9777	+ 1·0226	+ 1·2291	— 7·423	+ 8·447
	19	+ 9·9231	+ 0·9785	+ 1·0111	+ 1·2342	— 7·119	+ 8·748

222 APPARENT PLACES OF STARS, 1922.

BESSEL'S DAY NUMBERS.

Mean Midnight.	Log. A.	Log. B.	Log. C.	Log. D.	Log. A'.	Log. B'.
Nov. 19	+ 9.9231	+ 0.9785	+ 1.0111	+ 1.2342	- 7.119	+ 8.748
20	9.9245	0.9793	0.9991	1.2391	+ 6.697	+ 8.845
21	9.9260	0.9801	0.9866	1.2438	+ 7.356	+ 8.826
22	9.9275	0.9808	0.9737	1.2483	+ 7.566	+ 8.708
23	9.9290	0.9816	0.9602	1.2527	+ 7.649	+ 8.415
24	+ 9.9305	+ 0.9823	+ 0.9461	+ 1.2568	+ 7.655	- 7.477
25	9.9320	0.9830	0.9314	1.2608	+ 7.591	- 8.477
26	9.9335	0.9837	0.9160	1.2647	+ 7.445	- 8.699
27	9.9350	0.9844	0.8999	1.2683	+ 7.132	- 8.785
28	9.9366	0.9850	0.8831	1.2718	- 6.340	- 8.792
29	+ 9.9381	+ 0.9857	+ 0.8654	+ 1.2752	- 7.228	- 8.732
30	9.9397	0.9863	0.8469	1.2784	- 7.466	- 8.568
Dec. 1	9.9412	0.9868	0.8273	1.2814	- 7.575	- 8.146
2	9.9428	0.9874	0.8067	1.2842	- 7.600	+ 8.114
3	9.9444	0.9880	0.7850	1.2869	- 7.554	+ 8.602
4	+ 9.9459	+ 0.9884	+ 0.7619	+ 1.2895	- 7.413	+ 8.785
5	9.9475	0.9889	0.7374	1.2919	- 7.047	+ 8.851
6	9.9491	0.9894	0.7112	1.2942	+ 6.730	+ 8.806
7	9.9507	0.9898	0.6832	1.2963	+ 7.281	+ 8.643
8	9.9522	0.9902	0.6531	1.2983	+ 7.429	+ 8.079
9	+ 9.9538	+ 0.9906	+ 0.6207	+ 1.3001	+ 7.423	- 8.380
10	9.9554	0.9910	0.5854	1.3018	+ 7.253	- 8.732
11	9.9570	0.9913	0.5469	1.3033	+ 6.578	- 8.857
12	9.9586	0.9915	0.5045	1.3047	- 7.098	- 8.851
13	9.9602	0.9918	0.4572	1.3060	- 7.416	- 8.716
14	+ 9.9617	+ 0.9920	+ 0.4041	+ 1.3071	- 7.514	- 8.301
15	9.9633	0.9922	0.3434	1.3081	- 7.484	+ 8.204
16	9.9649	0.9923	0.2726	1.3089	- 7.303	+ 8.681
17	9.9665	0.9925	0.1877	1.3096	- 6.578	+ 8.826
18	9.9681	0.9926	0.0820	1.3102	+ 7.150	+ 8.845
19	+ 9.9697	+ 0.9926	+ 9.9418	+ 1.3106	+ 7.478	+ 8.756
20	9.9712	0.9926	9.7331	1.3109	+ 7.607	+ 8.531
21	9.9728	0.9926	+ 9.3166	1.3111	+ 7.641	+ 7.778
22	9.9743	0.9926	- 9.1028	1.3111	+ 7.607	- 8.342
23	9.9759	0.9926	9.6632	1.3110	+ 7.487	- 8.643
24	+ 9.9774	+ 0.9925	- 9.9000	+ 1.3107	+ 7.244	- 8.763
25	9.9790	0.9923	0.0522	1.3103	+ 6.378	- 8.799
26	9.9805	0.9922	0.1646	1.3098	- 7.112	- 8.756
27	9.9820	0.9920	0.2537	1.3091	- 7.420	- 8.633
28	9.9836	0.9917	0.3275	1.3083	- 7.554	- 8.342
29	+ 9.9851	+ 0.9915	- 0.3904	+ 1.3074	- 7.607	+ 7.602
30	9.9866	0.9912	0.4453	1.3063	- 7.585	+ 8.491
31	9.9880	0.9908	0.4939	1.3051	- 7.478	+ 8.732
32	+ 9.9895	+ 0.9905	- 0.5374	+ 1.3037	- 7.218	+ 8.833

APPARENT PLACES OF STARS, 1922. 223

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

Mean Midnight.	<i>f</i>	Log. <i>g</i>	<i>G</i>	Log. <i>h</i>	<i>H</i>	Log. <i>i</i>	<i>f'</i>	Log. <i>g'</i>	<i>G'</i>	
Jan.	1	+0.290	0.9889	78 49	1.3099	350 3	-0.1847	+0.009	8.802	340
	2	0.300	0.9893	78 25	1.3097	349 7	0.2233	+0.006	8.772	312
	3	0.310	0.9896	78 2	1.3094	348 10	0.2586	+0.002	8.773	282
	4	0.320	0.9899	77 39	1.3091	347 14	0.2912	-0.003	8.823	254
	5	0.330	0.9902	77 16	1.3088	346 17	0.3213	-0.008	8.886	230
	6	+0.340	0.9905	76 53	1.3085	345 20	-0.3493	-0.012	8.943	209
	7	0.350	0.9908	76 30	1.3082	344 23	0.3755	-0.014	8.974	191
	8	0.360	0.9911	76 7	1.3078	343 26	0.4001	-0.015	8.995	173
	9	0.370	0.9913	75 44	1.3074	342 29	0.4232	-0.013	8.983	154
	10	0.380	0.9916	75 21	1.3070	341 32	0.4450	-0.009	8.932	133
	11	+0.390	0.9918	74 59	1.3066	340 35	-0.4656	-0.003	8.872	105
	12	0.400	0.9920	74 37	1.3062	339 38	0.4852	+0.003	8.820	72
	13	0.409	0.9922	74 15	1.3058	338 40	0.5038	+0.008	8.815	36
	14	0.419	0.9924	73 53	1.3053	337 43	0.5215	+0.011	8.859	2
	15	0.428	0.9926	73 31	1.3048	336 46	0.5384	+0.011	8.898	335
	16	+0.437	0.9928	73 9	1.3043	335 48	-0.5545	+0.009	8.916	312
	17	0.446	0.9930	72 47	1.3038	334 50	0.5699	+0.004	8.896	290
	18	0.455	0.9932	72 25	1.3033	333 52	0.5847	-0.001	8.834	266
	19	0.464	0.9934	72 4	1.3028	332 54	0.5988	-0.005	8.734	236
	20	0.473	0.9936	71 43	1.3023	331 56	0.6123	-0.007	8.653	197
	21	+0.482	0.9937	71 22	1.3017	330 57	-0.6253	-0.006	8.654	152
	22	0.491	0.9938	71 1	1.3012	329 58	0.6378	-0.004	8.741	115
	23	0.500	0.9940	70 40	1.3006	328 59	0.6498	0.000	8.820	88
	24	0.509	0.9941	70 20	1.3000	328 0	0.6614	+0.005	8.872	66
	25	0.517	0.9942	70 0	1.2994	327 1	0.6725	+0.008	8.896	46
	26	+0.526	0.9944	69 40	1.2988	326 2	-0.6832	+0.011	8.890	28
	27	0.534	0.9945	69 20	1.2982	325 3	0.6935	+0.011	8.869	9
	28	0.543	0.9947	69 0	1.2976	324 4	0.7034	+0.010	8.827	347
	29	0.551	0.9948	68 41	1.2969	323 4	0.7130	+0.007	8.789	322
	30	0.559	0.9949	68 22	1.2963	322 4	0.7222	+0.004	8.771	294
Feb.	31	+0.567	0.9950	68 3	1.2956	321 4	-0.7311	-0.001	8.801	265
	1	0.575	0.9951	67 44	1.2949	320 3	0.7397	-0.006	8.859	238
	2	0.582	0.9952	67 25	1.2942	319 3	0.7480	-0.011	8.926	216
	3	0.590	0.9953	67 6	1.2936	318 3	0.7559	-0.014	8.975	197
	4	0.598	0.9954	66 48	1.2929	317 2	0.7636	-0.015	9.001	179
	5	+0.605	0.9955	66 30	1.2923	316 2	-0.7711	-0.015	9.001	161
	6	0.613	0.9956	66 12	1.2916	315 1	0.7783	-0.011	8.974	142
	7	0.620	0.9957	65 54	1.2910	313 59	0.7852	-0.006	8.913	120
	8	0.627	0.9958	65 37	1.2903	312 58	0.7919	0.000	8.833	.92
	9	0.634	0.9960	65 20	1.2897	311 57	0.7983	+0.005	8.773	54
	10	+0.641	0.9961	65 3	1.2890	310 56	-0.8045	+0.009	8.787	15
	11	0.648	0.9962	64 46	1.2884	309 54	0.8105	+0.010	8.846	343
	12	0.655	0.9964	64 29	1.2877	308 52	0.8163	+0.009	8.893	317
	13	0.662	0.9965	64 13	1.2871	307 50	0.8218	+0.005	8.900	295
	14	0.668	0.9967	63 57	1.2864	306 48	0.8272	+0.001	8.858	273
15	+0.675	0.9969	63 41	1.2858	305 46	-0.8323	-0.003	8.774	248	
16	+0.681	0.9970	63 26	1.2851	304 44	-0.8373	-0.006	8.670	212	

224 APPARENT PLACES OF STARS, 1922.

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

Mean Midnight.	<i>f</i>	Log. <i>g</i>	<i>G</i>	Log. <i>h</i>	<i>H</i>	Log. <i>i</i>	<i>f'</i>	Log. <i>g'</i>	<i>G'</i>	
Feb.	16	+0.681	0.9970	63 26	1.2851	304 44	-0.8373	-0.006	8.670	212
	17	0.687	0.9972	63 11	1.2845	303 41	0.8421	-0.006	8.618	166
	18	0.693	0.9974	62 56	1.2839	302 38	0.8466	-0.004	8.693	122
	19	0.699	0.9976	62 41	1.2833	301 35	0.8510	0.000	8.792	92
	20	0.705	0.9978	62 26	1.2827	300 32	0.8553	+0.004	8.864	69
	21	+0.711	0.9980	62 12	1.2821	299 29	-0.8593	+0.008	8.904	49
	22	0.717	0.9982	61 58	1.2816	298 25	0.8632	+0.011	8.916	31
	23	0.723	0.9984	61 44	1.2810	297 22	0.8669	+0.012	8.902	14
	24	0.729	0.9987	61 31	1.2805	296 18	0.8704	+0.011	8.868	355
	25	0.735	0.9990	61 18	1.2800	295 14	0.8738	+0.009	8.829	333
Mar.	26	+0.740	0.9993	61 5	1.2795	294 10	-0.8770	+0.006	8.793	306
	27	0.746	0.9996	60 52	1.2790	293 6	0.8801	+0.001	8.789	277
	28	0.751	0.9999	60 39	1.2785	292 2	0.8830	-0.004	8.828	249
	1	0.757	1.0002	60 27	1.2781	290 58	0.8857	-0.008	8.886	225
	2	0.762	1.0006	60 15	1.2777	289 53	0.8883	-0.012	8.942	204
	3	+0.768	1.0009	60 3	1.2773	288 49	-0.8908	-0.015	8.980	184
	4	0.773	1.0013	59 52	1.2769	287 44	0.8931	-0.015	8.996	167
	5	0.778	1.0017	59 40	1.2765	286 40	0.8952	-0.013	8.983	149
	6	0.783	1.0021	59 28	1.2762	285 35	0.8972	-0.008	8.941	129
	7	0.788	1.0025	59 17	1.2759	284 31	0.8991	-0.003	8.866	105
	8	+0.793	1.0030	59 6	1.2756	283 26	-0.9008	+0.003	8.776	73
	9	0.798	1.0035	58 55	1.2753	282 21	0.9024	+0.007	8.729	33
	10	0.803	1.0041	58 45	1.2750	281 16	0.9039	+0.009	8.768	353
	11	0.808	1.0046	58 35	1.2748	280 11	0.9052	+0.008	8.837	322
	12	0.813	1.0052	58 25	1.2746	279 6	0.9064	+0.005	8.877	297
	13	+0.818	1.0057	58 15	1.2744	278 1	-0.9074	+0.001	8.871	276
	14	0.822	1.0063	58 6	1.2742	276 56	0.9083	-0.003	8.818	253
	15	0.827	1.0069	57 56	1.2740	275 51	0.9091	-0.006	8.728	222
	16	0.831	1.0075	57 47	1.2739	274 46	0.9097	-0.007	8.646	181
	17	0.836	1.0081	57 38	1.2738	273 41	0.9102	-0.005	8.663	136
18	+0.841	1.0088	57 29	1.2737	272 36	-0.9106	-0.002	8.763	100	
19	0.845	1.0095	57 20	1.2736	271 31	0.9109	+0.003	8.849	74	
20	0.850	1.0103	57 11	1.2736	270 26	0.9110	+0.007	8.907	54	
21	0.855	1.0111	57 3	1.2737	269 21	0.9110	+0.011	8.934	36	
22	0.860	1.0119	56 55	1.2737	268 16	0.9108	+0.013	8.934	18	
23	+0.864	1.0127	56 47	1.2738	267 11	-0.9105	+0.012	8.902	1	
24	0.869	1.0135	56 39	1.2738	266 7	0.9101	+0.010	8.862	341	
25	0.874	1.0144	56 31	1.2739	265 2	0.9096	+0.007	8.818	317	
26	0.879	1.0153	56 23	1.2740	263 57	0.9089	+0.003	8.796	289	
27	0.883	1.0162	56 15	1.2742	262 53	0.9081	-0.002	8.804	261	
28	+0.888	1.0171	56 7	1.2744	261 48	-0.9072	-0.006	8.844	235	
29	0.893	1.0181	56 0	1.2746	260 44	0.9062	-0.010	8.902	212	
30	0.898	1.0191	55 53	1.2748	259 39	0.9050	-0.013	8.944	191	
31	0.903	1.0201	55 46	1.2750	258 35	0.9037	-0.014	8.969	172	
Apr.	1	0.908	1.0211	55 39	1.2753	257 31	0.9022	-0.013	8.968	154
	2	+0.913	1.0222	55 32	1.2756	256 27	-0.9006	-0.009	8.941	134
	3	+0.918	1.0233	55 25	1.2759	255 23	-0.8989	-0.004	8.883	112

APPARENT PLACES OF STARS, 1922. 225

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

Mean Midnight.	<i>f</i>	Log. <i>g</i>	<i>G</i>	Log. <i>h</i>	<i>H</i>	Log. <i>i</i>	<i>f'</i>	Log. <i>g'</i>	<i>G'</i>	
Apr.	3	+0.918	1.0233	55 25	1.2759	255 23	-0.8989	-0.004	8.883	112
	4	0.923	1.0244	55 18	1.2762	254 19	0.8971	+0.001	8.802	84
	5	0.928	1.0255	55 11	1.2765	253 15	0.8951	+0.006	8.729	47
	6	0.933	1.0267	55 4	1.2769	252 12	0.8929	+0.008	8.727	5
	7	0.938	1.0279	54 58	1.2773	251 9	0.8907	+0.008	8.784	329
	8	+0.943	1.0291	54 51	1.2777	250 6	-0.8883	+0.005	8.844	301
	9	0.949	1.0303	54 44	1.2781	249 3	0.8857	+0.001	8.873	277
	10	0.954	1.0316	54 37	1.2785	248 0	0.8830	-0.003	8.856	254
	11	0.960	1.0329	54 31	1.2790	246 58	0.8802	-0.006	8.801	228
	12	0.965	1.0342	54 24	1.2795	245 55	0.8772	-0.008	8.727	195
	13	+0.971	1.0355	54 17	1.2800	244 52	-0.8741	-0.007	8.686	156
	14	0.976	1.0369	54 11	1.2805	243 50	0.8709	-0.004	8.735	116
	15	0.982	1.0383	54 5	1.2810	242 49	0.8675	+0.001	8.822	84
	16	0.988	1.0397	53 58	1.2815	241 47	0.8639	+0.006	8.892	61
	17	0.994	1.0411	53 51	1.2820	240 46	0.8602	+0.010	8.931	42
	18	+1.000	1.0425	53 45	1.2826	239 44	-0.8563	+0.012	8.940	24
	19	1.006	1.0440	53 39	1.2832	238 43	0.8522	+0.013	8.925	6
	20	1.012	1.0455	53 32	1.2837	237 42	0.8480	+0.012	8.889	347
	21	1.018	1.0470	53 26	1.2843	236 41	0.8436	+0.009	8.841	326
	22	1.024	1.0485	53 19	1.2849	235 40	0.8391	+0.005	8.803	300
	23	+1.030	1.0500	53 12	1.2855	234 40	-0.8344	.000	8.799	272
	24	1.036	1.0515	53 6	1.2861	233 40	0.8295	-0.004	8.823	244
	25	1.042	1.0530	52 59	1.2867	232 40	0.8244	-0.009	8.867	220
	26	1.049	1.0546	52 52	1.2873	231 40	0.8192	-0.012	8.912	199
	27	1.056	1.0562	52 45	1.2880	230 40	0.8137	-0.013	8.941	179
	28	+1.062	1.0578	52 38	1.2886	229 41	-0.8081	-0.013	8.949	159
	29	1.069	1.0594	52 31	1.2892	228 42	0.8022	-0.010	8.934	138
30	1.076	1.0610	52 24	1.2898	227 43	0.7962	-0.005	8.894	117	
May	1	1.083	1.0626	52 17	1.2905	226 44	0.7900	.000	8.833	90
	2	1.090	1.0642	52 9	1.2911	225 45	0.7835	+0.005	8.773	57
	3	+1.097	1.0659	52 2	1.2918	224 46	-0.7768	+0.008	8.749	20
	4	1.104	1.0676	51 55	1.2924	223 48	0.7699	+0.009	8.777	342
	5	1.112	1.0693	51 48	1.2930	222 50	0.7628	+0.007	8.830	311
	6	1.119	1.0710	51 40	1.2937	221 52	0.7554	+0.003	8.865	284
	7	1.127	1.0726	51 33	1.2943	220 54	0.7478	-0.002	8.864	260
	8	+1.134	1.0743	51 25	1.2949	219 57	-0.7399	-0.006	8.841	234
	9	1.142	1.0760	51 18	1.2955	219 0	0.7317	-0.009	8.790	205
	10	1.149	1.0777	51 10	1.2961	218 3	0.7233	-0.008	8.747	171
	11	1.157	1.0794	51 2	1.2967	217 6	0.7146	-0.006	8.751	133
	12	1.165	1.0811	50 54	1.2973	216 9	0.7056	-0.002	8.804	99
	13	+1.173	1.0828	50 46	1.2979	215 13	-0.6962	+0.003	8.867	72
	14	1.180	1.0845	50 38	1.2985	214 17	0.6865	+0.008	8.913	50
	15	1.188	1.0863	50 29	1.2991	213 21	0.6765	+0.011	8.933	31
	16	1.197	1.0880	50 21	1.2997	212 25	0.6662	+0.013	8.927	12
	17	1.206	1.0897	50 13	1.3002	211 29	0.6554	+0.012	8.896	353
	18	+1.214	1.0914	50 4	1.3008	210 33	-0.6443	+0.010	8.857	333
	19	+1.223	1.0931	49 56	1.3014	209 37	-0.6327	+0.006	8.815	309

226 APPARENT PLACES OF STARS, 1922.

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

Mean Midnight.	<i>f</i>	Log. <i>g</i>	<i>G</i>	Log. <i>h</i>	<i>H</i>	Log. <i>i</i>	<i>f'</i>	Log. <i>g'</i>	<i>G'</i>		
May	19	+1.223	1.0931	49 56	1.3014	209 37	-0.6327	+0.006	8.815	309	
	20	1.231	1.0948	49 47	1.3019	208 42	0.6207	+0.002	8.793	281	
	21	1.240	1.0965	49 39	1.3024	207 47	0.6083	-0.003	8.812	253	
	22	1.249	1.0982	49 30	1.3029	206 52	0.5954	-0.007	8.855	228	
	23	1.257	1.1000	49 21	1.3034	205 57	0.5819	-0.011	8.898	205	
	24	+1.266	1.1017	49 12	1.3039	205 2	-0.5679	-0.013	8.931	185	
	25	1.275	1.1034	49 3	1.3044	204 8	0.5533	-0.013	8.943	165	
	26	1.284	1.1051	48 54	1.3049	203 13	0.5381	-0.011	8.931	145	
	27	1.293	1.1068	48 45	1.3053	202 19	0.5222	-0.007	8.899	122	
	28	1.302	1.1085	48 35	1.3057	201 25	0.5055	-0.001	8.847	96	
	29	+1.311	1.1102	48 25	1.3061	200 31	-0.4881	+0.004	8.801	64	
	30	1.320	1.1119	48 16	1.3065	199 37	0.4699	+0.008	8.783	30	
	31	1.329	1.1136	48 6	1.3069	198 43	0.4507	+0.010	8.800	355	
	June	1	1.338	1.1152	47 57	1.3073	197 49	0.4305	+0.009	8.837	324
		2	1.348	1.1168	47 47	1.3076	196 56	0.4092	+0.005	8.862	297
		3	+1.357	1.1185	47 37	1.3080	196 2	-0.3867	0.000	8.863	271
		4	1.367	1.1201	47 27	1.3083	195 9	0.3629	-0.005	8.844	244
		5	1.376	1.1217	47 17	1.3086	194 16	0.3375	-0.008	8.809	216
		6	1.386	1.1233	47 7	1.3089	193 23	0.3105	-0.009	8.769	183
		7	1.395	1.1250	46 57	1.3092	192 29	0.2815	-0.007	8.756	147
		8	+1.405	1.1266	46 47	1.3095	191 36	-0.2504	-0.004	8.791	113
		9	1.415	1.1282	46 37	1.3097	190 43	0.2167	+0.001	8.848	84
		10	1.425	1.1298	46 26	1.3099	189 50	0.1800	+0.006	8.885	59
		11	1.435	1.1315	46 16	1.3101	188 57	0.1399	+0.010	8.913	38
		12	1.444	1.1331	46 5	1.3103	188 4	0.0955	+0.012	8.914	19
		13	+1.454	1.1346	45 55	1.3105	187 11	-0.0459	+0.012	8.898	0
		14	1.464	1.1360	45 44	1.3106	186 19	9.9898	+0.010	8.861	339
		15	1.474	1.1375	45 34	1.3107	185 26	9.9253	+0.007	8.819	316
16		1.483	1.1390	45 23	1.3108	184 34	9.8493	+0.003	8.794	289	
17		1.493	1.1405	45 12	1.3109	183 41	9.7569	-0.002	8.798	260	
18		+1.503	1.1420	45 1	1.3110	182 49	-9.6394	-0.006	8.838	233	
19		1.512	1.1435	44 51	1.3110	181 56	9.4775	-0.010	8.896	211	
20		1.522	1.1450	44 40	1.3111	181 4	9.2165	-0.013	8.936	191	
21		1.532	1.1464	44 29	1.3111	180 11	-8.4608	-0.014	8.949	172	
22		1.542	1.1478	44 18	1.3111	179 19	+9.0282	-0.012	8.946	152	
23		+1.552	1.1492	44 7	1.3110	178 26	+9.3845	-0.008	8.921	131	
24		1.561	1.1506	43 56	1.3110	177 34	9.5774	-0.003	8.870	107	
25		1.571	1.1520	43 45	1.3110	176 41	9.7104	+0.002	8.818	76	
26		1.581	1.1534	43 33	1.3109	175 48	9.8120	+0.007	8.796	41	
27		1.591	1.1548	43 22	1.3108	174 56	9.8941	+0.010	8.814	6	
28		+1.601	1.1562	43 11	1.3107	174 3	+9.9631	+0.010	8.846	336	
29	1.611	1.1575	43 0	1.3106	173 11	0.0225	+0.007	8.876	310		
30	1.621	1.1588	42 49	1.3104	172 18	0.0746	+0.003	8.877	285		
July	1	1.630	1.1601	42 38	1.3102	171 26	0.1210	-0.002	8.847	259	
	2	1.640	1.1614	42 27	1.3100	170 33	0.1628	-0.006	8.799	230	
	3	+1.650	1.1627	42 16	1.3098	169 40	+0.2008	-0.008	8.753	196	
	4	+1.660	1.1639	42 5	1.3096	168 47	+0.2357	-0.008	8.736	160	

APPARENT PLACES OF STARS, 1922. 227

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

Mean Midnight.	<i>f</i>	Log. <i>g</i>	<i>G</i>	Log. <i>h</i>	<i>H</i>	Log. <i>i</i>	<i>f'</i>	Log. <i>g'</i>	<i>G'</i>	
July	4	+1.660	1.1639	42° 5'	1.3096	168 47	+0.2357	-0.008	8.736	160°
	5	1.669	1.1652	41 54	1.3094	167 55	0.2678	-0.005	8.773	123
	6	1.679	1.1664	41 43	1.3091	167 2	0.2976	-0.001	8.826	93
	7	1.688	1.1676	41 32	1.3088	166 9	0.3254	+0.004	8.873	68
	8	1.697	1.1688	41 20	1.3085	165 16	0.3514	+0.009	8.900	45
	9	+1.707	1.1700	41 9	1.3082	164 23	+0.3759	+0.011	8.912	25
	10	1.716	1.1712	40 58	1.3079	163 29	0.3989	+0.012	8.898	5
	11	1.726	1.1723	40 47	1.3075	162 36	0.4206	+0.011	8.866	345
	12	1.735	1.1734	40 36	1.3071	161 42	0.4412	+0.008	8.827	323
	13	1.744	1.1745	40 25	1.3067	160 49	0.4608	+0.004	8.794	296
	14	+1.753	1.1756	40 14	1.3063	159 55	+0.4794	-0.001	8.800	267
	15	1.762	1.1767	40 3	1.3059	159 2	0.4971	-0.005	8.832	240
	16	1.771	1.1778	39 53	1.3055	158 8	0.5140	-0.009	8.889	217
	17	1.780	1.1789	39 42	1.3051	157 14	0.5302	-0.013	8.940	197
	18	1.789	1.1799	39 31	1.3047	156 20	0.5457	-0.014	8.965	178
	19	+1.798	1.1809	39 20	1.3042	155 26	+0.5605	-0.013	8.968	160
	20	1.807	1.1819	39 9	1.3037	154 31	0.5747	-0.011	8.949	141
	21	1.816	1.1829	38 58	1.3032	153 36	0.5883	-0.006	8.896	119
	22	1.825	1.1839	38 47	1.3027	152 42	0.6015	0.000	8.833	91
	23	1.834	1.1849	38 37	1.3022	151 47	0.6141	+0.005	8.784	57
	24	+1.842	1.1858	38 27	1.3016	150 52	+0.6263	+0.009	8.789	20
	25	1.851	1.1868	38 16	1.3011	149 57	0.6380	+0.010	8.832	347
	26	1.859	1.1877	38 6	1.3005	149 2	0.6492	+0.009	8.867	319
	27	1.867	1.1886	37 56	1.3000	148 7	0.6601	+0.005	8.882	295
	28	1.875	1.1895	37 46	1.2994	147 12	0.6706	-0.000	8.857	271
	29	+1.883	1.1904	37 35	1.2989	146 16	+0.6807	-0.004	8.807	245
	30	1.891	1.1913	37 25	1.2983	145 20	0.6905	-0.007	8.734	211
	31	1.899	1.1922	37 15	1.2977	144 24	0.7000	-0.007	8.689	172
Aug.	1	1.907	1.1931	37 5	1.2971	143 28	0.7091	-0.005	8.719	130
	2	1.915	1.1939	36 55	1.2965	142 32	0.7180	-0.001	8.796	98
	3	+1.923	1.1947	36 45	1.2959	141 36	+0.7265	+0.003	8.872	72
	4	1.931	1.1955	36 35	1.2953	140 39	0.7347	+0.008	8.911	51
	5	1.938	1.1963	36 26	1.2946	139 42	0.7427	+0.011	8.926	31
	6	1.946	1.1971	36 16	1.2940	138 45	0.7504	+0.013	8.919	11
	7	1.953	1.1978	36 7	1.2934	137 48	0.7579	+0.012	8.888	352
	8	+1.960	1.1986	35 58	1.2928	136 51	+0.7652	+0.009	8.848	330
	9	1.967	1.1994	35 49	1.2922	135 53	0.7722	+0.006	8.805	306
	10	1.974	1.2001	35 40	1.2916	134 55	0.7789	+0.001	8.796	277
	11	1.981	1.2009	35 31	1.2909	133 57	0.7855	-0.004	8.815	249
	12	1.988	1.2016	35 22	1.2903	132 59	0.7918	-0.008	8.869	224
	13	+1.995	1.2023	35 13	1.2896	132 1	+0.7979	-0.012	8.925	202
	14	2.002	1.2030	35 4	1.2890	131 2	0.8038	-0.014	8.964	184
	15	2.009	1.2037	34 55	1.2884	130 4	0.8096	-0.014	8.980	167
	16	2.015	1.2043	34 47	1.2878	129 5	0.8151	-0.012	8.977	149
	17	2.022	1.2050	34 39	1.2872	128 6	0.8204	-0.008	8.934	130
	18	+2.028	1.2057	34 31	1.2866	127 7	+0.8256	-0.003	8.862	106
	19	+2.034	1.2064	34 23	1.2860	126 7	+0.8306	+0.002	8.777	75

228 APPARENT PLACES OF STARS, 1922.

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

Mean Midnight.	<i>f</i>	Log. <i>g</i>	<i>G</i>	Log. <i>h</i>	<i>H</i>	Log. <i>i</i>	<i>f'</i>	Log. <i>g'</i>	<i>G'</i>	
Aug. 19	+2.034	1.2064	34 23	1.2860	126 7	+0.8306	+0.002	8.777	75	
	20	2.041	1.2071	34 15	1.2854	125 8	0.8354	+0.007	8.727	36
	21	2.047	1.2077	34 8	1.2848	124 8	0.8400	+0.009	8.760	356
	22	2.053	1.2084	34 0	1.2842	123 8	0.8444	+0.008	8.826	325
	23	2.059	1.2090	33 53	1.2836	122 8	0.8487	+0.006	8.868	300
	24	+2.065	1.2096	33 45	1.2830	121 7	+0.8528	+0.001	8.872	277
	25	2.071	1.2102	33 38	1.2825	120 7	0.8568	-0.003	8.832	253
	26	2.077	1.2109	33 31	1.2819	119 6	0.8606	-0.006	8.752	225
	27	2.083	1.2115	33 24	1.2814	118 5	0.8643	-0.007	8.670	187
	28	2.089	1.2121	33 17	1.2809	117 4	0.8678	-0.006	8.667	141
	29	+2.094	1.2127	33 10	1.2804	116 3	+0.8712	-0.002	8.760	103
	30	2.100	1.2133	33 3	1.2799	115 2	0.8744	+0.003	8.852	76
Sept. 31	2.105	1.2139	32 56	1.2795	114 0	0.8775	+0.007	8.912	54	
	1	2.111	1.2145	32 50	1.2790	112 59	0.8804	+0.011	8.947	35
	2	2.116	1.2151	32 44	1.2786	111 57	0.8832	+0.013	8.948	17
	3	+2.121	1.2158	32 38	1.2781	110 55	+0.8858	+0.013	8.925	359
	4	2.127	1.2164	32 32	1.2777	109 53	0.8883	+0.011	8.885	339
	5	2.132	1.2170	32 26	1.2773	108 51	0.8907	+0.008	8.838	316
	6	2.137	1.2176	32 21	1.2769	107 48	0.8929	+0.003	8.802	289
	7	2.142	1.2182	32 15	1.2765	106 46	0.8950	-0.002	8.800	259
	8	+2.147	1.2188	32 10	1.2762	105 43	+0.8970	-0.006	8.831	233
	9	2.152	1.2194	32 5	1.2759	104 40	0.8988	-0.010	8.887	210
	10	2.157	1.2200	32 0	1.2756	103 37	0.9005	-0.013	8.940	190
	11	2.162	1.2207	31 55	1.2753	102 34	0.9021	-0.014	8.967	172
12	2.167	1.2213	31 50	1.2750	101 31	0.9035	-0.013	8.975	154	
13	+2.172	1.2219	31 46	1.2748	100 28	+0.9048	-0.010	8.956	136	
14	2.177	1.2225	31 41	1.2746	99 24	0.9060	-0.005	8.898	116	
15	2.182	1.2231	31 37	1.2744	98 21	0.9071	0.000	8.806	90	
16	2.187	1.2237	31 33	1.2742	97 17	0.9080	+0.004	8.706	56	
17	2.192	1.2243	31 29	1.2741	96 13	0.9088	+0.007	8.683	12	
18	+2.196	1.2249	31 25	1.2740	95 9	+0.9095	+0.008	8.750	333	
19	2.201	1.2255	31 21	1.2739	94 5	0.9101	+0.006	8.826	303	
20	2.206	1.2262	31 17	1.2738	93 1	0.9105	+0.002	8.863	279	
21	2.210	1.2269	31 14	1.2737	91 57	0.9108	-0.003	8.857	257	
22	2.215	1.2276	31 11	1.2737	90 53	0.9110	-0.006	8.806	231	
23	+2.220	1.2283	31 7	1.2737	89 49	+0.9110	-0.008	8.725	200	
24	2.225	1.2290	31 4	1.2738	88 45	0.9109	-0.007	8.676	158	
25	2.230	1.2297	31 1	1.2738	87 41	0.9107	-0.004	8.725	115	
26	2.235	1.2304	30 58	1.2739	86 37	0.9104	+0.001	8.823	83	
27	2.239	1.2311	30 55	1.2740	85 33	0.9099	+0.007	8.907	59	
28	+2.244	1.2318	30 52	1.2741	84 29	+0.9093	+0.011	8.955	39	
29	2.248	1.2325	30 49	1.2742	83 25	0.9086	+0.013	8.973	22	
30	2.253	1.2333	30 47	1.2743	82 20	0.9077	+0.014	8.960	4	
Oct. 1	2.258	1.2340	30 45	1.2745	81 16	0.9067	+0.013	8.924	346	
	2	2.263	1.2348	30 43	1.2747	80 12	0.9056	+0.009	8.875	325
	3	+2.268	1.2355	30 41	1.2749	79 8	+0.9044	+0.005	8.823	301
	4	+2.273	1.2363	30 39	1.2752	78 4	+0.9030	+0.001	8.793	274

APPARENT PLACES OF STARS, 1922. 229

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

Mean Midnight.	<i>f</i>	Log. <i>g</i>	<i>G</i>	Log. <i>h</i>	<i>H</i>	Log. <i>i</i>	<i>f'</i>	Log. <i>g'</i>	<i>G'</i>	
Oct.	4	+2.273	1.2363	30° 39'	1.2752	78° 4'	+0.9030	+0.001	8.793	274°
	5	2.278	1.2371	30 37	1.2755	77 0	0.9015	-0.004	8.806	245
	6	2.283	1.2379	30 35	1.2758	75 56	0.8998	-0.008	8.848	219
	7	2.288	1.2387	30 33	1.2761	74 52	0.8980	-0.012	8.901	197
	8	2.293	1.2396	30 31	1.2764	73 48	0.8961	-0.013	8.938	178
	9	+2.298	1.2404	30 29	1.2767	72 44	+0.8940	-0.013	8.951	160
	10	2.303	1.2413	30 28	1.2771	71 41	0.8918	-0.011	8.943	141
	11	2.308	1.2421	30 26	1.2775	70 37	0.8895	-0.007	8.908	121
	12	2.313	1.2430	30 25	1.2779	69 34	0.8870	-0.002	8.838	99
	13	2.318	1.2439	30 24	1.2783	68 30	0.8843	+0.003	8.745	69
	14	+2.323	1.2448	30 22	1.2788	67 27	+0.8815	+0.006	8.662	28
	15	2.329	1.2457	30 21	1.2793	66 23	0.8786	+0.007	8.691	343
	16	2.334	1.2466	30 20	1.2798	65 20	0.8755	+0.006	8.772	309
	17	2.340	1.2475	30 18	1.2803	64 17	0.8723	+0.002	8.848	282
	18	2.346	1.2485	30 17	1.2808	63 14	0.8689	-0.002	8.872	259
	19	+2.352	1.2495	30 16	1.2813	62 11	+0.8653	-0.006	8.851	235
	20	2.358	1.2505	30 15	1.2819	61 9	0.8616	-0.009	8.805	208
	21	2.364	1.2515	30 13	1.2824	60 6	0.8577	-0.009	8.746	174
	22	2.370	1.2525	30 12	1.2830	59 3	0.8536	-0.006	8.733	134
	23	2.376	1.2535	30 11	1.2836	58 1	0.8494	-0.001	8.802	96
	24	+2.382	1.2546	30 10	1.2842	56 59	+0.8450	+0.004	8.888	68
	25	2.388	1.2556	30 9	1.2848	55 57	0.8404	+0.009	8.945	46
	26	2.394	1.2567	30 8	1.2854	54 55	0.8356	+0.013	8.972	27
	27	2.401	1.2578	30 7	1.2860	53 53	0.8306	+0.014	8.975	10
	28	2.407	1.2589	30 6	1.2866	52 51	0.8254	+0.014	8.950	353
	29	+2.414	1.2600	30 4	1.2872	51 50	+0.8201	+0.011	8.907	333
	30	2.420	1.2611	30 3	1.2879	50 49	0.8145	+0.007	8.852	311
	31	2.427	1.2622	30 2	1.2885	49 48	0.8088	+0.003	8.813	285
Nov.	1	2.434	1.2634	30 1	1.2892	48 47	0.8028	-0.002	8.798	256
	2	2.441	1.2645	30 0	1.2898	47 46	0.7966	-0.007	8.816	228
	3	+2.448	1.2657	29 59	1.2905	46 45	+0.7901	-0.010	8.860	204
	4	2.455	1.2668	29 58	1.2911	45 44	0.7834	-0.012	8.900	184
	5	2.462	1.2680	29 57	1.2918	44 44	0.7765	-0.012	8.923	165
	6	2.469	1.2692	29 55	1.2924	43 44	0.7694	-0.011	8.927	145
	7	2.477	1.2704	29 54	1.2931	42 44	0.7619	-0.007	8.907	125
	8	+2.484	1.2716	29 52	1.2937	41 44	+0.7542	-0.002	8.856	103
	9	2.492	1.2728	29 51	1.2944	40 44	0.7463	+0.002	8.777	75
	10	2.499	1.2740	29 49	1.2950	39 45	0.7380	+0.006	8.709	40
	11	2.507	1.2752	29 48	1.2956	38 45	0.7295	+0.008	8.694	359
	12	2.515	1.2765	29 46	1.2963	37 45	0.7206	+0.007	8.754	321
	13	+2.523	1.2778	29 44	1.2969	36 46	+0.7114	+0.004	8.826	290
	14	2.531	1.2791	29 43	1.2976	35 47	0.7018	-0.001	8.865	264
	15	2.539	1.2804	29 41	1.2982	34 48	0.6919	-0.006	8.868	242
	16	2.548	1.2817	29 39	1.2988	33 49	0.6816	-0.009	8.858	216
	17	2.557	1.2830	29 37	1.2994	32 50	0.6709	-0.010	8.805	187
	18	+2.565	1.2843	29 35	1.3000	31 51	+0.6599	-0.008	8.778	152
	19	+2.574	1.2856	29 33	1.3006	30 53	+0.6484	-0.004	8.791	115

230 APPARENT PLACES OF STARS, 1922.

QUANTITIES FOR CORRECTING THE PLACES OF STARS.

Mean Midnight.	<i>f</i>	Log. <i>g</i>	<i>G</i>	Log. <i>h</i>	<i>H</i>	Log. <i>i</i>	<i>f'</i>	Log. <i>g'</i>	<i>G'</i>
Nov. 19	^s +2.574	1.2856	^o 29 33	1.3006	^o 30 53	+0.6484	^s -0.004	8.791	115 ^o
	2.582	1.2869	29 31	1.3012	29 55	0.6364	+0.002	8.849	82
	2.591	1.2882	29 28	1.3018	28 57	0.6239	+0.007	8.908	56
	2.600	1.2895	29 26	1.3024	27 59	0.6110	+0.011	8.953	35
	2.609	1.2908	29 23	1.3029	27 1	0.5975	+0.014	8.969	16
	+2.618	1.2921	29 21	1.3034	26 3	+0.5834	+0.014	8.957	358
	2.627	1.2934	29 18	1.3039	25 6	0.5687	+0.012	8.923	339
	2.636	1.2947	29 15	1.3044	24 8	0.5533	+0.009	8.875	318
	2.646	1.2960	29 12	1.3049	23 10	0.5372	+0.004	8.824	294
	2.655	1.2973	29 9	1.3054	22 13	0.5204	-0.001	8.793	266
Dec. 1	+2.665	1.2987	29 6	1.3058	21 16	+0.5027	-0.005	8.804	238
	2.674	1.3000	29 3	1.3062	20 19	0.4842	-0.009	8.841	212
	2.684	1.3014	29 0	1.3066	19 22	0.4646	-0.012	8.882	191
	2.693	1.3027	28 57	1.3070	18 25	0.4440	-0.012	8.908	171
	2.703	1.3041	28 53	1.3074	17 29	0.4223	-0.011	8.915	151
	+2.713	1.3054	28 50	1.3078	16 32	+0.3992	-0.008	8.903	130
	2.723	1.3067	28 46	1.3082	15 35	0.3747	-0.003	8.871	107
	2.733	1.3080	28 42	1.3085	14 38	0.3485	+0.002	8.812	80
	2.743	1.3093	28 38	1.3088	13 42	0.3205	+0.006	8.765	49
	2.753	1.3106	28 34	1.3091	12 45	0.2904	+0.008	8.741	13
19	+2.763	1.3119	28 30	1.3094	11 48	+0.2580	+0.008	8.765	336
	2.773	1.3132	28 26	1.3097	10 52	0.2227	+0.006	8.812	304
	2.783	1.3145	28 22	1.3099	9 56	0.1842	+0.001	8.859	276
	2.793	1.3158	28 18	1.3101	8 59	0.1418	-0.004	8.876	251
	2.803	1.3171	28 14	1.3103	8 3	0.0945	-0.008	8.866	225
	+2.814	1.3184	28 9	1.3105	7 7	+0.0414	-0.010	8.833	197
	2.824	1.3196	28 4	1.3106	6 11	9.9807	-0.009	8.800	165
	2.834	1.3209	27 59	1.3107	5 15	9.9099	-0.006	8.797	130
	2.844	1.3222	27 54	1.3108	4 19	9.8250	-0.001	8.829	96
	2.854	1.3235	27 49	1.3109	3 23	9.7193	+0.004	8.878	68
20	+2.865	1.3247	27 44	1.3110	2 27	+9.5791	+0.009	8.919	43
	2.875	1.3260	27 39	1.3110	1 31	9.3704	+0.012	8.944	23
	2.885	1.3272	27 34	1.3111	0 35	+8.9539	+0.013	8.944	4
	2.896	1.3284	27 29	1.3111	359 39	-8.7401	+0.012	8.924	345
	2.907	1.3296	27 24	1.3111	358 43	9.3005	+0.009	8.879	324
	+2.917	1.3308	27 19	1.3110	357 47	-9.5373	+0.005	8.831	301
	2.928	1.3320	27 14	1.3110	356 51	9.6895	+0.001	8.800	274
	2.938	1.3332	27 9	1.3109	355 54	9.8019	-0.004	8.797	246
	2.948	1.3343	27 3	1.3108	354 58	9.8910	-0.008	8.833	219
	2.959	1.3355	26 58	1.3107	354 2	9.9648	-0.011	8.875	197
29	+2.969	1.3366	26 52	1.3105	353 5	-0.0277	-0.012	8.910	177
	2.979	1.3377	26 46	1.3104	352 9	0.0826	-0.012	8.920	158
	2.989	1.3388	26 40	1.3102	351 13	0.1312	-0.009	8.908	138
	+2.999	1.3400	26 34	1.3100	350 17	-0.1747	-0.005	8.879	116

APPARENT PLACES OF STARS, 1922. 231

AT UPPER TRANSIT AT GREENWICH.

α Ursæ Minoris (*Polaris*). Mag. 2.1

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	88° 53'	h m	88° 53'	h m	88° 53'	h m	88° 53'	h m	88° 53'	h m	88° 53'
	I 32	88° 53'	I 32	88° 53'	I 32	88° 53'	I 32	88° 53'	I 32	88° 53'	I 32	88° 53'
1	91.00	33.73	56.62	34.54	29.61	30.14	14.18	21.33	18.47	11.82	39.74	4.77
2	89.87	33.86	55.53	34.42	28.84	29.88	14.10	21.02	18.88	11.58	40.55	4.59
3	88.71	33.96	54.47	34.31	28.13	29.61	14.04	20.74	19.25	11.33	41.42	4.40
4	87.58	34.04	53.45	34.20	27.47	29.35	13.95	20.46	19.62	11.06	42.37	4.22
5	86.47	34.12	52.48	34.09	26.85	29.11	13.82	20.19	20.01	10.79	43.39	4.04
6	85.40	34.19	51.53	34.00	26.25	28.87	13.66	19.90	20.44	10.50	44.47	3.89
7	84.37	34.25	50.58	33.91	25.63	28.65	13.47	19.59	20.95	10.20	45.57	3.75
8	83.37	34.32	49.61	33.84	24.98	28.43	13.28	19.27	21.55	9.91	46.67	3.64
9	82.39	34.40	48.58	33.76	24.29	28.21	13.14	18.94	22.23	9.62	47.72	3.54
10	81.41	34.48	47.49	33.67	23.56	27.98	13.06	18.59	22.95	9.35	48.74	3.45
11	80.40	34.58	46.37	33.57	22.82	27.73	13.08	18.24	23.69	9.10	49.72	3.35
12	79.34	34.68	45.24	33.44	22.09	27.46	13.18	17.90	24.42	8.87	50.67	3.26
13	78.22	34.78	44.13	33.29	21.42	27.16	13.34	17.57	25.11	8.65	51.60	3.16
14	77.04	34.87	43.05	33.11	20.82	26.84	13.54	17.26	25.77	8.43	52.53	3.06
15	75.81	34.92	42.06	32.92	20.30	26.53	{ ^{13.75} _{13.95} }	{ ^{16.28} _{16.87} }	26.39	8.22	53.47	2.94
16	74.57	34.96	41.15	32.73	19.86	26.23	14.11	16.38	27.00	7.99	54.44	2.82
17	73.36	34.98	40.30	32.54	19.47	25.94	14.24	16.10	27.61	7.77	55.44	2.71
18	72.20	34.96	39.47	32.36	19.11	25.65	14.35	15.81	28.23	7.53	56.49	2.60
19	71.10	34.95	38.66	32.19	18.74	25.38	14.46	15.51	28.88	7.29	57.58	2.50
20	70.05	34.93	37.82	32.04	18.33	25.12	14.57	15.20	29.56	7.04	58.71	2.41
21	69.05	34.91	36.94	31.88	17.91	24.85	14.70	14.88	30.30	6.79	59.89	2.34
22	68.05	34.90	36.04	31.72	17.46	24.58	14.88	14.55	31.08	6.55	61.08	2.29
23	67.03	34.92	35.09	31.54	16.98	24.29	15.09	14.21	31.91	6.32	62.27	2.26
24	65.97	34.92	34.13	31.33	16.51	23.99	15.37	13.88	32.80	6.10	63.43	2.24
25	64.86	34.92	33.17	31.12	16.06	23.67	15.71	13.55	33.73	5.89	64.54	2.24
26	63.72	34.92	32.23	30.89	15.63	23.35	16.10	13.22	34.67	5.70	65.60	2.23
27	62.54	34.90	31.31	30.65	15.25	23.01	16.54	12.91	35.60	5.53	66.61	2.22
28	61.34	34.86	30.44	30.40	14.91	22.67	17.03	12.62	36.50	5.37	67.60	2.20
29	60.14	34.81	29.61	30.14	14.63	22.33	17.54	12.35	37.36	5.23	68.59	2.17
30	58.93	34.73			14.42	21.99	18.02	12.08	38.17	5.09	69.63	2.13
31	57.76	34.64			14.28	21.65	18.47	11.82	38.96	4.94	70.73	2.09
32	56.62	34.54			14.18	21.33			39.74	4.77		

Mean R.A. 1^h 32^m 41^s.459 Mean Dec. +88° 53' 15".91 Sec δ 51.517 Tan δ + 51.507

232 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

α Ursæ Minoris (*Polaris*). Mag. 2.1

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h 1 33	^m 88 53	^h 1 33	^m 88 53	^h 1 34	^m 88 53	^h 1 34	^m 88 53	^h 1 34	^m 88 53	^h 1 33	^m 88 53
1	10.73	2.09	45.82	4.41	15.83	11.51	34.20	21.44	38.27	32.90	86.24	42.96
2	11.89	2.06	47.01	4.59	16.58	11.82	34.49	21.79	38.12	33.23	85.65	43.24
3	13.12	2.03	48.14	4.78	17.28	12.12	34.78	22.13	37.98	33.57	85.06	43.52
4	14.38	2.03	49.21	4.98	17.97	12.41	35.08	22.46	37.87	33.90	84.46	43.81
5	15.64	2.05	50.23	5.17	18.64	12.70	35.39	22.80	37.76	34.26	83.82	44.11
6	16.86	2.10	51.20	5.37	19.32	12.97	35.72	23.14	37.66	34.62	83.13	44.41
7	18.03	2.15	52.14	5.56	20.02	13.25	36.07	23.48	37.51	35.00	82.36	44.71
8	19.15	2.21	53.08	5.74	20.74	13.53	36.44	23.83	37.33	35.39	81.52	45.00
9	20.23	2.27	54.02	5.91	21.48	13.81	36.82	24.19	37.07	35.78	80.63	45.27
10	21.27	2.32	54.97	6.08	22.24	14.09	37.18	24.56	36.73	36.16	79.71	45.52
11	22.31	2.37	55.95	6.25	23.02	14.39	37.51	24.96	36.33	36.54	78.79	45.76
12	23.34	2.40	56.95	6.43	23.81	14.71	37.79	25.36	35.89	36.90	77.91	45.98
13	24.40	2.44	57.98	6.61	24.58	15.05	37.99	25.78	35.43	37.24	77.08	46.19
14	25.47	2.47	59.05	6.80	25.31	15.39	38.11	26.18	34.98	37.57	76.31	46.42
15	26.57	2.51	60.13	7.01	25.99	15.75	38.18	26.58	34.58	37.90	75.57	46.62
16	27.71	2.55	61.22	7.24	26.59	16.12	38.22	26.95	34.22	38.21	74.82	46.85
17	28.89	2.61	62.28	7.49	27.13	16.48	38.26	27.32	33.91	38.53	74.05	47.09
18	30.10	2.67	63.30	7.75	27.61	16.83	38.32	27.67	33.61	38.86	73.22	47.35
19	31.34	2.75	64.25	8.03	28.08	17.17	38.43	28.02	33.29	39.21	72.32	47.60
20	32.58	2.85	65.15	8.30	28.57	17.50	38.59	28.36	32.92	39.57	71.36	47.84
21	33.78	2.98	65.98	8.56	29.10	17.82	38.79	28.73	32.48	39.93	70.34	48.05
22	34.94	3.12	66.80	8.82	29.68	18.13	38.99	29.12	31.98	40.29	69.28	48.25
23	36.04	3.27	67.61	9.06	30.30	18.46	39.15	29.50	31.41	40.64	68.21	48.43
24	37.07	3.41	68.45	9.30	30.95	18.80	39.25	29.91	30.78	40.97	67.15	48.58
25	38.07	3.55	69.35	9.53	31.58	19.16	39.28	30.32	30.12	41.29	66.10	48.74
26	39.06	3.67	70.29	9.78	32.18	19.53	39.23	30.72	29.45	41.58	65.06	48.88
27	40.06	3.78	71.27	10.03	32.70	19.92	39.13	31.11	28.78	41.87	64.05	49.01
28	41.12	3.89	72.27	10.30	33.16	20.31	38.98	31.49	28.12	42.15	63.08	49.14
29	42.24	4.00	73.25	10.58	33.55	20.69	38.80	31.86	27.48	42.42	62.13	49.27
30	43.41	4.12	74.17	10.89	33.89	21.07	38.63	32.21	26.85	42.69	61.19	49.41
31	44.61	4.26	75.03	11.20	34.20	21.44	38.44	32.56	26.24	42.96	60.25	49.56
32	45.82	4.41	75.83	11.51			38.27	32.90			59.29	49.72

Mean R.A. 1^h 32^m 41^s.459 Mean Dec. + 88° 53' 15".91 Sec δ 51.517 Tan δ + 51.507

APPARENT PLACES OF STARS, 1922. 233

AT UPPER TRANSIT AT GREENWICH.

51 H Cephei. Mag. 5.3

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	7 4	87 10	7 4	87 10	7 4	87 10	7 4	87 10	7 4	87 10	7 4	87 10
1	56.21	15.24	55.91	25.11	48.91	32.28	36.47	35.63	24.37	33.50	15.97	26.82
2	56.31	15.59	55.71	25.41	48.51	32.46	36.05	35.62	24.06	33.36	15.79	26.58
3	56.40	15.93	55.52	25.69	48.13	32.63	35.66	35.61	23.76	33.22	15.58	26.32
4	56.47	16.26	55.34	25.97	47.75	32.78	35.28	35.62	23.44	33.09	15.37	26.04
5	56.52	16.58	55.16	26.23	47.40	32.93	34.90	35.63	23.10	32.96	15.17	25.74
6	56.58	16.89	54.99	26.49	47.07	33.07	34.51	35.64	22.74	32.82	15.00	25.42
7	56.63	17.19	54.84	26.75	46.75	33.23	34.10	35.66	22.36	32.65	14.86	25.09
8	56.69	17.48	54.70	27.02	46.44	33.39	33.68	35.68	21.98	32.47	14.75	24.77
9	56.76	17.77	54.56	27.31	46.11	33.57	33.22	35.68	21.62	32.26	14.66	24.46
10	56.84	18.07	54.40	27.61	45.76	33.75	32.76	35.66	21.28	32.04	14.58	24.15
11	56.94	18.37	54.21	27.91	45.39	33.93	32.30	35.61	20.97	31.80	14.51	23.85
12	57.04	18.68	53.98	28.22	44.99	34.10	31.85	35.54	20.69	31.57	14.45	23.58
13	57.13	19.02	53.73	28.52	44.57	34.26	31.42	35.45	20.43	31.34	14.37	23.31
14	57.19	19.37	53.45	28.80	44.13	34.39	31.02	35.37	20.18	31.13	14.28	23.04
15	57.22	19.72	53.16	29.05	43.69	34.49	30.63	35.28	19.93	30.93	14.19	22.77
16	57.22	20.07	52.86	29.29	43.26	34.58	30.26	35.19	19.67	30.73	14.09	22.49
17	57.17	20.41	52.58	29.51	42.85	34.66	29.89	35.12	19.40	30.53	13.99	22.19
18	57.11	20.74	52.31	29.72	42.46	34.74	29.51	35.05	19.12	30.32	13.89	21.89
19	57.04	21.05	52.06	29.93	42.09	34.81	29.13	34.99	18.83	30.12	13.80	21.58
20	56.97	21.34	51.81	30.16	41.72	34.90	28.74	34.92	18.53	29.92	13.72	21.25
21	56.92	21.62	51.56	30.40	41.33	35.00	28.33	34.85	18.24	29.69	13.66	20.91
22	56.88	21.91	51.29	30.64	40.94	35.10	27.90	34.78	17.95	29.45	13.63	20.57
23	56.85	22.20	51.01	30.89	40.53	35.20	27.47	34.69	17.67	29.20	13.63	20.24
24	56.82	22.50	50.71	31.14	40.11	35.29	27.04	34.59	17.39	28.93	13.66	19.91
25	56.79	22.82	50.38	31.39	39.67	35.39	26.60	34.47	17.14	28.65	13.71	19.59
26	56.73	23.15	50.04	31.63	39.22	35.47	26.18	34.34	16.92	28.37	13.77	19.28
27	56.65	23.48	49.67	31.86	38.75	35.54	25.77	34.18	16.74	28.09	13.83	18.98
28	56.55	23.82	49.30	32.08	38.28	35.59	25.38	34.01	16.57	27.81	13.88	18.69
29	56.42	24.16	48.91	32.28	37.81	35.62	25.02	33.84	16.42	27.55	13.90	18.40
30	56.27	24.48			37.35	35.63	24.68	33.66	16.28	27.30	13.91	18.11
31	56.10	24.80			36.90	35.64	24.37	33.50	16.13	27.05	13.90	17.81
32	55.91	25.11			36.47	35.63			15.97	26.82		

Mean R.A. 7^h 4^m 29^s.540 Mean Dec. + 87° 10' 27".24 Sec δ 20.284 Tan δ + 20.260

234 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

51 H Cephei. Mag. 5.3

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	7 4	87 10	7 4	87 10	7 4	87 9	7 4	87 9	7 5	87 9	7 5	87 10
1	13.90	17.81	18.98	7.91	30.18	60.35	44.52	56.44	0.25	56.75	13.38	1.42
2	13.91	17.49	19.29	7.60	30.63	60.19	45.01	56.40	0.69	56.84	13.73	1.63
3	13.92	17.16	19.62	7.31	31.07	60.03	45.48	56.37	1.14	56.92	14.09	1.83
4	13.97	16.80	19.95	7.04	31.50	59.88	45.95	56.32	1.60	56.99	14.46	2.04
5	14.04	16.45	20.27	6.78	31.91	59.72	46.41	56.27	2.08	57.06	14.85	2.27
6	14.15	16.10	20.58	6.53	32.32	59.56	46.88	56.21	2.57	57.14	15.24	2.51
7	{14.28}	{18.77}	20.88	6.28	32.72	59.40	47.36	56.15	3.08	57.22	15.62	2.76
8	14.42	15.43	21.17	6.04	33.13	59.23	47.85	56.09	3.61	57.33	15.98	3.04
9	14.56	15.15	21.46	5.80	33.55	59.06	48.37	56.03	4.13	57.46	16.31	3.32
10	14.70	14.85	21.74	5.56	33.98	58.87	48.89	55.99	4.64	57.62	16.62	3.61
11	14.83	14.56	22.02	5.30	34.43	58.68	49.45	55.95	5.13	57.78	16.90	3.90
12	14.94	14.28	22.30	5.03	34.90	58.50	50.02	55.92	5.59	57.95	17.15	4.18
13	15.04	14.00	22.58	4.76	35.40	58.33	50.59	55.92	6.03	58.11	17.39	4.44
14	15.14	13.71	23.27	4.49	35.92	58.18	51.15	55.94	6.44	58.28	17.65	4.68
15	15.25	13.41	23.56	4.21	36.45	58.04	51.69	55.98	6.85	58.43	17.92	4.92
16	15.35	13.10	24.27	3.93	37.00	57.92	52.20	56.02	7.26	58.56	18.21	5.16
17	15.47	12.78	24.58	3.66	37.59	57.82	52.68	56.05	7.68	58.69	18.52	5.41
18	15.61	12.45	25.30	3.41	38.20	57.73	53.16	56.06	8.13	58.81	18.83	5.68
19	15.77	12.11	26.08	3.18	38.83	57.64	53.63	56.07	8.60	58.95	19.13	5.96
20	15.95	11.78	26.88	2.96	39.48	57.53	54.12	56.07	9.08	59.11	19.40	6.27
21	16.17	11.44	27.70	2.76	40.15	57.42	54.62	56.06	9.56	59.28	19.65	6.59
22	16.41	11.12	28.55	2.56	40.85	57.29	55.14	56.05	10.02	59.48	19.89	6.91
23	16.67	10.82	29.45	2.36	41.58	57.15	55.69	56.06	10.47	59.69	20.09	7.23
24	16.93	10.54	30.40	2.15	42.35	57.01	56.25	56.09	10.89	59.91	20.26	7.55
25	17.19	10.26	31.40	1.93	43.15	56.88	56.81	56.14	11.29	60.14	20.42	7.87
26	17.42	9.99	32.45	1.70	43.98	56.77	57.36	56.20	11.67	60.36	20.56	8.18
27	17.64	9.72	33.55	1.45	44.85	56.67	57.88	56.29	12.02	60.58	20.70	8.47
28	17.84	9.46	34.70	1.20	45.75	56.60	58.38	56.39	12.37	60.80	20.85	8.77
29	18.03	9.18	35.95	0.96	46.68	56.54	58.87	56.49	12.70	61.01	20.99	9.05
30	18.23	8.88	37.30	0.75	47.65	56.48	59.34	56.58	13.04	61.22	21.14	9.33
31	18.45	8.56	38.75	0.54	48.65	56.44	59.80	56.67	13.38	61.42	21.30	9.61
32	18.70	8.23	40.30	0.35	49.70	60.25	60.25	56.75			21.48	9.90

Mean R.A. 7^h 4^m 29^s.540 Mean Dec. + 87° 10' 27".24 Sec δ 20.284 Tan δ + 20.260

APPARENT PLACES OF STARS, 1922. 235

AT UPPER TRANSIT AT GREENWICH.

4 B Ursæ Minoris. Mag. 7.0

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m 8 21	88° 51'	h m 8 21	88° 51'	h m 8 21	88° 52'	h m 8 20	88° 52'	h m 8 20	88° 52'	h m 8 19	88° 51'
	^s		^s		^s		^s		^s		^s	
1	33.13	45.86	43.18	55.42	34.48	3.98	68.69	10.22	37.50	11.14	69.73	66.78
2	33.76	46.16	43.05	55.75	33.77	4.25	67.71	10.31	36.60	11.07	69.00	66.59
3	34.33	46.45	42.91	56.07	33.05	4.51	66.76	10.40	35.69	11.01	68.23	66.39
4	34.86	46.75	42.76	56.37	32.34	4.75	65.85	10.50	34.77	10.97	67.42	66.18
5	35.35	47.04	42.63	56.67	31.67	4.98	64.96	10.60	33.80	10.93	66.62	65.95
6	35.80	47.33	42.54	56.96	31.04	5.21	64.07	10.71	32.77	10.88	65.85	65.70
7	36.25	47.61	42.48	57.25	30.45	5.44	63.13	10.83	31.69	10.81	65.13	65.42
8	36.70	47.87	42.45	57.55	29.88	5.69	62.11	10.96	30.58	10.72	64.49	65.14
9	37.18	48.13	42.41	57.87	29.30	5.94	61.03	11.07	29.48	10.61	63.91	64.87
10	37.70	48.40	42.34	58.21	28.68	6.20	59.90	11.15	28.42	10.47	63.39	64.60
11	38.26	48.67	42.22	58.54	27.99	6.45	58.75	11.21	27.41	10.33	62.90	64.34
12	38.83	48.96	42.02	58.89	27.22	6.71	57.60	11.25	26.48	10.18	62.41	64.08
13	39.39	49.26	41.73	59.23	26.38	6.95	56.48	11.27	25.60	10.03	61.91	63.84
14	39.92	49.58	41.37	59.56	25.48	7.18	55.41	11.28	24.75	9.88	61.39	63.60
15	40.37	49.91	40.96	59.87	24.56	7.38	54.40	11.29	23.91	9.75	60.86	63.36
16	40.72	50.25	40.54	60.16	23.65	7.56	53.42	11.30	23.06	9.63	60.30	63.12
17	41.00	50.59	40.11	60.44	22.77	7.74	52.46	11.33	22.19	9.51	59.73	62.87
18	41.21	50.91	39.71	60.72	21.93	7.91	51.49	11.36	21.30	9.39	59.14	62.60
19	41.39	51.21	39.35	60.99	21.13	8.08	50.50	11.39	20.38	9.25	58.56	62.32
20	41.56	51.51	39.00	61.27	20.35	8.26	49.48	11.42	19.44	9.11	58.01	62.02
21	41.75	51.80	38.66	61.56	19.55	8.45	48.42	11.46	18.48	8.97	57.49	61.72
22	41.97	52.09	38.31	61.86	18.73	8.65	47.33	11.49	17.51	8.81	57.03	61.41
23	42.22	52.38	37.91	62.17	17.88	8.85	46.20	11.51	16.54	8.64	56.63	61.08
24	42.48	52.69	37.46	62.49	16.98	9.04	45.05	11.52	15.60	8.45	56.30	60.76
25	42.73	53.01	36.97	62.80	16.03	9.23	43.89	11.50	14.71	8.25	56.04	60.44
26	42.95	53.35	36.43	63.11	15.04	9.42	42.73	11.47	13.85	8.03	55.81	60.14
27	43.13	53.69	35.82	63.41	14.02	9.59	41.59	11.43	13.07	7.80	55.61	59.85
28	43.25	54.05	35.16	63.71	12.97	9.75	40.48	11.37	12.35	7.57	55.40	59.58
29	43.32	54.40	34.48	63.98	11.89	9.89	39.43	11.30	11.68	7.36	55.14	59.31
30	43.32	54.75			10.80	10.02	38.44	11.22	11.04	7.16	54.83	59.03
31	43.27	55.09			9.73	10.13	37.50	11.14	10.40	6.97	54.48	58.74
32	43.18	55.42			8.69	10.22			9.73	6.78		

Mean R.A. 8^h 20^m 43^s.867 Mean Dec. + 88° 52' 3".51 Sec δ 50.602 Tan δ + 50.592

236 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

4 B Ursæ Minoris. Mag. 7.0

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	88° 51'	h m	88° 51'	h m	88° 51'	h m	88° 51'	h m	88° 51'	h m	88° 51'
1	54.48	58.74	55.08	48.08	12.81	38.23	42.05	31.12	19.16	27.68	54.91	29.07
2	54.12	58.43	55.46	47.72	13.69	37.96	43.16	30.97	20.30	27.65	55.95	29.18
3	53.77	58.09	55.89	47.36	14.54	37.70	44.23	30.81	21.44	27.62	57.02	29.30
4	53.48	57.75	56.34	47.02	15.36	37.45	45.28	30.65	22.61	27.58	58.13	29.41
5	53.25	57.40	56.80	46.70	16.16	37.21	46.32	30.49	23.80	27.54	59.28	29.54
6	53.10	57.05	57.25	46.39	16.94	36.97	47.36	30.32	25.03	27.51	60.45	29.68
7	53.01	56.70	57.69	46.09	17.72	36.71	48.42	30.15	26.31	27.47	61.62	29.84
8	52.97	56.37	58.10	45.79	18.49	36.44	49.51	29.97	27.64	27.45	62.77	30.01
9	52.95	56.04	58.49	45.48	19.27	36.18	50.65	29.79	29.00	27.45	63.86	30.21
10	52.94	55.74	58.86	45.17	20.09	35.90	51.84	29.62	30.35	27.47	64.88	30.42
11	52.90	55.44	59.23	44.85	20.94	35.62	53.08	29.46	31.68	27.52	65.83	30.63
12	52.84	55.14	59.60	44.54	21.85	35.33	54.37	29.31	32.95	27.57	66.72	30.82
13	52.76	54.83	60.00	44.22	22.82	35.06	55.68	29.18	34.16	27.63	67.58	31.01
14	52.67	54.52	60.44	43.88	23.85	34.79	57.00	29.07	35.31	27.68	68.44	31.18
15	52.56	54.21	60.93	43.53	24.93	34.53	58.29	28.98	36.43	27.73	69.34	31.35
16	52.45	53.89	61.49	43.18	26.03	34.29	59.52	28.89	37.55	27.76	70.27	31.51
17	52.36	53.54	62.12	42.84	27.13	34.07	60.71	28.81	38.68	27.78	71.25	31.68
18	52.31	53.20	62.81	42.50	28.19	33.86	61.84	28.71	39.85	27.81	72.26	31.87
19	52.30	52.84	63.55	42.18	29.19	33.66	62.95	28.60	41.08	27.83	73.26	32.09
20	52.36	52.48	64.29	41.89	30.15	33.46	64.07	28.48	42.35	27.88	74.25	32.32
21	52.49	52.11	65.01	41.60	31.07	33.25	65.25	28.35	43.65	27.93	75.19	32.57
22	52.69	51.76	65.68	41.31	31.99	33.02	66.48	28.22	44.95	28.01	76.06	32.81
23	52.95	51.41	66.32	41.03	32.95	32.77	67.77	28.10	46.22	28.10	76.88	33.09
24	53.23	51.08	66.91	40.75	33.96	32.52	69.10	28.00	47.44	28.22	77.63	33.35
25	{53.53}	{50.76}	67.49	40.45	35.04	32.27	70.45	27.93	48.62	28.34	78.34	33.61
26	53.96	50.46	68.08	40.14	36.19	32.03	71.80	27.87	49.74	28.47	79.02	33.86
27	54.12	49.84	68.73	39.81	37.37	31.82	73.11	27.82	50.82	28.59	79.68	34.12
28	54.26	49.51	69.44	39.47	38.57	31.62	74.38	27.78	51.87	28.71	80.33	34.36
29	54.39	49.17	70.21	39.13	39.76	31.44	75.62	27.75	52.90	28.83	80.98	34.60
30	54.56	48.81	71.05	38.81	40.91	31.28	76.83	27.72	53.90	28.95	81.65	34.83
31	54.78	48.45	71.92	38.51	42.05	31.12	78.01	27.70	54.91	29.07	82.35	35.07
32	55.08	48.08	72.81	38.23			79.16	27.68			83.07	35.32

APPARENT PLACES OF STARS, 1922. 237

AT UPPER TRANSIT AT GREENWICH.

6 B Ursæ Minoris. Mag. 6.3

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	88° 7'	h m	88° 7'	h m	88° 7'	h m	88° 7'	h m	88° 8'	h m	88° 8'
	12 14	88° 7'	12 14	88° 7'	12 14	88° 7'	12 14	88° 7'	12 14	88° 8'	12 14	88° 8'
1	15.79	34.67	35.89	37.19	48.13	43.91	50.82	53.72	42.54	2.12	26.18	7.00
2	16.52	34.68	36.41	37.40	48.37	44.23	50.67	54.01	42.14	2.32	25.63	7.09
3	17.23	34.70	36.92	37.60	48.58	44.54	50.53	54.30	41.77	2.53	25.03	7.19
4	17.93	34.72	37.40	37.80	48.78	44.84	50.41	54.57	41.40	2.74	24.40	7.28
5	18.59	34.75	37.88	37.98	48.95	45.13	50.31	54.85	41.01	2.97	23.72	7.36
6	19.24	34.78	38.36	38.16	49.15	45.40	50.23	55.15	40.60	3.21	23.02	7.42
7	19.86	34.81	38.86	38.33	49.37	45.68	50.14	55.46	40.13	3.45	22.32	7.46
8	20.48	34.83	39.38	38.50	49.61	45.96	50.03	55.77	39.62	3.69	21.63	7.48
9	21.10	34.85	39.93	38.67	49.87	46.24	49.87	56.11	39.07	3.90	20.97	7.48
10	21.73	34.85	40.49	38.87	50.14	46.54	49.65	56.44	38.50	4.10	20.34	7.48
11	22.40	34.85	41.06	39.08	50.38	46.85	49.38	56.76	37.93	4.28	19.73	7.47
12	23.09	34.87	41.61	39.32	50.59	47.18	49.08	57.07	37.37	4.43	19.15	7.47
13	23.82	34.89	42.11	39.58	50.74	47.52	48.77	57.36	36.83	4.58	18.57	7.48
14	24.57	34.93	42.57	39.85	50.85	47.87	48.46	57.63	36.32	4.72	18.00	7.49
15	25.31	35.00	42.98	40.11	50.92	48.21	48.16	57.89	35.82	4.87	17.40	7.51
16	26.02	35.09	43.36	40.37	50.96	48.53	47.88	58.15	35.34	5.03	16.80	7.53
17	26.70	35.20	43.72	40.62	50.98	48.84	47.62	58.42	34.86	5.19	16.17	7.54
18	27.33	35.32	44.07	40.85	51.00	49.14	47.37	58.68	34.37	5.37	15.52	7.55
19	27.92	35.43	44.42	41.09	51.04	49.43	47.12	58.96	33.86	5.54	14.85	7.56
20	28.49	35.54	44.80	41.32	51.11	49.72	46.87	59.24	33.32	5.72	14.16	7.55
21	29.06	35.64	45.21	41.56	51.18	50.02	46.60	59.53	32.75	5.89	13.46	7.53
22	29.64	35.73	45.63	41.81	51.26	50.33	46.29	59.82	32.16	6.05	12.76	7.48
23	30.24	35.82	46.04	42.07	51.33	50.66	45.95	60.12	31.54	6.20	12.07	7.41
24	30.86	35.92	46.45	42.36	51.38	50.99	45.58	60.41	30.91	6.33	11.41	7.33
25	31.50	36.03	46.84	42.65	51.41	51.34	45.19	60.70	30.27	6.45	10.79	7.23
26	32.15	36.15	47.21	42.95	51.42	51.70	44.77	60.98	29.62	6.55	10.19	7.14
27	32.81	36.29	47.55	43.27	51.40	52.05	44.32	61.24	28.99	6.63	9.63	7.05
28	33.47	36.45	47.86	43.59	51.35	52.40	43.87	61.48	28.38	6.70	9.07	6.98
29	34.11	36.62	48.13	43.91	51.26	52.74	43.41	61.70	27.80	6.77	8.51	6.91
30	34.73	36.80			51.14	53.08	42.96	61.91	27.26	6.83	7.92	6.85
31	35.33	36.99			50.98	53.41	42.54	62.12	26.72	6.91	7.30	6.79
32	35.89	37.19			50.82	53.72			26.18	7.00		

Mean R.A. 12^h 14^m 30^s.387 Mean Dec. + 88° 7' 56".35 Sec δ 30.683 Tan δ + 30.667

238 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

6 B Ursæ Minoris. Mag. 6.3

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	88° 8'	h m	88° 7'	h m	88° 7'	h m	88° 7'	h m	88° 7'	h m	88° 7'
	I 2 I 3		I 2 I 3		I 2 I 3		I 2 I 3		I 2 I 3		I 2 I 3	
1	67.30	6.79	49.51	61.47	37.77	52.00	34.69	40.53	40.88	29.31	55.14	20.98
2	66.65	6.72	48.97	61.19	37.58	51.64	34.78	40.17	41.21	29.00	55.67	20.77
3	65.96	6.64	48.46	60.91	37.40	51.29	34.86	39.82	41.54	28.70	56.22	20.56
4	65.26	6.53	47.99	60.62	37.23	50.94	34.93	39.47	41.86	28.38	56.78	20.34
5	64.58	6.41	47.55	60.33	37.06	50.60	34.99	39.12	42.18	28.06	57.38	20.12
6	63.92	6.26	47.14	60.06	36.88	50.28	35.04	38.76	42.53	27.72	58.02	19.90
7	63.30	6.11	46.75	59.79	36.69	49.95	35.10	38.39	42.90	27.38	58.69	19.70
8	62.71	5.95	46.36	59.53	36.49	49.62	35.14	38.02	43.31	27.04	59.39	19.51
9	62.15	5.79	45.96	59.27	36.28	49.29	35.21	37.65	43.77	26.70	60.10	19.34
10	61.61	5.64	45.55	59.02	36.06	48.95	35.30	37.25	44.26	26.37	60.80	19.19
11	61.07	5.49	45.14	58.77	35.84	48.59	35.42	36.85	44.76	26.05	61.46	19.06
12	60.53	5.36	44.71	58.51	35.62	48.23	35.58	36.44	45.27	25.76	62.10	18.94
13	59.96	5.23	44.27	58.25	35.42	47.84	35.79	36.05	45.77	25.49	62.70	18.81
14	59.41	5.10	43.81	57.98	35.25	47.44	36.03	35.66	46.24	25.23	63.28	18.68
15	58.83	4.97	43.36	57.68	35.13	47.04	36.28	35.29	46.68	24.97	63.86	18.54
16	58.23	4.83	42.91	57.37	35.05	46.64	36.54	34.93	47.10	24.70	64.46	18.39
17	57.62	4.68	42.49	57.05	35.00	46.24	36.77	34.58	47.52	24.42	65.09	18.24
18	56.99	4.52	42.10	56.71	34.98	45.86	36.97	34.24	47.95	24.13	65.76	18.08
19	56.36	4.35	41.75	56.37	34.97	45.49	37.15	33.90	48.40	23.83	66.46	17.94
20	55.74	4.14	41.44	56.03	34.94	45.14	37.31	33.54	48.89	23.53	67.20	17.82
21	55.15	3.92	41.16	55.69	34.88	44.79	37.47	33.18	49.43	23.23	67.94	17.72
22	54.60	3.68	40.90	55.37	34.79	44.44	37.65	32.80	49.99	22.94	68.68	17.64
23	54.09	3.43	40.63	55.06	34.67	44.07	37.87	32.41	50.58	22.67	69.41	17.58
24	53.60	3.19	40.33	54.75	34.55	43.69	38.14	32.01	51.18	22.42	70.12	17.53
25	53.15	2.97	40.02	54.45	34.45	43.29	38.45	31.63	51.78	22.19	70.80	17.49
26	52.70	2.75	39.67	54.15	34.38	42.89	38.79	31.27	52.36	21.97	71.47	17.44
27	52.23	2.55	39.30	53.83	{34.36}	{42.48}	39.14	30.92	52.94	21.77	72.13	17.40
28	51.72	2.35	38.93	53.48	34.43	41.66	39.50	30.57	53.51	21.57	72.77	17.37
29	51.19	2.15	38.59	53.12	34.50	41.27	39.87	30.25	54.06	21.38	73.41	17.33
30	50.64	1.95	38.28	52.75	34.59	40.89	40.23	29.93	54.60	21.18	74.04	17.28
31	50.07	1.72	38.01	52.38	34.69	40.53	40.56	29.62	55.14	20.98	74.68	17.23
32	49.51	1.47	37.77	52.00			40.88	29.31			75.35	17.17

Mean R.A. 12^h 14^m 30^s.387 Mean Dec. + 88° 7' 56".35 Sec δ 30.683 Tan δ + 30.667

APPARENT PLACES OF STARS, 1922. 239

AT UPPER TRANSIT AT GREENWICH.

57 B Ursæ Minoris. Mag. 7.2

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h ^m 15 1	[°] 87 31	^h ^m 15 1	[°] 87 31	^h ^m 15 2	[°] 87 31	^h ^m 15 2	[°] 87 31	^h ^m 15 2	[°] 87 32	^h ^m 15 2	[°] 87 32
1	34.59	49.36	48.81	44.72	2.81	45.76	14.49	52.24	18.51	1.29	14.31	10.37
2	35.02	49.12	49.33	44.70	3.28	45.93	14.71	52.51	18.50	1.57	14.09	10.63
3	35.45	48.90	49.83	44.68	3.72	46.10	14.93	52.77	18.49	1.85	13.86	10.91
4	35.87	48.70	50.31	44.67	4.13	46.26	15.16	53.02	18.51	2.13	13.59	11.19
5	36.29	48.51	50.78	44.65	4.54	46.42	15.40	53.26	18.52	2.44	13.29	11.47
6	36.69	48.33	51.24	44.62	4.95	46.56	15.65	53.51	18.53	2.75	12.96	11.75
7	37.08	48.15	51.71	44.58	5.36	46.69	15.91	53.77	18.51	3.09	12.60	12.01
8	37.47	47.97	52.19	44.54	5.79	46.82	16.18	54.05	18.46	3.43	12.24	12.26
9	37.84	47.78	52.69	44.49	6.23	46.95	16.42	54.35	18.37	3.78	11.88	12.49
10	38.22	47.57	53.22	44.45	6.68	47.09	16.64	54.66	18.26	4.12	11.52	12.70
11	38.61	47.35	53.77	44.44	7.14	47.24	16.83	54.99	18.13	4.44	11.18	12.90
12	39.03	47.13	54.34	44.45	7.60	47.41	16.99	55.32	17.98	4.74	10.85	13.10
13	39.47	46.91	54.88	44.48	8.04	47.61	17.12	55.64	17.83	5.03	10.53	13.29
14	39.94	46.71	55.41	44.53	8.45	47.83	17.23	55.95	17.70	5.31	10.22	13.50
15	40.43	46.52	55.92	44.59	8.84	48.07	17.33	56.25	17.58	5.58	9.90	13.72
16	40.94	46.35	56.40	44.66	9.20	48.31	17.44	56.54	17.47	5.86	9.58	13.94
17	41.44	46.21	56.86	44.73	9.53	48.53	17.57	56.83	17.37	6.14	9.25	14.16
18	41.93	46.09	57.31	44.80	9.86	48.75	17.70	57.11	17.26	6.43	8.89	14.38
19	42.40	45.99	57.76	44.85	10.19	48.96	17.83	57.40	17.14	6.73	8.50	14.60
20	42.84	45.89	58.23	44.90	10.53	49.16	17.98	57.70	17.01	7.05	8.10	14.82
21	43.27	45.78	58.72	44.95	10.89	49.36	18.12	58.01	16.87	7.37	7.67	15.03
22	43.70	45.67	59.22	45.01	11.25	49.56	18.24	58.33	16.71	7.68	7.23	15.22
23	44.14	45.54	59.73	45.08	11.63	49.77	18.36	58.65	16.52	8.00	6.78	15.40
24	44.61	45.40	60.26	45.16	12.01	50.00	18.45	58.99	16.30	8.31	6.33	15.55
25	45.09	45.27	60.78	45.25	12.39	50.26	18.52	59.32	16.06	8.63	5.89	15.69
26	45.59	45.15	61.30	45.35	12.75	50.52	18.57	59.67	15.80	8.92	5.46	15.82
27	46.12	45.04	61.82	45.47	13.10	50.80	18.59	60.02	15.53	9.19	5.05	15.95
28	46.66	44.95	62.32	45.61	13.42	51.08	18.59	60.36	15.26	9.44	4.66	16.08
29	47.21	44.87	62.81	45.76	13.73	51.37	18.56	60.68	15.00	9.67	4.26	16.22
30	47.75	44.80			14.01	51.66	18.54	60.99	14.76	9.89	3.86	16.38
31	48.29	44.75			14.26	51.96	18.51	61.29	14.52	10.13	3.43	16.55
32	48.81	44.72			14.49	52.24			14.31	10.37		

Mean R.A. 15^h 2^m 5^s.004 Mean Dec. + 87° 32' 0".69 Sec δ 23.237 Tan δ + 23.215

240 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

57 B Ursæ Minoris. Mag. 7.2

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	15 I	87 32	15 I	87 32	15 I	87 32	15 I	87 31	15 I	87 31	15 I	87 31
	^s		^s		^s		^s		^s		^s	
1	63.43	16.55	47.85	18.53	31.45	15.44	18.18	68.25	10.05	57.93	9.62	46.73
2	62.99	16.72	47.27	18.51	30.96	15.23	17.86	67.95	9.92	57.60	9.72	46.41
3	62.52	16.88	46.70	18.47	30.48	15.02	17.55	67.66	9.80	57.27	9.82	46.07
4	62.02	17.02	46.15	18.42	30.03	14.82	17.23	67.37	9.66	56.93	9.93	45.71
5	61.51	17.15	45.61	18.35	29.58	14.64	16.91	67.09	9.52	56.58	10.05	45.35
6	60.99	17.27	45.10	18.28	29.14	14.45	16.58	66.81	9.37	56.23	10.21	44.98
7	60.48	17.36	44.60	18.21	28.70	14.26	16.24	66.53	9.22	55.87	10.40	44.60
8	59.99	17.44	44.10	18.14	28.24	14.08	15.90	66.24	9.08	55.49	10.60	44.24
9	59.52	17.51	43.61	18.08	27.76	13.90	15.54	65.94	8.98	55.10	10.83	43.89
10	59.07	17.59	43.11	18.02	27.29	13.72	15.18	65.64	{8.89}	{54.79}	11.08	43.56
11	58.61	17.67	42.62	17.97	26.80	13.53	14.83	65.32	8.80	53.89	11.34	43.24
12	58.16	17.76	42.10	17.92	26.31	13.33	14.49	64.98	8.80	53.51	11.58	42.95
13	57.71	17.84	41.57	17.87	25.81	13.11	14.18	64.62	8.81	53.14	11.80	42.65
14	57.25	17.93	41.03	17.82	25.31	12.87	13.90	64.25	8.82	52.79	12.00	42.36
15	56.78	18.02	40.47	17.77	24.83	12.62	13.63	63.89	8.80	52.45	12.19	42.06
16	56.29	18.12	39.90	17.69	24.37	12.35	13.39	63.54	8.77	52.11	12.39	41.75
17	55.78	18.21	39.33	17.59	23.93	12.07	13.17	63.19	8.73	51.77	12.60	41.42
18	55.25	18.30	38.76	17.47	23.52	11.79	12.95	62.86	8.68	51.42	12.84	41.10
19	54.71	18.37	38.21	17.33	23.12	11.52	12.72	62.55	8.63	51.05	13.11	40.77
20	54.15	18.43	37.67	17.18	22.73	11.27	12.46	62.24	8.60	50.66	13.41	40.45
21	53.59	18.46	37.16	17.03	22.33	11.02	12.19	61.92	8.61	50.28	13.74	40.13
22	53.04	18.47	36.68	16.88	21.92	10.79	11.91	61.60	8.65	49.88	14.08	39.83
23	52.51	18.47	36.20	16.74	21.49	10.56	11.62	61.25	8.72	49.49	14.44	39.55
24	52.00	18.45	35.72	16.61	21.04	10.31	11.35	60.88	8.82	49.11	14.79	39.28
25	51.50	18.43	35.22	16.49	20.58	10.06	11.11	60.51	8.94	48.74	15.14	39.02
26	51.01	18.42	34.70	16.38	20.13	9.79	10.90	60.12	9.05	48.39	15.49	38.77
27	50.53	18.43	34.17	16.26	19.69	9.49	10.71	59.73	9.18	48.05	15.83	38.53
28	50.04	18.44	33.62	16.14	19.28	9.18	10.55	59.35	9.29	47.71	16.17	38.30
29	49.52	18.47	33.06	15.99	18.88	8.87	10.41	58.97	9.41	47.37	16.49	38.06
30	48.98	18.50	32.50	15.82	18.51	8.56	10.29	58.61	9.52	47.05	16.81	37.82
31	48.43	18.52	31.96	15.63	18.18	8.25	10.17	58.27	9.62	46.73	17.13	37.57
32	47.85	18.53	31.45	15.44			10.05	57.93			17.47	37.31

Mean R.A. 15^h 2^m 5^s.004 Mean Dec. + 87° 32' 0".69 Sec δ 23.237 Tan δ + 23.215

APPARENT PLACES OF STARS, 1922. 241

AT UPPER TRANSIT AT GREENWICH.

ε Ursæ Minoris. Mag. 4.4

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	16 53	82 9	16 53	82 9	16 53	82 9	16 53	82 9	16 53	82 10	16 53	82 10
1	43.44	63.57	46.59	54.90	50.89	51.46	55.75	53.64	59.06	0.62	60.14	10.27
2	43.51	63.22	46.73	54.72	51.05	51.46	55.88	53.82	59.13	0.88	60.14	10.57
3	43.58	62.88	46.87	54.55	51.22	51.47	56.01	53.99	59.20	1.14	60.13	10.90
4	43.66	62.56	47.01	54.39	51.38	51.48	56.13	54.15	59.27	1.40	60.12	11.24
5	43.74	62.25	47.14	54.23	51.54	51.49	56.26	54.29	59.35	1.67	60.10	11.60
6	43.81	61.95	47.27	54.06	51.69	51.50	56.39	54.44	59.43	1.96	60.08	11.95
7	43.88	61.66	47.41	53.88	51.84	51.49	56.53	54.60	59.50	2.26	60.05	12.30
8	43.96	61.38	47.54	53.69	51.99	51.47	56.67	54.78	59.56	2.59	60.02	12.64
9	44.03	61.09	47.68	53.50	52.16	51.45	56.81	54.98	59.62	2.93	59.98	12.97
10	44.10	60.79	47.83	53.30	52.32	51.42	56.95	55.20	59.67	3.28	59.94	13.28
11	44.18	60.47	47.98	53.12	52.49	51.42	57.08	55.43	59.71	3.61	59.89	13.56
12	44.26	60.14	48.14	52.94	52.66	51.45	57.20	55.68	59.74	3.93	59.85	13.85
13	44.35	59.81	48.30	52.79	52.83	51.50	57.31	55.94	59.78	4.24	59.81	14.14
14	44.44	59.48	48.46	52.66	53.00	51.57	57.42	56.19	59.81	4.55	59.78	14.43
15	44.54	59.16	48.63	52.56	53.16	51.66	57.53	56.43	59.85	4.85	59.74	14.72
16	44.65	58.85	48.78	52.48	53.31	51.76	57.63	56.65	59.89	5.14	59.70	15.02
17	44.76	58.57	48.93	52.39	53.46	51.86	57.73	56.87	59.94	5.43	59.66	15.33
18	44.88	58.31	49.08	52.30	53.61	51.95	57.84	57.08	59.98	5.73	59.62	15.66
19	44.99	58.06	49.23	52.21	53.76	52.03	57.95	57.31	60.02	6.04	59.57	15.98
20	45.10	57.83	49.38	52.12	53.90	52.11	58.06	57.54	60.06	6.36	59.51	16.31
21	45.20	57.59	49.53	52.01	54.06	52.18	58.17	57.77	60.10	6.69	59.45	16.64
22	45.31	57.35	49.69	51.90	54.21	52.25	58.28	58.02	60.13	7.04	59.38	16.96
23	45.41	57.10	49.85	51.80	54.37	52.34	58.39	58.28	60.15	7.38	59.30	17.27
24	45.52	56.84	50.02	51.71	54.53	52.43	58.49	58.56	60.16	7.73	59.22	17.56
25	45.63	56.58	50.19	51.63	54.70	52.54	58.59	58.85	60.16	8.08	59.14	17.83
26	45.75	56.31	50.36	51.56	54.87	52.65	58.68	59.14	60.16	8.44	59.06	18.09
27	45.87	56.04	50.54	51.51	55.03	52.78	58.77	59.44	60.16	8.77	58.98	18.33
28	46.01	55.79	50.71	51.48	55.19	52.93	58.84	59.75	60.15	9.09	58.90	18.57
29	46.15	55.55	50.89	51.46	55.33	53.10	58.92	60.05	60.14	9.39	58.83	18.83
30	46.30	55.32			55.48	53.28	58.99	60.34	60.14	9.69	58.76	19.10
31	46.44	55.10			55.62	53.46	59.06	60.62	60.14	9.98	58.68	19.38
32	46.59	54.90			55.75	53.64			60.14	10.27		

Mean R.A. 16^h 53^m 54^s.271 Mean Dec. + 82° 10' 4".35 Sec δ 7.338 Tan δ + 7.270

242 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

ε Ursæ Minoris. Mag. 4.4

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	16 53	82 10	16 53	82 10	16 53	82 10	16 53	82 10	16 53	82 10	16 53	82 9
	s	s	s	s	s	s	s	s	s	s	s	s
1	58.68	19.38	54.97	26.25	49.82	28.74	44.57	26.52	40.07	19.82	37.63	70.21
2	58.60	19.68	54.81	26.41	49.64	28.72	44.41	26.35	39.96	19.55	37.59	69.88
3	58.51	19.99	54.64	26.56	49.46	28.69	44.26	26.19	39.85	19.30	37.55	69.56
4	58.41	20.29	54.48	26.69	49.30	28.65	44.11	26.04	39.74	19.04	37.51	69.22
5	58.30	20.58	54.33	26.81	49.13	28.62	43.96	25.89	39.63	18.78	37.47	68.87
6	58.19	20.85	54.17	26.91	48.97	28.59	43.81	25.74	39.51	18.51	37.43	68.50
7	58.08	21.09	54.03	27.01	48.80	28.58	43.65	25.59	39.39	18.23	{37.40}	{68.13}
8	57.97	21.32	53.88	27.11	48.63	28.56	43.49	25.43	39.28	17.93	37.36	67.34
9	57.86	21.55	53.73	27.22	48.46	28.55	43.33	25.28	39.17	17.61	37.35	66.95
10	57.76	21.77	53.58	27.33	48.28	28.54	43.16	25.12	39.06	17.27	37.35	66.57
11	57.66	21.98	53.42	27.45	48.11	28.53	42.99	24.94	38.96	16.93	37.35	66.21
12	57.56	22.20	53.28	27.57	47.92	28.51	42.82	24.74	38.88	16.59	37.36	65.86
13	57.46	22.43	53.12	27.69	47.73	28.47	42.66	24.52	38.79	16.25	37.36	65.53
14	57.36	22.66	52.96	27.82	47.54	28.41	42.50	24.29	38.71	15.92	37.36	65.20
15	57.25	22.90	52.80	27.94	47.36	28.33	42.35	24.05	38.63	15.61	37.35	64.87
16	57.14	23.14	52.62	28.05	47.17	28.23	42.21	23.81	38.54	15.30	37.35	64.53
17	57.02	23.39	52.44	28.14	47.00	28.13	42.07	23.57	38.46	15.00	37.35	64.18
18	56.90	23.64	52.26	28.21	46.82	28.02	41.93	23.34	38.38	14.72	37.36	63.81
19	56.76	23.87	52.08	28.27	46.66	27.91	41.80	23.12	38.30	14.41	37.37	63.42
20	56.62	24.10	51.90	28.31	46.49	27.80	41.65	22.92	38.21	14.08	37.39	63.04
21	56.48	24.31	51.73	28.33	46.33	27.70	41.51	22.73	38.13	13.74	37.41	62.65
22	56.34	24.50	51.57	28.35	46.16	27.62	41.36	22.52	38.06	13.37	37.45	62.28
23	56.20	24.66	51.41	28.38	45.99	27.54	41.21	22.30	37.99	13.00	37.49	61.90
24	56.07	24.81	51.25	28.43	45.80	27.47	41.05	22.05	37.93	12.64	37.53	61.55
25	55.93	24.97	51.09	28.48	45.62	27.39	40.91	21.79	37.88	12.28	37.57	61.21
26	55.80	25.12	50.92	28.54	45.43	27.28	40.78	21.52	37.83	11.91	37.62	60.88
27	55.67	25.29	50.75	28.60	45.25	27.16	40.65	21.23	37.78	11.55	37.66	60.55
28	55.54	25.47	50.56	28.66	45.08	27.02	40.52	20.94	37.74	11.20	37.71	60.22
29	55.41	25.66	50.38	28.71	44.91	26.86	40.41	20.65	37.70	10.87	37.76	59.90
30	55.27	25.85	50.19	28.74	44.74	26.69	40.29	20.37	37.67	10.54	37.81	59.59
31	55.12	26.06	50.01	28.75	44.57	26.52	40.18	20.10	37.63	10.21	37.85	59.27
32	54.97	26.25	49.82	28.74			40.07	19.82			37.90	58.93

Mean R.A. 16^h 53^m 54^s.271 Mean Dec. + 82° 10' 4".35 Sec δ 7.338 Tan δ + 7.270

APPARENT PLACES OF STARS, 1922. 243

AT UPPER TRANSIT AT GREENWICH.

δ Ursæ Minoris. Mag. 4.4

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	^h 17 56	^m 86 36	^h 17 57	^m 86 36	^h 17 57	^m 86 36	^h 17 57	^m 86 36	^h 17 57	^m 86 36	^h 17 57	^m 86 36
1	59.16	56.12	3.29	46.43	11.65	40.97	22.94	40.52	32.14	45.40	37.04	54.05
2	59.20	55.74	3.55	46.19	12.02	40.89	23.27	40.62	32.36	45.61	37.12	54.34
3	59.26	55.40	3.81	45.95	12.38	40.81	23.59	40.71	32.58	45.82	37.21	54.65
4	59.33	55.05	4.07	45.73	12.74	40.74	23.91	40.79	32.81	46.03	37.29	54.98
5	59.41	54.73	4.31	45.51	13.08	40.68	24.23	40.86	33.05	46.25	37.35	55.33
6	59.48	54.42	4.53	45.28	13.41	40.60	24.56	40.93	33.31	46.48	37.39	55.68
7	59.55	54.11	4.76	45.05	13.74	40.52	24.90	41.00	33.56	46.73	37.41	56.03
8	59.62	53.81	4.99	44.81	14.07	40.42	25.26	41.09	33.79	47.00	37.40	56.38
9	59.68	53.52	5.23	44.56	14.40	40.32	25.63	41.21	34.01	47.29	37.39	56.71
10	59.73	53.21	5.49	44.30	14.75	40.22	25.99	41.35	34.21	47.60	37.37	57.04
11	59.78	52.88	5.77	44.04	15.12	40.14	26.34	41.50	34.39	47.90	37.35	57.34
12	59.84	52.53	6.07	43.80	15.51	40.07	26.68	41.68	34.55	48.20	37.33	57.64
13	59.92	52.17	6.39	43.58	15.91	40.01	26.99	41.87	34.70	48.48	37.32	57.93
14	60.02	51.82	6.72	43.37	16.31	39.98	27.29	42.04	34.86	48.76	37.31	58.23
15	60.15	51.47	7.04	43.19	16.69	39.97	27.58	42.22	35.01	49.02	37.31	58.53
16	60.30	51.13	7.35	43.03	17.05	39.99	27.87	42.38	35.17	49.28	37.31	58.84
17	60.46	50.80	7.66	42.88	17.41	40.01	28.15	42.52	35.33	49.54	37.31	59.15
18	60.63	50.50	7.95	42.72	17.75	40.02	28.45	42.68	35.51	49.81	37.30	59.49
19	60.80	50.22	8.24	42.56	18.09	40.03	28.75	42.83	35.68	50.08	37.27	59.83
20	60.95	49.94	8.53	42.39	18.44	40.02	29.06	42.99	35.85	50.36	37.23	60.17
21	61.10	49.68	8.83	42.22	18.79	40.00	29.38	43.16	36.02	50.65	37.18	60.52
22	61.24	49.40	9.15	42.04	19.15	40.00	29.70	43.34	36.18	50.96	37.10	60.87
23	61.39	49.10	9.47	41.85	19.52	39.99	30.02	43.53	36.32	51.28	37.00	61.21
24	61.54	48.80	9.81	41.67	19.90	40.00	30.33	43.74	36.45	51.60	36.89	61.54
25	61.71	48.48	10.17	41.50	20.29	40.01	30.63	43.95	36.56	51.93	36.76	61.84
26	61.89	48.17	10.53	41.35	20.69	40.04	30.92	44.18	36.66	52.27	36.64	62.13
27	62.09	47.86	10.90	41.21	21.08	40.07	31.20	44.43	36.73	52.60	36.53	62.41
28	62.31	47.55	11.27	41.08	21.47	40.13	31.46	44.68	36.78	52.91	36.42	62.69
29	62.54	47.25	11.65	40.97	21.85	40.21	31.70	44.93	36.84	53.21	36.32	62.97
30	62.78	46.95			22.23	40.31	31.92	45.17	36.90	53.49	36.23	63.27
31	63.03	46.68			22.59	40.41	32.14	45.40	36.96	53.76	36.14	63.58
32	63.29	46.43			22.94	40.52			37.04	54.05		

Mean R.A. 17^h 57^m 25.820 Mean Dec. + 86° 36' 50".63 Sec δ 16.932 Tan δ + 16.902

244 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

δ Ursæ Minoris. Mag. 4.4

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m		h m		h m		h m		h m		h m	
	17 57	86 37	17 57	86 37	17 57	86 37	17 56	86 37	17 56	86 37	17 56	86 36
1	36.14	3.58	29.50	12.21	18.46	17.42	65.92	18.25	53.67	14.49	45.12	66.90
2	36.04	3.91	29.18	12.46	18.05	17.51	65.52	18.18	53.35	14.30	44.93	66.62
3	35.91	4.25	28.85	12.69	17.65	17.58	65.12	18.11	53.03	14.11	44.73	66.34
4	35.77	4.59	28.52	12.90	17.26	17.64	64.73	18.05	52.70	13.93	44.52	66.05
5	35.60	4.92	28.19	13.09	16.87	17.69	64.34	18.00	52.36	13.75	44.31	65.76
6	35.41	5.24	27.86	13.27	16.49	17.76	63.95	17.94	52.01	13.56	44.10	65.45
7	35.22	5.54	27.54	13.45	16.11	17.84	63.55	17.89	51.65	13.36	43.90	65.12
8	35.04	5.83	27.24	13.63	15.73	17.92	63.14	17.83	51.29	13.15	43.72	64.77
9	34.85	6.11	26.94	13.81	15.34	18.00	62.72	17.78	50.93	12.92	43.55	64.41
10	34.66	6.37	26.64	14.00	14.95	18.08	62.30	17.73	50.59	12.67	43.41	64.04
11	34.49	6.63	26.33	14.19	14.55	18.16	61.87	17.66	50.25	12.41	43.30	63.70
12	34.32	6.90	26.02	14.39	14.12	18.24	61.43	17.56	49.94	12.13	43.19	63.37
13	34.14	7.17	25.70	14.60	13.68	18.31	60.99	17.45	49.65	11.86	43.09	63.05
14	33.97	7.45	25.38	14.80	13.24	18.36	60.55	17.31	49.38	11.59	42.99	62.73
15	33.79	7.74	25.03	15.01	12.79	18.40	60.13	17.16	49.11	11.34	42.88	62.44
16	33.61	8.03	24.67	15.22	12.34	18.41	59.74	17.01	48.84	11.11	42.76	62.14
17	33.42	8.33	24.29	15.41	11.90	18.41	59.36	16.86	48.55	10.89	42.63	61.82
18	33.21	8.63	23.90	15.57	11.46	18.39	58.99	16.72	48.26	10.67	42.51	61.49
19	32.98	8.93	23.50	15.72	11.05	18.38	58.62	16.60	47.95	10.43	42.39	61.15
20	32.73	9.22	23.10	15.85	10.65	18.38	58.25	16.50	47.65	10.18	42.29	60.79
21	32.46	9.50	22.71	15.98	10.25	18.39	57.85	16.40	47.35	9.90	{ 42.22 }	{ 60.43 }
22	32.18	9.77	22.34	16.09	9.85	18.40	57.44	16.28	47.07	9.61	42.07	59.68
23	31.90	10.01	21.99	16.21	9.44	18.43	57.03	16.16	46.80	9.31	42.05	59.32
24	31.62	10.24	21.64	16.34	9.02	18.46	56.62	16.02	46.54	9.00	42.04	58.97
25	31.35	10.45	21.29	16.49	8.58	18.47	56.20	15.86	46.31	8.68	42.04	58.61
26	31.10	10.67	20.93	16.64	8.13	18.48	55.79	15.69	46.09	8.37	42.04	58.27
27	30.85	10.90	20.55	16.80	7.67	18.47	55.41	15.49	45.88	8.06	42.04	57.94
28	30.61	11.15	20.15	16.96	7.22	18.44	55.04	15.28	45.68	7.77	42.05	57.62
29	30.36	11.40	19.74	17.11	6.77	18.39	54.68	15.07	45.49	7.47	42.05	57.30
30	30.09	11.67	19.32	17.24	6.33	18.33	54.33	14.87	45.31	7.18	42.04	56.98
31	29.80	11.95	18.89	17.34	5.92	18.25	54.00	14.68	45.12	6.90	42.02	56.66
32	29.50	12.21	18.46	17.42			53.67	14.49			42.00	56.33

Mean R.A. 17^h 57^m 23^s.820 Mean Dec. + 86° 36' 50".63 Sec δ 16.932 Tan δ + 16.902

APPARENT PLACES OF STARS, 1922. 245

AT UPPER TRANSIT AT GREENWICH.

λ Ursæ Minoris. Mag. 6.6

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	18 55	89	18 55	89	18 55	89	18 56	89	18 56	89	18 57	89
1	18.82	39.30	22.50	28.85	44.86	21.83	21.87	18.89	56.98	21.50	21.24	28.69
2	18.56	38.93	23.13	28.56	46.02	21.67	23.05	18.91	57.88	21.66	21.79	28.95
3	{18.31}	{38.55}	23.76	28.28	47.16	21.51	24.18	18.92	58.81	21.81	22.38	29.23
4	18.10	37.92	24.36	28.01	48.25	21.36	25.30	18.93	59.78	21.95	22.95	29.52
5	18.02	37.59	24.94	27.75	49.30	21.22	26.42	18.93	60.79	22.11	23.49	29.84
6	17.97	37.27	25.48	27.48	50.30	21.08	27.59	18.92	61.85	22.28	23.95	30.16
7	17.91	36.96	25.99	27.21	51.28	20.93	28.82	18.92	62.93	22.48	24.33	30.50
8	17.81	36.66	26.49	26.94	52.27	20.77	30.10	18.93	64.00	22.69	24.64	30.83
9	17.67	36.36	27.01	26.65	53.28	20.59	31.44	18.95	65.01	22.92	24.88	31.16
10	17.50	36.06	27.59	26.34	54.35	20.41	32.79	19.00	65.95	23.17	25.08	31.48
11	17.32	35.74	28.27	26.03	55.51	20.25	34.12	19.08	66.81	23.41	25.28	31.78
12	17.15	35.40	29.04	25.73	56.75	20.10	35.39	19.17	67.61	23.65	25.49	32.07
13	17.03	35.05	29.90	25.45	58.03	19.97	36.61	19.28	68.36	23.88	25.72	32.35
14	17.00	34.68	30.79	25.19	59.33	19.86	37.76	19.38	69.11	24.10	25.98	32.63
15	17.06	34.31	31.70	24.95	60.61	19.78	38.86	19.48	69.86	24.32	26.26	32.92
16	17.22	33.95	32.59	24.73	61.84	19.70	39.95	19.57	70.63	24.53	26.55	33.21
17	17.45	33.61	33.44	24.51	63.03	19.63	41.04	19.65	71.42	24.74	26.83	33.52
18	17.71	33.28	34.25	24.30	64.17	19.56	42.16	19.73	72.23	24.95	27.09	33.84
19	17.98	32.97	35.05	24.09	65.29	19.49	43.31	19.80	73.06	25.18	27.33	34.17
20	18.24	32.68	35.84	23.86	66.41	19.42	44.49	19.88	73.91	25.41	27.52	34.51
21	18.46	32.39	36.65	23.62	67.55	19.34	45.69	19.97	74.75	25.66	27.64	34.86
22	18.66	32.10	37.51	23.37	68.73	19.24	46.92	20.07	75.58	25.92	27.69	35.21
23	18.84	31.80	38.41	23.13	69.96	19.15	48.17	20.19	76.37	26.19	27.66	35.56
24	19.03	31.49	39.37	22.88	71.24	19.06	49.42	20.31	77.11	26.47	27.57	35.89
25	19.26	31.16	40.39	22.64	72.55	18.99	50.65	20.46	77.78	26.77	27.43	36.21
26	19.54	30.83	41.46	22.42	73.89	18.94	51.85	20.62	78.39	27.07	27.28	36.52
27	19.89	30.49	42.57	22.21	75.25	18.89	53.00	20.80	78.92	27.37	27.13	36.83
28	20.31	30.15	43.70	22.01	76.62	18.86	54.09	20.98	79.38	27.66	27.03	37.11
29	20.78	29.81	44.86	21.83	77.99	18.85	55.11	21.15	79.82	27.93	26.97	37.40
30	21.31	29.48			79.33	18.85	56.06	21.33	80.26	28.19	26.95	37.70
31	21.89	29.16			80.63	18.87	56.98	21.50	80.73	28.44	26.93	38.03
32	22.50	28.85			81.87	18.89			81.24	28.69		

Mean R.A. 18^h 56^m 36^s.628 Mean Dec. + 89° 1' 27".98 Sec δ 58.735 Tan δ + 58.726

246 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

λ Ursæ Minoris. Mag. 6.6

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	18 57	89	18 56	89	18 55	89	18 55	89	18 54	89	18 54	89
	s	s	s	s	s	s	s	s	s	s	s	s
1	26.93	38.03	72.44	47.78	99.85	55.29	57.93	58.93	72.50	58.11	35.67	52.84
2	26.89	38.37	71.57	48.09	98.51	55.46	56.49	58.95	71.20	58.01	34.73	52.61
3	26.79	38.72	70.66	48.38	97.21	55.61	55.07	58.97	69.90	57.90	33.77	52.38
4	26.61	39.09	69.72	48.66	95.94	55.76	53.69	59.00	68.61	57.80	32.78	52.16
5	26.35	39.44	68.77	48.93	94.69	55.90	52.32	59.02	67.28	57.71	31.76	51.93
6	26.02	39.79	67.85	49.18	93.47	56.05	50.94	59.06	65.91	57.61	30.71	51.68
7	25.64	40.12	66.95	49.43	92.26	56.22	49.54	59.10	64.50	57.50	29.67	51.41
8	25.24	40.43	66.07	49.67	91.05	56.37	48.13	59.14	63.06	57.39	28.68	51.11
9	24.85	40.73	65.22	49.92	89.82	56.54	46.66	59.19	61.60	57.25	27.76	50.81
10	24.47	41.03	64.38	50.16	88.56	56.71	45.14	59.23	60.14	57.08	26.93	50.49
11	24.12	41.32	63.54	50.41	87.26	56.89	43.58	59.27	58.73	56.90	26.18	50.18
12	23.80	41.61	62.69	50.68	85.90	57.06	41.97	59.28	57.39	56.71	25.49	49.89
13	23.47	41.90	61.82	50.94	84.49	57.22	40.36	59.27	56.12	56.51	24.83	49.62
14	23.15	42.21	60.90	51.21	83.02	57.38	38.75	59.24	54.93	56.33	24.19	49.36
15	22.82	42.53	59.92	51.49	81.50	57.52	37.18	59.20	53.77	56.15	23.51	49.11
16	22.51	42.86	58.87	51.77	79.97	57.64	35.67	59.14	52.62	55.99	22.78	48.85
17	22.13	43.19	57.75	52.05	78.45	57.73	34.22	59.09	51.45	55.84	22.00	48.58
18	21.69	43.52	56.57	52.30	76.98	57.81	32.84	59.05	50.23	55.70	21.21	48.29
19	21.18	43.86	55.36	52.53	75.56	57.88	31.46	59.02	48.98	55.54	20.44	47.99
20	20.60	44.20	54.14	52.74	74.20	57.97	30.08	59.00	47.68	55.37	19.71	47.66
21	19.94	44.53	52.94	52.94	72.86	58.07	28.68	58.99	46.36	55.18	19.04	47.33
22	19.23	44.85	51.78	53.13	71.52	58.18	27.16	58.98	45.06	54.98	18.44	46.99
23	18.49	45.14	50.67	53.32	70.15	58.29	25.61	58.96	43.80	54.75	17.92	46.65
24	17.75	45.42	49.61	53.53	68.73	58.41	24.04	58.92	42.61	54.51	17.47	46.32
25	17.04	45.69	48.56	53.75	67.24	58.54	22.46	58.85	41.49	54.26	17.07	45.99
26	16.38	45.96	47.48	53.98	65.69	58.65	20.90	58.77	40.43	54.01	16.72	45.66
27	15.76	46.23	46.36	54.22	64.11	58.75	19.37	58.67	39.40	53.77	16.38	45.34
28	15.16	46.52	45.17	54.45	62.52	58.82	17.90	58.56	38.46	53.53	16.06	45.04
29	14.56	46.82	43.90	54.68	60.94	58.88	16.48	58.44	37.53	53.30	15.74	44.75
30	13.92	47.13	42.57	54.91	59.41	58.91	15.12	58.33	36.60	53.07	15.40	44.45
31	13.22	47.45	41.22	55.11	57.93	58.93	13.80	58.22	35.67	52.84	15.04	44.16
32	12.44	47.78	39.85	55.29			12.50	58.11			14.64	43.85

Mean R.A. $18^h 56^m 36.628$ Mean Dec. $+ 89^\circ 1' 27''.98$ Sec δ 58.735 Tan δ $+ 58.726$

APPARENT PLACES OF STARS, 1922. 247

AT UPPER TRANSIT AT GREENWICH.

B.A.C. 7504. Mag. 7.4

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	21 14	86° 43'	21 14	86° 43'	21 14	86° 42'	21 15	86° 42'	21 15	86° 42'	21 15	86° 42'
	^s		^s		^s		^s		^s		^s	
1	62.77	20.68	57.03	11.78	57.95	62.37	5.19	54.60	15.65	51.76	26.50	54.37
2	62.48	20.42	56.98	11.45	58.12	62.06	5.50	54.45	15.99	51.77	26.82	54.51
3	62.21	20.16	56.94	11.12	58.30	61.77	5.80	54.30	16.32	51.76	27.14	54.67
4	61.95	19.90	56.92	10.80	58.48	61.49	6.09	54.14	16.66	51.75	27.48	54.84
5	61.71	19.64	{56.29}	{10.49}	58.65	61.22	6.37	53.98	17.02	51.74	27.82	55.03
6	61.48	19.37	56.83	9.90	58.81	60.95	6.66	53.81	17.39	51.74	28.16	55.24
7	61.26	19.12	56.78	9.60	58.95	60.68	6.96	53.64	17.78	51.75	28.48	55.47
8	61.04	18.87	56.73	9.28	59.09	60.41	7.28	53.46	18.18	51.77	28.79	55.70
9	60.83	18.64	56.68	8.95	59.23	60.13	7.62	53.30	18.59	51.82	29.07	55.93
10	60.61	18.41	56.64	8.61	59.38	59.83	7.99	53.15	18.99	51.88	29.33	56.16
11	60.37	18.17	56.60	8.26	59.56	59.52	8.36	53.02	19.37	51.96	29.58	56.39
12	60.12	17.93	56.59	7.90	59.77	59.21	8.73	52.90	19.73	52.05	29.83	56.61
13	59.87	17.67	56.60	7.54	60.00	58.92	9.11	52.81	20.08	52.14	30.08	56.83
14	59.62	17.39	56.64	7.20	60.25	58.65	9.47	52.73	20.42	52.22	30.33	57.03
15	59.38	17.09	56.71	6.87	60.50	58.39	9.81	52.64	20.75	52.30	30.59	57.24
16	59.16	16.78	56.79	6.56	60.76	58.15	10.15	52.56	21.08	52.37	30.86	57.45
17	58.97	16.46	56.87	6.26	61.01	57.92	10.48	52.48	21.42	52.44	31.14	57.67
18	58.80	16.15	56.95	5.96	61.26	57.70	10.81	52.39	21.76	52.50	31.41	57.90
19	58.66	15.85	57.01	5.67	61.49	57.47	11.14	52.30	22.12	52.58	31.69	58.14
20	58.53	15.56	57.06	5.36	61.71	57.24	11.48	52.19	22.48	52.66	31.97	58.40
21	58.40	15.28	57.10	5.05	61.94	57.01	11.84	52.09	22.85	52.75	32.24	58.68
22	58.27	15.01	57.15	4.72	62.17	56.77	12.22	52.00	23.23	52.85	32.50	58.96
23	58.13	14.73	57.22	4.38	62.42	56.52	12.59	51.92	23.61	52.96	32.73	59.26
24	57.98	14.43	57.30	4.04	62.68	56.27	12.98	51.85	23.98	53.10	32.93	59.56
25	57.83	14.14	57.39	3.71	62.96	56.02	13.37	51.80	24.35	53.24	33.12	59.85
26	57.67	13.82	57.50	3.36	63.25	55.77	13.77	51.76	24.70	53.42	33.29	60.14
27	57.52	13.50	57.63	3.02	63.56	55.54	14.17	51.74	25.03	53.59	33.46	60.41
28	57.39	13.16	57.79	2.69	63.87	55.32	14.56	51.74	25.34	53.76	33.63	60.66
29	57.28	12.82	57.95	2.37	64.20	55.11	14.94	51.75	25.64	53.92	33.81	60.92
30	57.17	12.47			64.54	54.92	15.31	51.75	25.92	54.08	34.01	61.18
31	57.09	12.12			64.87	54.76	15.65	51.76	26.20	54.23	34.21	61.46
32	57.03	11.78			65.19	54.60			26.50	54.37		

Mean R.A. 21^h 15^m 14^s.023 Mean Dec. + 86° 43' 0".13 Sec δ 17.460 Tan δ + 17.432

248 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

B.A.C. 7504. Mag. 7.4

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	86° 43'	h m	86° 43'	h m	86° 43'	h m	86° 43'	h m	86° 43'	h m	86° 43'
	21 15	86 43	21 15	86 43	21 15	86 43	21 15	86 43	21 15	86 43	21 14	86 43
	^s		^s		^s		^s		^s		^s	
1	34.21	1.46	37.28	11.78	34.46	22.78	26.81	31.84	15.39	37.69	63.16	38.62
2	34.42	1.76	37.28	12.17	34.25	23.12	26.48	32.07	15.01	37.80	62.79	38.56
3	34.64	2.07	37.26	12.54	34.04	23.43	26.16	32.29	14.64	37.91	62.42	38.51
4	34.84	2.40	37.23	12.92	33.84	23.74	25.84	32.52	14.26	38.02	62.04	38.47
5	35.02	2.74	37.18	13.28	33.63	24.04	25.52	32.74	13.88	38.13	61.64	38.42
6	35.18	3.08	37.13	13.63	33.43	24.34	25.21	32.97	13.49	38.24	61.23	38.37
7	35.31	3.41	37.07	13.96	33.24	24.65	24.90	33.22	13.08	38.36	60.81	38.29
8	35.43	3.73	37.02	14.29	33.05	24.97	24.59	33.46	12.66	38.47	60.39	38.19
9	35.54	4.05	36.98	14.61	32.86	25.28	24.27	33.71	12.22	38.55	59.97	38.08
10	35.66	4.36	36.94	14.94	32.68	25.60	23.93	33.96	11.78	38.61	59.57	37.94
11	35.77	4.66	36.90	15.28	32.48	25.94	23.58	34.20	11.33	38.66	59.19	37.79
12	35.88	4.95	36.87	15.63	32.27	26.28	23.20	34.44	10.88	38.70	58.83	37.64
13	36.00	5.25	36.83	15.99	32.04	26.61	22.81	34.66	10.44	38.73	58.49	37.51
14	36.13	5.56	36.79	16.35	31.79	26.96	22.41	34.87	10.03	38.75	58.16	37.39
15	36.26	5.87	36.74	16.71	31.51	27.29	22.00	35.05	9.64	38.77	57.83	37.27
16	36.39	6.19	36.67	17.09	31.22	27.61	21.61	35.22	9.25	38.80	57.49	37.16
17	36.52	6.53	36.58	17.47	30.92	27.90	21.23	35.38	8.87	38.84	57.14	37.04
18	36.64	6.87	36.48	17.86	30.63	28.17	20.87	35.55	8.49	38.89	56.78	36.92
19	36.75	7.23	36.35	18.23	30.34	28.44	20.52	35.72	8.08	38.95	56.40	36.79
20	36.84	7.60	36.20	18.59	30.07	28.72	20.17	35.91	7.67	39.00	56.01	36.64
21	36.90	7.97	36.05	18.93	29.80	28.99	19.82	36.10	7.24	39.02	55.64	36.46
22	36.94	8.33	35.90	19.26	29.55	29.28	19.45	36.30	6.80	39.03	55.28	36.26
23	36.96	8.68	35.76	19.58	29.31	29.59	19.07	36.51	6.36	39.03	54.93	36.05
24	36.97	9.02	35.63	19.91	29.05	29.89	18.67	36.70	5.92	39.01	54.60	35.83
25	36.98	9.35	35.51	20.25	28.78	30.20	18.25	36.88	5.49	38.96	54.29	35.61
26	37.00	9.68	35.40	20.59	28.48	30.52	17.83	37.04	5.07	38.91	53.99	35.39
27	37.04	10.00	35.29	20.96	28.16	30.82	17.40	37.17	4.66	38.85	53.71	35.18
28	37.09	10.32	35.17	21.33	27.83	31.10	16.97	37.29	4.28	38.80	53.43	34.98
29	37.15	10.66	35.02	21.71	27.49	31.36	16.56	37.39	3.90	38.74	53.15	34.78
30	37.21	11.02	34.85	22.07	27.15	31.60	16.16	37.49	3.51	38.68	52.88	34.58
31	37.25	11.40	34.66	22.43	26.81	31.84	15.77	37.59	3.16	38.62	52.60	34.38
32	37.28	11.78	34.46	22.78			15.39	37.69			52.31	34.17

Mean R.A. 21^h 15^m 14^s.023 Mean Dec. + 86° 43' 0".13 Sec δ 17.460 Tan δ + 17.432

APPARENT PLACES OF STARS, 1922. 249

AT UPPER TRANSIT AT GREENWICH.

39 H Cephei. Mag. 5.6

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	86° 52'	h m	86° 52'	h m	86° 52'	h m	86° 52'	h m	86° 52'	h m	86° 52'
	23 27 ^s	86° 52'	23 27 ^s	86° 52'	23 27 ^s	86° 52'	23 27 ^s	86° 52'	23 27 ^s	86° 52'	23 27 ^s	86° 52'
1	46.61	60.82	35.78	56.15	30.47	48.24	31.63	38.07	38.92	30.91	50.11	28.18
2	46.18	60.74	35.51	55.89	30.40	47.90	31.80	37.81	39.21	30.76	50.48	28.15
3	45.77	60.65	35.26	55.63	30.35	47.56	31.96	37.56	39.50	30.60	50.87	28.12
4	45.37	60.55	35.04	55.38	30.32	47.24	32.11	37.31	39.79	30.44	51.27	28.11
5	44.98	60.44	34.82	55.14	30.29	46.93	32.24	37.03	40.08	30.26	51.69	28.12
6	44.62	60.34	34.60	54.91	30.26	46.64	32.38	36.75	40.40	30.08	52.13	28.15
7	44.27	60.23	34.37	54.68	30.22	46.35	32.53	36.47	40.74	29.90	52.56	28.20
8	43.93	60.13	34.13	54.46	30.17	46.05	32.69	36.17	41.10	29.74	52.98	28.27
9	43.59	60.04	33.88	54.23	30.11	45.76	32.88	35.87	41.49	29.60	53.38	28.35
10	43.24	59.96	33.62	53.98	30.05	45.45	33.10	35.57	41.89	29.48	53.77	28.43
11	42.88	59.88	33.36	53.72	29.99	45.12	33.34	35.28	42.28	29.39	54.14	28.49
12	42.50	59.80	33.10	53.44	(29.94)	{44.78}	33.60	35.02	42.66	29.30	54.50	28.56
13	42.11	59.70	32.86	53.14	29.93	44.08	33.87	34.78	43.03	29.22	54.85	28.63
14	41.71	59.59	32.64	52.83	29.97	43.74	34.14	34.56	43.38	29.14	55.20	28.69
15	41.30	59.45	32.44	52.52	30.02	43.40	34.40	34.34	43.71	29.05	55.57	28.74
16	40.91	59.30	32.27	52.22	30.10	43.08	34.64	34.12	44.05	28.95	55.94	28.78
17	40.54	59.12	32.13	51.93	30.18	42.78	34.87	33.90	44.39	28.86	56.32	28.84
18	40.19	58.94	32.01	51.65	30.24	42.49	35.09	33.67	44.73	28.76	56.71	28.92
19	39.86	58.75	31.88	51.38	30.30	42.20	35.31	33.43	45.08	28.65	57.12	29.00
20	39.56	58.57	31.74	51.11	30.35	41.91	35.55	33.18	45.45	28.54	57.53	29.10
21	39.26	58.40	31.59	50.84	30.38	41.61	35.79	32.93	45.83	28.44	57.95	29.21
22	38.97	58.23	31.43	50.56	30.42	41.30	36.05	32.68	46.23	28.36	58.36	29.35
23	38.67	58.08	31.26	50.25	30.47	40.97	36.33	32.43	46.65	28.29	58.75	29.50
24	38.36	57.92	31.09	49.93	30.53	40.63	36.63	32.19	47.06	28.23	59.13	29.66
25	38.03	57.75	30.93	49.61	30.61	40.30	36.94	31.96	47.48	28.20	59.49	29.82
26	37.70	57.57	30.79	49.27	30.71	39.96	37.27	31.75	47.90	28.18	59.83	29.98
27	37.36	57.36	30.66	48.93	30.82	39.62	37.61	31.55	48.31	28.18	60.15	30.13
28	37.01	57.13	30.55	48.59	30.95	39.28	37.96	31.37	48.70	28.18	60.47	30.28
29	36.68	56.90	30.47	48.24	31.10	38.96	38.29	31.21	49.07	28.18	60.80	30.41
30	36.37	56.66			31.27	38.65	38.61	31.06	49.42	28.19	61.15	30.54
31	36.06	56.41			31.45	38.35	38.92	30.91	49.76	28.19	61.52	30.68
32	35.78	56.15			31.63	38.07			50.11	28.18		

Mean R.A. 23^h 27^m 42^s.693 Mean Dec. + 86° 52' 38".23 Sec δ 18.357 Tan δ + 18.330

250 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

39 H Cephei. Mag. 5.6

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.	R.A.	Dec. N.
	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
	23 28	86 52	23 28	86 52	23 28	86 52	23 28	86 52	23 27	86 53	23 27	86 53
1	1 ^s .52	30 ^s .68	10.99	38 ^s .06	15.82	48 ^s .72	15.17	59 ^s .96	69.12	10 ^s .25	59.13	16 ^s .82
2	1.91	30.83	11.26	38.38	15.85	49.09	15.03	60.29	68.85	10.51	58.79	16.96
3	2.30	31.00	11.50	38.71	15.87	49.46	14.89	60.63	68.60	10.77	58.44	17.11
4	2.69	31.19	11.71	39.05	15.89	49.82	14.76	60.97	68.35	11.04	58.07	17.26
5	3.07	31.40	11.90	39.38	15.92	50.16	14.64	61.30	68.10	11.32	57.69	17.40
6	3.43	31.62	12.08	39.70	15.95	50.50	14.53	61.64	67.84	11.61	57.30	17.55
7	3.77	31.84	12.25	40.03	15.98	50.85	14.41	61.99	67.56	11.90	56.89	17.69
8	4.09	32.07	12.42	40.32	16.02	51.20	14.30	62.33	67.27	12.19	56.45	17.81
9	4.39	32.28	12.60	40.62	16.07	51.54	14.19	62.69	66.95	12.48	56.01	17.91
10	4.68	32.49	12.78	40.91	16.12	51.90	14.06	63.07	66.61	12.75	55.57	17.99
11	4.97	32.69	12.97	41.20	16.17	52.28	13.92	63.45	66.25	13.01	55.15	18.04
12	5.27	32.89	13.18	41.50	16.21	52.68	13.75	63.83	65.89	13.24	54.75	18.09
13	5.57	33.08	13.39	41.81	16.24	53.08	13.56	64.21	65.53	13.45	54.35	18.13
14	5.88	33.28	13.59	42.14	16.25	53.49	13.34	64.57	65.18	13.66	53.98	18.19
15	6.20	33.48	13.79	42.48	16.23	53.90	13.12	64.91	64.85	13.86	53.61	18.25
16	6.53	33.70	13.98	42.84	16.18	54.31	12.89	65.24	64.53	14.08	53.25	18.32
17	6.86	33.92	14.16	43.21	16.12	54.70	12.67	65.56	64.23	14.30	52.87	18.40
18	7.19	34.15	14.31	43.59	16.05	55.07	12.46	65.87	63.94	14.53	52.48	18.48
19	7.53	34.41	14.45	43.97	15.98	55.43	12.27	66.18	63.63	14.76	52.07	18.54
20	7.85	34.68	14.56	44.34	15.92	55.77	12.09	66.50	63.30	15.01	51.64	18.59
21	8.15	34.98	14.65	44.71	15.87	56.12	11.92	66.83	62.95	15.25	51.20	18.62
22	8.42	35.28	14.74	45.06	15.84	56.48	11.75	67.18	62.58	15.48	50.75	18.63
23	8.68	35.57	14.83	45.39	15.82	56.85	11.55	67.53	62.19	15.68	50.31	18.62
24	8.91	35.85	14.94	45.72	15.81	57.23	11.33	67.89	61.79	15.86	49.89	18.59
25	9.13	36.13	15.06	46.05	15.78	57.64	11.08	68.23	61.39	16.03	49.48	18.55
26	9.36	36.39	15.19	46.39	15.73	58.05	10.82	68.56	61.00	16.18	49.07	18.51
27	9.60	36.64	15.33	46.76	15.65	58.45	10.54	68.87	60.61	16.32	48.68	18.47
28	9.86	36.89	15.46	47.14	15.55	58.85	10.25	69.17	60.22	16.45	48.31	18.43
29	10.13	37.15	15.59	47.53	15.43	59.23	9.96	69.45	59.85	16.58	47.94	18.39
30	10.42	37.43	15.69	47.93	15.30	59.60	9.67	69.73	59.49	16.70	47.57	18.35
31	10.71	37.74	15.77	48.33	15.17	59.96	9.39	69.99	59.13	16.82	47.20	18.33
32	10.99	38.06	15.82	48.72			9.12	70.25			46.82	18.31

Mean R.A. 23^h 27^m 42^s.693 Mean Dec. + 86° 52' 38".23 Sec δ 18.357 Tan δ + 18.330

APPARENT PLACES OF STARS, 1922. 251

AT UPPER TRANSIT AT GREENWICH.

o Octantis. Mag. 7.2

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	88° 48'	h m	88° 47'	h m	88° 47'	h m	88° 47'	h m	88° 47'	h m	88° 47'
	O I I		O I O		O I O		O I O		O I I		O I I	
	s		s		s		s		s		s	
1	39.57	6.68	71.18	60.53	55.13	51.36	50.95	39.25	1.45	28.57	24.47	20.57
2	38.61	6.57	70.39	60.28	54.72	51.02	51.04	38.85	2.09	28.23	25.42	20.41
3	37.64	6.48	69.59	60.02	54.29	50.67	51.19	38.44	2.78	27.91	26.32	20.26
4	36.65	6.38	68.77	59.74	53.86	50.31	51.41	38.04	3.49	27.60	27.18	20.11
5	35.62	6.28	67.95	59.45	53.45	49.93	51.68	37.63	4.19	27.31	27.98	19.95
6	34.56	6.17	67.15	59.13	53.07	49.53	52.00	37.25	4.85	27.03	28.77	19.79
7	33.48	6.04	66.40	58.80	52.75	49.13	52.34	36.87	5.45	26.76	29.57	19.62
8	32.38	5.90	65.71	58.45	52.50	48.72	52.65	36.52	6.02	26.50	30.42	19.43
9	31.28	5.73	65.09	58.10	52.33	48.31	52.91	36.18	6.56	26.22	31.31	19.25
10	30.21	5.53	64.52	57.77	52.21	47.91	53.13	35.84	7.11	25.92	32.26	19.07
11	29.18	5.33	64.00	57.44	52.11	47.54	53.32	35.49	7.69	25.62	33.26	18.91
12	28.22	5.12	63.50	57.12	52.01	47.17	53.49	35.12	8.32	25.31	34.28	18.77
13	27.33	4.91	62.97	56.82	51.87	46.81	53.68	34.75	9.00	25.01	35.32	18.65
14	26.48	4.69	62.39	56.53	51.69	46.46	53.92	34.36	9.74	24.72	36.36	18.55
15	25.65	4.49	61.77	56.23	51.46	46.10	54.21	33.97	10.52	24.43	37.38	18.45
16	24.82	4.30	61.11	55.92	51.21	45.72	54.57	33.60	11.33	24.16	38.37	18.36
17	23.95	4.12	60.45	55.58	50.96	45.34	54.98	33.22	12.16	23.91	39.34	18.28
18	23.03	3.94	59.80	55.23	50.75	44.94	55.44	32.86	12.98	23.67	40.28	18.21
19	22.06	3.76	59.19	54.87	50.60	44.52	55.92	32.51	13.79	23.44	41.19	18.13
20	21.06	3.56	58.64	54.50	50.51	44.11	56.41	32.17	14.59	23.22	42.08	18.05
21	20.04	3.35	58.14	54.12	50.48	43.70	56.90	31.84	15.36	23.01	42.97	17.96
22	19.05	3.11	57.70	53.75	50.50	43.30	57.37	31.53	16.10	22.79	43.86	17.87
23	18.11	2.84	57.31	53.39	{ 50.55 }	{ 42.92 }	57.82	31.22	16.84	22.58	44.77	17.77
24	17.23	2.57	56.95	53.04	50.69	42.17	58.26	30.91	17.56	22.36	45.73	17.66
25	16.40	2.30	56.59	52.70	50.76	41.81	58.67	30.60	18.28	22.14	46.74	17.57
26	15.62	2.03	56.24	52.36	50.83	41.45	59.07	30.28	19.02	21.90	47.82	17.49
27	14.87	1.77	55.88	52.02	50.88	41.10	59.48	29.95	19.80	21.65	48.93	17.43
28	14.14	1.52	55.51	51.69	50.90	40.75	59.90	29.61	20.64	21.41	50.05	17.38
29	13.41	1.26	55.13	51.36	50.91	40.39	60.36	29.27	21.55	21.17	51.14	17.36
30	12.68	1.01			50.91	40.02	60.87	28.92	22.51	20.95	52.16	17.36
31	11.94	0.77			50.92	39.64	61.45	28.57	23.49	20.75	53.13	17.36
32	11.18	0.53			50.95	39.25			24.47	20.57		

Mean R.A. $\alpha^h 12^m 17^s.505$ Mean Dec. — $88^\circ 47' 47''.81$ Sec δ 47.616 Tan δ — 47.605

252 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

o Octantis. Mag. 7.2

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m O II 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'	h m O I 2 88° 47'
1	53.13	17.36	22.13	19.29	43.06	25.96	48.88	35.15	37.00	44.31	71.26	49.56
2	54.04	17.36	22.91	19.42	43.59	26.23	48.86	35.49	36.30	44.58	70.17	49.65
3	54.92	17.35	23.73	19.55	44.11	26.51	48.79	35.84	35.56	44.84	69.07	49.72
4	55.80	17.33	24.59	19.68	44.61	26.80	48.66	36.19	34.78	45.10	67.99	49.77
5	56.69	17.30	25.47	19.82	45.08	27.11	48.47	36.54	33.98	45.33	66.93	49.82
6	57.63	17.27	26.38	19.98	45.50	27.43	48.24	36.87	33.16	45.55	65.91	49.85
7	58.62	17.25	27.28	20.16	45.87	27.75	47.97	37.20	32.36	45.76	64.94	49.87
8	59.66	17.24	28.15	20.36	46.18	28.08	47.67	37.52	31.58	45.95	64.01	49.89
9	60.73	17.25	28.99	20.56	46.44	28.40	47.34	37.83	30.84	46.13	63.08	49.93
10	61.80	17.26	29.79	20.78	46.67	28.72	47.00	38.13	30.14	46.31	62.15	49.97
11	62.86	17.30	30.55	21.01	46.87	29.03	46.67	38.41	29.45	46.50	61.18	50.02
12	63.91	17.35	31.26	21.24	47.06	29.33	46.37	38.69	28.75	46.71	60.14	50.07
13	64.93	17.42	31.93	21.47	47.25	29.61	46.10	38.97	28.02	46.92	59.04	50.12
14	65.92	17.50	32.56	21.69	47.46	29.88	45.86	39.25	27.23	47.14	57.89	50.15
15	66.87	17.58	33.18	21.90	47.70	30.15	45.62	39.54	26.37	47.36	56.72	50.15
16	67.78	17.66	33.80	22.11	47.97	30.43	45.35	39.85	25.44	47.56	55.56	50.13
17	68.67	17.74	34.42	22.30	48.26	30.72	45.03	40.17	24.46	47.73	54.43	50.09
18	69.52	17.82	35.08	22.49	48.54	31.04	44.64	40.50	23.46	47.89	53.35	50.03
19	70.37	17.88	35.78	22.69	48.78	31.37	44.17	40.82	22.47	48.02	52.31	49.96
20	71.25	17.94	36.52	22.90	48.96	31.72	43.63	41.13	21.51	48.14	51.33	49.91
21	72.16	18.00	37.27	23.12	49.06	32.06	43.05	41.42	20.59	48.26	50.36	49.86
22	73.10	18.05	38.00	23.36	49.09	32.40	42.46	41.68	19.71	48.38	49.39	49.82
23	74.09	18.12	38.68	23.62	49.04	32.73	41.88	41.93	18.86	48.50	48.42	49.78
24	75.12	18.20	39.30	23.90	48.97	33.04	41.33	42.17	18.01	48.63	47.43	49.75
25	76.15	18.30	39.85	24.18	48.90	33.34	40.81	42.42	17.15	48.77	46.41	49.72
26	77.16	18.42	40.33	24.46	48.85	33.63	40.31	42.67	16.26	48.91	45.35	49.68
27	78.12	18.57	40.75	24.73	48.83	33.92	39.83	42.93	15.34	49.05	44.27	49.63
28	79.01	18.73	41.17	24.98	48.84	34.21	39.33	43.20	14.38	49.19	43.16	49.57
29	79.84	18.88	41.59	25.22	48.86	34.50	38.81	43.47	13.38	49.33	42.04	49.49
30	80.62	19.02	42.05	25.46	48.88	34.82	38.25	43.75	12.34	49.45	40.91	49.39
31	81.38	19.16	42.54	25.70	48.88	35.15	37.65	44.03	11.26	49.56	39.80	49.28
32	82.13	19.29	43.06	25.96			37.00	44.31			38.71	49.14

Mean R.A. $\alpha^h 12^m 17^s.505$ Mean Dec. $- 88^\circ 47' 47''.81$ Sec $\delta 47.616$ Tan $\delta - 47.605$

APPARENT PLACES OF STARS, 1922. 253

AT UPPER TRANSIT AT GREENWICH.

9 B Octantis. Mag. 7.8

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m 23I	86° 4'	h m 23I	86° 4'	h m 23I	86° 4'	h m 23I	86° 3'	h m 23I	86° 3'	h m 23I	86° 3'
1	69.12	18.41	58.72	18.72	49.68	14.29	42.18	65.54	$\left\{ \begin{smallmatrix} 38.84 \\ 38.80 \end{smallmatrix} \right\}$	$\left\{ \begin{smallmatrix} 54.93 \\ 54.54 \end{smallmatrix} \right\}$	40.37	43.69
2	68.83	18.51	58.39	18.67	49.39	14.09	41.97	65.21	38.78	54.14	40.53	43.37
3	68.53	18.61	58.05	18.61	49.09	13.88	41.77	64.86	38.78	53.74	40.67	43.07
4	68.23	18.72	57.69	18.54	48.79	13.66	41.59	64.49	38.79	53.36	40.81	42.79
5	67.92	18.82	57.32	18.45	48.48	13.43	41.43	64.12	38.81	52.99	40.94	42.52
6	67.59	18.92	56.95	18.35	48.17	13.18	41.28	63.74	38.83	52.63	41.06	42.24
7	67.25	19.03	56.59	18.23	47.87	12.91	41.15	63.37	38.84	52.29	41.18	41.95
8	66.90	19.12	56.23	18.08	47.58	12.63	41.03	63.01	38.83	51.96	41.30	41.64
9	66.54	19.19	55.88	17.91	47.31	12.33	40.92	62.68	38.82	51.63	41.44	41.32
10	66.18	19.23	55.56	17.74	47.06	12.03	40.79	62.35	38.80	51.30	41.59	41.00
11	65.82	19.26	55.26	17.58	46.83	11.74	40.65	62.03	38.78	50.95	41.76	40.68
12	65.47	19.27	54.96	17.42	46.60	11.46	40.51	61.71	38.78	50.58	41.95	40.38
13	65.13	19.26	54.66	17.26	46.36	11.20	40.35	61.38	38.80	50.20	42.15	40.08
14	64.81	19.25	54.35	17.11	46.12	10.95	40.19	61.04	38.83	49.82	42.36	39.80
15	64.50	19.24	54.02	16.98	45.86	10.70	40.04	60.68	38.88	49.44	42.57	39.52
16	64.19	19.24	53.68	16.86	45.59	10.44	39.91	60.30	38.94	49.07	42.78	39.27
17	63.87	19.26	53.34	16.72	45.32	10.17	39.80	59.92	39.01	48.71	42.98	39.02
18	63.53	19.28	52.99	16.57	45.05	9.88	39.70	59.53	39.09	48.36	43.19	38.79
19	63.19	19.31	52.64	16.39	44.79	9.58	39.62	59.15	39.17	48.02	43.38	38.56
20	62.83	19.33	52.30	16.20	44.55	9.27	39.55	58.77	39.26	47.69	43.57	38.33
21	62.46	19.34	51.98	15.98	44.32	8.94	39.48	58.40	39.34	47.38	43.76	38.10
22	62.09	19.33	51.67	15.76	44.11	8.60	39.43	58.05	39.41	47.07	43.94	37.85
23	61.72	19.29	51.37	15.54	43.90	8.27	39.37	57.71	39.49	46.76	44.13	37.60
24	61.36	19.25	51.08	15.31	43.70	7.95	39.32	57.37	39.55	46.44	44.33	37.34
25	61.00	19.19	50.80	15.09	43.52	7.64	39.25	57.04	39.61	46.12	44.54	37.07
26	60.67	19.12	50.53	14.89	43.34	7.34	39.19	56.72	39.67	45.79	44.78	36.80
27	60.33	19.04	50.25	14.69	43.16	7.04	39.12	56.39	39.74	45.45	45.03	36.54
28	59.99	18.97	49.97	14.49	42.97	6.74	39.05	56.04	39.83	45.10	45.29	36.30
29	59.69	18.91	49.68	14.29	42.79	6.45	38.97	55.68	39.94	44.74	45.56	36.08
30	59.38	18.85			42.59	6.15	38.90	55.32	40.07	44.38	45.82	35.89
31	59.05	18.78			42.38	5.85	$\left\{ \begin{smallmatrix} 38.84 \\ 38.80 \end{smallmatrix} \right\}$	$\left\{ \begin{smallmatrix} 54.93 \\ 54.54 \end{smallmatrix} \right\}$	40.22	44.03	46.07	35.71
32	58.72	18.72			42.18	5.54			40.37	43.69		

Mean R.A. 2^h 32^m 7^s.876 Mean Dec. — 86° 3' 56".00 Sec δ 14.574 Tan δ — 14.540

254 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

9 B Octantis. Mag. 7.8

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	86° 3'	h m	86° 3'	h m	86° 3'	h m	86° 3'	h m	86° 3'	h m	86° 3'
	2 31	86° 3'	2 31	86° 3'	2 32	86° 3'	2 32	86° 3'	2 32	86° 3'	2 32	86° 3'
1	46.07	35.71	54.73	31.92	3.89	33.51	10.57	39.99	12.75	49.77	9.33	58.90
2	46.31	35.55	55.01	31.88	4.18	33.64	10.75	40.27	12.72	50.12	9.11	59.18
3	46.54	35.38	55.29	31.82	4.47	33.77	10.92	40.57	12.67	50.48	8.88	59.45
4	46.76	35.20	55.60	31.76	4.77	33.92	11.08	40.88	12.62	50.82	8.64	59.70
5	46.99	35.00	55.91	31.71	5.05	34.09	11.22	41.20	12.56	51.16	8.41	59.93
6	47.22	34.80	56.24	31.68	5.33	34.28	11.35	41.52	12.48	51.49	8.18	60.14
7	47.47	34.60	56.57	31.67	5.60	34.47	11.47	41.85	12.40	51.81	7.96	60.34
8	47.73	34.39	56.90	31.67	5.87	34.68	11.57	42.18	12.31	52.12	7.75	60.54
9	48.01	34.20	57.23	31.69	6.12	34.89	11.66	42.50	12.24	52.41	7.55	60.74
10	48.30	34.03	57.56	31.72	6.36	35.11	11.74	42.80	12.17	52.69	7.34	60.95
11	48.60	33.85	57.87	31.77	6.58	35.33	11.82	43.10	12.11	52.98	7.12	61.18
12	48.91	33.70	58.18	31.82	6.79	35.54	11.91	43.39	12.05	53.28	6.90	61.42
13	49.21	33.56	58.47	31.88	7.01	35.74	12.00	43.66	11.99	53.59	6.65	61.67
14	49.50	33.45	58.76	31.94	7.22	35.93	12.10	43.93	11.91	53.91	6.38	61.91
15	49.79	33.34	59.05	31.99	7.44	36.11	12.21	44.22	11.81	54.25	6.09	62.13
16	50.07	33.24	59.32	32.05	7.67	36.30	12.32	44.53	11.69	54.59	5.80	62.32
17	50.34	33.14	59.60	32.10	7.91	36.48	12.42	44.85	11.54	54.93	5.50	62.50
18	50.61	33.04	59.88	32.13	8.16	36.68	12.50	45.19	11.39	55.24	5.21	62.66
19	50.88	32.93	60.18	32.16	8.40	36.90	12.56	45.54	11.23	55.54	4.93	62.81
20	51.14	32.82	60.49	32.20	8.63	37.15	12.59	45.89	11.07	55.82	4.66	62.94
21	51.41	32.70	60.81	32.26	8.85	37.41	12.61	46.23	10.92	56.09	4.40	63.08
22	51.69	32.57	61.13	32.32	9.05	37.68	12.62	46.56	10.77	56.35	4.14	63.23
23	51.99	32.44	61.45	32.40	9.23	37.96	12.62	46.89	10.63	56.61	3.87	63.39
24	52.30	32.31	61.76	32.51	9.39	38.23	12.61	47.20	10.49	56.88	3.61	63.56
25	52.63	32.21	62.05	32.64	9.54	38.49	12.62	47.49	10.36	57.15	3.34	63.73
26	52.96	32.12	62.33	32.79	9.69	38.74	12.65	47.79	10.22	57.44	3.05	63.89
27	53.28	32.05	62.59	32.93	9.86	38.98	12.68	48.09	10.07	57.72	2.75	64.05
28	53.59	32.01	62.84	33.06	10.02	39.22	12.70	48.40	9.90	58.01	2.44	64.21
29	53.89	31.99	63.09	33.18	10.20	39.46	12.72	48.73	9.73	58.31	2.12	64.35
30	54.18	31.98	63.34	33.29	10.39	39.72	12.74	49.06	9.54	58.61	1.79	64.49
31	54.46	31.95	63.61	33.40	10.57	39.99	12.75	49.41	9.33	58.90	1.46	64.61
32	54.73	31.92	63.89	33.51			12.75	49.77			1.13	64.71

Mean R.A. 2^h 32^m 7^s.876 Mean Dec. — 86° 3' 56".00 Sec δ 14.574 Tan δ — 14.540

APPARENT PLACES OF STARS, 1922. 255

AT UPPER TRANSIT AT GREENWICH.

10 B Octantis. Mag. 8.4

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	2 51	88 29	2 50	88 29	2 50	88 29	2 50	88 29	2 50	88 28	2 50	88 28
	^s		^s		^s		^s		^s		^s	
1	45.19	28.57	77.83	29.67	53.11	25.93	31.58	17.83	20.49	67.61	21.78	56.43
2	44.43	28.69	76.94	29.63	52.31	25.75	30.97	17.51	20.29	67.21	22.11	56.12
3	43.67	28.82	76.02	29.59	51.48	25.57	30.37	17.19	20.14	66.82	22.42	55.82
4	42.90	28.95	75.06	29.55	50.63	25.39	29.81	16.85	20.05	66.43	22.70	55.53
5	42.11	29.07	74.08	29.49	49.77	25.18	29.29	16.49	{ 20.00 19.97 }	{ 66.07 65.71 }	22.96	55.25
6	41.28	29.20	73.08	29.42	48.90	24.96	28.82	16.12	19.94	65.36	23.19	54.96
7	40.40	29.32	72.09	29.32	48.05	24.71	28.40	15.77	19.89	65.02	23.41	54.66
8	39.49	29.44	71.12	29.21	47.24	24.45	28.01	15.42	19.80	64.70	23.64	54.35
9	38.55	29.53	70.18	29.07	46.48	24.17	27.63	15.09	19.68	64.37	23.92	54.04
10	37.59	29.60	69.28	28.92	45.76	23.90	27.24	14.78	19.55	64.04	24.24	53.71
11	36.64	29.65	68.43	28.78	45.08	23.62	26.83	14.49	19.42	63.69	24.60	53.39
12	35.71	29.69	67.61	28.64	44.42	23.36	26.38	14.19	19.32	63.33	25.01	53.08
13	34.82	29.71	66.79	28.52	43.76	23.12	25.91	13.87	19.27	62.96	25.45	52.77
14	33.96	29.72	65.95	28.40	43.07	22.89	25.42	13.53	19.25	62.58	25.91	52.47
15	33.13	29.74	65.08	28.30	42.34	22.66	24.94	13.18	19.28	62.20	26.39	52.20
16	32.31	29.77	64.16	28.19	41.59	22.43	24.51	12.83	19.36	61.83	26.88	51.94
17	31.49	29.81	63.22	28.08	40.82	22.18	24.12	12.46	19.47	61.47	27.36	51.68
18	30.64	29.86	62.26	27.94	40.05	21.92	23.77	12.09	19.59	61.13	27.82	51.43
19	29.73	29.91	61.30	27.78	39.29	21.63	23.46	11.73	19.73	60.79	28.27	51.19
20	28.78	29.96	60.37	27.61	38.57	21.33	23.19	11.36	19.87	60.46	28.70	50.94
21	27.80	29.99	59.46	27.43	37.89	21.02	22.95	11.00	20.01	60.14	29.11	50.70
22	26.80	30.01	58.60	27.24	37.26	20.71	22.73	10.65	20.13	59.83	29.52	50.45
23	25.82	30.01	57.77	27.04	36.66	20.40	22.51	10.32	20.24	59.52	29.94	50.19
24	24.85	29.99	56.97	26.84	36.09	20.10	22.29	9.99	20.34	59.20	30.38	49.91
25	23.91	29.96	56.19	26.66	35.54	19.81	22.06	9.66	20.42	58.87	30.86	49.63
26	23.00	29.91	55.42	26.47	35.00	19.53	21.82	9.34	20.49	58.55	31.39	49.36
27	22.11	29.86	54.66	26.29	34.47	19.25	21.56	9.02	20.59	58.21	31.98	49.09
28	21.25	29.81	53.89	26.11	33.93	18.97	21.29	8.69	20.73	57.85	32.61	48.84
29	20.40	29.77	53.11	25.93	33.37	18.69	21.01	8.35	20.91	57.48	33.24	48.60
30	19.55	29.74			32.79	18.41	20.74	7.98	21.15	57.12	33.87	48.38
31	18.70	29.70			32.19	18.12	20.49	7.61	21.45	56.76	34.47	48.19
32	17.83	29.67			31.58	17.83			21.78	56.43		

Mean R.A. 2^h 51^m 37^s.695 Mean Dec. — 88° 29' 6".36 Sec δ 37.826 Tan δ — 37.813

256 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

10 B Octantis. Mag. 8.4

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	° ' "	h m	° ' "	h m	° ' "	h m	° ' "	h m	° ' "	h m	° ' "
	2 50	88° 28'	2 50	88° 28'	2 51	88° 28'	2 51	88° 28'	2 51	88° 29'	2 51	88° 29'
	^s		^s		^s		^s		^s		^s	
1	34.47	48.19	55.63	43.85	19.29	44.80	37.66	50.74	45.07	0.23	37.77	9.53
2	35.04	48.00	56.32	43.79	20.04	44.90	38.18	51.01	45.08	0.58	37.25	9.82
3	35.58	47.82	57.03	43.72	20.82	45.01	38.68	51.29	45.05	0.94	36.70	10.11
4	36.09	47.63	57.78	43.65	21.60	45.14	39.16	51.58	44.97	1.28	36.12	10.37
5	36.61	47.43	58.57	43.58	22.38	45.29	39.61	51.88	44.86	1.63	35.53	10.61
6	37.15	47.22	59.39	43.53	23.15	45.45	40.01	52.19	44.72	1.96	34.96	10.83
7	37.73	47.00	60.23	43.49	23.89	45.62	40.38	52.50	44.56	2.28	34.42	11.05
8	38.35	46.78	61.08	43.47	24.61	45.81	40.72	52.81	44.39	2.58	33.90	11.27
9	39.02	46.57	61.93	43.47	25.30	46.00	41.01	53.12	44.23	2.88	33.39	11.49
10	39.73	46.37	62.78	43.47	25.95	46.19	41.28	53.42	44.10	3.17	32.89	11.72
11	40.46	46.19	63.60	43.49	26.57	46.39	41.53	53.71	43.99	3.46	32.37	11.96
12	41.19	46.02	64.40	43.52	27.16	46.59	41.79	53.99	43.89	3.76	31.81	12.21
13	41.92	45.87	65.18	43.56	27.73	46.78	42.07	54.25	43.78	4.08	31.20	12.47
14	42.66	45.73	65.93	43.59	28.31	46.95	42.38	54.51	43.64	4.41	30.53	12.72
15	43.38	45.59	66.65	43.63	28.90	47.11	42.71	54.80	43.45	4.75	29.82	12.96
16	44.08	45.47	67.36	43.67	29.52	47.28	43.04	55.09	43.20	5.09	29.07	13.18
17	44.76	45.35	68.06	43.69	30.18	47.45	43.35	55.40	42.90	5.43	28.31	13.38
18	45.41	45.23	68.78	43.70	30.86	47.63	43.62	55.73	42.54	5.76	27.58	13.56
19	46.05	45.11	69.54	43.72	31.53	47.83	43.84	56.07	42.17	6.07	26.86	13.73
20	46.70	44.98	70.33	43.74	32.18	48.05	44.00	56.41	41.79	6.35	26.16	13.89
21	47.35	44.85	71.15	43.77	32.78	48.29	44.11	56.75	41.42	6.62	25.49	14.05
22	48.03	44.70	71.99	43.81	33.33	48.55	44.18	57.08	41.07	6.89	24.84	14.22
23	48.75	44.55	72.83	43.88	33.83	48.81	44.23	57.40	40.74	7.17	24.18	14.40
24	49.52	44.40	73.65	43.96	34.29	49.07	44.29	57.70	40.43	7.45	23.51	14.58
25	50.33	44.28	74.43	44.06	34.73	49.31	44.37	57.99	40.12	7.73	22.82	14.77
26	51.15	44.18	75.16	44.18	35.17	49.55	44.47	58.28	39.80	8.02	22.11	14.95
27	51.97	44.10	75.86	44.30	35.63	49.78	44.58	58.58	39.46	8.32	21.37	15.13
28	52.76	44.04	76.53	44.42	36.11	50.01	44.71	58.89	39.09	8.62	20.59	15.31
29	53.52	43.99	77.19	44.52	36.61	50.24	44.83	59.22	38.69	8.92	19.78	15.47
30	54.25	43.95	77.86	44.62	37.13	50.48	44.93	59.55	38.25	9.23	18.93	15.63
31	54.94	43.90	78.56	44.71	37.66	50.74	45.02	59.88	37.77	9.53	18.06	15.76
32	55.63	43.85	79.29	44.80			45.07	60.23			17.19	15.88

Mean R.A. 2^h 51^m 37^s.695 Mean Dec. — 88° 29' 6".36 Sec δ 37.826 Tan δ — 37.813

APPARENT PLACES OF STARS, 1922. 257

AT UPPER TRANSIT AT GREENWICH.

31 G Mensæ. Mag. 6.2

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	5 45	84 49	5 45	84 50	5 45	84 50	5 45	84 50	5 44	84 49	5 44	84 49
1	29.47 ^s	54.52	24.38 ^s	3.06	17.36 ^s	7.25	8.75 ^s	7.29	61.34 ^s	62.83	56.27 ^s	54.57
2	29.38	54.84	24.17	3.30	17.09	7.34	8.47	7.23	61.11	62.60	56.18	54.23
3	29.28	55.14	23.96	3.53	16.82	7.44	8.18	7.15	60.89	62.35	56.10	53.90
4	29.18	55.45	23.74	3.76	16.55	7.54	7.89	7.06	60.68	62.09	56.02	53.59
5	29.08	55.77	23.51	3.99	16.26	7.63	7.61	6.94	60.48	61.84	55.95	53.30
6	28.98	56.10	23.26	4.21	15.96	7.70	7.33	6.81	60.29	61.59	55.87	53.03
7	28.86	56.44	23.01	4.41	15.66	7.75	7.07	6.66	60.12	61.35	55.77	52.76
8	28.73	56.79	22.75	4.60	15.36	7.79	6.81	6.52	59.95	61.12	55.68	52.48
9	28.58	57.12	22.49	4.76	15.07	7.81	6.56	6.38	59.77	60.90	55.58	52.18
10	28.42	57.44	22.24	4.91	14.78	7.80	6.32	6.26	59.58	60.68	55.49	51.86
11	28.26	57.75	21.99	5.05	14.51	7.79	6.08	6.15	59.39	60.46	55.40	51.54
12	28.09	58.04	21.74	5.19	14.24	7.78	5.83	6.04	59.20	60.24	55.33	51.19
13	27.92	58.31	21.50	5.33	13.98	7.79	5.58	5.94	59.00	60.00	55.27	50.84
14	27.75	58.56	21.27	5.48	13.71	7.82	5.32	5.84	58.81	59.74	55.22	50.50
15	27.59	58.81	21.03	5.64	13.44	7.85	5.05	5.73	58.63	59.48	55.18	50.16
16	27.43	59.06	20.79	5.81	13.15	7.88	4.78	5.59	58.45	59.20	55.14	49.81
17	27.28	59.33	20.53	5.99	12.87	7.92	4.51	5.43	58.28	58.91	55.12	49.48
18	27.13	59.61	20.26	6.17	12.58	7.94	4.25	5.24	58.13	58.61	{ ⁵⁵ / ₅₈ }	{ ⁴⁸ / ₅₅ }
19	26.97	59.90	19.99	6.32	12.28	7.95	4.01	5.05	57.98	58.32	55.06	48.54
20	26.79	60.20	19.71	6.46	11.98	7.93	3.78	4.86	57.85	58.02	55.03	48.25
21	26.61	60.50	19.44	6.57	11.69	7.89	3.55	4.67	57.72	57.74	55.01	47.95
22	26.41	60.79	19.17	6.68	11.40	7.84	3.33	4.47	57.60	57.47	54.98	47.66
23	26.21	61.07	18.90	6.77	11.13	7.77	3.11	4.28	57.47	57.21	54.94	47.34
24	26.00	61.32	18.63	6.85	10.86	7.71	2.90	4.10	57.34	56.95	54.91	47.01
25	25.79	61.56	18.37	6.92	10.59	7.65	2.69	3.92	57.20	56.69	54.89	46.68
26	25.58	61.79	18.11	7.00	10.33	7.58	2.47	3.75	57.06	56.42	54.87	46.32
27	25.38	62.00	17.86	7.08	10.07	7.52	2.26	3.58	56.92	56.15	54.87	45.96
28	25.17	62.20	17.61	7.16	9.82	7.47	2.04	3.41	56.78	55.87	54.88	45.59
29	24.97	62.41	17.36	7.25	9.56	7.43	1.81	3.23	56.64	55.57	54.90	45.24
30	24.78	62.62			9.29	7.38	1.57	3.04	56.50	55.25	54.94	44.92
31	24.58	62.83			9.02	7.34	1.34	2.83	56.38	54.91	54.98	44.60
32	24.38	63.06			8.75	7.29			56.27	54.57		

Mean R.A. 5^h 45^m 16^s.372 Mean Dec. — 84° 49' 40".23 Sec δ 11.093 Tan δ — 11.048

258 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

31 G Mensæ. Mag. 6.2

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	5 44	84 49	5 44	84 49	5 45	84 49	5 45	84 49	5 45	84 49	5 45	84 49
1	54.98	44.60	57.56	35.50	3.31	29.61	10.38	28.92	16.88	33.97	20.20	42.99
2	55.01	44.30	57.68	35.26	3.53	29.47	10.63	28.98	17.07	34.23	20.24	43.36
3	55.04	44.02	57.81	35.01	3.76	29.34	10.89	29.05	17.24	34.50	20.27	43.72
4	55.06	43.74	57.95	34.75	4.00	29.22	11.14	29.14	17.41	34.78	20.29	44.08
5	55.08	43.44	58.09	34.49	4.24	29.12	11.39	29.23	17.57	35.07	20.29	44.43
6	55.10	43.13	58.25	34.22	4.49	29.02	11.63	29.34	17.71	35.36	20.29	44.77
7	55.13	42.81	58.42	33.95	4.74	28.94	11.87	29.48	17.84	35.65	20.30	45.09
8	55.17	42.47	58.59	33.70	4.99	28.88	12.10	29.62	17.96	35.92	20.30	45.41
9	55.21	42.14	58.78	33.46	5.23	28.82	12.33	29.77	18.08	36.19	20.31	45.71
10	55.27	41.80	58.97	33.23	5.47	28.80	12.54	29.92	18.21	36.44	20.32	46.02
11	55.34	41.46	59.16	33.01	5.71	28.77	12.74	30.06	18.35	36.70	20.34	46.34
12	55.41	41.13	59.35	32.81	5.94	28.75	12.94	30.19	18.49	36.95	20.36	46.69
13	55.50	40.81	59.54	32.62	6.16	28.72	13.14	30.31	18.62	37.21	20.36	47.05
14	55.59	40.50	59.72	32.44	6.38	28.69	13.35	30.43	18.76	37.49	20.34	47.43
15	55.69	40.19	59.90	32.27	6.60	28.65	13.56	30.55	18.90	37.80	20.32	47.81
16	55.78	39.91	60.08	32.09	6.82	28.59	13.78	30.68	19.02	38.13	20.28	48.18
17	55.87	39.64	60.25	31.91	7.05	28.54	14.01	30.83	19.13	38.47	20.23	48.55
18	55.96	39.37	60.42	31.72	7.30	28.49	14.24	31.00	19.22	38.82	20.18	48.89
19	56.05	39.09	60.60	31.52	7.54	28.46	14.46	31.20	19.30	39.16	20.12	49.22
20	56.14	38.82	60.79	31.31	7.80	28.45	14.67	31.41	19.38	39.48	20.06	49.53
21	56.23	38.54	60.98	31.11	8.06	28.47	14.87	31.63	19.45	39.80	20.01	49.84
22	56.31	38.24	61.19	30.91	8.31	28.51	15.06	31.85	19.52	40.10	19.97	50.15
23	56.40	37.93	61.41	30.72	8.55	28.56	15.24	32.07	19.60	40.39	19.92	50.46
24	56.49	37.62	61.64	30.55	8.78	28.63	15.41	32.28	19.68	40.68	19.87	50.79
25	56.60	37.30	61.86	30.41	9.01	28.69	15.58	32.49	19.76	40.98	19.82	51.12
26	56.73	36.99	62.08	30.29	9.23	28.74	15.76	32.69	19.84	41.29	19.77	51.46
27	56.87	36.69	62.30	30.19	9.45	28.78	15.95	32.88	19.93	41.61	19.70	51.81
28	57.01	36.42	62.50	30.09	9.66	28.82	16.13	33.07	20.01	41.94	19.63	52.16
29	57.15	36.17	62.70	29.98	9.90	28.85	16.32	33.27	20.08	42.27	19.54	52.52
30	57.30	35.95	62.90	29.87	10.14	28.88	16.50	33.49	20.14	42.62	19.45	52.88
31	57.44	35.73	63.10	29.74	10.38	28.92	16.69	33.73	20.20	42.99	19.34	53.23
32	57.56	35.50	63.31	29.61			16.88	33.97			19.23	53.56

APPARENT PLACES OF STARS, 1922. 259

AT UPPER TRANSIT AT GREENWICH.

12 B Octantis. Mag. 6.8

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	6 0	85 56	6 0	85 56	6 0	85 56	6 0	85 56	5 59	85 56	5 59	85 56
1	40 ^s .54	12 ^s .17	34 ^s .50	21 ^s .11	25 ^s .78	25 ^s .89	14 ^s .83	26 ^s .70	65 ^s .11	22 ^s .97	58 ^s .11	15 ^s .25
2	40.43	12.48	34.25	21.35	25.45	26.01	14.47	26.67	64.80	22.76	57.97	14.93
3	40.32	12.80	34.00	21.60	25.11	26.12	14.09	26.62	64.50	22.53	57.84	14.62
4	40.21	13.13	33.73	21.85	24.77	26.24	13.71	26.55	64.22	22.29	57.73	14.32
5	40.11	13.45	33.44	22.10	24.41	26.36	13.34	26.46	63.96	22.06	57.62	14.04
6	39.99	13.78	33.14	22.35	24.04	26.46	12.98	26.35	63.71	21.83	57.50	13.77
7	39.85	14.13	32.83	22.57	23.66	26.55	12.64	26.23	63.46	21.61	57.36	13.50
8	39.71	14.48	32.51	22.77	23.28	26.61	12.30	26.12	63.22	21.40	57.22	13.23
9	39.54	14.82	32.19	22.95	22.91	26.65	11.98	26.01	62.99	21.20	57.08	12.94
10	39.36	15.16	31.87	23.12	22.54	26.67	11.67	25.91	62.74	21.01	56.94	12.63
11	39.16	15.48	31.56	23.27	22.18	26.68	11.35	25.82	62.48	20.81	56.81	12.33
12	38.95	15.78	31.25	23.43	21.84	26.70	11.03	25.74	62.22	20.60	56.70	11.99
13	38.74	16.06	30.96	23.59	21.51	26.73	10.70	25.67	61.95	20.38	56.59	11.65
14	38.54	16.32	30.67	23.77	21.17	26.78	10.36	25.59	61.69	20.14	56.50	11.31
15	38.35	16.59	30.38	23.96	20.82	26.83	10.01	25.49	61.43	19.89	56.42	10.97
16	38.17	16.85	30.08	24.15	20.48	26.89	9.66	25.38	61.19	19.62	56.35	10.64
17	37.99	17.13	29.76	24.35	20.12	26.96	9.32	25.24	60.97	19.34	56.30	10.32
18	37.82	17.42	29.43	24.55	19.74	27.01	8.98	25.09	60.76	19.07	56.25	10.00
19	37.63	17.73	29.09	24.73	19.37	27.04	8.65	24.93	60.56	18.80	56.20	9.70
20	37.42	18.04	28.74	24.89	18.99	27.04	8.34	24.76	60.36	18.53	56.16	9.40
21	37.20	18.36	28.40	25.03	18.61	27.03	8.03	24.59	60.17	18.27	{ 56.11 } { 8.82 }	{ 9.11 } { 8.82 }
22	36.97	18.67	28.06	25.15	18.24	27.01	7.74	24.41	59.99	18.01	56.00	8.52
23	36.72	18.96	27.72	25.26	17.89	26.97	7.45	24.23	59.81	17.75	55.94	8.21
24	36.47	19.23	27.38	25.36	17.53	26.93	7.17	24.07	59.62	17.50	55.87	7.89
25	36.21	19.48	27.05	25.47	17.19	26.88	6.90	23.92	59.44	17.26	55.81	7.57
26	35.96	19.72	26.73	25.57	16.86	26.84	6.62	23.77	59.24	17.02	55.77	7.22
27	35.71	19.94	26.41	25.67	16.52	26.81	6.33	23.62	59.04	16.76	55.74	6.86
28	35.46	20.16	26.09	25.77	16.20	26.79	6.04	23.47	58.85	16.49	55.73	6.50
29	35.22	20.39	25.78	25.89	15.87	26.76	5.74	23.32	58.65	16.19	55.74	6.16
30	34.98	20.62			15.52	26.74	5.43	23.16	58.46	15.89	55.76	5.83
31	34.74	20.86			15.18	26.72	5.11	22.97	58.27	15.58	55.79	5.51
32	34.50	21.11			14.83	26.70			58.11	15.25		

Mean R.A. 6^h 0^m 23^s.118 Mean Dec. — 85° 55' 59".05 Sec δ 14.100 Tan δ — 14.065

260 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

12 B Octantis. Mag. 6.8

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	5 59	85 55	5 59	85 55	6 0	85 55	6 0	85 55	6 0	85 55	6 0	85 56
1	55.79	65.51	58.45	56.29	5.34	49.97	14.23	48.70	22.74	53.15	27.40	1.84
2	55.82	65.22	58.60	56.04	5.61	49.82	14.55	48.73	22.99	53.39	27.47	2.20
3	55.84	64.94	58.74	55.78	5.90	49.67	14.87	48.77	23.22	53.65	27.52	2.56
4	55.85	64.66	58.89	55.51	6.19	49.53	15.19	48.83	23.44	53.91	27.57	2.92
5	55.85	64.36	59.06	55.24	6.49	49.40	15.52	48.92	23.65	54.18	27.60	3.27
6	55.85	64.05	59.24	54.96	6.79	49.29	15.84	49.02	23.85	54.46	27.62	3.60
7	55.87	63.73	59.43	54.68	7.11	49.19	16.14	49.13	24.03	54.74	27.64	3.91
8	55.89	63.39	59.64	54.41	7.42	49.11	16.43	49.25	24.21	55.00	27.66	4.21
9	55.92	63.06	59.86	54.16	7.73	49.05	16.72	49.38	24.38	55.25	27.69	4.51
10	55.97	62.72	60.08	53.92	8.03	48.99	17.00	49.50	24.55	55.49	27.72	4.83
11	56.04	62.37	60.31	53.69	8.32	48.94	17.27	49.62	24.72	55.73	27.76	5.16
12	56.12	62.03	60.54	53.47	8.61	48.89	17.53	49.74	24.91	55.97	27.80	5.50
13	56.20	61.70	60.77	53.27	8.90	48.85	17.80	49.84	25.11	56.22	27.82	5.87
14	56.29	61.39	60.99	53.08	9.17	48.80	18.07	49.94	25.30	56.50	27.83	6.24
15	56.40	61.09	61.21	52.89	9.44	48.74	18.34	50.04	25.48	56.79	27.82	6.63
16	56.50	60.81	61.42	52.71	9.72	48.66	18.63	50.15	25.66	57.11	27.78	7.00
17	56.60	60.53	61.63	52.51	10.01	48.59	18.93	50.28	25.81	57.43	27.74	7.36
18	56.69	60.25	61.83	52.30	10.31	48.52	19.23	50.43	25.95	57.77	27.68	7.70
19	56.79	59.98	62.04	52.08	10.63	48.46	19.52	50.61	26.07	58.10	27.63	8.03
20	56.87	59.70	62.26	51.86	10.95	48.43	19.80	50.80	26.18	58.42	27.57	8.36
21	56.95	59.41	62.49	51.63	11.27	48.43	20.06	51.01	26.28	58.73	27.51	8.67
22	57.03	59.11	62.74	51.42	11.60	48.46	20.30	51.22	26.39	59.02	27.47	8.98
23	57.12	58.80	63.01	51.22	11.90	48.49	20.54	51.41	26.50	59.31	27.42	9.31
24	57.23	58.48	63.28	51.05	12.20	48.53	20.77	51.60	26.62	59.59	27.38	9.63
25	57.36	58.15	63.56	50.89	12.48	48.57	21.00	51.79	26.74	59.87	27.33	9.96
26	57.50	57.83	63.83	50.76	12.76	48.60	21.23	51.97	26.86	60.17	27.28	10.31
27	57.66	57.53	64.10	50.63	13.04	48.63	21.48	52.14	26.98	60.48	27.22	10.67
28	57.83	57.25	64.35	50.51	13.32	48.65	21.72	52.32	27.09	60.81	27.15	11.02
29	58.00	56.99	64.60	50.40	13.61	48.66	21.97	52.50	27.21	61.15	27.06	11.37
30	58.16	56.76	64.84	50.27	13.91	48.67	22.22	52.70	27.31	61.49	26.96	11.68
31	58.31	56.53	65.09	50.12	14.23	48.70	22.48	52.92	27.40	61.84	26.85	11.98
32	58.45	56.29	65.34	49.97			22.74	53.15			26.72	12.30

Mean R.A. 6^h 23^m 23^s.118 Mean Dec. — 85° 55' 59".05 Sec δ 14.100 Tan δ — 14.065

APPARENT PLACES OF STARS, 1922. 261

AT UPPER TRANSIT AT GREENWICH.

A Octantis. Mag. 7.8

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	88° 37'	h m	88° 37'	h m	88° 38'	h m	88° 38'	h m	88° 38'	h m	88° 37'
1	9.08	43.76	62.17	54.50	43.50	2.66	74.44	8.18	43.58	9.08	75.64	65.24
2	9.13	44.09	61.76	54.83	42.74	2.91	73.40	8.31	42.50	9.03	74.89	65.02
3	9.19	44.42	61.34	55.18	41.96	3.17	72.32	8.43	41.42	8.96	74.19	64.80
4	9.25	44.75	60.88	55.52	41.15	3.43	71.20	8.53	40.37	8.87	73.54	64.59
5	9.30	45.11	60.37	55.87	40.30	3.69	70.07	8.61	39.37	8.77	72.91	64.40
6	9.34	45.46	59.80	56.22	39.39	3.94	68.95	8.67	38.43	8.68	72.27	64.22
7	9.35	45.83	59.18	56.57	38.43	4.18	67.87	8.72	37.52	8.57	71.60	64.04
8	9.31	46.21	58.51	56.90	37.44	4.39	66.84	8.75	36.64	8.49	70.90	63.85
9	9.23	46.61	57.82	57.21	36.44	4.59	65.85	8.78	35.77	8.43	70.18	63.66
10	9.08	46.99	57.13	57.50	35.46	4.77	64.88	8.83	34.87	8.37	69.45	63.46
11	8.87	47.37	56.44	57.78	34.51	4.94	63.93	8.90	33.94	8.31	68.72	63.24
12	8.62	47.74	55.79	58.04	33.60	5.11	62.96	8.97	32.97	8.25	68.01	63.00
13	8.35	48.08	55.18	58.31	32.73	5.28	61.96	9.05	31.98	8.17	67.33	62.75
14	8.08	48.41	54.60	58.60	31.87	5.47	60.92	9.13	30.98	8.07	66.70	62.48
15	7.84	48.73	54.01	58.90	31.01	5.68	59.84	9.19	30.00	7.95	66.12	62.22
16	7.63	49.06	53.40	59.21	30.13	5.89	58.74	9.23	29.03	7.81	65.57	61.93
17	7.45	49.41	52.76	59.53	29.20	6.11	57.64	9.26	28.10	7.67	65.06	61.66
18	7.28	49.73	52.06	59.86	28.22	6.31	56.54	9.28	27.21	7.51	64.58	61.40
19	7.10	50.09	51.31	60.17	27.19	6.50	55.46	9.28	26.34	7.34	64.11	61.15
20	6.89	50.46	50.52	60.47	26.15	6.67	54.41	9.26	25.51	7.18	63.66	60.91
21	6.62	50.84	49.71	60.74	25.12	6.83	53.39	9.23	24.71	7.03	63.20	60.68
22	6.30	51.22	48.90	61.00	24.09	6.96	52.40	9.20	23.93	6.88	62.71	60.45
23	5.93	51.60	48.08	61.25	23.06	7.08	51.44	9.18	23.16	6.74	62.19	60.21
24	5.52	51.95	47.28	61.49	22.06	7.20	50.50	9.16	22.39	6.60	61.65	59.97
25	5.09	52.29	46.50	61.72	21.08	7.32	49.56	9.14	21.60	6.46	61.11	59.71
26	4.65	52.62	45.74	61.95	20.13	7.43	48.63	9.13	20.78	6.33	60.56	59.44
27	4.21	52.95	44.99	62.18	19.20	7.54	47.68	9.13	19.93	6.19	60.02	59.15
28	3.79	53.26	44.24	62.42	18.27	7.66	46.70	9.13	19.05	6.04	59.54	58.84
29	3.37	53.56	43.50	62.66	17.34	7.78	45.69	9.12	18.17	5.87	59.12	58.52
30	2.97	53.87			16.40	7.91	44.65	9.10	17.29	5.68	58.76	58.21
31	2.57	54.19			15.44	8.04	43.58	9.08	16.44	5.47	58.45	57.91
32	2.17	54.50			14.44	8.18			15.64	5.24		

262 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

A Octantis. Mag. 7.8

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	88° 37'	h m	88° 37'	h m	88° 37'	h m	88° 37'	h m	88° 37'	h m	88° 37'
	7 34	88 37	7 34	88 37	7 35	88 37	7 35	88 37	7 35	88 37	7 36	88 37
	^s		^s		^s		^s		^s		^s	
1	58.45	57.91	54.87	48.29	6.29	39.74	28.73	34.84	56.39	35.27	18.13	41.21
2	58.18	57.62	54.96	48.02	6.84	39.49	29.63	34.73	57.32	35.39	18.71	41.50
3	57.93	57.35	55.05	47.72	7.43	39.23	30.56	34.64	58.24	35.53	19.24	41.81
4	57.65	57.10	55.15	47.42	8.07	38.99	31.51	34.57	59.12	35.68	19.72	42.12
5	57.34	56.85	55.28	47.09	8.75	38.75	32.47	34.51	59.98	35.83	20.15	42.42
6	57.00	56.59	55.45	46.77	9.46	38.52	33.43	34.46	60.80	36.00	20.53	42.71
7	56.65	56.30	55.67	46.45	10.21	38.30	34.38	34.43	61.57	36.17	20.90	42.99
8	56.30	56.00	55.93	46.12	10.95	38.09	35.32	34.41	62.31	36.34	21.28	43.27
9	55.96	55.70	56.24	45.79	11.72	37.89	36.23	34.40	63.02	36.50	21.67	43.54
10	55.67	55.38	56.58	45.48	12.48	37.71	37.10	34.39	63.72	36.66	22.10	43.80
11	55.42	55.05	56.95	45.18	13.22	37.55	37.94	34.39	64.44	36.80	22.55	44.08
12	55.21	54.72	57.34	44.89	13.94	37.39	38.76	34.39	65.19	36.94	23.01	44.38
13	55.05	54.39	57.74	44.62	14.64	37.24	39.57	34.37	65.99	37.09	23.47	44.70
14	{ 54.84 }	{ 54.76 }	58.14	44.35	15.31	37.08	40.39	34.35	66.81	37.25	23.89	45.03
15	54.78	53.45	58.51	44.08	15.97	36.91	41.24	34.32	67.63	37.43	24.26	45.38
16	54.73	53.14	58.85	43.83	16.64	36.72	42.14	34.30	68.44	37.64	24.56	45.74
17	54.69	52.84	59.17	43.57	17.32	36.54	43.08	34.29	69.22	37.86	24.80	46.09
18	54.63	52.55	59.48	43.30	18.05	36.35	44.05	34.30	69.95	38.11	25.01	46.43
19	54.55	52.27	59.79	43.02	18.84	36.17	45.03	34.34	70.61	38.36	25.19	46.76
20	54.46	51.99	60.13	42.74	19.68	36.01	45.99	34.39	71.22	38.61	25.36	47.08
21	54.34	51.70	60.51	42.44	20.56	35.86	46.91	34.46	71.81	38.84	25.54	47.40
22	54.21	51.40	60.94	42.13	21.45	35.73	47.79	34.55	72.40	39.07	25.75	47.70
23	54.08	51.08	61.44	41.84	22.31	35.63	48.63	34.64	73.00	39.28	25.97	48.00
24	54.00	50.75	61.99	41.57	23.14	35.55	49.44	34.72	73.61	39.50	26.20	48.32
25	53.98	50.41	62.57	41.31	23.95	35.46	50.24	34.79	74.24	39.71	26.43	48.64
26	54.02	50.07	63.15	41.07	24.72	35.38	51.05	34.84	74.89	39.93	26.66	48.98
27	54.12	49.74	63.72	40.85	25.48	35.29	51.88	34.90	75.56	40.15	26.87	49.32
28	54.27	49.42	64.26	40.64	26.25	35.19	52.73	34.96	76.22	40.40	27.05	49.67
29	54.43	49.12	64.78	40.44	27.05	35.08	53.62	35.02	76.87	40.66	27.20	50.04
30	54.60	48.84	65.28	40.22	27.88	34.96	54.54	35.09	77.51	40.93	27.30	50.42
31	54.75	48.57	65.78	39.98	28.73	34.84	55.47	35.17	78.13	41.21	27.35	50.80
32	54.87	48.29	66.29	39.74			56.39	35.27			27.35	51.17

Mean R.A. 7^h 36^m 7^s.763 Mean Dec. — 88° 37' 39".22 Sec δ 41.751 Tan δ — 41.739

APPARENT PLACES OF STARS, 1922. 263

AT UPPER TRANSIT AT GREENWICH.

10 G Octantis. Mag. 6.7

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	10 36	85 41	10 36	85 41	10 36	85 41	10 35	85 41	10 35	85 41	10 35	85 41
	s	"	s	"	s	"	s	"	s	"	s	"
1	2.04	1.70	7.32	11.39	8.29	22.05	65.31	33.30	59.13	41.66	50.71	45.86
2	2.25	1.95	7.43	11.74	8.28	22.42	65.17	33.65	58.86	41.89	50.41	45.88
3	2.47	2.19	7.54	12.10	8.27	22.79	65.02	34.00	58.58	42.10	50.12	45.88
4	2.70	2.42	7.66	12.47	8.26	23.18	64.84	34.35	58.30	42.29	49.84	45.89
5	2.93	2.66	7.77	12.85	8.23	23.58	64.64	34.69	58.02	42.46	49.59	45.91
6	3.16	2.91	7.87	13.25	8.19	23.99	64.43	35.02	57.76	42.62	49.34	45.94
7	3.39	3.18	7.95	13.66	8.12	24.41	64.22	35.32	57.50	42.78	49.09	45.98
8	3.63	3.47	8.01	14.08	8.04	24.82	64.01	35.60	57.25	42.94	48.83	46.03
9	3.86	3.79	8.05	14.48	7.96	25.21	63.81	35.88	57.02	43.11	48.56	46.07
10	4.07	4.11	8.08	14.87	7.86	25.59	63.63	36.15	56.79	43.29	48.27	46.10
11	4.27	4.45	8.11	15.24	7.75	25.95	63.46	36.44	56.55	43.48	47.99	46.12
12	4.45	4.78	8.13	15.60	7.65	26.31	63.29	36.74	56.30	43.68	47.69	46.12
13	4.61	5.11	8.17	15.95	7.56	26.65	63.12	37.05	56.04	43.88	47.38	46.10
14	4.77	5.43	8.22	16.31	7.48	27.00	62.94	37.37	55.77	44.06	47.08	46.07
15	4.92	5.73	8.27	16.67	7.42	27.36	62.75	37.68	55.48	44.22	46.78	46.03
16	5.08	6.01	8.32	17.04	7.35	27.74	62.54	37.99	55.19	44.36	46.50	45.98
17	5.24	6.29	8.38	17.44	7.28	28.12	62.32	38.29	54.89	44.49	46.23	45.91
18	5.42	6.58	8.44	17.86	7.20	28.51	62.09	38.56	54.60	44.60	45.96	45.84
19	5.61	6.89	8.47	18.27	7.10	28.91	61.86	38.83	54.32	44.70	45.71	45.77
20	5.80	7.22	8.48	18.69	6.98	29.29	61.62	39.07	54.03	44.79	45.46	45.71
21	5.98	7.58	8.48	19.10	6.84	29.67	61.38	39.31	53.76	44.88	45.22	45.66
22	6.15	7.95	8.46	19.49	6.70	30.04	61.15	39.54	53.50	44.96	44.97	45.62
23	6.31	8.32	8.44	19.88	6.56	30.38	60.92	39.76	53.24	45.04	44.72	45.58
24	6.44	8.69	8.41	20.26	6.41	30.70	60.69	39.97	52.98	45.14	44.46	45.54
25	6.57	9.04	8.38	20.61	6.26	31.02	60.48	40.19	52.73	45.24	44.19	45.49
26	6.68	9.39	8.36	20.96	6.12	31.34	60.26	40.42	52.48	45.35	43.91	45.43
27	6.79	9.74	8.34	21.32	5.98	31.65	60.04	40.66	52.21	45.46	43.62	45.35
28	6.89	10.08	8.31	21.68	5.85	31.97	59.83	40.90	51.93	45.57	43.33	45.24
29	6.99	10.41	8.29	22.05	5.72	32.29	59.61	41.14	51.64	45.67	43.04	45.12
30	7.09	10.74			5.59	32.61	59.38	41.40	51.33	45.76	42.77	44.99
31	7.20	11.06			5.45	32.95	59.13	41.66	51.02	45.82	42.52	44.85
32	7.32	11.39			5.31	33.30			50.71	45.86		

264 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

10 G Octantis. Mag. 6·7

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	10 35	85 41	10 35	85 41	10 35	85 41	10 35	85 41	10 35	85 41	10 35	85 41
	^s	^s	^s	^s	^s	^s	^s	^s	^s	^s	^s	^s
1	42·52	44·85	36·09	39·07	33·35	29·82	35·47	20·72	42·10	14·18	50·86	13·16
2	42·29	44·71	35·95	38·85	33·33	29·51	35·61	20·42	42·39	14·03	51·18	13·24
3	42·07	44·58	35·81	38·62	33·30	29·18	35·77	20·12	42·68	13·90	51·50	13·34
4	41·85	44·46	35·65	38·39	33·29	28·85	35·93	19·82	42·98	13·79	51·80	13·45
5	41·63	44·36	35·49	38·15	33·30	28·50	36·11	19·53	43·27	13·70	52·09	13·57
6	41·41	44·26	35·33	37·89	33·32	28·15	36·30	19·25	43·56	13·63	52·38	13·68
7	41·17	44·15	35·17	37·61	33·34	27·81	36·49	18·99	43·85	13·56	52·65	13·79
8	40·92	44·03	35·02	37·32	33·39	27·47	36·70	18·74	44·13	13·49	52·91	13·90
9	40·66	43·89	34·88	37·01	33·45	27·13	36·90	18·52	44·39	13·43	53·17	14·00
10	40·40	43·73	34·75	36·70	33·51	26·80	37·10	18·31	44·65	13·37	53·44	14·09
11	40·15	43·56	34·64	36·39	33·58	26·50	37·30	18·10	44·91	13·29	53·72	14·19
12	39·90	43·37	34·54	36·08	33·65	26·21	37·49	17·89	45·17	13·20	54·02	14·29
13	39·66	43·18	34·45	35·77	33·71	25·93	37·66	17·68	45·45	13·11	54·32	14·42
14	39·44	42·98	34·37	35·47	33·77	25·65	37·84	17·46	45·74	13·03	54·63	14·57
15	39·22	42·77	34·29	35·19	33·82	25·37	38·02	17·22	46·04	12·97	54·94	14·74
16	39·02	42·55	34·21	34·92	33·86	25·08	38·21	16·97	46·36	12·92	55·24	14·93
17	38·83	42·34	34·14	34·65	33·91	24·77	38·42	16·73	46·69	12·90	55·53	15·13
18	38·65	42·15	34·07	34·38	33·96	24·45	38·64	16·50	47·02	12·91	55·79	15·33
19	38·46	41·96	33·98	34·11	34·03	24·12	38·88	16·29	47·33	12·93	56·04	15·53
20	38·27	41·79	33·88	33·83	34·11	23·79	39·14	16·09	47·63	12·96	56·29	15·72
21	38·08	41·61	33·78	33·53	34·21	23·47	39·40	15·92	47·92	12·99	56·54	15·90
22	37·88	41·43	33·68	33·22	34·34	23·16	39·67	15·76	48·20	13·00	56·78	16·07
23	37·68	41·25	33·59	32·90	34·48	22·87	39·92	15·62	48·47	13·01	57·02	16·24
24	37·46	41·05	33·53	32·56	34·62	22·61	40·15	15·49	48·74	13·01	57·27	16·42
25	37·24	40·82	33·49	32·22	34·76	22·35	40·39	15·34	49·02	13·01	57·53	16·61
26	37·03	40·57	33·46	31·90	34·89	22·09	40·62	15·18	49·31	13·02	57·79	16·79
27	36·83	40·31	33·45	31·59	35·01	21·83	40·84	15·01	49·61	13·02	58·06	16·99
28	36·65	40·05	33·45	31·29	35·12	21·57	41·07	14·84	49·91	13·03	58·33	17·20
29	36·49	39·79	33·44	31·00	35·24	21·29	41·31	14·67	50·22	13·06	58·59	17·44
30	36·35	39·54	{ 33·42 }	{ 30·72 }	35·35	21·01	41·56	14·50	50·54	13·11	58·85	17·68
31	36·22	39·30	33·38	30·13	35·47	20·72	41·82	14·34	50·86	13·16	59·10	17·94
32	36·09	39·07	33·35	29·82			42·10	14·18			59·34	18·22

APPARENT PLACES OF STARS, 1922. 265

AT UPPER TRANSIT AT GREENWICH.

η Octantis. Mag. 6.3

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	II O	84 IO	II O	84 IO	II O	84 IO	II O	84 IO	II O	84 IO	IO 59	84 IO
	s	"	s	"	s	"	s	"	s	"	s	"
1	5.09	13.55	9.70	22.68	11.19	33.22	9.81	44.77	5.88	53.75	60.05	58.84
2	5.27	13.75	9.81	23.01	11.20	33.58	9.73	45.14	5.71	54.00	59.83	58.89
3	5.45	13.96	9.91	23.35	11.22	33.96	9.64	45.51	5.52	54.24	59.62	58.93
4	5.63	14.18	10.02	23.71	11.24	34.35	9.53	45.88	5.32	54.47	59.42	58.97
5	5.81	14.41	10.13	24.09	11.25	34.75	9.40	46.23	5.13	54.68	59.24	59.01
6	6.00	14.64	10.24	24.48	11.25	35.17	9.27	46.57	4.95	54.87	59.05	59.07
7	6.20	14.89	10.33	24.87	11.24	35.60	9.14	46.89	4.77	55.05	58.87	59.13
8	6.40	15.15	10.41	25.27	11.21	36.01	9.01	47.20	4.60	55.24	58.69	59.21
9	6.59	15.43	10.47	25.67	11.17	36.42	8.89	47.50	4.44	55.43	58.50	59.29
10	6.77	15.73	10.52	26.06	11.11	36.80	8.77	47.79	4.28	55.64	58.31	59.36
11	6.95	16.05	10.56	26.43	11.06	37.17	8.67	48.09	4.12	55.85	58.09	59.41
12	7.11	16.37	10.61	26.80	11.01	37.54	8.57	48.40	3.96	56.07	57.87	59.44
13	7.25	16.67	10.66	27.15	10.98	37.89	8.47	48.73	3.79	56.30	57.65	59.46
14	7.39	16.97	10.72	27.49	10.95	38.25	8.36	49.07	3.60	56.51	57.43	59.46
15	7.52	17.25	10.78	27.84	10.93	38.61	8.24	49.41	3.40	56.69	57.22	59.45
16	7.65	17.52	10.85	28.21	10.91	38.99	8.11	49.74	3.20	56.86	57.01	59.42
17	7.79	17.79	10.93	28.60	10.88	39.39	7.98	50.06	3.00	57.02	56.81	59.38
18	7.95	18.08	10.99	29.01	10.85	39.79	7.83	50.36	2.79	57.16	56.60	59.34
19	8.11	18.37	11.04	29.43	10.80	40.19	7.67	50.64	2.59	57.29	56.41	59.30
20	8.27	18.68	11.08	29.84	10.74	40.58	7.51	50.92	2.39	57.41	56.22	59.27
21	8.43	19.01	11.11	30.25	10.67	40.97	7.35	51.18	2.20	57.52	56.04	59.24
22	8.59	19.35	11.13	30.64	10.60	41.35	7.19	51.43	2.01	57.63	55.86	59.22
23	8.73	19.70	11.14	31.03	10.51	41.71	7.04	51.66	1.82	57.74	55.68	59.21
24	8.87	20.06	11.15	31.41	10.42	42.06	6.89	51.90	1.64	57.87	55.50	59.21
25	8.99	20.41	11.16	31.77	10.34	42.39	6.75	52.15	1.46	58.01	55.30	59.19
26	9.09	20.75	11.16	32.13	10.25	42.72	6.61	52.39	1.29	58.15	55.08	59.16
27	9.19	21.08	11.16	32.49	10.17	43.05	6.47	52.65	1.11	58.28	54.86	59.11
28	9.30	21.41	11.17	32.85	10.09	43.38	6.33	52.92	0.92	58.42	54.65	59.04
29	9.39	21.73	11.19	33.22	10.02	43.71	6.19	53.20	0.71	58.55	54.44	58.95
30	9.49	22.05			9.95	44.05	6.04	53.48	0.49	58.66	54.23	58.85
31	9.60	22.36				44.40	5.88	53.75	0.27	58.76	54.04	58.74
32	9.70	22.68				44.77			0.05	58.84		

266 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

η Octantis. Mag. 6.3

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	10 59	84 10	10 59	84 10	10 59	84 10	10 59	84 10	10 59	84 10	10 59	84 10
1	54.04	58.74	48.99	53.69	46.45	45.12	47.37	35.52	51.82	28.31	58.26	26.40
2	53.86	58.63	48.88	53.49	46.41	44.81	47.45	35.20	52.02	28.14	58.50	26.44
3	53.69	58.53	48.75	53.28	46.37	44.50	47.54	34.88	52.22	27.98	58.74	26.51
4	53.53	58.44	48.63	53.07	46.33	44.17	47.64	34.57	52.44	27.83	58.97	26.59
5	53.36	58.36	48.50	52.84	46.29	43.83	47.76	34.27	52.66	27.71	59.21	26.68
6	53.18	58.28	48.37	52.59	{46.27}	{43.48}	47.88	33.98	52.88	27.60	59.42	26.77
7	53.00	58.20	48.23	52.34	46.26	42.79	48.00	33.70	53.09	27.51	59.62	26.85
8	52.82	58.11	48.10	52.06	46.27	42.46	48.13	33.43	53.29	27.42	59.83	26.93
9	52.63	57.99	47.98	51.78	46.29	42.13	48.27	33.17	53.47	27.34	60.03	27.00
10	52.43	57.86	47.86	51.49	46.32	41.80	48.40	32.93	53.66	27.24	60.23	27.06
11	52.23	57.72	47.76	51.19	46.35	41.48	48.54	32.70	53.85	27.13	60.44	27.13
12	52.04	57.56	47.66	50.89	46.38	41.19	48.66	32.48	54.04	27.02	60.66	27.20
13	51.86	57.39	47.57	50.60	46.41	40.90	48.77	32.26	54.24	26.91	60.90	27.30
14	51.68	57.21	47.50	50.31	46.44	40.62	48.89	32.03	54.45	26.80	61.14	27.42
15	51.51	57.02	47.43	50.03	46.46	40.33	49.01	31.78	54.67	26.71	61.39	27.55
16	51.35	56.83	47.36	49.76	46.47	40.04	49.13	31.52	54.90	26.63	61.63	27.71
17	51.19	56.65	47.29	49.51	46.47	39.72	49.27	31.26	55.14	26.58	61.86	27.89
18	51.05	56.48	47.21	49.25	46.49	39.39	49.42	31.00	55.38	26.55	62.08	28.07
19	50.91	56.32	47.13	48.99	46.53	39.05	49.58	30.76	55.62	26.54	62.28	28.24
20	50.76	56.16	47.05	48.72	46.57	38.72	49.76	30.54	55.85	26.53	62.47	28.40
21	50.61	56.01	46.96	48.44	46.63	38.39	49.95	30.33	56.06	26.53	62.66	28.56
22	50.46	55.86	46.86	48.14	46.70	38.07	50.13	30.15	56.27	26.52	62.85	28.71
23	50.29	55.69	46.78	47.82	46.78	37.77	50.31	29.98	56.47	26.51	63.05	28.85
24	50.12	55.51	46.71	47.49	46.86	37.49	50.48	29.82	56.68	26.48	63.25	29.00
25	49.94	55.32	46.65	47.16	46.95	37.21	50.64	29.65	56.88	26.44	63.45	29.15
26	49.77	55.11	46.62	46.84	47.03	36.95	50.79	29.47	57.09	26.41	63.65	29.32
27	49.62	54.87	46.59	46.53	47.10	36.68	50.95	29.29	57.32	26.39	63.86	29.49
28	49.48	54.61	46.56	46.24	47.17	36.41	51.11	29.11	57.54	26.37	64.08	29.67
29	49.34	54.36	46.54	45.97	47.24	36.13	51.28	28.90	57.78	26.37	64.30	29.88
30	49.21	54.13	46.51	45.69	47.30	35.83	51.45	28.70	58.01	26.38	64.51	30.10
31	49.09	53.90	46.48	45.41	47.37	35.52	51.63	28.50	58.26	26.40	64.71	30.34
32	48.99	53.69	46.45	45.12			51.82	28.31			64.91	30.59

Mean R.A. 10^h 59^m 53^s 418 Mean Dec. — 84° 10' 27".43 See δ 9.852 Tan δ — 9.801

APPARENT PLACES OF STARS, 1922. 267

AT UPPER TRANSIT AT GREENWICH.

ρ Octantis. Mag. 5.7

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	15 24	84 12	15 25	84 12	15 25	84 12	15 25	84 12	15 25	84 12	15 25	84 12
1	59.98	11.49	7.31	9.44	14.28	12.00	20.82	18.81	24.88	28.00	25.98	38.27
2	60.17	11.35	7.55	9.42	14.51	12.13	21.01	19.07	24.98	28.36	25.93	38.59
3	60.37	11.21	7.81	9.42	14.75	12.27	21.20	19.36	25.06	28.73	25.89	38.89
4	60.57	11.06	8.07	9.42	15.00	12.42	21.39	19.67	25.13	29.10	25.85	39.17
5	60.77	10.91	8.34	9.44	15.25	12.59	21.57	19.99	25.19	29.45	25.81	39.45
6	60.98	10.75	8.62	9.49	15.51	12.77	21.73	20.31	25.23	29.78	25.79	39.73
7	61.21	10.60	8.90	9.55	15.76	12.97	21.87	20.63	25.28	30.09	25.78	40.01
8	61.45	10.47	9.17	9.63	16.01	13.20	22.00	20.94	25.34	30.39	25.77	40.30
9	61.71	10.35	9.45	9.73	16.24	13.43	22.14	21.23	25.40	30.69	25.74	40.61
10	61.97	10.24	9.70	9.84	16.45	13.66	22.28	21.51	25.48	31.00	25.71	40.93
11	62.23	10.16	9.93	9.94	16.65	13.88	22.42	21.78	25.56	31.31	25.67	41.26
12	62.48	10.10	10.17	10.03	16.85	14.10	22.58	22.04	25.64	31.63	25.62	41.58
13	62.72	10.05	10.40	10.11	17.05	14.30	22.74	22.31	25.71	31.97	25.55	41.89
14	62.96	10.00	10.63	10.18	17.26	14.49	22.91	22.60	25.78	32.33	25.47	42.20
15	63.18	9.95	10.87	10.24	17.47	14.68	23.07	22.91	25.83	32.69	25.39	42.50
16	63.39	9.89	11.12	10.30	17.69	14.87	23.23	23.24	25.86	33.05	25.30	42.77
17	63.61	9.81	11.39	10.37	17.92	15.06	23.38	23.57	25.89	33.40	25.21	43.03
18	63.83	9.73	11.67	10.46	18.16	15.28	23.51	23.92	25.90	33.74	25.12	43.29
19	64.07	9.65	11.94	10.57	18.39	15.52	23.63	24.25	25.91	34.06	25.03	43.54
20	64.33	9.56	12.21	10.70	18.62	15.78	23.74	24.58	25.91	34.38	24.95	43.78
21	64.60	9.48	12.47	10.84	18.83	16.05	23.84	24.90	25.91	34.70	24.87	44.02
22	64.87	9.43	12.73	11.00	19.03	16.32	23.94	25.21	25.92	35.01	24.80	44.28
23	65.14	9.41	12.96	11.16	19.21	16.59	24.02	25.52	25.92	35.31	24.73	44.54
24	65.41	9.40	13.18	11.31	19.39	16.85	24.11	25.82	25.93	35.60	24.67	44.81
25	65.67	9.40	13.40	11.46	19.56	17.11	24.21	26.12	25.95	35.89	24.61	45.10
26	65.91	9.41	13.62	11.60	19.73	17.35	24.32	26.41	25.98	36.20	24.52	45.40
27	66.16	9.42	13.83	11.74	19.90	17.59	24.43	26.71	26.01	36.53	24.41	45.68
28	66.39	9.43	14.05	11.87	20.07	17.83	24.54	27.01	26.03	36.87	24.29	45.96
29	66.62	9.43	14.28	12.00	20.25	18.07	24.65	27.33	26.04	37.22	24.16	46.21
30	66.85	9.43			20.43	18.31	24.77	27.66	26.04	37.58	24.02	46.45
31	67.08	9.43			20.62	18.56	24.88	28.00	26.02	37.93	23.89	46.67
32	67.31	9.44			20.82	18.81			25.98	38.27		

Mean R.A. 15^h 25^m 3^s.593 Mean Dec. — 84° 12' 32".89 Sec δ 9.911 Tan δ — 9.860

268 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

ρ Octantis. Mag. 5.7

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	15 25	84 12	15 25	84 12	15 25	84 12	15 25	84 12	15 25	84 12	15 25	84 12
	^s	^s	^s	^s	^s	^s	^s	^s	^s	^s	^s	^s
1	23.89	46.67	19.18	51.76	13.19	51.97	8.02	47.20	5.33	38.53	6.69	29.05
2	23.76	46.87	19.03	51.84	13.01	51.92	7.86	46.98	5.29	38.19	6.81	28.76
3	23.64	47.06	18.86	51.93	12.81	51.85	7.71	46.74	5.26	37.85	6.95	28.48
4	23.54	47.26	18.69	52.03	12.59	51.77	7.55	46.49	5.25	37.51	7.09	28.20
5	23.45	47.47	18.51	52.14	12.38	51.68	7.40	46.22	5.25	37.18	7.23	27.95
6	23.34	47.70	18.31	52.24	12.17	51.56	7.26	45.94	5.27	36.86	7.38	27.72
7	23.23	47.93	18.11	52.33	11.95	51.43	7.13	45.66	5.29	36.53	7.52	27.49
8	23.11	48.16	17.90	52.39	11.74	51.29	7.01	45.38	5.32	36.23	7.65	27.27
9	22.98	48.39	17.69	52.43	11.54	51.14	6.91	45.10	5.35	35.94	7.77	27.04
10	22.84	48.61	17.47	52.47	11.36	50.98	6.82	44.82	5.37	35.66	7.88	26.80
11	22.68	48.82	17.25	52.50	11.18	50.82	6.73	44.54	5.39	35.39	8.01	26.54
12	22.52	49.02	17.04	52.51	11.00	50.66	6.65	44.28	5.39	35.11	8.14	26.27
13	22.36	49.21	16.84	52.51	10.84	50.50	6.57	44.04	5.40	34.82	8.28	26.00
14	22.18	49.38	16.63	52.50	10.69	50.36	6.48	43.81	5.40	34.51	8.45	25.74
15	22.01	49.54	16.44	52.49	10.54	50.23	6.37	43.56	5.42	34.18	8.63	25.48
16	21.85	49.69	16.26	52.49	10.38	50.10	6.26	43.31	{ 5.45 }	{ 33.84 }	8.82	25.25
17	21.69	49.83	16.09	52.50	10.21	49.97	6.15	43.04	5.49	33.50	9.02	25.04
18	21.53	49.96	15.92	52.51	10.03	49.83	6.05	42.74	5.56	33.16	9.22	24.85
19	21.38	50.10	15.74	52.52	9.84	49.67	5.96	42.43	5.64	32.83	9.40	24.66
20	21.24	50.25	15.55	52.55	9.64	49.50	5.89	42.11	5.73	32.53	9.58	24.48
21	21.11	50.41	15.35	52.57	9.45	49.31	5.83	41.79	5.82	32.25	9.75	24.30
22	20.96	50.57	15.14	52.58	9.28	49.09	5.78	41.47	5.91	31.98	9.91	24.12
23	20.81	50.74	14.92	52.56	9.12	48.86	5.75	41.17	6.05	31.71	10.07	23.92
24	20.65	50.92	14.70	52.53	8.98	48.63	5.72	40.88	6.12	31.44	10.24	23.72
25	20.47	51.08	14.48	52.47	8.84	48.42	5.68	40.60	6.17	31.17	10.41	23.51
26	20.28	51.24	14.28	52.39	8.72	48.21	5.64	40.33	6.18	30.88	10.59	23.31
27	20.08	51.37	14.09	52.31	8.60	48.01	5.60	40.06	6.25	30.59	10.78	23.12
28	19.88	51.47	13.90	52.22	8.47	47.81	5.55	39.78	6.31	30.29	10.98	22.92
29	19.69	51.55	13.72	52.15	8.33	47.61	5.49	39.48	6.39	29.98	11.19	22.72
30	19.51	51.62	13.56	52.08	8.18	47.41	5.43	39.17	6.48	29.67	11.41	22.54
31	19.34	51.69	13.38	52.03	8.02	47.20	5.38	38.86	6.58	29.36	11.64	22.38
32	19.18	51.76	13.19	51.97			5.33	38.53	6.69	29.05	11.88	22.24

APPARENT PLACES OF STARS, 1922. 269

AT UPPER TRANSIT AT GREENWICH.

σ Octantis. Mag. 5.5

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	19 33	89 12	19 33	89 12	19 34	89 12	19 35	89 12	19 36	89 12	19 37	89 12
1	43.90	45.06	57.74	34.17	31.21	26.22	22.02	20.83	15.57	19.96	4.16	23.70
2	43.87	44.73	58.48	33.84	32.53	25.97	23.87	20.70	17.47	20.02	5.42	23.92
3	43.82	44.41	59.27	33.50	33.91	25.72	25.79	20.60	19.33	20.09	6.58	24.13
4	43.76	44.09	60.14	33.16	35.37	25.46	27.75	20.51	21.11	20.18	7.70	24.32
5	43.69	43.75	61.10	32.82	36.93	25.21	29.71	20.44	22.79	20.27	8.82	24.50
6	43.64	43.40	62.18	32.48	38.58	24.96	31.63	20.39	24.39	20.37	9.97	24.67
7	43.63	43.04	63.36	32.15	40.30	24.74	33.46	20.35	25.92	20.45	11.17	24.85
8	43.69	42.67	64.60	31.83	42.06	24.53	35.21	20.31	27.43	20.52	12.44	25.03
9	43.85	42.29	65.87	31.54	43.80	24.34	36.89	20.27	28.97	20.57	13.76	25.23
10	44.12	41.90	67.12	31.27	45.49	24.17	38.53	20.21	30.55	20.63	15.08	25.44
11	44.51	41.52	68.32	31.00	47.11	24.01	40.18	20.14	32.21	20.70	16.37	25.66
12	{44.89 45.33}	{41.16 40.82}	69.43	30.73	48.65	23.85	41.87	20.06	33.94	20.78	17.60	25.90
13	46.07	40.49	70.49	30.46	50.14	23.67	43.64	19.98	35.70	20.86	18.76	26.15
14	46.57	40.17	71.52	30.18	51.62	23.47	45.49	19.91	37.45	20.95	19.84	26.40
15	47.01	39.85	72.55	29.88	53.13	23.27	47.39	19.85	39.16	21.07	20.84	26.66
16	47.39	39.53	73.65	29.56	54.70	23.06	49.32	19.81	40.83	21.20	21.78	26.92
17	47.72	39.19	74.84	29.24	56.37	22.85	51.24	19.78	42.43	21.34	22.66	27.18
18	48.05	38.85	76.13	28.93	58.12	22.65	53.13	19.77	43.95	21.49	23.51	27.43
19	48.42	38.49	77.50	28.63	59.93	22.48	54.97	19.78	45.41	21.65	24.33	27.67
20	48.87	38.11	78.93	28.35	61.76	22.31	56.76	19.79	46.83	21.80	25.16	27.90
21	49.42	37.74	80.38	28.08	63.58	22.17	58.49	19.82	48.20	21.96	26.01	28.14
22	50.09	37.38	81.83	27.84	65.38	22.04	60.17	19.85	49.54	22.10	26.90	28.37
23	50.83	37.02	83.26	27.60	67.12	21.92	61.81	19.87	50.88	22.24	27.85	28.60
24	51.63	36.67	84.65	27.37	68.82	21.81	63.42	19.88	52.24	22.37	28.85	28.84
25	52.44	36.33	86.00	27.15	70.49	21.70	65.03	19.89	53.65	22.49	29.86	29.09
26	53.26	36.02	87.32	26.92	72.12	21.59	66.65	19.90	55.12	22.62	30.86	29.36
27	54.06	35.71	88.62	26.69	73.72	21.47	68.31	19.91	56.64	22.76	31.79	29.66
28	54.83	35.40	89.91	26.46	75.31	21.35	70.03	19.91	58.21	22.91	32.62	29.96
29	55.57	35.10	91.21	26.22	76.92	21.22	71.82	19.91	59.78	23.08	33.32	30.27
30	56.30	34.79			78.56	21.09	73.68	19.93	61.32	23.27	33.92	30.57
31	57.02	34.48			80.25	20.96	75.57	19.96	62.79	23.48	34.45	30.86
32	57.74	34.17			82.02	20.83			64.16	23.70		

Mean R.A. 19^h 35^m 29^s.770 Mean Dec. — 89° 12' 49".57 Sec δ 72.876 Tan δ — 72.869

270 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

σ Octantis. Mag. 5.5

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	19 37	89 12	19 37	89 12	19 36	89 12	19 35	89 12	19 35	89 12	19 35	89 12
1	34.45	30.86	41.81	40.02	83.34	48.58	105.04	53.57	57.16	53.33	19.61	47.59
2	34.94	31.13	41.68	40.30	82.45	48.82	103.51	53.68	55.54	53.23	18.60	47.30
3	35.45	31.39	41.57	40.59	81.48	49.07	101.91	53.79	53.93	53.10	17.67	47.01
4	36.00	31.64	41.46	40.89	80.42	49.31	100.28	53.87	52.35	52.96	16.84	46.71
5	36.60	31.90	41.31	41.20	79.28	49.56	98.61	53.94	50.83	52.81	16.10	46.41
6	37.24	32.16	41.09	41.52	78.08	49.80	96.92	54.00	49.39	52.65	15.43	46.12
7	37.90	32.44	40.79	41.85	76.83	50.03	95.25	54.04	48.03	52.49	14.82	45.84
8	38.55	32.73	40.40	42.17	75.54	50.25	93.60	54.07	46.76	52.32	14.22	45.57
9	39.14	33.03	39.93	42.49	74.22	50.44	92.00	54.08	45.54	52.16	13.59	45.31
10	39.66	33.34	39.40	42.80	72.89	50.62	90.45	54.09	44.34	52.01	12.90	45.05
11	40.10	33.67	38.81	43.10	71.59	50.79	88.98	54.10	43.12	51.87	12.16	44.78
12	40.46	34.00	38.16	43.39	70.33	50.95	87.57	54.10	41.85	51.73	11.37	44.50
13	40.73	34.32	37.50	43.68	69.13	51.10	86.18	54.11	40.52	51.59	10.59	44.20
14	40.93	34.64	36.84	43.96	67.98	51.26	84.78	54.13	39.12	51.44	9.85	43.87
15	41.09	34.94	36.21	44.22	66.87	51.43	83.34	54.16	37.69	51.27	9.20	43.53
16	41.22	35.24	35.62	44.47	65.77	51.61	81.82	54.20	36.27	51.08	8.67	43.17
17	41.33	35.53	35.08	44.72	64.62	51.80	80.22	54.22	34.90	50.86	8.25	42.81
18	41.45	35.81	34.58	44.99	63.39	51.99	78.55	54.22	33.62	50.62	7.91	42.47
19	41.61	36.09	34.09	45.27	62.06	52.19	76.85	54.20	32.45	50.37	7.63	42.15
20	41.82	36.37	33.57	45.55	60.63	52.37	75.15	54.15	31.38	50.13	7.39	41.83
21	42.07	36.66	33.00	45.84	59.13	52.53	73.52	54.08	30.37	49.89	7.13	41.53
22	42.35	36.94	32.32	46.14	57.60	52.66	71.96	54.00	29.39	49.66	6.82	41.22
23	42.63	37.25	31.52	46.44	56.08	52.76	70.48	53.91	28.40	49.45	6.47	40.92
24	42.85	37.57	30.62	46.72	54.60	52.85	69.07	53.84	27.39	49.25	6.11	40.62
25	42.99	37.90	29.65	46.99	53.19	52.94	67.70	53.78	26.33	49.06	5.73	40.31
26	43.01	38.24	28.65	47.23	51.85	53.02	66.32	53.72	25.22	48.85	5.34	39.97
27	42.92	38.58	27.67	47.45	50.54	53.11	64.92	53.67	24.08	48.63	4.98	39.64
28	42.73	38.90	26.73	47.66	49.23	53.21	63.47	53.61	22.94	48.39	4.66	39.29
29	42.48	39.19	25.85	47.87	47.89	53.33	61.95	53.55	21.80	48.13	4.41	38.93
30	42.22	39.47	25.02	48.09	46.50	53.45	60.38	53.49	20.69	47.86	4.22	38.57
31	41.99	39.74	24.19	48.33	45.04	53.57	58.78	53.41	19.61	47.59	4.13	38.20
32	41.81	40.02	23.34	48.58			57.16	53.33			4.15	37.83

Mean R.A. 19^h 35^m 29^s.770 Mean Dec. — 89° 12' 49".57 Sec δ 72.876 Tan δ — 72.869

APPARENT PLACES OF STARS, 1922. 271

AT UPPER TRANSIT AT GREENWICH.

44 G Octantis. Mag. 6.3

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	19 41	81 32	19 41	81 32	19 41	81 32	19 41	81 32	19 41	81 32	19 41	81 32
1	34.25	50.81	35.61	40.50	38.80	32.69	43.64	27.10	48.84	25.69	53.69	28.69
2	34.25	50.51	35.68	40.19	38.93	32.45	43.82	26.97	49.03	25.73	53.81	28.88
3	34.24	50.20	35.76	39.87	39.06	32.20	44.01	26.84	49.21	25.78	53.92	29.07
4	34.24	49.90	35.84	39.54	39.20	31.94	44.21	26.73	49.39	25.84	54.03	29.24
5	34.23	49.59	35.93	39.20	39.34	31.68	44.40	26.64	49.55	25.91	54.15	29.40
6	34.22	49.27	36.04	38.87	39.50	31.43	44.58	26.58	49.71	25.99	54.27	29.55
7	34.23	48.93	36.16	38.54	39.67	31.20	44.75	26.53	49.87	26.06	54.40	29.69
8	34.24	48.57	36.28	38.22	39.85	30.99	44.92	26.47	50.01	26.11	54.53	29.84
9	34.25	48.21	36.41	37.92	40.02	30.80	45.08	26.41	50.16	26.15	54.66	30.01
10	34.29	47.85	36.53	37.65	40.18	30.62	45.24	26.34	50.31	26.18	54.80	30.18
11	34.34	47.49	36.65	37.40	40.33	30.46	45.39	26.25	50.47	26.21	54.94	30.38
12	34.39	47.14	36.75	37.15	40.47	30.29	45.55	26.15	50.64	26.26	55.07	30.60
13	{ 34.44 } { 34.49 }	{ 46.81 } { 46.50 }	36.85	36.88	40.60	30.10	45.73	26.05	50.82	26.31	55.19	30.82
14	34.55	46.20	36.94	36.61	40.74	29.90	45.91	25.96	51.00	26.38	55.30	31.06
15	34.59	45.90	37.03	36.32	40.89	29.69	46.09	25.89	51.17	26.47	55.40	31.30
16	34.62	45.60	37.14	36.01	41.04	29.48	46.29	25.83	51.34	26.58	55.49	31.53
17	34.65	45.30	37.26	35.70	41.20	29.26	46.48	25.79	51.50	26.70	55.58	31.77
18	34.68	44.97	37.38	35.39	41.37	29.06	46.66	25.76	51.66	26.83	55.66	32.00
19	34.71	44.62	37.51	35.09	41.54	28.88	46.84	25.75	51.80	26.96	55.74	32.22
20	34.76	44.27	37.65	34.81	41.72	28.70	47.02	25.76	51.94	27.10	55.83	32.43
21	34.82	43.90	37.79	34.55	41.89	28.55	47.18	25.77	52.07	27.22	55.93	32.63
22	34.89	43.55	37.93	34.30	42.07	28.41	47.34	25.77	52.20	27.34	56.03	32.82
23	34.96	43.21	38.07	34.07	42.23	28.28	47.50	25.77	52.33	27.45	56.13	33.03
24	35.04	42.88	38.20	33.84	42.39	28.16	47.65	25.77	52.47	27.55	56.24	33.25
25	35.13	42.56	38.33	33.62	42.55	28.04	47.80	25.75	52.62	27.66	56.35	33.48
26	35.21	42.26	38.45	33.40	42.71	27.92	47.96	25.74	52.76	27.77	56.46	33.73
27	35.28	41.96	38.56	33.17	42.85	27.79	48.12	25.72	52.91	27.88	56.56	33.99
28	35.35	41.67	38.68	32.93	43.00	27.67	48.29	25.70	53.07	28.00	56.65	34.27
29	35.42	41.38	38.80	32.69	43.14	27.54	48.46	25.68	53.24	28.14	56.73	34.56
30	35.49	41.09			43.30	27.39	48.65	25.68	53.40	28.30	56.80	34.84
31	35.55	40.80			43.47	27.24	48.84	25.69	53.55	28.49	56.85	35.10
32	35.61	40.50			43.64	27.10			53.69	28.69		

272 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

44 G Octantis. Mag. 6.3

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	19 41	81 32	19 41	81 32	19 41	81 32	19 41	81 32	19 41	81 32	19 41	81 32
1	56.85	35.10	57.84	43.63	56.38	51.81	52.99	56.84	48.67	57.08	45.30	52.05
2	56.90	35.35	57.84	43.89	56.30	52.05	52.84	56.96	48.51	56.99	45.21	51.79
3	56.96	35.59	57.85	44.15	56.22	52.30	52.70	57.08	48.36	56.89	45.13	51.52
4	57.02	35.81	57.86	44.44	56.13	52.55	52.56	57.18	48.22	56.77	45.06	51.24
5	57.08	36.03	57.85	44.73	56.03	52.79	52.40	57.26	48.08	56.64	45.00	50.97
6	57.15	36.28	57.84	45.04	55.93	53.02	52.24	57.33	47.95	56.50	44.95	50.70
7	57.23	36.54	57.82	45.34	55.81	53.25	52.08	57.39	47.83	56.35	44.90	50.44
8	57.31	36.81	57.79	45.65	55.69	53.47	51.93	57.44	47.72	56.21	44.84	50.20
9	57.39	37.09	57.75	45.96	55.57	53.67	51.79	57.47	47.62	56.07	44.79	49.96
10	57.45	37.38	57.71	46.27	55.46	53.85	51.65	57.48	47.52	55.94	44.73	49.73
11	57.50	37.68	57.66	46.56	55.34	54.02	51.52	57.49	47.41	55.83	44.66	49.49
12	57.54	37.99	57.60	46.84	55.23	54.18	51.40	57.51	47.30	55.72	44.59	49.23
13	57.57	38.29	57.54	47.11	55.12	54.33	51.28	57.54	47.18	55.61	44.52	48.95
14	57.59	38.59	57.49	47.36	55.02	54.49	51.16	57.58	47.05	55.48	44.45	48.65
15	57.61	38.88	57.45	47.60	54.93	54.66	51.03	57.63	46.91	55.33	44.39	48.34
16	57.63	39.16	57.40	47.84	54.83	54.84	50.89	57.68	46.78	55.15	44.35	48.01
17	57.65	39.43	57.36	48.09	54.73	55.03	50.74	57.71	46.66	54.96	44.32	47.68
18	57.67	39.69	57.32	48.34	54.62	55.22	50.59	57.73	46.55	54.75	44.30	47.36
19	57.70	39.94	57.28	48.61	54.50	55.42	50.43	57.72	46.45	54.53	44.28	47.05
20	57.73	40.20	57.24	48.88	54.37	55.60	50.28	57.69	46.35	54.31	44.27	46.76
21	57.76	40.45	57.20	49.17	54.24	55.76	50.13	57.64	46.26	54.10	44.26	46.48
22	57.80	40.73	57.15	49.47	54.10	55.89	49.99	57.57	46.18	53.90	44.23	46.21
23	57.85	41.01	57.08	49.76	53.97	56.01	49.86	57.50	46.10	53.71	44.20	45.93
24	57.89	41.32	57.00	50.03	53.84	56.10	49.74	57.44	46.01	53.53	44.17	45.64
25	57.91	41.64	56.91	50.28	53.71	56.19	49.62	57.39	45.91	53.35	44.14	45.35
26	57.92	41.96	56.83	50.52	53.59	56.28	49.50	57.35	45.81	53.17	44.10	45.06
27	57.92	42.27	56.75	50.74	53.47	56.38	49.38	57.31	45.71	52.97	44.06	44.75
28	57.91	42.57	56.67	50.94	53.36	56.49	49.24	57.27	45.61	52.76	44.03	44.44
29	57.89	42.86	56.59	51.15	53.25	56.61	49.11	57.23	45.50	52.53	44.01	44.10
30	57.87	43.13	56.52	51.36	53.13	56.73	48.96	57.19	45.40	52.30	44.00	43.76
31	57.85	43.39	56.45	51.58	52.99	56.84	48.82	57.14	45.30	52.05	44.00	43.41
32	57.84	43.63	56.38	51.81			48.67	57.08			44.01	43.06

Mean R.A. 19^h 41^m 43^s.924 Mean Dec. — 81° 32' 54".51 Sec δ 6.804 Tan δ — 6.730

APPARENT PLACES OF STARS, 1922. 273

AT UPPER TRANSIT AT GREENWICH.

48 G Octantis. Mag. 7.1

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	20 23	84 40	20 23	84 40	20 24	84 40	20 24	84 40	20 24	84 40	20 24	84 40
1	58 ^s .90	32 ^s .70	59.40	21 ^s .85	3.18	12 ^s .79	9.88	5 ^s .35	17.74	2 ^s .04	25.60	3.32
2	58.83	32.42	59.46	21.50	3.34	12.50	10.14	5.14	18.03	2.00	25.82	3.47
3	58.77	32.12	59.53	21.15	3.50	12.21	10.42	4.95	18.32	1.99	26.03	3.62
4	58.71	31.81	59.60	20.79	3.68	11.90	10.70	4.78	18.60	2.00	26.22	3.76
5	58.65	31.50	59.70	20.42	3.87	11.58	10.98	4.62	18.86	2.01	26.42	3.88
6	58.59	31.17	59.81	20.04	4.09	11.27	11.25	4.48	19.11	2.02	26.62	3.99
7	58.55	30.83	59.94	19.67	4.32	10.97	11.52	4.36	19.35	2.03	26.83	4.10
8	58.51	30.47	60.08	19.32	4.55	10.70	11.78	4.24	19.58	2.03	27.06	4.21
9	58.48	30.10	60.24	18.99	4.78	10.45	12.01	4.13	19.83	2.01	27.29	4.33
10	58.47	29.73	60.39	18.67	5.00	10.22	12.25	4.00	20.08	1.99	27.52	4.46
11	58.48	29.36	60.52	18.36	5.21	9.99	12.49	3.85	20.34	1.96	27.76	4.62
12	58.50	29.00	60.64	18.06	5.41	9.76	12.73	3.69	20.60	1.94	27.98	4.79
13	58.54	28.66	60.76	17.76	5.60	9.52	12.97	3.54	20.88	1.94	28.19	4.97
14	58.58	28.33	60.87	17.44	5.78	9.27	13.23	3.38	21.17	1.96	28.39	5.17
15	58.61	28.01	60.97	17.10	5.98	9.01	13.51	3.23	21.45	1.99	28.58	5.38
16	58.63	27.69	61.09	16.76	6.19	8.73	13.80	3.11	21.71	2.04	28.77	5.59
17	58.63	27.38	61.21	16.41	6.40	8.46	14.09	2.99	21.97	2.11	28.94	5.79
18	58.63	27.05	61.36	16.06	6.63	8.19	14.37	2.90	22.22	2.19	29.10	5.98
19	58.63	26.70	61.53	15.71	6.87	7.93	14.64	2.83	22.46	2.26	29.26	6.17
20	58.63	26.33	61.70	15.37	7.12	7.69	14.91	2.77	22.69	2.33	29.42	6.35
21	58.64	25.95	61.87	15.06	7.37	7.47	15.17	2.71	22.92	2.41	29.59	6.53
22	58.68	25.57	62.05	14.75	7.62	7.27	15.41	2.66	23.14	2.49	29.77	6.70
23	{ 58.73 } { 58.79 }	{ 25.20 } { 24.83 }	62.22	14.46	7.86	7.07	15.66	2.60	23.37	2.56	29.95	6.88
24	58.86	24.47	62.39	14.18	8.09	6.89	15.90	2.54	23.59	2.61	30.14	7.06
25	58.93	24.11	62.56	13.91	8.32	6.71	16.15	2.47	23.82	2.66	30.34	7.26
26	59.01	23.77	62.72	13.64	8.54	6.54	16.39	2.40	24.06	2.71	30.53	7.48
27	59.09	23.45	62.87	13.36	8.76	6.36	16.64	2.32	24.31	2.77	30.72	7.71
28	59.16	23.13	63.03	13.07	8.98	6.16	16.89	2.24	24.58	2.85	30.89	7.96
29	59.22	22.82	63.18	12.79	9.19	5.97	17.16	2.16	24.85	2.95	31.05	8.23
30	59.28	22.50			9.41	5.76	17.44	2.09	25.11	3.05	31.18	8.49
31	59.34	22.17			9.64	5.56	17.74	2.04	25.36	3.18	31.31	8.73
32	59.40	21.85			9.88	5.35			25.60	3.32		

274 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

48 G Octantis. Mag. 7.1

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	°	h m	°	h m	°	h m	°	h m	°	h m	°
	20 24	84 40	20 24	84 40	20 24	84 40	20 24	84 40	20 24	84 40	20 24	84 40
	s	s	s	s	s	s	s	s	s	s	s	s
1	31.31	8.73	33.95	17.08	32.70	25.96	28.03	32.42	21.20	34.36	15.11	30.65
2	31.42	8.96	33.98	17.34	32.61	26.24	27.83	32.59	20.96	34.33	14.93	30.43
3	31.54	9.18	34.02	17.61	32.51	26.52	27.61	32.76	20.71	34.28	14.76	30.20
4	31.67	9.39	34.05	17.89	32.40	26.81	27.38	32.92	20.47	34.22	14.60	29.95
5	31.80	9.60	34.08	18.19	32.28	27.10	27.15	33.07	20.23	34.15	14.45	29.70
6	31.94	9.82	34.10	18.51	32.14	27.38	26.91	33.19	20.01	34.06	14.33	29.45
7	32.09	10.05	34.11	18.84	31.99	27.65	26.68	33.30	19.79	33.96	14.21	29.22
8	32.24	10.30	34.11	19.16	31.84	27.91	26.45	33.40	19.59	33.86	14.09	28.99
9	32.38	10.57	34.09	19.49	31.67	28.15	26.23	33.49	19.40	33.77	13.97	28.78
10	32.51	10.85	34.06	19.81	31.51	28.39	26.02	33.56	19.22	33.69	13.83	28.57
11	32.63	11.14	34.02	20.11	31.35	28.61	25.81	33.63	19.03	33.62	13.69	28.35
12	32.74	11.43	33.97	20.42	31.20	28.82	25.61	33.70	18.83	33.55	13.54	28.12
13	32.82	11.72	33.92	20.72	31.05	29.02	25.43	33.78	18.62	33.48	13.38	27.86
14	32.90	12.01	33.87	21.00	30.92	29.22	25.24	33.87	18.39	33.39	13.24	27.59
15	32.98	12.30	33.82	21.27	30.80	29.42	25.04	33.96	18.16	33.29	13.10	27.30
16	33.04	12.57	33.78	21.53	30.67	29.63	24.83	34.06	17.93	33.17	12.98	26.99
17	33.11	12.84	33.75	21.80	30.53	29.86	24.59	34.15	17.71	33.02	12.88	26.68
18	33.17	13.10	33.72	22.07	30.38	30.10	24.35	34.22	17.50	32.86	12.79	26.37
19	33.24	13.35	33.70	22.35	30.22	30.35	24.11	34.28	17.30	32.68	12.71	26.08
20	33.33	13.60	33.67	22.64	30.04	30.58	23.86	34.31	17.12	32.49	12.64	25.79
21	33.42	13.85	33.64	22.95	29.85	30.79	23.62	34.33	16.94	32.32	12.57	25.51
22	33.51	14.11	33.60	23.27	29.65	30.98	23.38	34.32	16.78	32.16	12.49	25.25
23	33.60	14.40	33.53	23.59	29.45	31.16	23.17	34.31	16.61	32.01	12.40	24.98
24	33.69	14.70	33.44	23.89	29.25	31.31	22.96	34.29	16.44	31.86	12.30	24.71
25	33.77	15.01	33.34	24.18	29.07	31.45	22.77	34.30	16.27	31.72	12.20	24.43
26	33.83	15.33	33.23	24.45	28.89	31.59	22.57	34.30	16.09	31.57	12.10	24.15
27	33.87	15.65	33.13	24.71	28.72	31.74	22.37	34.31	15.89	31.41	12.00	23.85
28	33.89	15.97	33.03	24.96	28.56	31.89	22.15	34.33	15.69	31.24	11.90	23.53
29	33.91	16.27	32.94	25.20	28.39	32.06	21.92	34.35	15.50	31.06	11.82	23.21
30	33.91	16.56	32.86	25.44	28.22	32.24	21.69	34.36	15.30	30.86	11.75	22.87
31	33.92	16.82	32.78	25.69	28.03	32.42	21.45	34.37	15.11	30.65	11.69	22.52
32	33.95	17.08	32.70	25.96			21.20	34.36			11.65	22.17

Mean R.A. 20^h 24^m 14^s.606 Mean Dec. — 84° 40' 32".37 Sec δ 10.777 Tan δ — 10.731

APPARENT PLACES OF STARS, 1922. 275

AT UPPER TRANSIT AT GREENWICH.

v Octantis. Mag. 5.7

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	° ' "	h m	° ' "	h m	° ' "	h m	° ' "	h m	° ' "	h m	° ' "
	22 16	86 21	22 16	86 21	22 16	86 21	22 16	86 21	22 16	86 21	22 17	86 21
1	49 ^s ·53	67 ^s ·38	44 ^s ·63	57 ^s ·86	44 ^s ·76	47 ^s ·10	49 ^s ·66	36 ^s ·20	58 ^s ·17	28 ^s ·30	9 ^s ·05	24 ^s ·54
2	49·31	67·16	44·53	57·52	44·82	46·74	49·89	35·87	58·53	28·09	9·41	24·53
3	49·09	66·94	44·43	57·17	44·88	46·36	50·15	35·53	58·90	27·90	9·76	24·52
4	48·86	66·71	44·33	56·81	44·95	45·98	50·43	35·20	59·27	27·73	10·08	24·51
5	48·62	66·47	44·25	56·44	45·04	45·59	50·72	34·89	59·62	27·57	10·40	24·50
6	48·37	66·21	44·18	56·05	45·16	45·19	51·01	34·60	59·96	27·42	10·71	24·47
7	48·12	65·93	44·13	55·66	45·29	44·79	51·29	34·32	60·28	27·27	11·05	24·43
8	47·89	65·65	44·11	55·26	45·45	44·40	51·55	34·06	60·58	27·11	11·39	24·40
9	47·66	65·35	44·11	54·86	45·63	44·02	51·80	33·79	60·88	26·95	11·75	24·37
10	47·45	65·03	44·14	54·48	45·80	43·67	52·04	33·51	61·19	26·77	12·13	24·35
11	47·27	64·71	44·17	54·11	45·95	43·33	52·26	33·23	61·51	26·59	12·51	24·35
12	47·12	64·38	44·18	53·76	46·09	43·00	52·49	32·94	61·85	26·41	12·89	24·37
13	46·98	64·06	44·18	53·41	46·22	42·66	52·73	32·65	62·21	26·25	13·26	24·40
14	46·85	63·75	44·16	53·07	46·34	42·32	53·00	32·35	62·59	26·09	13·63	24·45
15	46·72	63·45	44·14	52·72	46·45	41·96	53·29	32·05	62·97	25·95	13·98	24·50
16	46·57	63·16	44·11	52·34	46·57	41·58	53·59	31·76	63·35	25·83	14·31	24·57
17	46·41	62·88	44·08	51·96	46·71	41·21	53·91	31·49	63·72	25·73	14·63	24·65
18	46·24	62·59	44·07	51·56	46·88	40·83	54·23	31·23	64·08	25·63	14·94	24·72
19	46·06	62·29	44·08	51·16	47·06	40·45	54·55	30·99	64·44	25·55	15·25	24·78
20	45·88	61·97	44·11	50·75	47·27	40·08	54·87	30·76	64·78	25·47	15·56	24·84
21	45·70	61·62	{44·17}	{49·35}	47·48	39·73	55·18	30·54	65·11	25·39	15·86	24·89
22	45·55	61·27	44·31	49·60	47·70	39·40	55·47	30·33	65·43	25·30	16·17	24·94
23	45·41	60·91	44·38	49·23	47·91	39·08	55·75	30·12	65·75	25·22	16·50	24·99
24	45·30	60·54	44·46	48·87	48·12	38·76	56·04	29·90	66·08	25·13	16·84	25·04
25	45·20	60·17	44·53	48·51	48·32	38·44	56·32	29·68	66·40	25·03	17·20	25·11
26	45·12	59·82	44·60	48·16	48·52	38·14	56·60	29·46	66·75	24·93	17·56	25·19
27	45·05	59·49	44·66	47·82	48·71	37·84	56·89	29·24	67·11	24·83	17·92	25·29
28	44·97	59·17	44·71	47·46	48·89	37·53	57·18	29·01	67·48	24·74	18·28	25·40
29	44·89	58·84	44·76	47·10	49·08	37·21	57·49	28·77	67·88	24·66	18·61	25·53
30	44·81	58·52			49·26	36·88	57·82	28·53	68·27	24·60	18·92	25·67
31	44·73	58·20			49·45	36·54	58·17	28·30	68·67	24·56	19·20	25·82
32	44·63	57·86			49·66	36·20			69·05	24·54		

Mean R.A. 22^h 17^m 9^s·823 Mean Dec. — 86° 21' 56"·56 Sec δ 15·776 Tan δ — 15·744

276 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

ν Octantis. Mag. 5.7

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.	R.A.	Dec. S.
	h m	^s	h m	^s	h m	^s	h m	^s	h m	^s	h m	^s
	22 17	86 21	22 17	86 21	22 17	86 21	22 17	86 21	22 17	86 21	22 16	86 21
1	19.20	25.82	26.84	31.71	29.71	40.57	26.87	49.45	18.90	55.69	68.97	56.50
2	19.47	25.95	27.01	31.93	29.73	40.88	26.69	49.73	18.57	55.83	68.61	56.42
3	19.73	26.07	27.19	32.16	29.75	41.20	26.49	50.02	18.23	55.95	68.26	56.33
4	20.00	26.18	27.39	32.40	29.75	41.52	26.27	50.31	17.87	56.05	67.93	56.23
5	20.28	26.29	27.58	32.65	29.73	41.86	26.05	50.58	17.52	56.15	67.61	56.11
6	20.57	26.41	27.77	32.92	29.69	42.20	25.81	50.84	17.18	56.22	67.31	55.99
7	20.88	26.54	27.95	33.20	29.63	42.53	25.57	51.10	16.86	56.28	67.03	55.88
8	21.20	26.68	28.10	33.49	29.56	42.86	25.32	51.34	16.55	56.33	66.76	55.77
9	21.52	26.82	28.24	33.80	29.48	43.19	25.07	51.56	16.24	56.38	66.49	55.66
10	21.83	26.99	28.37	34.11	29.38	43.50	24.83	51.77	15.95	56.45	66.20	55.56
11	22.13	27.18	28.48	34.41	29.29	43.79	24.59	51.97	15.66	56.51	65.90	55.45
12	22.41	27.37	28.57	34.71	29.20	44.08	24.37	52.17	15.36	56.59	65.58	55.34
13	22.68	27.57	28.65	35.00	29.11	44.37	24.16	52.37	15.05	56.67	65.24	55.22
14	22.94	27.78	28.73	35.29	29.04	44.65	23.95	52.58	14.72	56.74	64.90	55.07
15	23.18	27.98	28.80	35.58	28.97	44.93	23.74	52.81	14.37	56.80	64.57	54.90
16	23.41	28.19	28.88	35.85	28.92	45.21	23.52	53.03	14.00	56.84	64.25	54.71
17	23.62	28.39	28.97	36.11	28.87	45.50	23.27	53.26	13.63	56.85	63.95	54.52
18	23.84	28.58	29.08	36.38	28.80	45.81	22.99	53.48	13.26	56.84	63.67	54.32
19	24.06	28.76	29.19	36.65	28.70	46.13	22.69	53.68	12.91	56.82	63.42	54.12
20	24.29	28.95	29.31	36.93	28.58	46.45	22.38	53.87	12.57	56.78	63.18	53.93
21	24.53	29.13	29.42	37.24	28.43	46.76	22.08	54.04	12.26	56.75	62.93	53.75
22	24.79	29.31	29.51	37.56	28.27	47.06	21.77	54.19	11.96	56.73	62.68	53.57
23	25.06	29.51	29.58	37.88	28.09	47.35	21.48	54.33	11.67	56.71	62.42	53.39
24	25.32	29.73	29.63	38.21	27.92	47.62	21.20	54.47	11.36	56.70	62.15	53.21
25	25.58	29.97	29.65	38.54	27.75	47.87	20.94	54.60	11.05	56.69	61.88	53.03
26	25.81	30.22	29.65	38.85	27.59	48.12	20.68	54.75	10.73	56.69	61.60	52.83
27	26.02	30.47	29.64	39.15	27.44	48.37	20.41	54.90	10.40	56.68	61.31	52.63
28	26.21	30.74	29.64	39.44	27.31	48.62	20.13	55.07	10.05	56.65	61.02	52.42
29	26.38	31.00	29.64	39.71	27.18	48.89	19.85	55.23	9.70	56.62	60.74	52.19
30	26.53	31.25	29.65	39.99	27.03	49.17	19.55	55.39	9.34	56.57	60.48	51.95
31	26.68	31.49	29.68	40.27	26.87	49.45	19.23	55.55	8.97	56.50	60.23	51.69
32	26.84	31.71	29.71	40.57			18.90	55.69			59.98	51.41

APPARENT PLACES OF STARS, 1922. 277

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Andromedæ. Mag. 2.2		β Cassiopeiæ. Mag. 2.4		γ Pegasi. Mag. 2.9	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 0 4	28 39	h m 0 4	58 43	h m 0 9	14 44
Jan. 0.2	21.545 ¹⁴⁸	45.52 ¹⁰⁰	61.352 ³²³	28.78 ⁸³	13.316 ¹²⁵	65.22 ⁹⁰
10.2	21.397 ¹⁴²	44.52 ¹²¹	61.029 ³⁰⁸	27.95 ¹²⁸	13.191 ¹²⁰	64.32 ¹⁰²
20.2	21.255 ¹³²	43.31 ¹⁴⁷	60.721 ²⁸⁴	26.67 ¹⁷⁷	13.071 ¹¹⁴	63.30 ¹⁰⁸
30.1	21.123 ¹¹²	41.84 ¹⁵⁹	60.437 ²⁴⁹	24.90 ²¹⁹	12.957 ⁹⁵	62.22 ¹¹¹
Feb. 9.1	21.011 ⁸⁷	40.25 ¹⁶⁹	60.188 ¹⁹⁹	22.71 ²⁴⁸	12.862 ⁷⁴	61.11 ¹⁰⁸
19.1	20.924 ⁵⁴	38.56 ¹⁶⁹	59.989 ¹⁴²	20.23 ²⁶⁷	12.788 ⁴⁸	60.03 ¹⁰¹
Mar. 1.1	20.870 ²¹	36.87 ¹⁶³	59.847 ⁷¹	17.56 ²⁸⁰	12.740 ¹⁹	59.02 ⁸⁸
11.0	20.849 ²³	35.24 ¹⁴⁶	59.776 ²	14.76 ²⁷⁵	12.721 ¹⁹	58.14 ⁶⁹
21.0	20.872 ⁶⁷	33.78 ¹³⁰	59.778 ⁸³	12.01 ²⁶⁶	12.740 ⁶⁰	57.45 ⁴⁶
31.0	20.939 ¹¹³	32.48 ⁹⁹	59.861 ¹⁶³	9.35 ²³⁷	12.800 ¹⁰¹	56.99 ¹⁹
Apr. 10.0	21.052 ¹⁵⁸	31.49 ⁶⁷	60.024 ²³⁸	6.98 ²⁰⁷	12.901 ¹⁴¹	56.80 ¹⁰
19.9	21.210 ²⁰⁶	30.82 ²⁸	60.262 ³¹¹	4.91 ¹⁶⁵	13.042 ¹⁸⁶	56.90 ⁴³
29.9	21.416 ²⁴³	30.54 ⁹	60.573 ³⁷¹	3.26 ¹²²	13.228 ²²¹	57.33 ⁷³
May 9.9	21.659 ²⁷⁷	30.63 ⁵¹	60.944 ⁴²³	2.04 ⁶⁹	13.449 ²⁵³	58.06 ¹⁰⁴
19.8	21.936 ³⁰⁴	31.14 ⁸⁶	61.367 ⁴⁶⁴	1.35 ¹⁵	13.702 ²⁷⁸	59.10 ¹³³
29.8	22.240 ³²³	32.00 ¹²⁴	61.831 ⁴⁸⁹	1.20 ³⁶	13.980 ²⁹⁹	60.43 ¹⁵⁶
June 8.8	22.563 ³³⁷	33.24 ¹⁵⁴	62.320 ⁵⁰¹	1.56 ⁸⁷	14.279 ³¹⁰	61.99 ¹⁷⁸
18.8	22.900 ³³⁴	34.78 ¹⁸⁵	62.821 ⁵⁰⁰	2.43 ¹³⁸	14.589 ³¹³	63.77 ¹⁹⁶
28.7	23.234 ³²⁷	36.63 ²⁰⁵	63.321 ⁴⁸⁷	3.81 ¹⁸³	14.902 ³⁰⁹	65.73 ²⁰⁵
July 8.7	23.561 ³¹⁰	38.68 ²²⁷	63.808 ⁴⁵⁹	5.64 ²²¹	15.211 ²⁹³	67.78 ²¹⁰
18.7	23.871 ²⁸⁷	40.95 ²³⁸	64.267 ⁴²²	7.85 ²⁵⁹	15.504 ²⁷²	69.88 ²⁰⁹
28.7	24.158 ²⁵⁷	43.33 ²⁴⁴	64.689 ³⁷⁵	10.44 ²⁸⁷	15.776 ²⁴⁷	71.97 ²⁰⁴
Aug. 7.6	24.415 ²²²	45.77 ²⁴⁵	65.064 ³²⁰	13.31 ³⁰⁹	16.023 ²¹²	74.01 ¹⁹⁴
17.6	24.637 ¹⁸⁰	48.22 ²⁴¹	65.384 ²⁶²	16.40 ³²⁵	16.235 ¹⁷⁷	75.95 ¹⁸²
27.6	24.817 ¹⁴³	50.63 ²³¹	65.646 ¹⁹⁹	19.65 ³³⁴	16.412 ¹⁴²	77.77 ¹⁶⁴
Sept. 6.5	24.960 ¹⁰²	52.94 ²¹⁹	65.845 ¹³⁷	22.99 ³³⁵	16.554 ¹⁰²	79.41 ¹⁴⁵
16.5	25.062 ⁵⁹	55.13 ²⁰²	65.982 ⁷¹	26.34 ³³⁰	16.656 ⁶³	80.86 ¹²⁵
26.5	25.121 ²⁴	57.15 ¹⁸⁰	66.053 ¹¹	29.64 ³¹⁷	16.719 ³⁰	82.11 ¹⁰¹
Oct. 6.5	25.145 ¹³	58.95 ¹⁵⁸	66.064 ⁵¹	32.81 ²⁹⁹	16.749 ⁶	83.12 ⁷⁸
16.4	25.132 ⁴⁴	60.53 ¹³³	66.013 ¹⁰⁷	35.80 ²⁷⁵	16.743 ³¹	83.90 ⁵⁶
26.4	25.088 ⁷⁴	61.86 ¹⁰⁴	65.906 ¹⁵⁹	38.55 ²⁴³	16.712 ⁵⁹	84.46 ³³
Nov. 5.4	25.014 ⁹⁶	62.90 ⁷⁵	65.747 ²⁰³	40.98 ²⁰⁶	16.653 ⁷⁹	84.79 ¹¹
15.4	24.918 ¹¹⁶	63.65 ⁴³	65.544 ²⁴⁴	43.04 ¹⁶¹	16.574 ⁹⁸	84.90 ⁸
25.3	24.802 ¹³²	64.08 ¹⁴	65.300 ²⁷⁸	44.65 ¹¹⁴	16.476 ¹¹¹	84.82 ³⁰
Dec. 5.3	24.670 ¹⁴¹	64.22 ²⁰	65.022 ³⁰³	45.79 ⁶²	16.365 ¹¹⁸	84.52 ⁴⁹
15.3	24.529 ¹⁴⁷	64.02 ⁵⁰	64.719 ³¹⁸	46.41 ⁹	16.247 ¹²⁶	84.03 ⁶⁵
25.2	24.382 ¹⁵¹	63.52 ⁸³	64.401 ³²⁵	46.50 ⁴⁶	16.121 ¹²⁷	83.38 ⁸³
35.2	24.231	62.69	64.076	46.04	15.994	82.55
Mean Place	21.126	35.38	60.365	10.58	13.028	59.95
Sec δ , Tan δ	1.140	+0.547	1.926	+1.646	1.034	+0.263
L α , L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω α , ω δ	-0.04	0.0	-0.11	0.0	-0.02	0.0
AUTHORITY	A. E.		A. E.		A. E.	

278 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ι Ceti. Mag. 3·8		ζ Tucanæ. Mag. 4·3		δ Piscium. Mag. 5·6	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 0 15	° ' 15	h m 0 15	° ' 19	h m 0 16	° ' 45
Jan. 0·2	27·298 ¹²²	25·77 ⁶¹	59·81 ⁴¹	76·04 ⁷⁵	35·245 ¹²⁰	28·43 ⁸²
10·2	27·176 ¹¹⁶	26·38 ⁴⁷	59·40 ³⁹	75·29 ¹²⁸	35·125 ¹¹⁷	27·61 ⁸⁵
20·2	27·060 ¹⁰⁷	26·85 ³⁰	59·01 ³⁴	74·01 ¹⁸²	35·008 ¹⁰⁹	26·76 ⁸⁶
30·2	26·953 ⁹³	27·15 ¹²	58·67 ³⁰	72·19 ²²⁶	34·899 ⁹⁵	25·90 ⁸²
Feb. 9·1	26·860 ⁷²	27·27 ⁸	58·37 ²⁴	69·93 ²⁶⁹	34·804 ⁷⁷	25·08 ⁷⁵
19·1	26·788 ⁵⁰	27·19 ³¹	58·13 ¹⁷	67·24 ³⁰²	34·727 ⁵²	24·33 ⁶⁴
Mar. 1·1	26·738 ¹⁹	26·88 ⁵²	57·96 ¹¹	64·22 ³²⁸	34·675 ²²	23·69 ⁴⁷
11·0	26·719 ¹²	26·36 ⁷⁵	57·85 ³	60·94 ³⁴⁹	34·653 ¹¹	23·22 ²⁸
21·0	26·731 ⁵²	25·61 ¹⁰¹	57·82 ⁵	57·45 ³⁵⁹	34·664 ⁵¹	22·94 ⁴
31·0	26·783 ⁹⁰	24·60 ¹²⁴	57·87 ¹⁴	53·86 ³⁶³	34·715 ⁹¹	22·90 ²¹
Apr. 10·0	26·873 ¹³¹	23·36 ¹⁴⁵	58·01 ²¹	50·23 ³⁵⁹	34·806 ¹³²	23·11 ⁴⁹
19·9	27·004 ¹⁶⁹	21·91 ¹⁶⁴	58·22 ³⁰	46·64 ³⁴⁵	34·938 ¹⁷³	23·60 ⁷⁸
29·9	27·173 ²⁰⁸	20·27 ¹⁸³	58·52 ³⁷	43·19 ³²⁸	35·111 ²¹⁰	24·38 ¹⁰⁵
May 9·9	27·381 ²⁴¹	18·44 ¹⁹⁶	58·89 ⁴³	39·91 ³⁰⁰	35·321 ²⁴³	25·43 ¹³⁰
19·9	27·622 ²⁶⁴	16·48 ²⁰⁵	59·32 ⁵⁰	36·91 ²⁶⁸	35·564 ²⁷²	26·73 ¹⁵³
29·8	27·886 ²⁹⁰	14·43 ²⁰⁸	59·82 ⁵⁵	34·23 ²²⁷	35·836 ²⁹⁰	28·26 ¹⁷³
June 8·8	28·176 ³⁰¹	12·35 ²⁰⁴	60·37 ⁵⁷	31·96 ¹⁸³	36·126 ³⁰⁴	29·99 ¹⁸⁷
18·8	28·477 ³⁰⁷	10·31 ¹⁹⁸	60·94 ⁶⁰	30·13 ¹³³	36·430 ³⁰⁸	31·86 ¹⁹⁶
28·7	28·784 ³⁰⁶	8·33 ¹⁸⁵	61·54 ⁶⁰	28·80 ⁷⁸	36·738 ³⁰⁴	33·82 ²⁰⁰
July 8·7	29·090 ²⁹²	6·48 ¹⁶⁹	62·14 ⁵⁹	28·02 ²⁵	37·042 ²⁹²	35·82 ¹⁹⁹
18·7	29·382 ²⁷⁴	4·79 ¹⁴⁵	62·73 ⁵⁵	27·77 ³²	37·334 ²⁷²	37·81 ¹⁹³
28·7	29·656 ²⁵³	3·34 ¹²²	63·28 ⁵¹	28·09 ⁸⁵	37·606 ²⁴⁸	39·74 ¹⁸²
Aug. 7·6	29·909 ²²⁰	2·12 ⁹⁴	63·79 ⁴⁵	28·94 ¹³⁷	37·854 ²¹⁷	41·56 ¹⁶⁶
17·6	30·129 ¹⁸²	1·18 ⁶²	64·24 ³⁸	30·31 ¹⁸³	38·071 ¹⁸¹	43·22 ¹⁴⁸
27·6	30·311 ¹⁴⁹	0·56 ³⁷	64·62 ²⁹	32·14 ²²⁴	38·252 ¹⁴⁶	44·70 ¹²⁸
Sept. 6·6	30·460 ¹⁰⁷	0·19 ⁵	64·91 ²¹	34·38 ²⁵⁶	38·398 ¹⁰⁸	45·98 ¹⁰⁵
16·5	30·567 ⁷¹	0·14 ¹⁸	65·12 ¹¹	36·94 ²⁷⁹	38·506 ⁷¹	47·03 ⁸²
26·5	30·638 ³⁴	0·32 ⁴⁶	65·23 ¹	39·73 ²⁹¹	38·577 ³⁶	47·85 ⁵⁹
Oct. 6·5	30·672 ¹	0·78 ⁶³	65·24 ⁸	42·64 ²⁹²	38·613 ³	48·44 ³⁶
16·4	30·671 ²⁸	1·41 ⁸⁰	65·16 ¹⁷	45·56 ²⁸⁰	38·616 ²⁶	48·80 ¹⁶
26·4	30·643 ⁵⁸	2·21 ⁸⁹	64·99 ²⁴	48·36 ²⁵⁸	38·590 ⁵⁰	48·96 ²
Nov. 5·4	30·585 ⁷⁹	3·10 ⁹⁵	64·75 ³¹	50·94 ²²⁶	38·540 ⁷²	48·94 ²¹
15·4	30·506 ⁹³	4·05 ⁹⁷	64·44 ³⁶	53·20 ¹⁸³	38·468 ⁸⁹	48·73 ³⁶
25·3	30·413 ¹⁰⁸	5·02 ⁹⁷	64·08 ³⁹	55·03 ¹³⁵	38·379 ¹⁰²	48·37 ⁵⁰
Dec. 5·3	30·305 ¹¹⁷	5·99 ⁸⁹	63·69 ⁴²	56·38 ⁷⁹	38·277 ¹¹³	47·87 ⁶⁰
15·3	30·188 ¹²¹	6·88 ⁸⁰	63·27 ⁴³	57·17 ²²	38·164 ¹¹⁸	47·27 ⁷¹
25·3	30·067 ¹²³	7·68 ⁷²	62·84 ⁴¹	57·39 ³⁸	38·046 ¹²²	46·56 ⁷⁹
35·2	29·944	8·40	62·43	57·01	37·924	45·77
Mean Place	27·243	22·32	61·21	58·10	34·991	25·91
Sec δ, Tan δ	1·013	-0·163	2·396	-2·177	1·009	+0·136
L α, L δ	0·00	+0·4	0·00	+0·4	0·00	+0·4
ω α, ω δ	+0·01	+0·1	+0·15	+0·1	-0·01	+0·1
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 279

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	44 Piscium. Mag. 6.0		β Hydri. Mag. 2.9		α Phœnicis. Mag. 2.4	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m O 2I	° ′ I 30	h m O 2I	° ′ 77 4I	h m O 22	° ′ 42 43
Jan. 0.2	24.421 ¹¹⁹	27.96 ⁷⁶	37.53 ⁹⁰	56.02 ⁹⁵	25.552 ¹⁹⁷	60.45 ³
10.2	24.302 ¹¹⁶	27.20 ⁷²	36.63 ⁸⁵	55.07 ¹⁵⁴	25.355 ¹⁸⁸	60.42 ⁴⁸
20.2	24.186 ¹¹⁰	26.48 ⁶⁶	35.78 ⁷⁷	53.53 ²⁰⁹	25.167 ¹⁷¹	59.94 ⁹¹
30.2	24.076 ⁹⁵	25.82 ⁵⁷	35.01 ⁶⁷	51.44 ²⁵⁵	24.996 ¹⁵¹	59.03 ¹³¹
Feb. 9.1	23.981 ⁷⁹	25.25 ⁴⁴	34.34 ⁵⁶	48.89 ²⁹⁸	24.845 ¹²³	57.72 ¹⁷⁰
19.1	23.902 ⁵⁵	24.81 ³⁰	33.78 ⁴²	45.91 ³³⁰	24.722 ⁸⁸	56.02 ²⁰⁵
Mar. 1.1	23.847 ²⁵	24.51 ¹¹	33.36 ²⁷	42.61 ³⁵⁵	24.634 ⁵³	53.97 ²³³
11.0	23.822 ⁷	24.40 ¹⁰	33.09 ¹³	39.06 ³⁷²	24.581 ⁸	51.64 ²⁵⁷
21.0	23.829 ⁴⁵	24.50 ³³	32.96 ³	35.34 ³⁷⁸	24.573 ³⁸	49.07 ²⁷⁷
31.0	23.874 ⁸⁵	24.83 ⁵⁹	32.99 ¹⁹	31.56 ³⁷⁸	24.611 ⁸⁸	46.30 ²⁹²
Apr. 10.0	23.959 ¹²⁵	25.42 ⁸⁵	33.18 ³⁴	27.78 ³⁶⁹	24.699 ¹³⁷	43.38 ²⁹⁹
19.9	24.084 ¹⁶⁶	26.27 ¹⁰⁹	33.52 ⁴⁹	24.09 ³⁵²	24.836 ¹⁸⁹	40.39 ³⁰²
29.9	24.250 ²⁰⁴	27.36 ¹³⁴	34.01 ⁶³	20.57 ³²⁶	25.025 ²³⁴	37.37 ²⁹⁶
May 9.9	24.454 ²³⁷	28.70 ¹⁵⁵	34.64 ⁷⁶	17.31 ²⁹⁵	25.259 ²⁷⁹	34.41 ²⁸³
19.9	24.691 ²⁶⁵	30.25 ¹⁷²	35.40 ⁸⁷	14.36 ²⁵⁹	25.538 ³¹⁵	31.58 ²⁶⁸
29.8	24.956 ²⁸⁷	31.97 ¹⁸⁶	36.27 ⁹⁶	11.77 ²¹³	25.853 ³⁴⁵	28.90 ²⁴⁰
June 8.8	25.243 ³⁰⁰	33.83 ¹⁹⁵	37.23 ¹⁰³	9.64 ¹⁶⁶	26.198 ³⁶⁶	26.50 ²¹²
18.8	25.543 ³⁰⁵	35.78 ¹⁹⁹	38.26 ¹⁰⁷	7.98 ¹⁰⁸	26.564 ³⁷⁷	24.38 ¹⁷⁵
28.7	25.848 ³⁰²	37.77 ¹⁹⁶	39.33 ¹⁰⁹	6.90 ⁵⁴	26.941 ³⁷⁹	22.63 ¹³⁴
July 8.7	26.150 ²⁹³	39.73 ¹⁸⁹	40.42 ¹⁰⁷	6.36 ²	27.320 ³⁶⁸	21.29 ⁸⁹
18.7	26.443 ²⁷⁴	41.62 ¹⁷⁷	41.49 ¹⁰²	6.38 ⁶¹	27.688 ³⁴⁹	20.40 ⁴²
28.7	26.717 ²⁵⁰	43.39 ¹⁶¹	42.51 ⁹⁴	6.99 ¹¹⁵	28.037 ³²¹	19.98 ⁵
Aug. 7.6	26.967 ²¹⁹	45.00 ¹⁴¹	43.45 ⁸⁴	8.14 ¹⁶⁷	28.358 ²⁸⁵	20.03 ⁵²
17.6	27.186 ¹⁸⁶	46.41 ¹¹⁸	44.29 ⁷¹	9.81 ²¹⁷	28.643 ²⁴⁰	20.55 ⁹⁸
27.6	27.372 ¹⁵⁰	47.59 ⁹⁴	45.00 ⁵⁵	11.98 ²⁵³	28.883 ¹⁹²	21.53 ¹³⁸
Sept. 6.6	27.522 ¹¹²	48.53 ⁶⁹	45.55 ³⁸	14.51 ²⁸⁴	29.075 ¹⁴⁰	22.91 ¹⁷¹
16.5	27.634 ⁷⁵	49.22 ⁴⁴	45.93 ¹⁹	17.35 ³⁰⁶	29.215 ⁸⁶	24.62 ²⁰¹
26.5	27.709 ⁴¹	49.66 ²⁰	46.12 ¹	20.41 ³¹³	29.301 ³³	26.63 ²²³
Oct. 6.5	27.750 ⁷	49.86 ¹	46.13 ¹⁸	23.54 ³¹¹	29.334 ¹⁴	28.86 ²³³
16.4	27.757 ²²	49.85 ²⁰	45.95 ³⁶	26.65 ²⁹³	29.320 ⁶²	31.19 ²³⁴
26.4	27.735 ⁴⁷	49.65 ³⁶	45.59 ⁵¹	29.58 ²⁷⁰	29.258 ¹⁰¹	33.53 ²²⁵
Nov. 5.4	27.688 ⁶⁸	49.29 ⁵⁰	45.08 ⁶⁷	32.28 ²³⁰	29.157 ¹³⁵	35.78 ²⁰⁹
15.4	27.620 ⁸⁶	48.79 ⁶¹	44.41 ⁷⁷	34.58 ¹⁸¹	29.022 ¹⁶⁰	37.87 ¹⁸²
25.3	27.534 ⁹⁹	48.18 ⁶⁸	43.64 ⁸⁶	36.39 ¹³⁰	28.862 ¹⁸¹	39.69 ¹⁵³
Dec. 5.3	27.435 ¹¹¹	47.50 ⁷³	42.78 ⁹¹	37.69 ⁶⁶	28.681 ¹⁹⁴	41.22 ¹¹³
15.3	27.324 ¹¹⁶	46.77 ⁷⁶	41.87 ⁹³	38.35 ⁷	28.487 ¹⁹⁹	42.35 ⁶⁸
25.3	27.208 ¹²⁰	46.01 ⁷⁷	40.94 ⁹¹	38.42 ⁶⁰	28.288 ²⁰⁰	43.03 ²⁷
35.2	27.088	45.24	40.03	37.82	28.088	43.30
Mean Place	24.208	27.87	40.59	36.72	25.974	46.47
Sec δ, Tan δ	1.000	+0.027	4.696	-4.584	1.361	-0.924
L α, L δ	0.00	+0.4	-0.01	+0.4	0.00	+0.4
ω α, ω δ	0.00	+0.1	+0.31	+0.1	+0.06	+0.1
AUTHORITY			A. E.		A. E.	

280 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	12 Ceti. Mag. 6.0		ε Andromedæ. Mag. 4.5		δ Andromedæ. Mag. 3.5	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m	° ′	h m	° ′	h m	° ′
	0 26	4 22	0 34	28 53	0 35	30 25
Jan. 0.2	3.681 ^s ₁₂₁	79.26 ₇₁	26.392 ^s ₁₅₂	27.36 ₇₈	9.823 ^s ₁₅₆	72.65 ₇₈
10.2	3.560 ₁₁₈	79.97 ₆₀	26.240 ₁₅₃	26.58 ₁₀₃	9.667 ₁₅₇	71.87 ₁₀₁
20.2	3.442 ₁₁₁	80.57 ₄₈	26.087 ₁₄₆	25.55 ₁₂₆	9.510 ₁₄₉	70.86 ₁₂₈
30.2	3.331 ₁₀₀	81.05 ₃₁	25.941 ₁₃₄	24.29 ₁₄₃	9.361 ₁₃₈	69.58 ₁₄₆
Feb. 9.1	3.231 ₇₉	81.36 ₁₇	25.807 ₁₁₅	22.86 ₁₅₅	9.223 ₁₁₈	68.12 ₁₅₉
19.1	3.152 ₅₈	81.53 ₃	25.692 ₈₇	21.31 ₁₅₉	9.105 ₈₈	66.53 ₁₆₅
Mar. 1.1	3.094 ₃₁	81.50 ₂₃	25.605 ₅₂	19.72 ₁₅₇	9.017 ₅₃	64.88 ₁₆₄
11.1	3.063 ₂	81.27 ₄₈	25.553 ₁₃	18.15 ₁₄₆	8.964 ₁₄	63.24 ₁₅₄
21.0	3.065 ₄₂	80.79 ₆₈	25.540 ₃₂	16.69 ₁₃₀	8.950 ₃₃	61.70 ₁₃₇
31.0	3.107 ₇₈	80.11 ₉₆	25.572 ₈₀	15.39 ₁₀₆	8.983 ₈₁	60.33 ₁₁₅
Apr. 10.0	3.185 ₁₂₁	79.15 ₁₁₇	25.652 ₁₂₈	14.33 ₇₆	9.064 ₁₂₉	59.18 ₈₄
19.9	3.306 ₁₅₉	77.98 ₁₄₂	25.780 ₁₇₅	13.57 ₄₄	9.193 ₁₇₈	58.34 ₅₁
29.9	3.465 ₁₉₉	76.56 ₁₅₈	25.955 ₂₁₉	13.13 ₇	9.371 ₂₂₂	57.83 ₁₅
May 9.9	3.664 ₂₃₄	74.98 ₁₇₉	26.174 ₂₅₈	13.06 ₃₀	9.593 ₂₆₀	57.68 ₂₂
19.9	3.898 ₂₆₂	73.19 ₁₉₀	26.432 ₂₉₁	13.36 ₆₇	9.853 ₂₉₃	57.90 ₆₂
29.8	4.160 ₂₈₁	71.29 ₁₉₉	26.723 ₃₁₄	14.03 ₁₀₂	10.146 ₃₁₉	58.52 ₉₈
June 8.8	4.441 ₂₉₉	69.30 ₂₀₂	27.037 ₃₃₀	15.05 ₁₃₅	10.465 ₃₃₅	59.50 ₁₃₀
18.8	4.740 ₃₀₅	67.28 ₂₀₀	27.367 ₃₃₇	16.40 ₁₆₄	10.800 ₃₄₂	60.80 ₁₆₁
28.8	5.045 ₃₀₄	65.28 ₁₉₂	27.704 ₃₃₄	18.04 ₁₈₈	11.142 ₃₃₉	62.41 ₁₈₆
July 8.7	5.349 ₂₉₃	63.36 ₁₇₉	28.038 ₃₂₂	19.92 ₂₀₈	11.481 ₃₂₆	64.27 ₂₀₈
18.7	5.642 ₂₇₆	61.57 ₁₆₃	28.360 ₃₀₄	22.00 ₂₂₁	11.807 ₃₀₉	66.35 ₂₂₄
28.7	5.918 ₂₅₆	59.94 ₁₄₀	28.664 ₂₇₈	24.21 ₂₃₀	12.116 ₂₈₂	68.59 ₂₃₂
Aug. 7.6	6.174 ₂₂₅	58.54 ₁₁₈	28.942 ₂₄₇	26.51 ₂₃₃	12.398 ₂₅₁	70.91 ₂₃₈
17.6	6.399 ₁₈₈	57.36 ₈₉	29.189 ₂₁₂	28.84 ₂₃₂	12.649 ₂₁₅	73.29 ₂₃₆
27.6	6.587 ₁₅₆	56.47 ₆₂	29.401 ₁₇₃	31.16 ₂₂₄	12.864 ₁₇₇	75.65 ₂₃₂
Sept. 6.6	6.743 ₁₁₇	55.85 ₃₆	29.574 ₁₃₄	33.40 ₂₁₄	13.041 ₁₃₇	77.97 ₂₂₁
16.5	6.860 ₈₁	55.49 ₈	29.708 ₉₅	35.54 ₁₉₉	13.178 ₉₈	80.18 ₂₀₇
26.5	6.941 ₄₄	55.41 ₁₅	29.803 ₅₇	37.53 ₁₈₁	13.276 ₆₁	82.25 ₁₉₁
Oct. 6.5	6.985 ₁₂	55.56 ₃₆	29.860 ₂₁	39.34 ₁₆₁	13.337 ₂₂	84.16 ₁₇₁
16.5	6.997 ₁₆	55.92 ₅₄	29.881 ₁₂	40.95 ₁₃₈	13.359 ₁₀	85.87 ₁₄₇
26.4	6.981 ₄₆	56.46 ₆₆	29.869 ₄₁	42.33 ₁₁₄	13.349 ₄₂	87.34 ₁₂₄
Nov. 5.4	6.935 ₆₇	57.12 ₈₀	29.828 ₆₉	43.47 ₈₆	13.307 ₇₀	88.58 ₉₄
15.4	6.868 ₈₄	57.92 ₈₃	29.759 ₉₂	44.33 ₅₉	13.237 ₉₃	89.52 ₆₆
25.3	6.784 ₁₀₁	58.75 ₈₆	29.667 ₁₁₂	44.92 ₂₉	13.144 ₁₁₄	90.18 ₃₆
Dec. 5.3	6.683 ₁₀₉	59.61 ₈₄	29.555 ₁₂₉	45.21 ₀	13.030 ₁₃₁	90.54 ₄
15.3	6.574 ₁₁₇	60.45 ₈₁	29.426 ₁₄₂	45.21 ₃₁	12.899 ₁₄₅	90.58 ₂₅
25.3	6.457 ₁₂₁	61.26 ₇₄	29.284 ₁₅₁	44.90 ₆₀	12.754 ₁₅₄	90.33 ₅₈
35.2	6.336	62.00 ₇₄	29.133	44.30	12.600	89.75
Mean Place	3.507	77.07	25.761	18.32	9.164	63.14
Sec δ, Tan δ	1.003	-0.077	1.142	+0.552	1.160	+0.588
L α, L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω α, ω δ	+0.01	+0.1	-0.04	+0.1	-0.04	+0.2
AUTHORITY	A. E.		A. N.		A. E.	

APPARENT PLACES OF STARS, 1922. 281

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Cassiopeiæ. Mag. 2.2-2.8		β Ceti. Mag. 2.2		δ Piscium. Mag. 4.6	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m ° ' "	° ' "	h m ° ' "	h m ° ' "	h m ° ' "	° ' "
Jan. 0.2	5.472 ²⁹⁵	51.74 ⁴⁶	40.595 ¹³⁵	59.52 ⁵⁵	38.423 ¹²⁴	39.97 ⁷⁶
10.2	5.177 ²⁹⁵	51.28 ⁹⁵	40.460 ¹³³	60.07 ³³	38.299 ¹²⁴	39.21 ⁷⁹
20.2	4.882 ²⁸³	50.33 ¹⁴⁵	40.327 ¹²⁶	60.40 ³	38.175 ¹²²	38.42 ⁷⁸
30.2	4.599 ²⁵⁹	48.88 ¹⁸³	40.201 ¹¹⁵	60.43 ²⁰	38.053 ¹¹²	37.64 ⁷⁵
Feb. 9.1	4.340 ²²¹	47.05 ²²⁰	40.086 ⁹⁹	60.23 ⁵²	37.941 ⁹⁸	36.89 ⁶⁷
19.1	4.119 ¹⁷¹	44.85 ²⁴³	39.987 ⁷⁴	59.71 ⁷⁷	37.843 ⁷⁶	36.22 ⁵⁷
Mar. 1.1	3.948 ¹¹⁵	42.42 ²⁵⁶	39.913 ⁴⁸	58.94 ¹⁰¹	37.767 ⁴⁹	35.65 ⁴²
11.1	3.833 ⁴⁶	39.86 ²⁶¹	39.865 ¹³	57.93 ¹²⁹	37.718 ¹⁶	35.23 ²³
21.0	3.787 ²⁶	37.25 ²⁵⁶	39.852 ²²	56.64 ¹⁵²	37.702 ²²	35.00 ²
31.0	3.813 ⁹⁹	34.69 ²³⁶	39.874 ⁶⁶	55.12 ¹⁷⁶	37.724 ⁶³	34.98 ²²
Apr. 10.0	3.912 ¹⁷⁶	32.33 ²¹⁰	39.940 ¹⁰⁶	53.36 ¹⁹⁵	37.787 ¹⁰⁵	35.20 ⁴⁹
19.9	4.088 ²⁴⁸	30.23 ¹⁷⁶	40.046 ¹⁴⁹	51.41 ²¹²	37.892 ¹⁴⁸	35.69 ⁷⁵
29.9	4.336 ³¹³	28.47 ¹³⁷	40.195 ¹⁹⁰	49.29 ²²⁰	38.040 ¹⁸⁸	36.44 ¹⁰²
May 9.9	4.649 ³⁶⁹	27.10 ⁸⁶	40.385 ²²⁷	47.09 ²³¹	38.228 ²²⁴	37.46 ¹²⁶
19.9	5.018 ⁴¹³	26.24 ⁴²	40.612 ²⁵⁶	44.78 ²³¹	38.452 ²⁵⁶	38.72 ¹⁴⁹
29.8	5.431 ⁴⁴⁸	25.82 ¹⁰	40.868 ²⁸⁵	42.47 ²²⁸	38.708 ²⁸⁰	40.21 ¹⁶⁷
June 8.8	5.879 ⁴⁶⁹	25.92 ⁵⁹	41.153 ³⁰¹	40.19 ²¹⁹	38.988 ²⁹⁷	41.88 ¹⁸¹
18.8	6.348 ⁴⁷⁹	26.51 ¹⁰⁷	41.454 ³¹⁴	38.00 ²⁰⁷	39.285 ³⁰⁶	43.69 ¹⁹¹
28.8	6.827 ⁴⁷²	27.58 ¹⁵³	41.768 ³¹⁴	35.93 ¹⁸³	39.591 ³⁰⁶	45.60 ¹⁹⁵
July 8.7	7.299 ⁴⁵⁵	29.11 ¹⁹²	42.082 ³⁰⁸	34.10 ¹⁵⁸	39.897 ²⁹⁹	47.55 ¹⁹³
18.7	7.754 ⁴²⁹	31.03 ²²⁸	42.390 ²⁹³	32.52 ¹²⁸	40.196 ²⁸⁵	49.48 ¹⁸⁸
28.7	8.183 ³⁹²	33.31 ²⁵⁹	42.683 ²⁷³	31.24 ⁹⁷	40.481 ²⁶²	51.36 ¹⁷⁶
Aug. 7.6	8.575 ³⁴⁷	35.90 ²⁸³	42.956 ²⁴²	30.27 ⁶⁰	40.743 ²³⁶	53.12 ¹⁶²
17.6	8.922 ²⁹⁹	38.73 ³⁰¹	43.198 ²⁰⁹	29.67 ²⁷	40.979 ²⁰⁵	54.74 ¹⁴⁴
27.6	9.221 ²⁴²	41.74 ³¹⁴	43.407 ¹⁷⁸	29.40 ¹⁰	41.184 ¹⁷¹	56.18 ¹²²
Sept. 6.6	9.463 ¹⁸⁸	44.88 ³¹⁹	43.585 ¹³⁵	29.50 ⁴³	41.355 ¹³⁵	57.40 ¹⁰⁰
16.5	9.651 ¹²⁹	48.07 ³¹⁷	43.720 ⁹⁶	29.93 ⁷²	41.490 ⁹⁹	58.40 ⁷⁷
26.5	9.780 ⁷⁰	51.24 ³¹⁰	43.816 ⁵⁶	30.65 ⁹⁹	41.589 ⁶⁴	59.17 ⁵⁴
Oct. 6.5	9.850 ¹³	54.34 ²⁹⁵	43.872 ²³	31.64 ¹¹⁹	41.653 ³³	59.71 ³²
16.5	9.863 ⁴⁰	57.29 ²⁷⁸	43.895 ¹³	32.83 ¹³⁰	41.686 ²	60.03 ¹¹
26.4	9.823 ⁸⁹	60.07 ²⁴⁹	43.882 ⁴²	34.13 ¹⁴¹	41.688 ²⁵	60.14 ⁷
Nov. 5.4	9.734 ¹³⁹	62.56 ²¹⁶	43.840 ⁶⁶	35.54 ¹⁴²	41.663 ⁴⁹	60.07 ²³
15.4	9.595 ¹⁸²	64.72 ¹⁷⁸	43.774 ⁸⁹	36.96 ¹³⁷	41.614 ⁷⁰	59.84 ³⁸
25.3	9.413 ²²⁰	66.50 ¹³⁸	43.685 ¹⁰⁷	38.33 ¹²⁵	41.544 ⁸⁶	59.46 ⁵⁰
Dec. 5.3	9.193 ²⁴⁹	67.88 ⁸⁹	43.578 ¹¹⁹	39.58 ¹¹⁴	41.458 ¹⁰²	58.96 ⁵⁹
15.3	8.944 ²⁷⁷	68.77 ³⁸	43.459 ¹²⁵	40.72 ⁹³	41.356 ¹¹³	58.37 ⁶⁸
25.3	8.667 ²⁹¹	69.15 ¹³	43.334 ¹³⁴	41.65 ⁶⁸	41.243 ¹²¹	57.69 ⁷³
35.2	8.376	69.02	43.200	42.33	41.122	56.96
Mean Place	4.220	35.24	40.505	51.91	38.006	38.85
Sec δ , Tan δ	1.793	+1.489	1.054	-0.333	1.008	+0.126
L α , L δ	+0.01	+0.4	0.00	+0.4	0.00	+0.4
ω α , ω δ	-0.10	+0.2	+0.02	+0.2	-0.01	+0.2
AUTHORITY	A. E.		A. E.		A. N.	

282 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	20 Ceti. Mag. 4·9		γ Cassiopeiæ. Mag. 2·3		μ Andromedæ. Mag. 3·9	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 0 49	° ′ 1 33	h m 0 51	° ′ 60 17	h m 0 52	° ′ 38 4
Jan. 0·2	1·539 ¹²³	64·71 ⁷⁴	60·85 ³⁴	57·52 ²⁰	25·991 ¹⁸¹	46·66 ⁵³
10·2	1·416 ¹²⁴	65·45 ⁶⁵	60·51 ³⁵	57·32 ⁷¹	25·810 ¹⁸⁴	46·13 ⁹²
20·2	1·292 ¹²²	66·10 ⁵⁷	60·16 ³⁴	56·61 ¹²⁵	25·626 ¹⁸⁰	45·21 ¹¹⁹
30·2	1·170 ¹¹³	66·67 ⁴³	59·82 ³¹	55·36 ¹⁶⁸	25·446 ¹⁷⁰	44·02 ¹⁵⁰
Feb. 9·1	1·057 ⁹⁹	67·10 ³⁰	59·51 ²⁸	53·68 ²¹⁰	25·276 ¹⁵²	42·52 ¹⁶⁹
19·1	0·958 ⁷⁸	67·40 ¹³	59·23 ²³	51·58 ²³⁷	25·124 ¹²¹	40·83 ¹⁸²
Mar. 1·1	0·880 ⁵²	67·53 ⁷	59·00 ¹⁶	49·21 ²⁵⁸	25·003 ⁸⁴	39·01 ¹⁸⁹
11·1	0·828 ²¹	67·46 ²⁸	58·84 ⁸	46·63 ²⁶⁸	24·919 ³⁶	37·12 ¹⁸⁷
21·0	0·807 ¹⁶	67·18 ⁵¹	58·76 ¹	43·95 ²⁶⁷	24·883 ¹¹	35·25 ¹⁷⁵
31·0	0·823 ⁵⁷	66·67 ⁷⁶	58·75 ⁸	41·28 ²⁵⁶	24·894 ⁶⁵	33·50 ¹⁵⁶
Apr. 10·0	0·880 ⁹⁸	65·91 ¹⁰⁰	58·83 ¹⁶	38·72 ²³²	24·959 ¹¹⁸	31·94 ¹³⁴
19·9	0·978 ¹⁴¹	64·91 ¹²⁴	58·99 ²⁵	36·40 ²⁰¹	25·077 ¹⁷²	30·60 ⁹⁶
29·9	1·119 ¹⁸⁰	63·67 ¹⁴⁵	59·24 ³²	34·39 ¹⁶²	25·249 ²²⁴	29·64 ⁶³
May 9·9	1·299 ²¹⁷	62·22 ¹⁶⁴	59·56 ³⁸	32·77 ¹²¹	25·473 ²⁰⁵	29·01 ²²
19·9	1·516 ²⁴⁹	60·58 ¹⁸¹	59·94 ⁴⁵	31·56 ⁷²	25·738 ³⁰³	28·79 ¹⁶
29·8	1·765 ²⁷⁴	58·77 ¹⁹¹	60·39 ⁴⁸	30·84 ²²	26·041 ³³⁵	28·95 ⁵⁸
June 8·8	2·039 ²⁹²	56·86 ¹⁹⁸	60·87 ⁵¹	30·62 ²⁸	26·376 ³⁵³	29·53 ⁹⁷
18·8	2·331 ³⁰³	54·88 ¹⁹⁹	61·38 ⁵³	30·90 ⁷⁸	26·729 ³⁶⁵	30·50 ¹³¹
28·8	2·634 ³⁰⁴	52·89 ¹⁹⁵	61·91 ⁵²	31·68 ¹²⁵	27·094 ³⁶⁶	31·81 ¹⁶²
July 8·7	2·938 ²⁹⁸	50·94 ¹⁸⁶	62·43 ⁵¹	32·93 ¹⁷⁰	27·460 ³⁵⁶	33·43 ¹⁹⁴
18·7	3·236 ²⁸⁵	49·08 ¹⁷⁰	62·94 ⁴⁹	34·63 ²⁰⁸	27·816 ³³⁸	35·37 ²¹⁶
28·7	3·521 ²⁶⁴	47·38 ¹⁵³	63·43 ⁴⁵	36·71 ²⁴⁴	28·154 ³¹⁴	37·53 ²³²
Aug. 7·6	3·785 ²³⁹	45·85 ¹³⁰	63·88 ⁴¹	39·15 ²⁷²	28·468 ²⁸⁴	39·85 ²⁴⁶
17·6	4·024 ²⁰⁷	44·55 ¹⁰⁵	64·29 ³⁵	41·87 ²⁹⁶	28·752 ²⁴⁷	42·31 ²⁵³
27·6	4·231 ¹⁷⁴	43·50 ⁷⁹	64·64 ³⁰	44·83 ³⁰⁹	28·999 ²⁰⁹	44·84 ²⁵³
Sept. 6·6	4·405 ¹³⁹	42·71 ⁵²	64·94 ²⁴	47·92 ³²²	29·208 ¹⁶⁸	47·37 ²⁵⁰
16·5	4·544 ¹⁰²	42·19 ²⁵	65·18 ¹⁷	51·14 ³²⁶	29·376 ¹²⁷	49·87 ²⁴²
26·5	4·646 ⁶⁸	41·94 ¹	65·35 ¹¹	54·40 ³²³	29·503 ⁸⁷	52·29 ²²⁹
Oct. 6·5	4·714 ³⁵	41·93 ²²	65·46 ⁴	57·63 ³¹³	29·590 ⁴³	54·58 ²¹¹
16·5	4·749 ⁴	42·15 ⁴¹	65·50 ¹	60·76 ²⁹⁷	29·633 ⁸	56·69 ¹⁹¹
26·4	4·753 ²³	42·56 ⁵⁶	65·49 ⁸	63·73 ²⁷³	29·641 ²⁷	58·60 ¹⁷⁰
Nov. 5·4	4·730 ⁴⁸	43·12 ⁶⁸	65·41 ¹³	66·46 ²⁴⁵	29·614 ⁶²	60·30 ¹⁴⁰
15·4	4·682 ⁶⁷	43·80 ⁷⁶	65·28 ¹⁹	68·91 ²⁰⁷	29·552 ⁹¹	61·70 ¹¹¹
25·3	4·615 ⁸⁶	44·56 ⁸⁰	65·09 ²⁴	70·98 ¹⁶⁶	29·461 ¹¹⁸	62·81 ⁷⁶
Dec. 5·3	4·529 ¹⁰¹	45·36 ⁸²	64·85 ²⁷	72·64 ¹²⁰	29·343 ¹⁴⁰	63·57 ⁴²
15·3	4·428 ¹¹¹	46·18 ⁸⁰	64·58 ³¹	73·84 ⁶⁹	29·203 ¹⁶⁰	63·99 ⁷
25·3	4·317 ¹²¹	46·98 ⁷⁷	64·27 ³⁴	74·53 ¹⁶	29·043 ¹⁷⁵	64·06 ³³
35·2	4·196	47·75	63·93	74·69	28·868	63·73
Mean Place	1·197	62·53	59·24	40·88	25·073	35·58
Sec δ, Tan δ	1·000	-0·027	2·018	+1·753	1·270	+0·783
L α, L δ	0·00	+0·4	+0·01	+0·4	0·00	+0·4
ω α, ω δ	0·00	+0·2	-0·11	+0·2	-0·05	+0·2
AUTHORITY			A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 283

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Sculptoris. Mag. 4.4		ε Piscium. Mag. 4.5		ζ Piscium. Mag. 5.7	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 0 54	° ′ 29 46	h m 0 58	° ′ 7 28	h m I 0	° ′ I4 31
Jan. 0.2	50.862 ¹⁶⁰	56.18 ⁴⁹	54.093 ¹²⁶	14.42 ⁷⁴	58.717 ¹²⁹	39.88 ⁷⁰
10.2	50.702 ¹⁶⁰	56.67 ¹³	53.967 ¹²⁹	13.68 ⁷⁵	58.588 ¹³³	39.18 ⁸¹
20.2	50.542 ¹⁵⁴	56.80 ²²	53.838 ¹²⁷	12.93 ⁷⁸	58.455 ¹³⁴	38.37 ⁸⁹
30.2	50.388 ¹⁴³	56.58 ⁶¹	53.711 ¹²⁴	12.15 ⁷³	58.321 ¹²⁷	37.48 ⁹²
Feb. 9.1	50.245 ¹²⁷	55.97 ⁹⁵	53.587 ¹⁰⁷	11.42 ⁶⁵	58.194 ¹¹⁴	36.56 ⁹²
19.1	50.118 ¹⁰⁴	55.02 ¹²⁷	53.480 ⁸⁶	10.77 ⁵⁵	58.080 ⁹⁴	35.64 ⁸⁸
Mar. 1.1	50.014 ⁷⁴	53.75 ¹⁶¹	53.394 ⁶³	10.22 ⁴⁴	57.986 ⁶⁶	34.76 ⁷⁸
11.1	49.940 ³⁸	52.14 ¹⁸⁶	53.331 ²⁸	9.78 ²⁴	57.920 ³⁴	33.98 ⁶⁵
21.0	49.902 ⁰	50.28 ²¹⁴	53.303 ⁷	9.54 ²	57.886 ⁶	33.33 ⁴⁶
31.0	49.902 ⁴⁴	48.14 ²³²	53.310 ⁵⁰	9.52 ¹⁹	57.892 ⁴⁸	32.87 ²³
Apr. 10.0	49.946 ⁹¹	45.82 ²⁵¹	53.360 ⁹¹	9.71 ⁴⁷	57.940 ⁹²	32.64 ³
19.9	50.037 ¹³⁶	43.31 ²⁶³	53.451 ¹³⁶	10.18 ⁶⁹	58.032 ¹³⁶	32.67 ³⁰
29.9	50.173 ¹⁸⁰	40.68 ²⁷⁰	53.587 ¹⁷⁴	10.87 ¹⁰⁰	58.168 ¹⁸⁰	32.97 ⁵⁸
May 9.9	50.353 ²²²	37.98 ²⁶⁹	53.761 ²¹⁴	11.87 ¹²¹	58.348 ²¹⁸	33.55 ⁸⁷
19.9	50.575 ²⁵⁸	35.29 ²⁶⁶	53.975 ²⁴⁶	13.08 ¹⁴³	58.566 ²⁵³	34.42 ¹¹⁴
29.8	50.833 ²⁸⁸	32.63 ²⁵³	54.221 ²⁷⁴	14.51 ¹⁶³	58.819 ²⁷⁹	35.56 ¹³⁸
June 8.8	51.121 ³¹¹	30.10 ²³⁴	54.495 ²⁸⁹	16.14 ¹⁷⁷	59.098 ²⁹⁸	36.94 ¹⁵⁸
18.8	51.432 ³²⁷	27.76 ²¹²	54.784 ³⁰²	17.91 ¹⁸⁵	59.396 ³¹⁰	38.52 ¹⁷⁶
28.8	51.759 ³³³	25.64 ¹⁷⁹	55.086 ³⁰⁹	19.76 ¹⁹¹	59.706 ³¹³	40.28 ¹⁸⁶
July 8.7	52.092 ³²⁹	23.85 ¹⁴⁶	55.395 ³⁰³	21.67 ¹⁹¹	60.019 ³⁰⁸	42.14 ¹⁹⁴
18.7	52.421 ³¹⁷	22.39 ¹⁰⁸	55.698 ²⁸⁹	23.58 ¹⁸⁷	60.327 ²⁹⁴	44.08 ¹⁹⁴
28.7	52.738 ²⁹⁸	21.31 ⁶⁴	55.987 ²⁶⁹	25.45 ¹⁷⁵	60.621 ²⁷⁵	46.02 ¹⁹¹
Aug. 7.6	53.036 ²⁷¹	20.67 ²⁴	56.256 ²⁴⁴	27.20 ¹⁶²	60.896 ²⁵⁰	47.93 ¹⁸³
17.6	53.307 ²³⁶	20.43 ²⁰	56.500 ²¹⁸	28.82 ¹⁴³	61.146 ²²¹	49.76 ¹⁷¹
27.6	53.543 ¹⁹⁹	20.63 ⁶³	56.718 ¹⁸⁰	30.25 ¹²⁶	61.367 ¹⁸⁸	51.47 ¹⁵⁶
Sept. 6.6	53.742 ¹⁶⁰	21.26 ⁹⁹	56.898 ¹⁵¹	31.51 ¹⁰⁰	61.555 ¹⁵²	53.03 ¹³⁸
16.5	53.902 ¹¹⁵	22.25 ¹³²	57.049 ¹¹³	32.51 ⁷⁹	61.707 ¹¹⁸	54.41 ¹¹⁷
26.5	54.017 ⁷³	23.57 ¹⁶⁰	57.162 ⁸⁰	33.30 ⁵⁴	61.825 ⁸⁴	55.58 ⁹⁸
Oct. 6.5	54.090 ³²	25.17 ¹⁸¹	57.242 ⁴⁵	33.84 ³⁴	61.909 ⁵⁰	56.56 ⁷⁶
16.5	54.122 ⁵	26.98 ¹⁹²	57.287 ¹⁹	34.18 ¹³	61.959 ²⁰	57.32 ⁵⁵
26.4	54.117 ⁴²	28.90 ¹⁹⁶	57.306 ⁹	34.31 ⁷	61.979 ⁹	57.87 ³⁶
Nov. 5.4	54.075 ⁷²	30.86 ¹⁹¹	57.297 ³⁸	34.24 ²⁰	61.970 ³⁶	58.23 ¹⁶
15.4	54.003 ⁹⁸	32.77 ¹⁷⁹	57.259 ⁶¹	34.04 ³⁶	61.934 ⁵⁸	58.39 ²
25.3	53.905 ¹¹⁹	34.56 ¹⁶¹	57.198 ⁷⁸	33.68 ⁴⁹	61.876 ⁷⁸	58.37 ²⁰
Dec. 5.3	53.786 ¹³⁶	36.17 ¹³⁵	57.120 ⁹⁸	33.19 ⁵⁹	61.798 ⁹⁷	58.17 ³⁴
15.3	53.650 ¹⁴⁹	37.52 ¹⁰⁵	57.022 ¹¹⁰	32.60 ⁶⁵	61.701 ¹¹³	57.83 ⁵⁰
25.3	53.501 ¹⁵⁶	38.57 ⁷⁰	56.912 ¹²⁰	31.95 ⁷¹	61.588 ¹²⁴	57.33 ⁶³
35.2	53.345	39.27	56.792	31.24	61.464	56.70
Mean Place	50.820	44.38	53.588	13.82	58.114	36.88
Sec δ, Tan δ	1.152	-0.572	1.009	+0.131	1.033	+0.259
L α, L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω α, ω δ	+0.04	+0.2	-0.01	+0.3	-0.02	+0.3
AUTHORITY	A. E.		A. E.			

284 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Phoenicis. Mag. 3.4			β Andromedæ. Mag. 2.4			ζ^1 Piscium. Mag. 5.6					
	R. A.		Dec. S.	R. A.		Dec. N.	R. A.		Dec. N.			
	h	m	°	'	h	m	°	'	h	m	°	'
	I	2	47	7	I	5	35	I2	I	9	7	9
Jan. 0.3	36.02	236	88.28	29	22.475	169	36.08	50	39.824	124	47.78	73
10.2	35.785	234	88.57	20	22.306	175	35.58	80	39.700	130	47.05	74
20.2	35.551	224	88.37	71	22.131	175	34.78	108	39.570	130	46.31	74
30.2	35.327	211	87.66	117	21.956	170	33.70	135	39.440	126	45.57	70
Feb. 9.2	35.116	187	86.49	161	21.786	148	32.35	154	39.314	115	44.87	63
19.1	34.929	158	84.88	203	21.638	127	30.81	168	39.199	96	44.24	54
Mar. 1.1	34.771	120	82.85	235	21.511	92	29.13	172	39.103	71	43.70	40
11.1	34.651	76	80.50	266	21.419	48	27.41	170	39.032	41	43.30	22
21.0	34.575	28	77.84	291	21.371	5	25.71	160	38.991	3	43.08	3
31.0	34.547	25	74.93	308	21.366	48	24.11	142	38.988	3	43.05	21
Apr. 10.0	34.572	83	71.85	320	21.414	102	22.69	120	39.026	81	43.26	45
20.0	34.655	136	68.65	326	21.516	151	21.49	87	39.107	125	43.71	71
29.9	34.791	193	65.39	323	21.667	206	20.62	56	39.232	166	44.42	96
May 9.9	34.984	243	62.16	314	21.873	250	20.06	17	39.398	206	45.38	121
19.9	35.227	291	59.02	298	22.123	283	19.89	19	39.604	241	46.59	142
29.9	35.518	332	56.04	274	22.406	319	20.08	57	39.845	268	48.01	161
June 8.8	35.850	359	53.30	243	22.725	341	20.65	94	40.113	289	49.62	175
18.8	36.209	382	50.87	208	23.066	352	21.59	126	40.402	301	51.37	184
28.8	36.591	394	48.79	163	23.418	358	22.85	156	40.703	307	53.21	190
July 8.7	36.985	395	47.16	119	23.776	350	24.41	184	41.010	303	55.11	189
18.7	37.380	383	45.97	68	24.126	333	26.25	205	41.313	293	57.00	184
28.7	37.763	365	45.29	17	24.459	316	28.30	219	41.606	275	58.84	173
Aug. 7.7	38.128	331	45.12	36	24.775	284	30.49	233	41.881	251	60.57	159
17.6	38.459	294	45.48	87	25.059	255	32.82	237	42.132	224	62.16	141
27.6	38.753	249	46.35	133	25.314	217	35.19	235	42.356	191	63.57	120
Sept. 6.6	39.002	196	47.68	175	25.531	179	37.54	233	42.547	159	64.77	98
16.6	39.198	144	49.43	211	25.710	137	39.87	225	42.706	124	65.75	75
26.5	39.342	88	51.54	239	25.847	103	42.12	213	42.830	91	66.50	52
Oct. 6.5	39.430	34	53.93	254	25.950	64	44.25	195	42.921	58	67.02	30
16.5	39.464	20	56.47	263	26.014	23	46.20	177	42.979	27	67.32	9
26.5	39.444	68	59.10	261	26.037	10	47.97	155	43.006	1	67.41	8
Nov. 5.4	39.376	110	61.71	246	26.027	42	49.52	128	43.005	27	67.33	25
15.4	39.266	149	64.17	222	25.985	74	50.80	104	42.978	50	67.08	38
25.4	39.117	180	66.39	190	25.911	99	51.84	70	42.928	70	66.70	49
Dec. 5.3	38.937	203	68.29	153	25.812	125	52.54	39	42.857	91	66.21	58
15.3	38.734	222	69.82	108	25.687	146	52.93	5	42.767	105	65.63	66
25.3	38.512	231	70.90	59	25.541	160	52.98	25	42.662	118	64.97	70
35.3	38.281		71.49		25.381		52.73		42.544		64.27	
Mean Place	36.201		71.65		21.523		26.46		39.259		47.75	
Sec δ , Tan δ	1.470		-1.078		1.224		+0.706		1.008		+0.126	
L α , L δ	-0.01		+0.4		+0.01		+0.4		0.00		+0.4	
ω α , ω δ	+0.07		+0.3		-0.05		+0.3		-0.01		+0.3	
AUTHORITY	A. E.			A. E.			A. E.					

APPARENT PLACES OF STARS, 1922. 285

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	θ Ceti. Mag. 3·8		δ Cassiopeiae. Mag. 2·8		γ Phoenicis. Mag. 3·4	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m I 20	° ' / 8 34	h m I 20	° ' / 59 49	h m I 24	° ' / 43 42
Jan. 0·3	7·883 ¹²⁸	73·48 ⁸⁰	43·878 ³²⁴	65·21 ¹⁵	58·778 ²¹⁸	79·95 ⁶⁰
10·3	7·755 ¹³⁴	74·28 ⁶¹	43·554 ³⁴¹	65·36 ³⁷	58·560 ²²³	80·55 ¹¹
20·2	7·621 ¹³⁵	74·89 ⁴⁶	43·213 ³⁴⁵	64·99 ⁸⁹	58·337 ²²¹	80·66 ³⁸
30·2	7·486 ¹³¹	75·35 ²⁴	42·868 ³³⁰	64·10 ¹³⁶	58·116 ²¹¹	80·28 ⁸⁴
Feb. 9·2	7·355 ¹²⁵	75·59 ³	42·538 ³⁰⁴	62·74 ¹⁷⁸	57·905 ¹⁹⁵	79·44 ¹²⁹
19·1	7·230 ¹⁰⁴	75·62 ¹⁶	42·234 ²⁶¹	60·96 ²¹⁴	57·710 ¹⁷⁰	78·15 ¹⁷¹
Mar. 1·1	7·126 ⁸⁰	75·46 ⁴⁴	41·973 ²⁰⁵	58·82 ²³⁹	57·540 ¹³⁹	76·44 ²⁰⁸
11·1	7·046 ⁵³	75·02 ⁶⁷	41·768 ¹³⁶	56·43 ²⁵⁵	57·401 ¹⁰⁰	74·36 ²⁴¹
21·1	6·993 ¹⁵	74·35 ⁸⁹	41·632 ⁵⁸	53·88 ²⁵⁸	57·301 ⁵⁵	71·95 ²⁶⁹
31·0	6·978 ²²	73·46 ¹¹⁴	41·574 ²⁷	51·30 ²⁵⁵	57·246 ⁶	69·26 ²⁹¹
Apr. 10·0	7·000 ⁶⁷	72·32 ¹⁴⁰	41·601 ¹⁰⁹	48·75 ²³⁸	57·240 ⁴⁸	66·35 ³⁰⁷
20·0	7·067 ¹⁰⁷	70·92 ¹⁵⁶	41·710 ¹⁹⁵	46·37 ²¹³	57·288 ¹⁰²	63·28 ³¹⁷
30·0	7·174 ¹⁵³	69·36 ¹⁷⁹	41·905 ²⁷³	44·24 ¹⁸¹	57·390 ¹⁵⁷	60·11 ³²⁰
May 9·9	7·327 ¹⁹¹	67·57 ¹⁹⁵	42·178 ³⁴⁸	42·43 ¹⁴⁰	57·547 ²⁰⁸	56·91 ³¹⁶
19·9	7·518 ²²⁶	65·62 ²⁰⁴	42·526 ⁴⁰⁸	41·03 ⁹⁹	57·755 ²⁵⁶	53·75 ³⁰⁴
29·9	7·744 ²⁵⁷	63·58 ²⁰⁸	42·934 ⁴⁵⁸	40·04 ⁵¹	58·011 ²⁹⁶	50·71 ²⁸⁵
June 8·8	8·001 ²⁸⁰	61·50 ²¹²	43·392 ⁴⁹³	39·53 ⁴	58·307 ³³⁰	47·86 ²⁶⁰
18·8	8·281 ²⁹³	59·38 ²⁰⁷	43·885 ⁵¹⁷	39·49 ⁴⁶	58·637 ³⁵⁵	45·26 ²²⁷
28·8	8·574 ³⁰¹	57·31 ¹⁹⁶	44·402 ⁵²⁶	39·95 ⁹¹	58·992 ³⁷⁰	42·99 ¹⁸⁸
July 8·8	8·875 ³⁰⁴	55·35 ¹⁸⁴	44·928 ⁵²²	40·86 ¹³⁴	59·362 ³⁷⁶	41·11 ¹⁴⁵
18·7	9·179 ²⁹³	53·51 ¹⁶²	45·450 ⁵⁰⁵	42·20 ¹⁷⁵	59·738 ³⁷⁰	39·66 ⁹⁷
28·7	9·472 ²⁷⁹	51·89 ¹³⁷	45·955 ⁴⁷⁷	43·95 ²¹³	60·108 ³⁵⁴	38·69 ⁴⁶
Aug. 7·7	9·751 ²⁶¹	50·52 ¹⁰⁸	46·432 ⁴⁴⁰	46·08 ²⁴³	60·462 ³³⁰	38·23 ⁵
17·6	10·012 ²³¹	49·44 ⁷⁸	46·872 ³⁹⁷	48·51 ²⁷⁰	60·792 ²⁹⁸	38·28 ⁵⁷
27·6	10·243 ¹⁹⁸	48·66 ⁴⁶	47·269 ³⁴⁵	51·21 ²⁸⁸	61·090 ²⁵⁹	38·85 ¹⁰⁶
Sept. 6·6	10·441 ¹⁷⁰	48·20 ¹⁵	47·614 ²⁸⁹	54·09 ³⁰²	61·349 ²¹⁴	39·91 ¹⁵¹
16·6	10·611 ¹³²	48·05 ¹⁵	47·903 ²³²	57·11 ³¹¹	61·563 ¹⁶⁵	41·42 ¹⁹⁰
26·5	10·743 ¹⁰⁰	48·20 ⁴³	48·135 ¹⁷⁰	60·22 ³¹³	61·728 ¹¹⁴	43·32 ²²²
Oct. 6·5	10·843 ⁶⁴	48·63 ⁶⁶	48·305 ¹⁰⁸	63·35 ³⁰⁸	61·842 ⁶⁵	45·54 ²⁴⁴
16·5	10·907 ³⁴	49·29 ⁸⁸	48·413 ⁴⁷	66·43 ²⁹⁸	61·907 ¹⁵	47·98 ²⁵⁸
26·5	10·941 ⁰	50·17 ¹⁰⁰	48·460 ¹⁴	69·41 ²⁷⁹	61·922 ³²	50·56 ²⁶⁰
Nov. 5·4	10·941 ²¹	51·17 ¹¹¹	48·446 ⁷⁴	72·20 ²⁵⁷	61·890 ⁷⁴	53·16 ²⁵²
15·4	10·920 ⁵¹	52·28 ¹¹⁴	48·372 ¹³¹	74·77 ²²⁶	61·816 ¹¹²	55·68 ²³⁴
25·4	10·869 ⁷¹	53·42 ¹¹³	48·241 ¹⁸⁴	77·03 ¹⁸⁶	61·704 ¹⁴⁵	58·02 ²⁰⁸
Dec. 5·3	10·798 ⁹¹	54·55 ¹⁰⁷	48·057 ²³⁴	78·89 ¹⁴⁶	61·559 ¹⁷³	60·10 ¹⁷³
15·3	10·707 ¹⁰⁸	55·62 ¹⁰⁰	47·823 ²⁷⁷	80·35 ¹⁰⁰	61·386 ¹⁹⁴	61·83 ¹³³
25·3	10·599 ¹²²	56·62 ⁸⁶	47·546 ³¹²	81·35 ⁴⁸	61·192 ²¹⁰	63·16 ⁸⁷
35·3	10·477	57·48	47·234	81·83	60·982 ²¹⁰	64·03
Mean Place	7·434	67·57	41·965	50·19	58·704	63·42
Sec δ , Tan δ	1·011	-0·151	1·990	+1·720	1·384	-0·956
L α , L δ	0·00	+0·4	+0·02	+0·4	-0·01	+0·4
ω α , ω δ	+0·01	+0·3	-0·11	+0·3	+0·06	+0·4
AUTHORITY	A. E.		A. E.		A. N.	

286 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	η Piscium. Mag. 3.7		α Eridani. Mag. 0.6		ν Piscium. Mag. 4.7	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m I 27	° ' " 6	h m I 34	° ' " 37	h m I 37	° ' " 5
Jan. 0.3	19.132 ^s 128	41.07 65	48.565 ^s 333	77.67 50	22.903 ^s 119	34.10 72
10.3	19.004 137	40.42 72	48.232 340	78.17 7	22.784 131	33.38 71
20.2	18.867 141	39.70 81	47.892 335	78.10 62	22.653 137	32.67 67
30.2	18.726 140	38.89 84	47.557 323	77.48 115	22.516 138	32.00 61
Feb. 9.2	18.586 128	38.05 86	47.234 298	76.33 167	22.378 131	31.39 52
19.2	18.458 115	37.19 82	46.936 266	74.66 213	22.247 116	30.87 41
Mar. 1.1	18.343 89	36.37 76	46.670 222	72.53 253	22.131 94	30.46 27
11.1	18.254 59	35.61 62	46.448 171	70.00 285	22.037 66	30.19 10
21.1	18.195 20	34.99 49	46.277 113	67.15 314	21.971 31	30.09 9
31.0	18.175 20	34.50 27	46.164 48	64.01 337	21.940 9	30.18 31
Apr. 10.0	18.195 69	34.23 2	46.116 22	60.64 350	21.949 53	30.49 55
20.0	18.264 111	34.21 20	46.138 90	57.14 355	22.002 97	31.04 78
30.0	18.375 156	34.41 50	46.228 161	53.59 352	22.099 141	31.82 102
May 9.9	18.531 198	34.91 75	46.389 230	50.07 341	22.240 182	32.84 125
19.9	18.729 236	35.66 103	46.619 292	46.66 325	22.422 219	34.09 144
29.9	18.965 265	36.69 124	46.911 349	43.41 300	22.641 251	35.53 162
June 8.9	19.230 289	37.93 146	47.260 396	40.41 266	22.892 275	37.15 174
18.8	19.519 304	39.39 163	47.656 431	37.75 228	23.167 293	38.89 183
28.8	19.823 311	41.02 173	48.087 458	35.47 181	23.460 302	40.72 185
July 8.8	20.134 311	42.75 182	48.545 469	33.66 131	23.762 303	42.57 184
18.7	20.445 303	44.57 186	49.014 470	32.35 76	24.065 297	44.41 177
28.7	20.748 286	46.43 184	49.484 456	31.59 19	24.362 283	46.18 166
Aug. 7.7	21.034 266	48.27 176	49.940 429	31.40 35	24.645 265	47.84 149
17.7	21.300 240	50.03 166	50.369 392	31.75 94	24.910 240	49.33 131
27.6	21.540 209	51.69 151	50.761 342	32.69 146	25.150 212	50.64 108
Sept. 6.6	21.749 179	53.20 133	51.103 285	34.15 195	25.362 182	51.72 85
16.6	21.928 144	54.53 117	51.388 220	36.10 235	25.544 149	52.57 60
26.6	22.072 114	55.70 95	51.608 153	38.45 266	25.693 117	53.17 37
Oct. 6.5	22.186 81	56.65 76	51.761 83	41.11 290	25.810 86	53.54 14
16.5	22.267 46	57.41 57	51.844 12	44.01 300	25.896 55	53.68 6
26.5	22.313 19	57.98 37	51.856 58	47.01 299	25.951 25	53.62 23
Nov. 5.4	22.332 11	58.35 20	51.798 117	50.00 285	25.976 2	53.39 39
15.4	22.321 35	58.55 3	51.681 176	52.85 263	25.974 28	53.00 50
25.4	22.286 62	58.58 14	51.505 225	55.48 230	25.946 52	52.50 59
Dec. 5.4	22.224 84	58.44 29	51.280 267	57.78 184	25.894 74	51.91 65
15.3	22.140 102	58.15 44	51.013 297	59.62 139	25.820 95	51.26 70
25.3	22.038 118	57.71 54	50.716 323	61.01 85	25.725 112	50.56 70
35.3	21.920	57.17	50.393	61.86	25.613	49.86
Mean Place	18.368	39.11	48.631	58.08	22.204	35.99
Sec δ , Tan δ	1.035	+0.267	1.868	-1.578	1.004	+0.089
L α , L δ	0.00	+0.4	-0.02	+0.4	0.00	+0.4
ω α , ω δ	-0.02	+0.4	+0.10	+0.4	-0.01	+0.4
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 287

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	♋ Piscium. Mag. 4·5		ζ Ceti. Mag. 3·9		ε Cassiopeiæ. Mag. 3·4	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m I 4I	8 45	h m I 47	10 42	h m I 48	63 17
Jan. 0·3	17·110 ₁₂₁	55·48 ₆₇	37·177 ₁₂₈	78·84 ₈₆	48·40 ₃₆	26·24 ₅₆
10·3	16·989 ₁₃₄	54·81 ₆₉	37·049 ₁₃₇	79·70 ₆₈	48·04 ₃₈	26·80 ₆
20·2	16·855 ₁₃₉	54·12 ₇₀	36·912 ₁₄₅	80·38 ₄₉	47·66 ₄₀	26·86 ₅₁
30·2	16·716 ₁₄₁	53·42 ₆₉	36·767 ₁₄₅	80·87 ₂₆	47·26 ₄₀	26·35 ₁₀₂
Feb. 9·2	16·575 ₁₃₂	52·73 ₆₂	36·622 ₁₃₉	81·13 ₀	46·86 ₃₈	25·33 ₁₄₈
19·2	16·443 ₁₂₃	52·11 ₅₅	36·483 ₁₂₈	81·13 ₂₂	46·48 ₃₃	23·85 ₁₉₀
Mar. 1·1	16·320 ₉₆	51·56 ₄₅	36·355 ₁₀₇	80·91 ₄₈	46·15 ₂₉	21·95 ₂₂₄
11·1	16·224 ₇₀	51·11 ₂₉	36·248 ₇₈	80·43 ₇₅	45·86 ₂₀	19·71 ₂₄₆
21·1	16·154 ₃₃	50·82 ₁₁	36·170 ₄₂	79·68 ₉₇	45·66 ₁₃	17·25 ₂₅₉
31·0	16·121 ₆	50·71 ₈	36·128 ₆	78·71 ₁₂₄	45·53 ₄	14·66 ₂₆₁
Apr. 10·0	16·127 ₅₂	50·79 ₃₃	36·122 ₃₆	77·47 ₁₄₆	45·49 ₆	12·05 ₂₅₅
20·0	16·179 ₉₃	51·12 ₅₈	36·158 ₈₂	76·01 ₁₆₉	45·55 ₁₆	9·50 ₂₃₆
30·0	16·272 ₁₄₀	51·70 ₈₁	36·240 ₁₂₃	74·32 ₁₈₈	45·71 ₂₄	7·14 ₂₀₉
May 9·9	16·412 ₁₈₃	52·51 ₁₀₄	36·363 ₁₆₇	72·44 ₂₀₃	45·95 ₃₄	5·05 ₁₇₇
19·9	16·595 ₂₁₈	53·55 ₁₂₄	36·530 ₂₀₇	70·41 ₂₀₉	46·29 ₄₀	3·28 ₁₃₈
29·9	16·813 ₂₅₁	54·79 ₁₄₆	36·737 ₂₄₀	68·32 ₂₁₉	46·69 ₄₇	1·90 ₉₃
June 8·9	17·064 ₂₇₆	56·25 ₁₆₁	36·977 ₂₆₇	66·13 ₂₁₉	47·16 ₅₂	0·97 ₄₇
18·8	17·340 ₂₉₄	57·86 ₁₇₁	37·244 ₂₈₅	63·94 ₂₁₅	47·68 ₅₆	0·50 ₁
28·8	17·634 ₃₀₃	59·57 ₁₇₉	37·529 ₂₉₇	61·79 ₂₀₂	48·24 ₅₇	0·49 ₄₈
July 8·8	17·937 ₃₀₅	61·36 ₁₈₂	37·826 ₃₀₂	59·77 ₁₈₅	48·81 ₅₈	0·97 ₉₄
18·7	18·242 ₃₀₁	63·18 ₁₇₈	38·128 ₃₀₀	57·92 ₁₆₅	49·39 ₅₈	1·91 ₁₃₆
28·7	18·543 ₂₈₇	64·96 ₁₇₀	38·428 ₂₈₉	56·27 ₁₃₈	49·97 ₅₅	3·27 ₁₇₆
Aug. 7·7	18·830 ₂₆₇	66·66 ₁₆₀	38·717 ₂₇₂	54·89 ₁₁₂	50·52 ₅₂	5·03 ₂₁₂
17·7	19·097 ₂₄₆	68·26 ₁₄₃	38·989 ₂₅₀	53·77 ₇₅	51·04 ₄₈	7·15 ₂₄₃
27·6	19·343 ₂₁₇	69·69 ₁₂₃	39·239 ₂₂₂	53·02 ₄₂	51·52 ₄₃	9·58 ₂₆₇
Sept. 6·6	19·560 ₁₈₅	70·92 ₁₀₂	39·461 ₁₈₈	52·60 ₈	51·95 ₃₇	12·25 ₂₈₈
16·6	19·745 ₁₅₇	71·94 ₈₁	39·649 ₁₆₀	52·52 ₂₄	52·32 ₃₁	15·13 ₃₀₂
26·6	19·902 ₁₂₄	72·75 ₅₉	39·809 ₁₂₅	52·76 ₅₅	52·63 ₂₅	18·15 ₃₁₁
Oct. 6·5	20·026 ₉₀	73·34 ₃₆	39·934 ₉₂	53·31 ₈₂	52·88 ₁₉	21·26 ₃₁₃
16·5	20·116 ₆₁	73·70 ₁₆	40·026 ₅₈	54·13 ₁₀₀	53·07 ₁₁	24·39 ₃₀₈
26·5	20·177 ₃₁	73·86 ₂	40·084 ₂₈	55·13 ₁₁₈	53·18 ₄	27·47 ₂₉₇
Nov. 5·4	20·208 ₄	73·84 ₁₅	40·112 ₂	56·31 ₁₂₇	53·22 ₃	30·44 ₂₇₉
15·4	20·212 ₂₅	73·69 ₃₂	40·110 ₂₆	57·58 ₁₃₃	53·19 ₉	33·23 ₂₅₅
25·4	20·187 ₄₇	73·37 ₄₂	40·084 ₅₄	58·91 ₁₂₉	53·10 ₁₇	35·78 ₂₂₂
Dec. 5·4	20·140 ₇₄	72·95 ₅₃	40·030 ₇₇	60·20 ₁₂₃	52·93 ₂₃	38·00 ₁₈₃
15·3	20·066 ₉₄	72·42 ₅₉	39·953 ₉₈	61·43 ₁₁₂	52·70 ₂₈	39·83 ₁₄₁
25·3	19·972 ₁₁₁	71·83 ₆₄	39·855 ₁₁₆	62·55 ₉₈	52·42 ₃₄	41·24 ₈₉
35·3	19·861	71·19	39·739	63·53	52·08	42·13
Mean Place	16·344	56·30	36·585	71·16	45·93	12·31
Sec δ, Tan δ	1·012	+0·154	1·018	-0·189	2·225	+1·987
L α, L δ	0·00	+0·4	0·00	+0·4	+0·02	+0·4
ω α, ω δ	-0·01	+0·4	+0·01	+0·5	-0·12	+0·5
AUTHORITY	A. E.		A. E.		A. E.	

288 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Arietis. Mag. 2.7		α Hydri. Mag. 3.0		ν Ceti. Mag. 4.2	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m I 50	20° 25'	h m I 56	61° 56'	h m I 56	21° 26'
Jan. 0.3	20.582 ¹²⁹	41.00 ⁴⁷	18.38 ⁴⁰	77.27 ⁷⁰	20.288 ¹⁴⁰	89.91 ⁹⁶
10.3	20.453 ¹⁴⁴	40.53 ⁶¹	17.98 ⁴⁰	77.97 ¹⁴	20.148 ¹⁵³	90.87 ⁶⁷
20.3	20.309 ¹⁵²	39.92 ⁷⁴	17.58 ⁴¹	78.11 ⁴⁵	19.995 ¹⁶¹	91.54 ³⁶
30.2	20.157 ¹⁵⁵	39.18 ⁸⁵	17.17 ⁴⁰	77.66 ¹⁰¹	19.834 ¹⁶¹	91.90 ¹
Feb. 9.2	20.002 ¹⁴⁸	38.33 ⁹⁴	16.77 ³⁸	76.65 ¹⁵³	19.673 ¹⁵⁸	91.91 ²⁹
19.2	19.854 ¹³⁴	37.39 ⁹⁵	16.39 ³⁴	75.12 ²⁰⁴	19.515 ¹⁴³	91.62 ⁶⁴
Mar. 1.1	19.720 ¹¹⁵	36.44 ⁹³	16.05 ³⁰	73.08 ²⁴⁶	19.372 ¹²³	90.98 ⁹⁶
11.1	19.605 ⁸¹	35.51 ⁸⁶	15.75 ²⁵	70.62 ²⁸⁴	19.249 ⁹⁴	90.02 ¹²⁵
21.1	19.524 ⁴⁶	34.65 ⁷⁷	15.50 ¹⁸	67.78 ³¹²	19.155 ⁶²	88.77 ¹⁵²
31.1	19.478 ²	33.88 ⁶¹	15.32 ¹¹	64.66 ³³⁹	19.093 ²¹	87.25 ¹⁸¹
Apr. 10.0	19.476 ⁴⁸	33.27 ³⁸	15.21 ⁴	61.27 ³⁵³	19.072 ²²	85.44 ²⁰⁵
20.0	19.524 ⁹¹	32.89 ¹⁵	15.17 ⁵	57.74 ³⁶²	19.094 ⁶⁸	83.39 ²²⁴
30.0	19.615 ¹³⁹	32.74 ⁹	15.22 ¹²	54.12 ³⁶¹	19.162 ¹¹⁵	81.15 ²³⁷
May 10.0	19.754 ¹⁸⁴	32.83 ³⁹	15.34 ²¹	50.51 ³⁵⁶	19.277 ¹⁵⁸	78.78 ²⁵⁰
19.9	19.938 ²²⁵	33.22 ⁶⁵	15.55 ²⁸	46.95 ³³⁷	19.435 ²⁰⁰	76.28 ²⁵⁵
29.9	20.163 ²⁶⁰	33.87 ⁹²	15.83 ³⁵	43.58 ³¹⁵	19.635 ²³⁷	73.73 ²⁵⁴
June 8.9	20.423 ²⁸⁷	34.79 ¹¹³	16.18 ⁴⁰	40.43 ²⁸³	19.872 ²⁶⁶	71.19 ²⁴⁶
18.8	20.710 ³⁰⁵	35.92 ¹³⁷	16.58 ⁴⁶	37.60 ²⁴³	20.138 ²⁹⁰	68.73 ²³²
28.8	21.015 ³¹⁵	37.29 ¹⁵²	17.04 ⁴⁹	35.17 ¹⁹⁸	20.428 ³⁰²	66.41 ²¹⁴
July 8.8	21.330 ³²⁰	38.81 ¹⁶⁸	17.53 ⁵¹	33.19 ¹⁴⁸	20.730 ³¹¹	64.27 ¹⁸⁷
18.8	21.650 ³¹³	40.49 ¹⁷⁵	18.04 ⁵²	31.71 ⁹³	21.041 ³¹⁰	62.40 ¹⁵⁸
28.7	21.963 ³⁰⁴	42.24 ¹⁷⁸	18.56 ⁵¹	30.78 ³⁵	21.351 ³⁰²	60.82 ¹²²
Aug. 7.7	22.267 ²⁸²	44.02 ¹⁷⁸	19.07 ⁵⁰	30.43 ²⁴	21.653 ²⁸⁵	59.60 ⁸²
17.7	22.549 ²⁶³	45.80 ¹⁷²	19.57 ⁴⁵	30.67 ⁸⁵	21.938 ²⁶⁴	58.78 ⁴²
27.6	22.812 ²³³	47.52 ¹⁶⁶	20.02 ⁴¹	31.52 ¹³⁷	22.202 ²³⁵	58.36 ⁰
Sept. 6.6	23.045 ²⁰³	49.18 ¹⁵¹	20.43 ³⁵	32.89 ¹⁹⁰	22.437 ²⁰⁵	58.36 ⁴⁰
16.6	23.248 ¹⁷¹	50.69 ¹³⁸	20.78 ²⁸	34.79 ²³⁷	22.642 ¹⁷¹	58.76 ⁷⁹
26.6	23.419 ¹³⁹	52.07 ¹²²	21.06 ²¹	37.16 ²⁷⁰	22.813 ¹³⁶	59.55 ¹¹²
Oct. 6.5	23.558 ¹⁰⁹	53.29 ¹⁰⁴	21.27 ¹³	39.86 ²⁹⁶	22.949 ¹⁰⁰	60.67 ¹⁴⁰
16.5	23.667 ⁷⁴	54.33 ⁸⁷	21.40 ⁵	42.82 ³¹²	23.049 ⁶⁵	62.07 ¹⁶³
26.5	23.741 ⁴²	55.20 ⁶⁸	21.45 ³	45.94 ³¹³	23.114 ³¹	63.70 ¹⁷⁶
Nov. 5.5	23.783 ¹⁵	55.88 ⁵⁰	21.42 ¹¹	49.07 ³⁰⁵	23.145 ²	65.46 ¹⁸³
15.4	23.798 ¹⁶	56.38 ³²	21.31 ¹⁸	52.12 ²⁸³	23.143 ³²	67.29 ¹⁸³
25.4	23.782 ⁴³	56.70 ¹⁸	21.13 ²⁵	54.95 ²⁵¹	23.111 ⁵⁹	69.12 ¹⁷³
Dec. 5.4	23.739 ⁷⁰	56.88 ³	20.88 ²⁹	57.46 ²⁰⁸	23.052 ⁸⁶	70.85 ¹⁶⁰
15.3	23.669 ⁹⁶	56.85 ¹⁹	20.59 ³⁴	59.54 ¹⁶¹	22.966 ¹⁰⁹	72.45 ¹³⁷
25.3	23.573 ¹¹⁵	56.66 ³⁵	20.25 ³⁸	61.15 ¹⁰⁶	22.857 ¹²⁹	73.82 ¹¹⁴
35.3	23.458	56.31	19.87	62.21	22.728	74.96
Mean Place	19.603	38.35	18.25	56.64	19.746	78.56
Sec δ , Tan δ	1.067	+0.372	2.127	-1.877	1.074	-0.393
L α , L δ	0.00	+0.4	-0.02	+0.3	-0.01	+0.3
ω α , ω δ	-0.02	+0.5	+0.11	+0.5	+0.02	+0.5
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 289

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Andromedæ. Mag. 2·3		α Arietis. Mag. 2·2		β Trianguli. Mag. 3·1	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m I 59	° ' " 57	h m 2 2	° ' " 23 5	h m 2 4	° ' " 34 37
Jan. 0·3	7·713 ¹⁷⁹	30·76 ¹³	47·405 ¹²⁸	42·34 ³⁶	55·109 ¹⁵⁰	14·69 ⁴
10·3	7·534 ¹⁹⁷	30·89 ²⁶	47·277 ¹⁴⁷	41·98 ⁵³	54·959 ¹⁷⁰	14·65 ³⁵
20·3	7·337 ²¹⁰	30·63 ⁶⁴	47·130 ¹⁵⁵	41·45 ⁶⁸	54·789 ¹⁸³	14·30 ⁶⁰
30·2	7·127 ²¹⁴	29·99 ⁹⁶	46·975 ¹⁶⁴	40·77 ⁸²	54·606 ¹⁹⁰	13·70 ⁸⁹
Feb. 9·2	6·913 ²¹⁰	29·03 ¹²¹	46·811 ¹⁵⁸	39·95 ⁹²	54·416 ¹⁸⁴	12·81 ¹¹¹
19·2	6·703 ¹⁹⁰	27·82 ¹⁴⁹	46·653 ¹⁴⁵	39·03 ⁹⁸	54·232 ¹⁷²	11·70 ¹²⁵
Mar. 1·1	6·513 ¹⁶¹	26·33 ¹⁶⁶	46·508 ¹²⁷	38·05 ¹⁰⁰	54·060 ¹⁴²	10·45 ¹⁴¹
11·1	6·352 ¹²¹	24·67 ¹⁷⁷	46·381 ⁹¹	37·05 ⁹⁹	53·918 ¹¹⁴	9·04 ¹⁴⁵
21·1	6·231 ⁷⁴	22·90 ¹⁷⁹	46·290 ⁵⁹	36·06 ⁸⁷	53·804 ⁶⁸	7·59 ¹⁴⁴
31·1	6·157 ²⁰	21·11 ¹⁷³	46·231 ¹³	35·19 ⁷³	53·736 ²¹	6·15 ¹³⁵
Apr. 10·0	6·137 ⁴¹	19·38 ¹⁶⁰	46·218 ³⁰	34·46 ⁵⁷	53·715 ³¹	4·80 ¹²⁵
20·0	6·178 ⁹⁸	17·78 ¹³⁹	46·248 ⁸³	33·89 ³³	53·746 ⁸⁷	3·55 ¹⁰⁰
30·0	6·276 ¹⁵⁸	16·39 ¹¹⁶	46·331 ¹³¹	33·56 ¹⁰	53·833 ¹⁴¹	2·55 ⁷⁶
May 10·0	6·434 ²¹⁵	15·23 ⁸²	46·462 ¹⁷⁶	33·46 ¹⁷	53·974 ¹⁹¹	1·79 ⁴⁶
19·9	6·649 ²⁶⁴	14·41 ⁴⁹	46·638 ²¹⁹	33·63 ⁴⁴	54·165 ²³⁷	1·33 ¹⁷
29·9	6·913 ³⁰³	13·92 ¹⁵	46·857 ²⁵⁵	34·07 ⁷³	54·402 ²⁸⁰	1·16 ¹⁷
June 8·9	7·216 ³⁴⁰	13·77 ²³	47·112 ²⁸⁵	34·80 ⁹⁷	54·682 ³⁰⁶	1·33 ⁴⁹
18·8	7·556 ³⁶⁴	14·00 ⁶²	47·397 ³⁰¹	35·77 ¹²¹	54·988 ³³⁵	1·82 ⁸¹
28·8	7·920 ³⁷⁷	14·62 ⁹³	47·698 ³¹⁹	36·98 ¹⁴⁰	55·323 ³⁴⁸	2·63 ¹⁰⁷
July 8·8	8·297 ³⁸⁷	15·55 ¹²³	48·017 ³²⁶	38·38 ¹⁵⁵	55·671 ³⁵³	3·70 ¹³³
18·8	8·684 ³⁷⁹	16·78 ¹⁵³	48·343 ³²¹	39·93 ¹⁶⁶	56·024 ³⁵⁴	5·03 ¹⁵⁶
28·7	9·063 ³⁶⁵	18·31 ¹⁷⁷	48·664 ³⁰⁹	41·59 ¹⁷³	56·378 ³³⁸	6·59 ¹⁷⁴
Aug. 7·7	9·428 ³⁴⁸	20·08 ²⁰⁰	48·973 ²⁹⁵	43·32 ¹⁷⁵	56·716 ³²⁴	8·33 ¹⁸⁷
17·7	9·776 ³²²	22·08 ²¹⁰	49·268 ²⁷⁴	45·07 ¹⁷⁴	57·040 ²⁹⁹	10·20 ¹⁹⁵
27·7	10·098 ²⁹⁰	24·18 ²²²	49·542 ²⁴⁶	46·81 ¹⁶⁸	57·339 ²⁷⁵	12·15 ²⁰⁰
Sept. 6·6	10·388 ²⁵⁶	26·40 ²²⁷	49·788 ²¹⁸	48·49 ¹⁵⁹	57·614 ²³⁸	14·15 ²⁰¹
16·6	10·644 ²¹⁹	28·67 ²²⁹	50·006 ¹⁸⁵	50·08 ¹⁴⁶	57·852 ²⁰⁸	16·16 ¹⁹⁷
26·6	10·863 ¹⁸²	30·96 ²²⁸	50·191 ¹⁵⁸	51·54 ¹³³	58·060 ¹⁷³	18·13 ¹⁹⁰
Oct. 6·5	11·045 ¹⁴⁰	33·24 ²¹⁹	50·349 ¹²³	52·87 ¹¹⁶	58·233 ¹³⁹	20·03 ¹⁸⁰
16·5	11·185 ¹⁰¹	35·43 ²⁰⁹	50·472 ⁸⁹	54·03 ¹⁰⁰	58·372 ¹⁰²	21·83 ¹⁶⁹
26·5	11·286 ⁶⁰	37·52 ¹⁹⁴	50·561 ⁵⁹	55·03 ⁸⁴	58·474 ⁶⁵	23·52 ¹⁵²
Nov. 5·5	11·346 ²⁰	39·46 ¹⁷⁷	50·620 ²⁹	55·87 ⁶⁶	58·539 ²⁹	25·04 ¹³⁵
15·4	11·366 ²¹	41·23 ¹⁵³	50·649 ⁵	56·53 ⁴⁹	58·568 ⁶	26·39 ¹¹⁶
25·4	11·345 ⁵⁸	42·76 ¹³⁰	50·644 ³⁴	57·02 ³⁰	58·562 ³⁹	27·55 ⁹²
Dec. 5·4	11·287 ⁹⁴	44·06 ⁹⁹	50·610 ⁶⁴	57·32 ¹⁷	58·523 ⁷⁴	28·47 ⁶⁷
15·3	11·193 ¹³⁰	45·05 ⁶⁸	50·546 ⁹¹	57·49 ⁶	58·449 ¹⁰⁷	29·14 ⁴⁰
25·3	11·063 ¹⁶¹	45·73 ³³	50·455 ¹¹²	57·43 ²⁴	58·342 ¹³¹	29·54 ¹⁶
35·3	10·902	46·06	50·343	57·19	58·211	29·70
Mean Place	6·228	22·23	46·314	39·49	53·780	8·50
Sec δ , Tan δ	1·345	+0·899	1·087	+0·426	1·215	+0·690
L α , L δ	+0·01	+0·3	+0·01	+0·3	+0·01	+0·3
ω α , ω δ	-0·05	+0·5	-0·02	+0·5	-0·04	+0·5
AUTHORITY	A. E.		A. E.		A. E.	

290 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ξ ¹ Ceti. Mag. 4.5		67 Ceti. Mag. 5.7		φ Eridani. Mag. 3.8	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 2 8	8 28	h m 2 13	6 46	h m 2 13	5 51
Jan.	0.3 52.711 ¹¹³	50.69 ⁶⁵	6.263 ¹¹⁸	59.05 ⁹¹	43.761 ²⁶⁹	101.72 ¹⁰⁷
	10.3 52.598 ¹³¹	50.04 ⁶⁶	6.145 ¹³³	59.96 ⁷⁸	43.492 ²⁸⁷	102.79 ⁵³
	20.3 52.467 ¹⁴³	49.38 ⁶⁶	6.012 ¹⁴⁶	60.74 ⁵⁹	43.205 ²⁹⁷	103.32 ¹
	30.2 52.324 ¹⁴⁹	48.72 ⁶²	5.866 ¹⁵¹	61.33 ³⁹	42.908 ²⁹⁷	103.31 ⁵⁵
Feb.	9.2 52.175 ¹⁴⁷	48.10 ⁵⁸	5.715 ¹⁴⁸	61.72 ²⁰	42.611 ²⁸⁸	102.76 ¹⁰⁶
	19.2 52.028 ¹³⁹	47.52 ⁵⁰	5.567 ¹⁴³	61.92 ³	42.323 ²⁶⁸	101.70 ¹⁵⁶
Mar.	1.2 51.889 ¹¹⁸	47.02 ³⁹	5.424 ¹²³	61.89 ²³	42.055 ²³⁸	100.14 ²⁰⁰
	11.1 51.771 ⁹³	46.63 ²⁶	5.301 ⁹⁷	61.66 ⁵⁰	41.817 ²⁰⁰	98.14 ²³⁹
	21.1 51.678 ⁶⁰	46.37 ¹¹	5.204 ⁶⁷	61.16 ⁷³	41.617 ¹⁵³	95.75 ²⁷⁴
	31.1 51.618 ²¹	46.26 ¹⁰	5.137 ²⁹	60.43 ⁹⁶	41.464 ⁹⁸	93.01 ³⁰²
Apr.	10.0 51.597 ²³	46.36 ³⁰	5.108 ¹²	59.47 ¹²⁰	41.366 ⁴⁰	89.99 ³²³
	20.0 51.620 ⁶⁷	46.66 ⁵³	5.120 ⁵⁹	58.27 ¹⁴³	41.326 ²⁴	86.76 ³³⁸
	30.0 51.687 ¹¹⁴	47.19 ⁷⁵	5.179 ¹⁰⁰	56.84 ¹⁶⁰	41.350 ⁸⁸	83.38 ³⁴⁶
May	10.0 51.801 ¹⁵⁸	47.94 ⁹⁹	5.279 ¹⁴⁷	55.24 ¹⁸⁰	41.438 ¹⁵²	79.92 ³⁴⁴
	19.9 51.959 ¹⁹⁷	48.93 ¹²⁰	5.426 ¹⁸⁸	53.44 ¹⁹⁵	41.590 ²¹³	76.48 ³³⁷
	29.9 52.156 ²³³	50.13 ¹³⁸	5.614 ²²¹	51.49 ²⁰¹	41.803 ²⁶⁷	73.11 ³²⁰
June	8.9 52.389 ²⁶¹	51.51 ¹⁵³	5.835 ²⁴⁹	49.48 ²⁰⁷	42.070 ³¹⁶	69.91 ²⁹⁶
	18.8 52.650 ²⁸³	53.04 ¹⁶⁵	6.084 ²⁷⁵	47.41 ²⁰⁶	42.386 ³⁵⁷	66.95 ²⁶⁴
	28.8 52.933 ²⁹⁸	54.69 ¹⁷²	6.359 ²⁸⁸	45.35 ¹⁹⁹	42.743 ³⁸⁷	64.31 ²²⁵
July	8.8 53.231 ³⁰³	56.41 ¹⁷⁴	6.647 ²⁹⁹	43.36 ¹⁸⁸	43.130 ⁴⁰⁶	62.06 ¹⁷⁹
	18.8 53.534 ³⁰¹	58.15 ¹⁷¹	6.946 ²⁹⁷	41.48 ¹⁷¹	43.536 ⁴¹⁵	60.27 ¹³⁰
	28.7 53.835 ²⁹⁵	59.86 ¹⁶³	7.243 ²⁹¹	39.77 ¹⁴⁷	43.951 ⁴¹³	58.97 ⁷⁵
Aug.	7.7 54.130 ²⁷⁸	61.49 ¹⁵¹	7.534 ²⁷⁸	38.30 ¹²²	44.364 ³⁹⁸	58.22 ¹⁹
	17.7 54.408 ²⁶⁰	63.00 ¹³⁵	7.811 ²⁶²	37.08 ⁹¹	44.762 ³⁷⁴	58.03 ³⁹
	27.7 54.668 ²³⁵	64.35 ¹¹⁶	8.073 ²³⁷	36.17 ⁶⁴	45.136 ³⁴⁰	58.42 ⁹⁵
Sept.	6.6 54.903 ²⁰⁸	65.51 ⁹⁵	8.310 ²⁰⁸	35.53 ²⁸	45.476 ²⁹⁸	59.37 ¹⁴⁸
	16.6 55.111 ¹⁷⁹	66.46 ⁷⁴	8.518 ¹⁸⁰	35.25 ⁴	45.774 ²⁴⁹	60.85 ¹⁹⁶
	26.6 55.290 ¹⁴⁹	67.20 ⁵²	8.698 ¹⁴⁹	35.29 ³³	46.023 ¹⁹⁵	62.81 ²³⁶
Oct.	6.6 55.439 ¹¹⁹	67.72 ³⁰	8.847 ¹²²	35.62 ⁵⁹	46.218 ¹³⁹	65.17 ²⁶⁷
	16.5 55.558 ⁸⁸	68.02 ¹⁰	8.969 ⁸⁶	36.21 ⁸⁴	46.357 ⁷⁹	67.84 ²⁸⁹
	26.5 55.646 ⁵⁹	68.12 ⁸	9.055 ⁵⁵	37.05 ¹⁰⁰	46.436 ²¹	70.73 ²⁹⁸
Nov.	5.5 55.705 ²⁹	68.04 ²²	9.110 ²⁶	38.05 ¹¹¹	46.457 ³⁵	73.71 ²⁹⁶
	15.4 55.734 ¹	67.82 ³⁵	9.136 ³	39.16 ¹²⁰	46.422 ⁸⁹	76.67 ²⁸⁴
	25.4 55.735 ²⁶	67.47 ⁴⁵	9.133 ²⁷	40.36 ¹²¹	46.333 ¹³⁹	79.51 ²⁵⁹
Dec.	5.4 55.709 ⁵³	67.02 ⁵³	9.106 ⁵⁷	41.57 ¹¹⁰	46.194 ¹⁸²	82.10 ²²⁵
	15.4 55.656 ⁷⁹	66.49 ⁵⁹	9.049 ⁸⁴	42.75 ¹¹⁸	46.012 ²²¹	84.35 ¹⁸⁵
	25.3 55.577 ¹⁰¹	65.90 ⁶²	8.965 ¹⁰⁶	43.85 ⁹⁹	45.791 ²⁵²	86.20 ¹³⁷
	35.3 55.476	65.28	8.859	44.84	45.539	87.57
Mean Place	51.797	52.84	5.488	51.76	43.329	82.52
Sec δ, Tan δ	1.011	+0.149	1.007	-0.119	1.620	-1.274
L α, L δ	0.00	+0.3	0.00	+0.3	-0.02	+0.3
ω α, ω δ	-0.01	+0.5	+0.01	+0.5	+0.07	+0.5
AUTHORITY			A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 291

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	θ Arietis. Mag. 5.7		κ Fornacis. Mag. 5.4		δ Hydri. Mag. 4.3	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 2 13	° ' 19 32	h m 2 18	° ' 24 9	h m 2 20	° ' 69 0
Jan. 0.3	48.068 ^s ₁₁₉	28.76 ₃₉	59.066 ^s ₁₄₀	85.61 ₁₁₃	21.74 ₅₅	71.97 ₉₅
10.3	47.949 ₁₃₉	28.37 ₅₂	58.926 ₁₅₈	86.74 ₈₁	21.19 ₅₇	72.92 ₃₄
20.3	47.810 ₁₅₂	27.85 ₆₃	58.768 ₁₆₉	87.55 ₄₆	20.62 ₅₈	73.26 ₂₅
30.2	47.658 ₁₅₉	27.22 ₇₃	58.599 ₁₇₅	88.01 ₁₀	20.04 ₅₈	73.01 ₈₄
Feb. 9.2	47.499 ₁₅₈	26.49 ₇₉	58.424 ₁₇₃	88.11 ₂₅	19.46 ₅₅	72.17 ₁₄₁
19.2	47.341 ₁₄₉	25.70 ₈₄	58.251 ₁₆₃	87.86 ₆₁	18.91 ₅₂	70.76 ₁₉₂
Mar. 1.2	47.192 ₁₃₀	24.86 ₈₂	58.088 ₁₄₆	87.25 ₉₅	18.39 ₄₇	68.84 ₂₃₇
11.1	47.062 ₁₀₂	24.04 ₇₈	57.942 ₁₂₀	86.30 ₁₂₈	17.92' ₄₀	66.47 ₂₇₇
21.1	46.960 ₆₇	23.26 ₆₈	57.822 ₈₇	85.02 ₁₅₉	17.52 ₃₂	63.70 ₃₁₁
31.1	46.893 ₂₆	22.58 ₅₄	57.735 ₄₉	83.43 ₁₈₇	17.20 ₂₃	60.59 ₃₃₇
Apr. 10.0	46.867 ₂₀	22.04 ₃₆	57.686 ₅	81.56 ₂₁₂	16.97 ₁₄	57.22 ₃₅₆
20.0	46.887 ₆₈	21.68 ₁₅	57.681 ₄₂	79.44 ₂₃₃	16.83 ₄	53.66 ₃₆₆
30.0	46.955 ₁₁₆	21.53 ₉	57.723 ₉₀	77.11 ₂₄₉	16.79 ₇	50.00 ₃₆₉
May 10.0	47.071 ₁₆₃	21.62 ₃₅	57.813 ₁₃₆	74.62 ₂₆₁	16.86 ₁₈	46.31 ₃₆₃
19.9	47.234 ₂₀₅	21.97 ₆₀	57.949 ₁₈₀	72.01 ₂₆₆	17.04 ₂₇	42.68 ₃₄₉
29.9	47.439 ₂₄₂	22.57 ₈₄	58.129 ₂₁₉	69.35 ₂₆₅	17.31 ₃₆	39.19 ₃₂₈
June 8.9	47.681 ₂₇₁	23.41 ₁₀₇	58.348 ₂₅₃	66.70 ₂₅₉	17.67 ₄₆	35.91 ₂₉₆
18.8	47.952 ₂₉₅	24.48 ₁₂₇	58.601 ₂₈₀	64.11 ₂₄₄	18.13 ₅₁	32.95 ₂₆₀
28.8	48.247 ₃₁₀	25.75 ₁₄₃	58.881 ₂₉₈	61.67 ₂₂₄	18.64 ₅₈	30.35 ₂₁₄
July 8.8	48.557 ₃₁₆	27.18 ₁₅₆	59.179 ₃₁₀	59.43 ₁₉₇	19.22 ₆₂	28.21 ₁₆₃
18.8	48.873 ₃₁₅	28.74 ₁₆₃	59.489 ₃₁₃	57.46 ₁₆₅	19.84 ₆₅	26.58 ₁₀₈
28.7	49.188 ₃₀₇	30.37 ₁₆₆	59.802 ₃₀₈	55.81 ₁₂₈	20.49 ₆₅	25.50 ₅₀
Aug. 7.7	49.495 ₂₉₂	32.03 ₁₆₆	60.110 ₂₉₆	54.53 ₈₇	21.14 ₆₄	25.00 ₁₂
17.7	49.787 ₂₇₂	33.69 ₁₆₀	60.406 ₂₇₈	53.66 ₄₃	21.78 ₆₀	25.12 ₇₂
27.7	50.059 ₂₄₉	35.29 ₁₅₂	60.684 ₂₅₃	53.23 ₀	22.38 ₅₇	25.84 ₁₃₁
Sept. 6.6	50.308 ₂₂₁	36.81 ₁₃₉	60.937 ₂₂₅	53.23 ₄₅	22.95 ₄₇	27.15 ₁₈₅
16.6	50.529 ₁₉₂	38.20 ₁₂₆	61.162 ₁₉₃	53.68 ₈₅	23.42 ₄₁	29.00 ₂₃₄
26.6	50.721 ₁₆₂	39.46 ₁₁₀	61.355 ₁₅₉	54.53 ₁₂₂	23.83 ₃₁	31.34 ₂₇₃
Oct. 6.6	50.883 ₁₃₁	40.56 ₉₃	61.514 ₁₂₄	55.75 ₁₅₄	24.14 ₂₁	34.07 ₃₀₃
16.5	51.014 ₉₉	41.49 ₇₇	61.638 ₈₈	57.29 ₁₇₈	24.35 ₁₀	37.10 ₃₂₂
26.5	51.113 ₆₉	42.26 ₆₀	61.726 ₅₃	59.07 ₁₉₅	24.45 ₁	40.32 ₃₂₈
Nov. 5.5	51.182 ₃₈	42.86 ₄₅	61.779 ₁₉	61.02 ₂₀₃	24.44 ₁₁	43.60 ₃₂₂
15.4	51.220 ₇	43.31 ₂₈	61.798 ₁₄	63.05 ₂₀₃	24.33 ₂₂	46.82 ₃₀₃
25.4	51.227 ₂₂	43.59 ₁₄	61.784 ₄₆	65.08 ₁₉₅	24.11 ₃₁	49.85 ₂₇₁
Dec. 5.4	51.205 ₅₁	43.73 ₁	61.738 ₇₆	67.03 ₁₇₉	23.80 ₃₉	52.56 ₂₃₃
15.4	51.154 ₈₀	43.72 ₁₆	61.662 ₁₀₂	68.82 ₁₅₈	23.41 ₄₆	54.89 ₁₈₄
25.3	51.074 ₁₀₅	43.56 ₂₉	61.560 ₁₂₇	70.40 ₁₃₁	22.95 ₅₁	56.73 ₁₂₉
35.3	50.969	43.27	61.433	71.71	22.44	58.02
Mean Place	46.975	27.60	58.402	72.88	21.32	50.36
Sec δ , Tan δ	1.061	+0.355	1.096	-0.449	2.792	-2.607
L α , L δ	+0.01	+0.3	-0.01	+0.3	-0.04	+0.3
ω α , ω δ	-0.02	+0.5	+0.02	+0.6	+0.14	+0.6

AUTHORITY

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292 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ξ^2 Ceti. Mag. 4.3		ν Ceti. Mag. 5.0		δ Ceti. Mag. 4.0	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 2 24	° 6	h m 2 31	° 15	h m 2 35	° 0
Jan. 0.3	1.542 ¹⁰⁹	37.32 ⁶⁵	47.691 ¹⁰⁶	9.16 ⁷¹	29.935 ¹⁰⁷	31.63 ⁸²
10.3	1.433 ¹³⁰	36.67 ⁶⁵	47.585 ¹²⁶	8.45 ⁶⁸	29.828 ¹²⁷	32.45 ⁷⁷
20.3	1.303 ¹⁴³	36.02 ⁶³	47.459 ¹⁴³	7.77 ⁶⁴	29.701 ¹⁴²	33.22 ⁶⁴
30.3	1.160 ¹⁵²	35.39 ⁵⁹	47.316 ¹⁵²	7.13 ⁵⁶	29.559 ¹⁵⁴	33.86 ⁵²
Feb. 9.2	1.008 ¹⁵³	34.80 ⁵⁵	47.164 ¹⁵⁵	6.57 ⁴⁷	29.405 ¹⁵⁵	34.38 ³⁸
19.2	0.855 ¹⁴⁴	34.25 ⁴⁶	47.009 ¹⁴⁹	6.10 ³⁸	29.250 ¹⁴⁹	34.76 ²³
Mar. 1.2	0.711 ¹³¹	33.79 ³⁷	46.860 ¹³³	5.72 ²⁵	29.101 ¹³⁸	34.99 ⁴
11.1	0.580 ¹⁰³	33.42 ²⁴	46.727 ¹¹²	5.47 ¹⁰	28.963 ¹¹³	35.03 ¹¹
21.1	0.477 ⁷⁴	33.18 ⁵	46.615 ⁸⁰	5.37 ⁷	28.850 ⁸²	34.92 ³⁶
31.1	0.403 ³⁴	33.13 ¹⁰	46.535 ⁴³	5.44 ²⁶	28.768 ⁴⁷	34.56 ⁵⁷
Apr. 10.1	0.369 ⁷	33.23 ³⁰	46.492 ⁰	5.70 ⁴⁷	28.721 ⁷	33.99 ⁷⁵
20.0	0.376 ⁵⁵	33.53 ⁵⁴	46.492 ⁴⁴	6.17 ⁶⁸	28.714 ³⁸	33.24 ¹⁰¹
30.0	0.431 ⁹⁸	34.07 ⁷⁴	46.536 ⁸⁹	6.85 ⁹¹	28.752 ⁸³	32.23 ¹²¹
May 10.0	0.529 ¹⁴⁴	34.81 ⁹⁸	46.625 ¹³⁵	7.76 ¹¹¹	28.835 ¹²⁸	31.02 ¹³⁹
20.0	0.673 ¹⁸⁶	35.79 ¹¹⁶	46.760 ¹⁷⁶	8.87 ¹³⁰	28.963 ¹⁷⁰	29.63 ¹⁵⁶
29.9	0.859 ²²⁰	36.95 ¹³⁶	46.936 ²¹⁴	10.17 ¹⁴⁷	29.133 ²⁰⁸	28.07 ¹⁷²
June 8.9	1.079 ²⁵²	38.31 ¹⁵¹	47.150 ²⁴⁵	11.64 ¹⁵⁹	29.341 ²³⁸	26.35 ¹⁷⁸
18.9	1.331 ²⁷⁶	39.82 ¹⁵⁸	47.395 ²⁶⁹	13.23 ¹⁶⁹	29.579 ²⁶⁴	24.57 ¹⁸⁴
28.8	1.607 ²⁹³	41.40 ¹⁶⁷	47.664 ²⁸⁸	14.92 ¹⁷³	29.843 ²⁸³	22.73 ¹⁸⁶
July 8.8	1.900 ³⁰⁰	43.07 ¹⁶⁹	47.952 ²⁹⁶	16.65 ¹⁷²	30.126 ²⁹³	20.87 ¹⁷⁹
18.8	2.200 ³⁰²	44.76 ¹⁶⁸	48.248 ³⁰⁰	18.37 ¹⁶⁶	30.419 ²⁹⁶	19.08 ¹⁷¹
28.8	2.502 ²⁹⁴	46.44 ¹⁶⁰	48.548 ²⁹⁴	20.03 ¹⁵⁶	30.715 ²⁹³	17.37 ¹⁵⁴
Aug. 7.7	2.796 ²⁸⁴	48.04 ¹⁴⁶	48.842 ²⁸⁴	21.59 ¹⁴²	31.008 ²⁸⁴	15.83 ¹³³
17.7	3.080 ²⁶⁷	49.50 ¹²⁹	49.126 ²⁶⁸	23.01 ¹²²	31.292 ²⁶⁷	14.50 ¹¹²
27.7	3.347 ²⁴⁵	50.79 ¹¹³	49.394 ²⁴⁷	24.23 ¹⁰¹	31.559 ²⁴⁸	13.38 ⁸⁵
Sept. 6.7	3.592 ²¹⁹	51.92 ⁹¹	49.641 ²²³	25.24 ⁷⁹	31.807 ²²⁵	12.53 ⁵⁶
16.6	3.811 ¹⁹¹	52.83 ⁷⁰	49.864 ¹⁹⁷	26.03 ⁵³	32.032 ¹⁹⁶	11.97 ²⁹
26.6	4.002 ¹⁶⁵	53.53 ⁴⁵	50.061 ¹⁶⁸	26.56 ³⁰	32.228 ¹⁷²	11.68 ¹
Oct. 6.6	4.167 ¹³²	53.98 ²⁶	50.229 ¹³⁹	26.86 ⁷	32.400 ¹⁴¹	11.67 ²³
16.5	4.299 ¹⁰⁶	54.24 ⁵	50.368 ¹¹⁰	26.93 ¹⁴	32.541 ¹¹²	11.90 ⁴³
26.5	4.405 ⁷⁵	54.29 ¹²	50.478 ⁸¹	26.79 ³¹	32.653 ⁸³	12.33 ⁶⁴
Nov. 5.5	4.480 ⁴²	54.17 ²⁷	50.559 ⁵⁰	26.48 ⁴⁶	32.736 ⁵⁰	12.97 ⁷⁸
15.5	4.522 ¹⁸	53.90 ³⁶	50.609 ²²	26.02 ⁵⁷	32.786 ²²	13.75 ⁸⁹
25.4	4.540 ¹⁵	53.54 ⁴⁸	50.631 ⁹	25.45 ⁶⁴	32.808 ⁹	14.64 ⁹²
Dec. 5.4	4.525 ⁴³	53.06 ⁵⁶	50.622 ³⁶	24.81 ⁷⁰	32.799 ³⁴	15.56 ⁹⁶
15.4	4.482 ⁷⁰	52.50 ⁶¹	50.586 ⁶⁵	24.11 ⁷¹	32.765 ⁶⁴	16.52 ⁹³
25.3	4.412 ⁹⁶	51.89 ⁶⁴	50.521 ⁹¹	23.40 ⁷¹	32.701 ⁹²	17.45 ⁸⁶
35.3	4.316	51.25	50.430	22.69	32.609	18.31
Mean Place	0.552	40.27	46.695	13.34	28.975	25.66
Sec δ , Tan δ	1.010	+0.143	1.004	+0.092	1.000	0.000
L α , L δ	0.00	+0.3	0.00	+0.3	0.00	+0.3
ω α , ω δ	-0.01	+0.6	-0.01	+0.6	0.00	+0.6
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 293

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Ceti. Mag. 3.6		π Ceti. Mag. 4.4		β Fornacis. Mag. 4.5	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 2 39	° ' 2 54	h m 2 40	° ' 14 11	h m 2 45	° ' 32 43
Jan. 0.3	16.409 ^s ₁₀₃	22.95 ^s ₇₈	25.401 ^s ₁₁₅	28.25 ^s ₁₁₅	50.369 ^s ₁₅₆	74.08 ^s ₁₄₀
10.3	16.306 ^s ₁₂₅	22.17 ^s ₇₁	25.286 ^s ₁₃₇	29.40 ^s ₉₀	50.213 ^s ₁₇₇	75.48 ^s ₁₀₁
20.3	16.181 ^s ₁₄₃	21.46 ^s ₆₄	25.149 ^s ₁₅₄	30.30 ^s ₆₅	50.036 ^s ₁₉₆	76.49 ^s ₅₈
30.3	16.038 ^s ₁₅₃	20.82 ^s ₅₅	24.995 ^s ₁₆₄	30.95 ^s ₃₇	49.840 ^s ₂₀₅	77.07 ^s ₁₇
Feb. 9.2	15.885 ^s ₁₅₇	20.27 ^s ₄₃	24.831 ^s ₁₆₇	31.32 ^s ₁₁	49.635 ^s ₂₀₈	77.24 ^s ₂₈
19.2	15.728 ^s ₁₅₂	19.84 ^s ₃₁	24.664 ^s ₁₆₂	31.43 ^s ₁₈	49.427 ^s ₂₀₂	76.96 ^s ₇₀
Mar. 1.2	15.576 ^s ₁₃₉	19.53 ^s ₁₇	24.502 ^s ₁₄₉	31.25 ^s ₄₈	49.225 ^s ₁₈₅	76.26 ^s ₁₁₀
11.1	15.437 ^s ₁₁₆	19.36 ^s ₀	24.353 ^s ₁₂₆	30.77 ^s ₇₆	49.040 ^s ₁₆₃	75.16 ^s ₁₄₈
21.1	15.321 ^s ₈₇	19.36 ^s ₁₉	24.227 ^s ₉₅	30.01 ^s ₁₀₂	48.877 ^s ₁₂₉	73.68 ^s ₁₈₄
31.1	15.234 ^s ₅₁	19.55 ^s ₃₈	24.132 ^s ₆₀	28.99 ^s ₁₃₁	48.748 ^s ₉₀	71.84 ^s ₂₁₆
Apr. 10.1	15.183 ^s ₉	19.93 ^s ₅₉	24.072 ^s ₁₉	27.68 ^s ₁₅₅	48.658 ^s ₄₄	69.68 ^s ₂₄₄
20.0	15.174 ^s ₃₆	20.52 ^s ₈₁	24.053 ^s ₂₅	26.13 ^s ₁₇₇	48.614 ^s ₂	67.24 ^s ₂₆₃
30.0	15.210 ^s ₈₁	21.33 ^s ₁₀₂	24.078 ^s ₇₂	24.36 ^s ₂₀₀	48.616 ^s ₅₆	64.61 ^s ₂₈₃
May 10.0	15.291 ^s ₁₂₆	22.35 ^s ₁₂₂	24.150 ^s ₁₁₇	22.36 ^s ₂₁₂	48.672 ^s ₁₀₆	61.78 ^s ₂₉₄
20.0	15.417 ^s ₁₆₉	23.57 ^s ₁₄₁	24.267 ^s ₁₅₉	20.24 ^s ₂₂₅	48.778 ^s ₁₅₂	58.84 ^s ₂₉₈
29.9	15.586 ^s ₂₀₅	24.98 ^s ₁₅₅	24.426 ^s ₁₉₉	17.99 ^s ₂₃₂	48.930 ^s ₂₀₀	55.86 ^s ₂₉₆
June 8.9	15.791 ^s ₂₃₉	26.53 ^s ₁₆₇	24.625 ^s ₂₃₄	15.67 ^s ₂₃₁	49.130 ^s ₂₃₉	52.90 ^s ₂₈₅
18.9	16.030 ^s ₂₆₄	28.20 ^s ₁₇₄	24.859 ^s ₂₆₀	13.36 ^s ₂₂₇	49.369 ^s ₂₇₁	50.05 ^s ₂₇₀
28.8	16.294 ^s ₂₈₂	29.94 ^s ₁₇₇	25.119 ^s ₂₈₀	11.09 ^s ₂₁₆	49.640 ^s ₂₉₆	47.35 ^s ₂₄₃
July 8.8	16.576 ^s ₂₉₃	31.71 ^s ₁₇₄	25.399 ^s ₂₉₃	8.93 ^s ₁₉₇	49.936 ^s ₃₁₅	44.92 ^s ₂₁₃
18.8	16.869 ^s ₂₉₇	33.45 ^s ₁₆₇	25.692 ^s ₂₉₉	6.96 ^s ₁₇₆	50.251 ^s ₃₂₄	42.79 ^s ₁₇₇
28.8	17.166 ^s ₂₉₄	35.12 ^s ₁₅₃	25.991 ^s ₂₉₇	5.20 ^s ₁₄₇	50.575 ^s ₃₂₆	41.02 ^s ₁₃₅
Aug. 7.7	17.460 ^s ₂₈₅	36.65 ^s ₁₃₇	26.288 ^s ₂₈₈	3.73 ^s ₁₁₅	50.901 ^s ₃₂₀	39.67 ^s ₈₇
17.7	17.745 ^s ₂₆₉	38.02 ^s ₁₁₇	26.576 ^s ₂₇₄	2.58 ^s ₇₉	51.221 ^s ₃₀₆	38.80 ^s ₃₇
27.7	18.014 ^s ₂₅₀	39.19 ^s ₉₂	26.850 ^s ₂₅₅	1.79 ^s ₄₀	51.527 ^s ₂₈₃	38.43 ^s ₁₃
Sept. 6.7	18.264 ^s ₂₂₆	40.11 ^s ₆₈	27.105 ^s ₂₃₀	1.39 ^s ₂	51.810 ^s ₂₅₉	38.56 ^s ₆₃
16.6	18.490 ^s ₂₀₁	40.79 ^s ₄₁	27.335 ^s ₂₀₃	1.37 ^s ₃₅	52.069 ^s ₂₂₈	39.19 ^s ₁₁₀
26.6	18.691 ^s ₁₇₄	41.20 ^s ₁₆	27.538 ^s ₁₇₃	1.72 ^s ₇₁	52.297 ^s ₁₉₂	40.29 ^s ₁₅₁
Oct. 6.6	18.865 ^s ₁₄₅	41.36 ^s ₈	27.711 ^s ₁₄₃	2.43 ^s ₁₀₂	52.489 ^s ₁₅₇	41.80 ^s ₁₉₀
16.5	19.010 ^s ₁₁₆	41.28 ^s ₃₀	27.854 ^s ₁₁₃	3.45 ^s ₁₂₇	52.646 ^s ₁₁₈	43.70 ^s ₂₁₈
26.5	19.126 ^s ₈₆	40.98 ^s ₄₇	27.967 ^s ₈₀	4.72 ^s ₁₄₇	52.764 ^s ₇₇	45.88 ^s ₂₃₇
Nov. 5.5	19.212 ^s ₅₇	40.51 ^s ₆₂	28.047 ^s ₄₇	6.19 ^s ₁₅₉	52.841 ^s ₃₉	48.25 ^s ₂₄₈
15.5	19.269 ^s ₂₇	39.89 ^s ₇₂	28.094 ^s ₁₆	7.78 ^s ₁₆₄	52.880 ^s ₁	50.73 ^s ₂₄₇
25.4	19.296 ^s ₂	39.17 ^s ₇₉	28.110 ^s ₁₄	9.42 ^s ₁₆₄	52.881 ^s ₃₈	53.20 ^s ₂₃₈
Dec. 5.4	19.294 ^s ₃₃	38.38 ^s ₈₂	28.096 ^s ₄₆	11.06 ^s ₁₅₇	52.843 ^s ₇₄	55.58 ^s ₂₂₁
15.4	19.261 ^s ₆₁	37.56 ^s ₈₁	28.050 ^s ₇₃	12.63 ^s ₁₄₃	52.769 ^s ₁₀₇	57.79 ^s ₁₉₃
25.4	19.200 ^s ₈₈	36.75 ^s ₇₉	27.977 ^s ₁₀₀	14.06 ^s ₁₂₆	52.662 ^s ₁₃₈	59.72 ^s ₁₆₂
35.3	19.112 ^s	35.96 ^s	27.877 ^s	15.32 ^s	52.524 ^s	61.34 ^s
Mean Place	15.400	28.16	24.538	17.87	49.577	58.63
Sec δ , Tan δ	1.001	+0.051	1.031	-0.253	1.189	-0.643
L α , L δ	0.00	+0.3	0.00	+0.3	-0.01	+0.3
ω α , ω δ	0.00	+0.6	+0.01	+0.6	+0.03	+0.7

AUTHORITY

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294 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	σ Arietis. Mag. 5.5		ϵ Arietis (mean). Mag. 4.6		θ Eridani. Mag. 3.1	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 2 47	° ' 14 45	h m 2 54	° ' 21 1	h m 2 55	° ' 40 36
Jan. 0.3	12.161 ₁₀₀	38.93 ₄₅	46.187 ₁₀₂	44.59 ₂₂	19.190 ₁₈₃	77.12 ₁₅₇
10.3	12.061 ₁₂₇	38.48 ₅₀	46.085 ₁₂₉	44.37 ₃₄	19.007 ₂₀₉	78.69 ₁₁₀
20.3	11.934 ₁₄₅	37.98 ₅₅	45.956 ₁₅₁	44.03 ₄₅	18.798 ₂₂₉	79.79 ₆₃
30.3	11.789 ₁₅₈	37.43 ₅₈	45.805 ₁₆₆	43.58 ₅₅	18.569 ₂₄₁	80.42 ₁₄
Feb. 9.2	11.631 ₁₆₅	36.85 ₆₀	45.639 ₁₇₃	43.03 ₆₄	18.328 ₂₄₄	80.56 ₃₅
19.2	11.466 ₁₆₀	36.25 ₅₉	45.466 ₁₇₀	42.39 ₇₀	18.084 ₂₃₇	80.21 ₈₂
Mar. 1.2	11.306 ₁₄₇	35.66 ₅₆	45.296 ₁₅₇	41.69 ₇₂	17.847 ₂₂₀	79.39 ₁₂₇
11.1	11.159 ₁₂₆	35.10 ₅₀	45.139 ₁₃₆	40.97 ₇₂	17.627 ₁₉₆	78.12 ₁₆₇
21.1	11.033 ₉₄	34.60 ₃₉	45.003 ₁₀₄	40.25 ₆₈	17.431 ₁₆₁	76.45 ₂₀₇
31.1	10.939 ₅₇	34.21 ₂₆	44.899 ₆₅	39.57 ₆₅	17.270 ₁₂₂	74.38 ₂₄₁
Apr. 10.1	10.882 ₁₃	33.95 ₁₀	44.834 ₂₁	38.99 ₄₅	17.148 ₇₁	71.97 ₂₆₉
20.0	10.869 ₃₃	33.85 ₉	44.813 ₂₇	38.54 ₂₉	17.077 ₂₀	69.28 ₂₉₁
30.0	10.902 ₈₁	33.94 ₃₁	44.840 ₇₆	38.25 ₉	17.057 ₃₇	66.37 ₃₀₈
May 10.0	10.983 ₁₂₇	34.25 ₅₁	44.916 ₁₂₆	38.16 ₁₃	17.094 ₈₉	63.29 ₃₁₉
20.0	11.110 ₁₇₁	34.76 ₇₄	45.042 ₁₇₁	38.29 ₃₆	17.183 ₁₄₃	60.10 ₃₂₂
29.9	11.281 ₂₁₀	35.50 ₉₄	45.213 ₂₁₂	38.65 ₅₈	17.326 ₁₉₅	56.88 ₃₁₆
June 8.9	11.491 ₂₄₅	36.44 ₁₁₂	45.425 ₂₄₇	39.23 ₇₉	17.521 ₂₃₈	53.72 ₃₀₆
18.9	11.736 ₂₇₀	37.56 ₁₂₉	45.672 ₂₇₆	40.02 ₉₈	17.759 ₂₇₉	50.66 ₂₈₂
28.8	12.006 ₂₉₁	38.85 ₁₃₉	45.948 ₂₉₇	41.00 ₁₁₆	18.038 ₃₀₇	47.84 ₂₅₆
July 8.8	12.297 ₃₀₃	40.24 ₁₄₈	46.245 ₃₁₀	42.16 ₁₂₈	18.345 ₃₃₁	45.28 ₂₂₀
18.8	12.600 ₃₀₇	41.72 ₁₅₂	46.555 ₃₁₆	43.44 ₁₃₈	18.676 ₃₄₆	43.08 ₁₇₉
28.8	12.907 ₃₀₄	43.24 ₁₅₁	46.871 ₃₁₅	44.82 ₁₄₃	19.022 ₃₄₈	41.29 ₁₃₄
Aug. 7.7	13.211 ₂₉₆	44.75 ₁₄₅	47.186 ₃₀₆	46.25 ₁₄₄	19.370 ₃₄₅	39.95 ₇₉
17.7	13.507 ₂₈₁	46.20 ₁₃₆	47.492 ₂₉₄	47.69 ₁₄₂	19.715 ₃₃₃	39.16 ₂₇
27.7	13.788 ₂₆₃	47.56 ₁₂₄	47.786 ₂₇₅	49.11 ₁₃₅	20.048 ₃₁₃	38.89 ₂₇
Sept. 6.7	14.051 ₂₄₀	48.80 ₁₀₉	48.061 ₂₅₄	50.46 ₁₂₆	20.361 ₂₈₅	39.16 ₈₄
16.6	14.291 ₂₁₆	49.89 ₉₂	48.315 ₂₂₉	51.72 ₁₁₅	20.646 ₂₅₅	40.00 ₁₃₃
26.6	14.507 ₁₈₉	50.81 ₇₅	48.544 ₂₀₂	52.87 ₁₀₂	20.901 ₂₁₆	41.33 ₁₇₉
Oct. 6.6	14.696 ₁₆₀	51.56 ₅₇	48.746 ₁₇₄	53.89 ₈₉	21.117 ₁₇₄	43.12 ₂₁₈
16.5	14.856 ₁₃₂	52.13 ₃₉	48.920 ₁₄₅	54.78 ₇₄	21.291 ₁₃₂	45.30 ₂₄₈
26.5	14.988 ₁₀₂	52.52 ₂₄	49.065 ₁₁₄	55.52 ₆₁	21.423 ₈₈	47.78 ₂₆₉
Nov. 5.5	15.090 ₇₁	52.76 ₁₀	49.179 ₈₃	56.13 ₄₇	21.511 ₄₁	50.47 ₂₇₉
15.5	15.161 ₄₀	52.86 ₃	49.262 ₅₁	56.60 ₃₅	21.552 ₃	53.26 ₂₇₈
25.4	15.201 ₉	52.83 ₁₃	49.313 ₁₇	56.95 ₂₃	21.549 ₄₈	56.04 ₂₆₇
Dec. 5.4	15.210 ₂₂	52.70 ₂₃	49.330 ₁₇	57.18 ₁₁	21.501 ₈₉	58.71 ₂₄₇
15.4	15.188 ₅₅	52.47 ₃₁	49.313 ₅₁	57.29 ₁	21.412 ₁₂₇	61.18 ₂₁₅
25.4	15.133 ₈₅	52.16 ₃₈	49.262 ₈₃	57.28 ₁₃	21.285 ₁₆₂	63.33 ₁₈₀
35.3	15.048	51.78	49.179	57.15	21.123	65.13
Mean Place	10.971	40.90	44.866	45.14	18.348	59.88
Sec δ , Tan δ	1.034	+0.263	1.071	+0.384	1.317	-0.858
L α , L δ	0.00	+0.3	+0.01	+0.3	-0.02	+0.3
ω α , ω δ	-0.01	+0.7	-0.02	+0.7	+0.04	+0.7

AUTHORITY

A. E.

APPARENT PLACES OF STARS, 1922. 295

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Ceti. Mag. 2.8		γ Persei. Mag. 3.1		μ Horologii. Mag. 5.2	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 2 58	° ' 3 46	h m 2 59	° ' 53 11	h m 3 1	60° 2'
Jan. 0.3	13.102 ⁹⁷	58.69 ⁷⁷	10.523 ¹⁹¹	74.89 ⁹⁷	47.20 ³⁴	43.24 ¹⁶²
10.3	13.005 ¹²⁰	57.92 ⁷²	10.332 ²³⁶	75.86 ⁵⁷	46.86 ³⁷	44.86 ¹⁰⁶
20.3	12.885 ¹⁴²	57.20 ⁶³	10.096 ²⁶⁸	76.43 ¹⁶	46.49 ⁴⁰	45.92 ⁵⁰
30.3	12.743 ¹⁵⁵	56.57 ⁵⁶	9.828 ²⁹¹	76.59 ²⁷	46.09 ⁴²	46.42 ⁸
Feb. 9.2	12.588 ¹⁶⁰	56.01 ⁴⁴	9.537 ²⁹⁷	76.32 ⁶⁹	45.67 ⁴¹	46.34 ⁶⁶
19.2	12.428 ¹⁶⁰	55.57 ³³	9.240 ²⁹²	75.63 ¹⁰⁸	45.26 ⁴⁰	45.68 ¹¹⁸
Mar. 1.2	12.268 ¹⁴⁸	55.24 ²⁰	8.948 ²⁶⁹	74.55 ¹⁴¹	44.86 ³⁸	44.50 ¹⁶⁸
11.1	12.120 ¹³²	55.04 ³	8.679 ²³¹	73.14 ¹⁶⁸	44.48 ³⁴	42.82 ²¹⁶
21.1	11.988 ¹⁰⁰	55.01 ¹²	8.448 ¹⁸⁰	71.46 ¹⁹⁰	44.14 ²⁸	40.66 ²⁵⁶
31.1	11.888 ⁶⁶	55.13 ³²	8.268 ¹²¹	69.56 ²⁰²	43.86 ²³	38.10 ²⁸⁹
Apr. 10.1	11.822 ²⁵	55.45 ⁵⁴	8.147 ⁵³	67.54 ²⁰⁵	43.63 ¹⁷	35.21 ³²⁰
20.0	11.797 ¹⁶	55.99 ⁷²	8.094 ²¹	65.49 ²⁰⁰	43.46 ⁸	32.01 ³⁴¹
30.0	11.813 ⁶⁵	56.71 ⁹⁵	8.115 ⁹⁵	63.49 ¹⁸⁸	43.38 ¹	28.60 ³⁵²
May 10.0	11.878 ¹⁰⁸	57.66 ¹¹⁴	8.210 ¹⁶⁸	61.61 ¹⁶⁸	43.37 ⁶	25.08 ³⁵⁹
20.0	11.986 ¹⁵³	58.80 ¹³⁰	8.378 ²³⁶	59.93 ¹⁴³	43.43 ¹⁵	21.49 ³⁵⁶
29.9	12.139 ¹⁹⁴	60.10 ¹⁴⁷	8.614 ²⁹⁶	58.50 ¹¹¹	43.58 ²²	17.93 ³⁴⁴
June 8.9	12.333 ²²³	61.57 ¹⁶⁰	8.910 ³⁵¹	57.39 ⁷⁸	43.80 ²⁹	14.49 ³²⁵
18.9	12.556 ²⁵³	63.17 ¹⁶²	9.261 ³⁹³	56.61 ⁴³	44.09 ³⁵	11.24 ²⁹⁸
28.8	12.809 ²⁷⁴	64.79 ¹⁷¹	9.654 ⁴²⁵	56.18 ⁴	44.44 ³⁹	8.26 ²⁶²
July 8.8	13.083 ²⁹¹	66.50 ¹⁶⁹	10.079 ⁴⁴⁷	56.14 ³¹	44.83 ⁴⁴	5.64 ²¹⁷
18.8	13.374 ²⁹⁵	68.19 ¹⁶³	10.526 ⁴⁵⁷	56.45 ⁶⁶	45.27 ⁴⁷	3.47 ¹⁶⁸
28.8	13.669 ²⁹⁴	69.82 ¹⁵¹	10.983 ⁴⁵⁹	57.11 ¹⁰²	45.74 ⁴⁸	1.79 ¹¹⁵
Aug. 7.7	13.963 ²⁸⁸	71.33 ¹³⁴	11.442 ⁴⁵²	58.13 ¹³⁰	46.22 ⁴⁹	0.64 ⁵⁴
17.7	14.251 ²⁷⁶	72.67 ¹¹⁵	11.894 ⁴³³	59.43 ¹⁵⁸	46.71 ⁴⁷	0.10 ⁵
27.7	14.527 ²⁵⁹	73.82 ⁹³	12.327 ⁴¹¹	61.01 ¹⁸²	47.18 ⁴⁴	0.15 ⁶⁹
Sept. 6.7	14.786 ²⁴¹	74.75 ⁶⁷	12.738 ³⁸⁰	62.83 ²⁰³	47.62 ⁴²	0.84 ¹²⁶
16.6	15.027 ²¹⁶	75.42 ⁴²	13.118 ³⁴⁶	64.86 ²¹⁶	48.04 ³⁶	2.10 ¹⁸¹
26.6	15.243 ¹⁸⁹	75.84 ¹⁹	13.464 ³⁰⁹	67.02 ²²⁹	48.40 ³⁰	3.91 ²³²
Oct. 6.6	15.432 ¹⁶⁵	76.03 ⁶	13.773 ²⁶⁵	69.31 ²³⁸	48.70 ²⁴	6.23 ²⁷⁰
16.5	15.597 ¹³⁵	75.97 ²⁷	14.038 ²¹⁸	71.69 ²⁴⁰	48.94 ¹⁷	8.93 ³⁰¹
26.5	15.732 ¹⁰⁷	75.70 ⁴⁶	14.256 ¹⁷⁰	74.09 ²⁴⁰	49.11 ¹⁰	11.94 ³²⁰
Nov. 5.5	15.839 ⁷⁶	75.24 ⁶¹	14.426 ¹¹⁸	76.49 ²³³	49.21 ²	15.14 ³²⁷
15.5	15.915 ⁴⁶	74.63 ⁶⁸	14.544 ⁶²	78.82 ²²²	49.23 ⁵	18.41 ³²¹
25.4	15.961 ¹⁴	73.95 ⁷⁷	14.606 ⁸	81.04 ²⁰⁵	49.18 ¹³	21.62 ³⁰⁵
Dec. 5.4	15.975 ¹⁶	73.18 ⁸¹	14.614 ⁵²	83.09 ¹⁸³	49.05 ¹⁹	24.67 ²⁷⁴
15.4	15.959 ⁴⁸	72.37 ⁸¹	14.562 ¹⁰⁸	84.92 ¹⁵⁶	48.86 ²⁶	27.41 ²³⁷
25.4	15.911 ⁷⁸	71.56 ⁷⁶	14.454 ¹⁶¹	86.48 ¹²²	48.60 ³⁰	29.78 ¹⁹⁰
35.3	15.833	70.80	14.293	87.70	48.30	31.68
Mean Place	11.991	64.38	8.190	67.91	46.22	22.80
Sec δ , Tan δ	1.002	+0.066	1.669	+1.337	2.002	-1.734
L α , L δ	0.00	+0.3	+0.02	+0.3	-0.03	+0.3
ω α , ω δ	0.00	+0.7	-0.06	+0.7	+0.08	+0.7

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296 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Persei. Mag. 2.1-3.2		δ Arietis. Mag. 4.5		τ^1 Arietis. Mag. 5.2	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 3 3	° ' 39	h m 3 7	° ' 25	h m 3 16	° ' 51
Jan. 0.4	7.012 ¹³⁵	26.41 ⁵¹	11.275 ⁹⁶	56.20 ²⁴	44.643 ⁸⁸	58.61 ¹⁷
10.3	6.877 ¹⁶⁷	26.92 ²⁵	11.179 ¹²¹	55.96 ³³	44.555 ¹¹⁹	58.44 ²⁶
20.3	6.710 ¹⁹⁷	27.17 ⁷	11.058 ¹⁴⁸	55.63 ⁴³	44.436 ¹⁴⁶	58.18 ³⁷
30.3	6.513 ²¹⁶	27.10 ³⁶	10.910 ¹⁶²	55.20 ⁵⁰	44.290 ¹⁶⁵	57.81 ⁴⁶
Feb. 9.2	6.297 ²²⁴	26.74 ⁶⁶	10.748 ¹⁷³	54.70 ⁵⁸	44.125 ¹⁷⁷	57.35 ⁵³
19.2	6.073 ²²¹	26.08 ⁹⁶	10.575 ¹⁷³	54.12 ⁶¹	43.948 ¹⁷⁷	56.82 ⁶⁰
Mar. 1.2	5.852 ²⁰⁷	25.12 ¹¹⁴	10.402 ¹⁶¹	53.51 ⁶⁵	43.771 ¹⁶⁹	56.22 ⁶⁴
11.2	5.645 ¹⁷⁹	23.98 ¹³⁴	10.241 ¹⁴²	52.86 ⁶¹	43.602 ¹⁵⁰	55.58 ⁶⁴
21.1	5.466 ¹³⁹	22.64 ¹⁴⁶	10.099 ¹¹³	52.25 ⁵⁸	43.452 ¹²¹	54.94 ⁶¹
31.1	5.327 ⁹³	21.18 ¹⁵⁰	9.986 ⁷⁵	51.67 ⁴⁷	43.331 ⁸⁵	54.33 ⁵⁵
Apr. 10.1	5.234 ⁹⁹	19.68 ¹⁴⁶	9.911 ³²	51.20 ³⁶	43.246 ⁴²	53.78 ⁴³
20.1	5.195 ²⁰	18.22 ¹³⁷	9.879 ¹⁴	50.84 ²⁰	43.204 ⁶	53.35 ²⁹
30.0	5.215 ⁸¹	16.85 ¹²⁶	9.893 ⁶⁵	50.64 ¹	43.210 ⁵⁵	53.06 ¹¹
May 10.0	5.296 ¹³⁸	15.59 ¹⁰²	9.958 ¹¹²	50.63 ¹⁹	43.265 ¹⁰³	52.95 ⁸
20.0	5.434 ¹⁹⁴	14.57 ⁸⁰	10.070 ¹⁵⁷	50.82 ⁴⁰	43.368 ¹⁵¹	53.03 ²⁸
29.9	5.628 ²⁴³	13.77 ⁵¹	10.227 ²⁰¹	51.22 ⁶¹	43.519 ¹⁹³	53.31 ⁴⁹
June 8.9	5.871 ²⁸⁶	13.26 ²³	10.428 ²³⁷	51.83 ⁸¹	43.712 ²³¹	53.80 ⁶⁹
18.9	6.157 ³²³	13.03 ⁷	10.665 ²⁶⁶	52.64 ¹⁰⁰	43.943 ²⁶²	54.49 ⁸⁷
28.9	6.480 ³⁴⁸	13.10 ³⁹	10.931 ²⁸⁸	53.64 ¹¹³	44.205 ²⁸⁶	55.36 ¹⁰³
July 8.8	6.828 ³⁶⁸	13.49 ⁶⁵	11.219 ³⁰³	54.77 ¹²⁴	44.491 ³⁰²	56.39 ¹¹⁶
18.8	7.196 ³⁷⁵	14.14 ⁸⁹	11.522 ³¹²	56.01 ¹³⁴	44.793 ³¹²	57.55 ¹²⁵
28.8	7.571 ³⁷⁵	15.03 ¹¹⁴	11.834 ³¹²	57.35 ¹³⁷	45.105 ³¹⁵	58.80 ¹³⁰
Aug. 7.8	7.946 ³⁷⁰	16.17 ¹³⁶	12.146 ³⁰⁷	58.72 ¹³⁷	45.420 ³⁰⁹	60.10 ¹³¹
17.7	8.316 ³⁵⁵	17.53 ¹⁵²	12.453 ²⁹⁵	60.09 ¹³³	45.729 ³⁰⁰	61.41 ¹²⁷
27.7	8.671 ³³⁵	19.05 ¹⁶³	12.748 ²⁷⁹	61.42 ¹²⁵	46.029 ²⁸⁵	62.68 ¹²³
Sept. 6.7	9.006 ³¹³	20.68 ¹⁷⁴	13.027 ²⁶⁰	62.67 ¹¹⁷	46.314 ²⁶⁷	63.91 ¹¹⁵
16.6	9.319 ²⁸⁵	22.42 ¹⁸⁰	13.287 ²³⁷	63.84 ¹⁰²	46.581 ²⁴⁵	65.06 ¹⁰³
26.6	9.604 ²⁵⁴	24.22 ¹⁸²	13.524 ²¹¹	64.86 ⁸⁹	46.826 ²²²	66.09 ⁹¹
Oct. 6.6	9.858 ²²¹	26.04 ¹⁸²	13.735 ¹⁸⁴	65.75 ⁷⁶	47.048 ¹⁹⁵	67.00 ⁷⁸
16.6	10.079 ¹⁸²	27.86 ¹⁷⁹	13.919 ¹⁵⁷	66.51 ⁶⁰	47.243 ¹⁶⁷	67.78 ⁶⁵
26.5	10.261 ¹⁴⁸	29.65 ¹⁷⁴	14.076 ¹²⁷	67.11 ⁴⁷	47.410 ¹³⁸	68.43 ⁵⁴
Nov. 5.5	10.409 ¹⁰⁸	31.39 ¹⁶⁶	14.203 ⁹⁵	67.58 ³⁵	47.548 ¹⁰⁷	68.97 ⁴¹
15.5	10.517 ⁶⁷	33.05 ¹⁵²	14.298 ⁶³	67.93 ²⁵	47.655 ⁷⁴	69.38 ³¹
25.5	10.584 ²²	34.57 ¹³⁶	14.361 ³⁰	68.18 ¹²	47.729 ³⁹	69.69 ²¹
Dec. 5.4	10.606 ²⁰	35.93 ¹²¹	14.391 ⁵	68.30 ⁷	47.768 ⁴	69.90 ¹⁰
15.4	10.586 ⁶⁶	37.14 ⁹⁷	14.386 ⁴¹	68.33 ³	47.772 ³³	70.00 ¹
25.4	10.520 ¹⁰⁸	38.11 ⁷²	14.345 ⁷⁴	68.26 ¹⁶	47.739 ⁶⁸	70.01 ⁹
35.3	10.412	38.83	14.271	68.10	47.671	69.92
Mean Place	5.199	22.37	9.923	57.86	43.229	60.39
Sec δ , Tan δ	1.318	+0.859	1.060	+0.353	1.070	+0.381
L α , L δ	+0.02	+0.3	+0.01	+0.3	+0.01	+0.3
ω α , ω δ	-0.04	+0.7	-0.02	+0.7	-0.02	+0.8

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APPARENT PLACES OF STARS, 1922. 297

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Persei. Mag. 1·9		ο Tauri. Mag. 3·8		ζ Tauri. Mag. 4·3	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 3 18 ^s	49 34 ^o	h m 3 20 ^s	8 45 ^o	h m 3 26 ^s	12 40 ^o
Jan. 0·4	46·934 ¹⁵⁴	69·95 ¹⁰²	38·059 ⁸³	14·02 ⁶¹	35·190 ⁸²	8·95 ⁴⁷
10·3	46·780 ¹⁹⁶	70·97 ⁶⁴	37·976 ¹¹¹	13·41 ⁶⁰	35·108 ¹⁰⁹	8·48 ⁵⁰
20·3	46·584 ²³⁵	71·61 ²⁶	37·865 ¹³⁹	12·81 ⁵⁶	34·999 ¹³⁸	7·98 ⁴⁷
30·3	46·349 ²⁶⁰	71·87 ¹¹	37·726 ¹⁵⁶	12·25 ⁵⁴	34·861 ¹⁵⁶	7·51 ⁴⁹
Feb. 9·3	46·089 ²⁷⁵	71·76 ⁴⁹	37·570 ¹⁶⁶	11·71 ⁴⁷	34·705 ¹⁷⁰	7·02 ⁴⁹
19·2	45·814 ²⁷²	71·27 ⁸⁵	37·404 ¹⁶⁸	11·24 ⁴⁰	34·535 ¹⁷²	6·53 ⁴⁵
Mar. 1·2	45·542 ²⁶⁰	70·42 ¹¹⁶	37·236 ¹⁶¹	10·84 ³³	34·363 ¹⁶⁵	6·08 ⁴⁰
11·2	45·282 ²²⁵	69·26 ¹⁴⁵	37·075 ¹⁴⁵	10·51 ²²	34·198 ¹⁴⁸	5·68 ³⁴
21·2	45·057 ¹⁸⁵	67·81 ¹⁶⁴	36·930 ¹¹⁹	10·29 ⁹	34·050 ¹²⁵	5·34 ²⁶
31·1	44·872 ¹³³	66·17 ¹⁷⁸	36·811 ⁸⁴	10·20 ⁶	33·925 ⁸⁹	5·08 ¹⁴
Apr. 10·1	44·739 ⁷²	64·39 ¹⁸⁴	36·727 ⁴⁵	10·26 ²²	33·836 ⁵⁰	4·94 ²
20·1	44·667 ⁸	62·55 ¹⁸⁰	36·682 ²	10·48 ⁴²	33·786 ⁶	4·96 ¹⁹
30·0	44·659 ⁶⁶	60·75 ¹⁷³	36·680 ⁴⁶	10·90 ⁶¹	33·780 ⁴²	5·15 ³⁶
May 10·0	44·725 ¹³¹	59·02 ¹⁵⁶	36·726 ⁹¹	11·51 ⁷⁸	33·822 ⁸⁹	5·51 ⁵⁴
20·0	44·856 ¹⁹⁷	57·46 ¹³⁵	36·817 ¹³⁵	12·29 ⁹⁹	33·911 ¹³³	6·05 ⁷⁶
30·0	45·053 ²⁵⁸	56·11 ¹⁰⁷	36·952 ¹⁷⁷	13·28 ¹¹³	34·044 ¹⁷⁵	6·81 ⁹²
June 8·9	45·311 ³⁰⁷	55·04 ⁷⁷	37·129 ²¹⁴	14·41 ¹²⁹	34·219 ²¹²	7·73 ¹⁰⁶
18·9	45·618 ³⁵³	54·27 ⁴⁵	37·343 ²⁴⁴	15·70 ¹³⁹	34·431 ²⁴³	8·79 ¹¹⁹
28·9	45·971 ³⁸³	53·82 ¹²	37·587 ²⁶⁶	17·09 ¹⁴⁷	34·674 ²⁶⁹	9·98 ¹²⁸
July 8·8	46·354 ⁴¹¹	53·70 ²⁰	37·853 ²⁸⁵	18·56 ¹⁴⁸	34·943 ²⁸⁶	11·26 ¹³⁶
18·8	46·765 ⁴²⁴	53·90 ⁵⁴	38·138 ²⁹⁴	20·04 ¹⁴⁸	35·229 ²⁹⁶	12·62 ¹³⁸
28·8	47·189 ⁴³²	54·44 ⁸¹	38·432 ²⁹⁶	21·52 ¹⁴¹	35·525 ³⁰¹	14·00 ¹³⁶
Aug. 7·8	47·621 ⁴²⁴	55·25 ¹⁰⁹	38·728 ²⁹⁴	22·93 ¹³¹	35·826 ²⁹⁹	15·36 ¹²⁶
17·7	48·045 ⁴¹⁶	56·34 ¹³⁵	39·022 ²⁸⁵	24·24 ¹¹⁷	36·125 ²⁹⁰	16·62 ¹¹⁸
27·7	48·461 ⁴⁰⁰	57·69 ¹⁵⁵	39·307 ²⁷¹	25·41 ⁹⁸	36·415 ²⁷⁷	17·80 ¹⁰⁵
Sept. 6·7	48·861 ³⁷¹	59·24 ¹⁷⁶	39·578 ²⁵⁶	26·39 ⁸⁰	36·692 ²⁶⁴	18·85 ⁸⁸
16·7	49·232 ³⁴⁵	61·00 ¹⁹¹	39·834 ²³³	27·19 ⁵⁶	36·956 ²⁴¹	19·73 ⁷⁰
26·6	49·577 ³¹¹	62·91 ¹⁹⁹	40·067 ²¹¹	27·75 ³⁵	37·197 ²¹⁹	20·43 ⁵⁰
Oct. 6·6	49·888 ²⁷⁷	64·90 ²⁰⁹	40·278 ¹⁸⁵	28·10 ¹⁵	37·416 ¹⁹⁴	20·93 ³³
16·6	50·165 ²³⁶	66·99 ²¹²	40·463 ¹⁶¹	28·25 ⁵	37·610 ¹⁷⁰	21·26 ¹⁶
26·5	50·401 ¹⁸⁹	69·11 ²¹³	40·624 ¹³²	28·20 ²⁰	37·780 ¹⁴¹	21·42 ²
Nov. 5·5	50·590 ¹⁴⁴	71·24 ²¹¹	40·756 ¹⁰¹	28·00 ³⁴	37·921 ¹¹³	21·44 ¹²
15·5	50·734 ⁹⁶	73·35 ²⁰¹	40·857 ⁷⁰	27·66 ⁴⁶	38·034 ⁷⁸	21·32 ²¹
25·5	50·830 ³⁸	75·36 ¹⁸⁹	40·927 ³⁹	27·20 ⁵³	38·112 ⁴⁵	21·11 ³⁰
Dec. 5·4	50·868 ¹³	77·25 ¹⁷²	40·966 ⁵	26·67 ⁵⁸	38·157 ¹²	20·81 ³⁷
15·4	50·855 ⁷⁰	78·97 ¹⁴⁵	40·971 ²⁹	26·09 ⁵⁹	38·169 ²⁴	20·44 ⁴¹
25·4	50·785 ¹²³	80·42 ¹²⁴	40·942 ⁶³	25·50 ⁶¹	38·145 ⁵⁹	20·03 ⁴⁵
35·4	50·662	81·66	40·879	24·89	38·086	19·58
Mean Place	44·691	65·21	36·793	19·22	33·852	13·36
Sec δ, Tan δ	1·542	+1·174	1·012	+0·154	1·025	+0·225
L α, L δ	+0·02	+0·3	0·00	+0·3	0·00	+0·2
ω α, ω δ	-0·05	+0·8	-0·01	+0·8	-0·01	+0·8

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298 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Eridani. Mag. 3·8		45 G. Horologii. Mag. 5·6		γ ^s Eridani. Mag. 4·3		
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.	
	h m	° ' "	h m	° ' "	h m	° ' "	
	3 29	9 43	3 30	50 38	3 30	21 53	
Jan.	0·4	16·400 ⁹⁴	27·22 ¹²⁶	16·123 ²²⁰	52·77 ¹⁹⁷	21·542 ¹⁰⁶	50·98 ¹⁵⁸
	10·3	16·306 ¹²⁰	28·48 ¹⁰³	15·903 ²⁶⁰	54·74 ¹⁴⁸	21·436 ¹³⁵	52·56 ¹²⁸
	20·3	16·186 ¹⁴⁶	29·51 ⁸¹	15·643 ²⁸⁹	56·22 ⁹⁷	21·301 ¹⁶¹	53·84 ⁹⁶
	30·3	16·040 ¹⁶³	30·32 ⁵⁷	15·354 ³⁰⁹	57·19 ⁴²	21·140 ¹⁸¹	54·80 ⁶¹
Feb.	9·3	15·877 ¹⁷⁵	30·89 ³⁴	15·045 ³²¹	57·61 ¹¹	20·959 ¹⁹¹	55·41 ²⁵
	19·2	15·702 ¹⁷⁶	31·23 ⁸	14·724 ³¹⁹	57·50 ⁶⁴	20·768 ¹⁹⁴	55·66 ¹¹
Mar.	1·2	15·526 ¹⁷⁰	31·31 ¹⁹	14·405 ³⁰⁷	56·86 ¹¹⁵	20·574 ¹⁸⁸	55·55 ⁴⁷
	11·2	15·356 ¹⁵⁶	31·12 ⁴⁵	14·098 ²⁸³	55·71 ¹⁶³	20·386 ¹⁷²	55·08 ⁸¹
	21·2	15·200 ¹³²	30·67 ⁷⁰	13·815 ²⁴⁹	54·08 ²⁰⁶	20·214 ¹⁴⁷	54·27 ¹¹⁵
	31·1	15·068 ⁹⁵	29·97 ⁹⁷	13·566 ²⁰⁵	52·02 ²⁴⁵	20·067 ¹¹⁴	53·12 ¹⁴⁷
Apr.	10·1	14·973 ⁶¹	29·00 ¹²⁰	13·361 ¹⁵³	49·57 ²⁷⁸	19·953 ⁷⁶	51·65 ¹⁷⁴
	20·1	14·912 ¹⁸	27·80 ¹⁴⁵	13·208 ⁹⁵	46·79 ³⁰⁵	19·877 ³²	49·91 ²⁰²
	30·0	14·894 ²⁸	26·35 ¹⁶⁴	13·113 ³³	43·74 ³²⁵	19·845 ¹⁵	47·89 ²²³
May	10·0	14·922 ⁷⁴	24·71 ¹⁸⁴	13·080 ³²	40·49 ³³⁹	19·860 ⁶²	45·66 ²⁴⁰
	20·0	14·996 ¹¹⁸	22·87 ¹⁹⁷	13·112 ⁹⁶	37·10 ³⁴⁴	19·922 ¹¹⁰	43·26 ²⁵⁴
	30·0	15·114 ¹⁵⁸	20·90 ²⁰⁷	13·208 ¹⁵⁷	33·66 ³⁴¹	20·032 ¹⁵³	40·72 ²⁶⁰
June	8·9	15·272 ¹⁹⁵	18·83 ²¹²	13·365 ²¹⁴	30·25 ³³⁰	20·185 ¹⁹²	38·12 ²⁶⁰
	18·9	15·467 ²²⁸	16·71 ²¹³	13·579 ²⁶⁷	26·95 ³¹¹	20·377 ²²⁸	35·52 ²⁵³
	28·9	15·695 ²⁵⁴	14·58 ²⁰⁶	13·846 ³¹⁰	23·84 ²⁸²	20·605 ²⁵⁵	32·99 ²⁴¹
July	8·8	15·949 ²⁷⁴	12·52 ¹⁹³	14·156 ³⁴⁷	21·02 ²⁴⁷	20·860 ²⁷⁸	30·58 ²²¹
	18·8	16·223 ²⁸⁴	10·59 ¹⁷⁷	14·503 ³⁷³	18·55 ²⁰³	21·138 ²⁹¹	28·37 ¹⁹⁴
	28·8	16·507 ²⁸⁹	8·82 ¹⁵⁵	14·876 ³⁸⁹	16·52 ¹⁵⁴	21·429 ²⁹⁹	26·43 ¹⁶¹
Aug.	7·8	16·796 ²⁸⁸	7·27 ¹²⁶	15·265 ³⁹⁶	14·98 ⁹⁹	21·728 ³⁰⁰	24·82 ¹²⁵
	17·7	17·084 ²⁸⁰	6·01 ⁹³	15·661 ³⁹²	13·99 ⁴¹	22·028 ²⁹³	23·57 ⁸²
	27·7	17·364 ²⁶⁸	5·08 ⁶⁰	16·053 ³⁷⁹	13·58 ¹⁸	22·321 ²⁸²	22·75 ³⁷
Sept.	6·7	17·632 ²⁵²	4·48 ²³	16·432 ³⁵⁵	13·76 ⁷⁸	22·603 ²⁶⁵	22·38 ⁷
	16·7	17·884 ²³⁰	4·25 ¹³	16·787 ³²⁴	14·54 ¹³⁶	22·868 ²⁴³	22·45 ⁵³
	26·6	18·114 ²⁰⁸	4·38 ⁴⁷	17·111 ²⁸⁶	15·90 ¹⁸⁹	23·111 ²¹⁹	22·98 ⁹⁶
Oct.	6·6	18·322 ¹⁸²	4·85 ⁸¹	17·397 ²⁴⁰	17·79 ²³³	23·330 ¹⁹¹	23·94 ¹³³
	16·6	18·504 ¹⁵⁶	5·66 ¹⁰⁹	17·637 ¹⁹¹	20·12 ²⁷¹	23·521 ¹⁶⁰	25·27 ¹⁶⁷
	26·5	18·660 ¹²⁵	6·75 ¹³⁰	17·828 ¹³⁷	22·83 ²⁹⁸	23·681 ¹²⁹	26·94 ¹⁹²
Nov.	5·5	18·785 ⁹⁴	8·05 ¹⁴⁸	17·965 ⁸⁰	25·81 ³¹³	23·810 ⁹⁴	28·86 ²⁰⁸
	15·5	18·879 ⁶¹	9·53 ¹⁵⁶	18·045 ²³	28·94 ³¹⁷	23·904 ⁶⁰	30·94 ²¹⁸
	25·5	18·940 ³¹	11·09 ¹⁵⁹	18·068 ³⁴	32·11 ³⁰⁸	23·964 ²³	33·12 ²¹⁸
Dec.	5·4	18·971 ⁶	12·68 ¹⁵⁵	18·034 ⁹¹	35·19 ²⁸⁹	23·987 ¹³	35·30 ²¹⁰
	15·4	18·965 ⁴²	14·23 ¹⁴⁶	17·943 ¹⁴³	38·08 ²⁶⁰	23·974 ⁵⁰	37·40 ¹⁹⁴
	25·4	18·923 ⁷¹	15·69 ¹³³	17·800 ¹⁹²	40·68 ²²¹	23·924 ⁸⁵	39·34 ¹⁷²
	35·4	18·852	17·02	17·608	42·89	23·839	41·06
Mean Place	15·269	16·76	14·952	34·00	20·444	37·70	
Sec δ, Tan δ	1·015	-0·171	1·577	-1·219	1·077	-0·402	
L α, L δ	0·00	+0·2	-0·02	+0·2	-0·01	+0·2	
ω α, ω δ	+0·01	+0·8	+0·05	+0·8	+0·02	+0·8	
AUTHORITY	A. E.		A. N.				

APPARENT PLACES OF STARS, 1922. 299

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	11 Tauri. Mag. 6.2		8 Persei. Mag. 3.1		8 Eridani. Mag. 3.7	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m s	° ' "	h m s	° ' "	h m s	° ' "
	3 36	25 4	3 37	47 32	3 39	10 1
Jan. 0.4	8.134 ⁷⁹	40.33 ⁵	24.042 ¹²⁵	24.91 ¹⁰⁵	31.817 ⁸²	46.17 ¹²⁸
10.3	8.055 ¹¹⁴	40.38 ⁶	23.917 ¹⁷³	25.96 ⁷³	31.735 ¹¹³	47.45 ¹⁰⁸
20.3	7.941 ¹⁴⁶	40.32 ¹⁹	23.744 ²¹²	26.69 ³⁸	31.622 ¹⁴⁰	48.53 ⁸⁷
30.3	7.795 ¹⁶⁸	40.13 ³²	23.532 ²⁴⁴	27.07 ⁵	31.482 ¹⁶¹	49.40 ⁶²
Feb. 9.3	7.627 ¹⁸⁵	39.81 ⁴⁵	23.288 ²⁵⁸	27.12 ³²	31.321 ¹⁷⁵	50.02 ³⁷
19.2	7.442 ¹⁸⁹	39.36 ⁵⁴	23.030 ²⁶⁸	26.80 ⁶⁵	31.146 ¹⁷⁹	50.39 ¹¹
Mar. 1.2	7.253 ¹⁸³	38.82 ⁶⁴	22.762 ²⁵⁸	26.15 ⁹⁹	30.967 ¹⁷⁵	50.50 ¹⁵
11.2	7.070 ¹⁶⁶	38.18 ⁷⁰	22.504 ²²⁹	25.16 ¹²²	30.792 ¹⁶¹	50.35 ⁴²
21.2	6.904 ¹⁴⁰	37.48 ⁷²	22.275 ¹⁹⁶	23.94 ¹⁴⁶	30.631 ¹³⁹	49.93 ⁶⁷
31.1	6.764 ¹⁰⁵	36.76 ⁶⁹	22.079 ¹⁴⁸	22.48 ¹⁶¹	30.492 ¹⁰⁸	49.26 ⁹⁴
Apr. 10.1	6.659 ⁶¹	36.07 ⁶³	21.931 ⁹²	20.87 ¹⁶⁸	30.384 ⁷¹	48.32 ¹¹⁹
20.1	6.598 ¹⁴	35.44 ⁵²	21.839 ²⁸	19.19 ¹⁶⁹	30.313 ²⁹	47.13 ¹⁴²
30.0	6.584 ³⁷	34.92 ³⁹	21.811 ³⁷	17.50 ¹⁶¹	30.284 ¹⁵	45.71 ¹⁶³
May 10.0	6.621 ⁸⁷	34.53 ²²	21.848 ¹⁰⁶	15.89 ¹⁴⁹	30.299 ⁶²	44.08 ¹⁸²
20.0	6.708 ¹³⁶	34.31 ²	21.954 ¹⁶⁷	14.40 ¹³²	30.361 ¹⁰⁶	42.26 ¹⁹⁸
30.0	6.844 ¹⁸²	34.29 ¹⁷	22.121 ²²⁷	13.08 ¹⁰⁹	30.467 ¹⁴⁹	40.28 ²⁰⁸
June 8.9	7.026 ²²¹	34.46 ³⁷	22.348 ²⁷⁸	11.99 ⁷⁹	30.616 ¹⁸⁷	38.20 ²¹⁵
18.9	7.247 ²⁵⁷	34.83 ⁵⁷	22.626 ³²⁶	11.20 ⁵²	30.803 ²²⁰	36.05 ²¹⁶
28.9	7.504 ²⁸³	35.40 ⁷⁴	22.952 ³⁵⁹	10.68 ²⁵	31.023 ²⁴⁷	33.89 ²¹⁰
July 8.8	7.787 ³⁰³	36.14 ⁸⁹	23.311 ³⁸⁶	10.43 ⁷	31.270 ²⁶⁷	31.79 ¹⁹⁹
18.8	8.090 ³¹⁵	37.03 ¹⁰²	23.697 ⁴⁰⁴	10.50 ³⁶	31.537 ²⁸⁰	29.80 ¹⁸²
28.8	8.405 ³²¹	38.05 ¹¹⁰	24.101 ⁴¹⁴	10.86 ⁶⁵	31.817 ²⁸⁸	27.98 ¹⁵⁹
Aug. 7.8	8.726 ³¹⁹	39.15 ¹¹⁶	24.515 ⁴¹⁵	11.51 ⁹³	32.105 ²⁸⁹	26.39 ¹³²
17.7	9.045 ³¹⁴	40.31 ¹¹⁸	24.930 ⁴⁰⁶	12.44 ¹¹¹	32.394 ²⁸⁴	25.07 ¹⁰⁰
27.7	9.359 ³⁰¹	41.49 ¹¹⁶	25.336 ³⁹⁷	13.55 ¹³⁵	32.678 ²⁷³	24.07 ⁶⁵
Sept. 6.7	9.660 ²⁸⁵	42.65 ¹¹³	25.733 ³⁷³	14.90 ¹⁵²	32.951 ²⁵⁹	23.42 ²⁸
16.7	9.945 ²⁶⁶	43.78 ¹⁰⁵	26.106 ³⁴⁹	16.42 ¹⁶⁶	33.210 ²⁴⁰	23.14 ⁹
26.6	10.211 ²⁴⁴	44.83 ⁹⁹	26.455 ³²⁰	18.08 ¹⁷⁶	33.450 ²¹⁹	23.23 ⁴⁵
Oct. 6.6	10.455 ²²⁰	45.82 ⁸⁹	26.775 ²⁹¹	19.84 ¹⁸⁶	33.669 ¹⁹⁴	23.68 ⁷⁸
16.6	10.675 ¹⁹²	46.71 ⁸⁰	27.066 ²⁵⁴	21.70 ¹⁹⁰	33.863 ¹⁶⁹	24.46 ¹⁰⁶
26.5	10.867 ¹⁶³	47.51 ⁷²	27.320 ²¹⁴	23.60 ¹⁹⁴	34.032 ¹³⁹	25.52 ¹³⁰
Nov. 5.5	11.030 ¹³²	48.23 ⁶²	27.534 ¹⁶⁷	25.54 ¹⁹²	34.171 ¹⁰⁹	26.82 ¹⁴⁷
15.5	11.162 ⁹⁸	48.85 ⁵²	27.701 ¹²⁰	27.46 ¹⁸⁸	34.280 ⁷⁸	28.29 ¹⁵⁸
25.5	11.260 ⁶¹	49.37 ⁴⁵	27.821 ⁶⁸	29.34 ¹⁷⁷	34.358 ⁴⁴	29.87 ¹⁶¹
Dec. 5.4	11.321 ²⁴	49.82 ³⁵	27.889 ¹⁵	31.11 ¹⁶⁴	34.402 ⁸	31.48 ¹⁵⁸
15.4	11.345 ¹⁷	50.17 ²⁵	27.904 ³⁹	32.75 ¹⁴⁶	34.410 ²⁷	33.06 ¹⁵⁰
25.4	11.328 ⁵⁷	50.42 ¹⁵	27.865 ⁹³	34.21 ¹²²	34.383 ⁶¹	34.56 ¹³⁶
35.4	11.271	50.57	27.772	35.43	34.322	35.92
Mean Place	6.569	42.14	21.813	21.98	30.627	35.58
Sec δ, Tan δ	1.104	+0.468	1.481	+1.093	1.016	-0.177
L α, L δ	+0.01	+0.2	+0.02	+0.2	0.00	+0.2
ω α, ω δ	-0.02	+0.8	-0.04	+0.8	+0.01	+0.8
AUTHORITY			A. E.		A. N.	

300 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	17 Tauri. Mag. 3.8		η Tauri. Mag. 3.0		γ Hydri. Mag. 3.2	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 3 40	° ′ 23 52	h m 3 42	° ′ 23 51	h m 3 48	° ′ 74 28
Jan. 0.4	15.954 ⁷⁴	6.76 ²	52.221 ⁷⁵	51.50 ²	28.17 ⁶⁵	62.48 ²⁰⁷
10.3	15.880 ¹¹¹	6.78 ¹⁰	52.146 ¹⁰⁸	51.52 ⁷	27.52 ⁷⁴	64.55 ¹⁵³
20.3	15.769 ¹⁴²	6.68 ²⁰	52.038 ¹⁴³	51.45 ²⁰	26.78 ⁸⁰	66.08 ⁹⁹
30.3	15.627 ¹⁶⁶	6.48 ³²	51.895 ¹⁶⁵	51.25 ³¹	25.98 ⁸⁵	67.07 ⁴¹
Feb. 9.3	15.461 ¹⁸²	6.16 ⁴²	51.730 ¹⁸²	50.94 ⁴⁰	25.13 ⁸⁷	67.48 ¹⁹
19.2	15.279 ¹⁸⁸	5.74 ⁵²	51.548 ¹⁸⁷	50.54 ⁵²	24.26 ⁸⁷	67.29 ⁷⁴
Mar. 1.2	15.091 ¹⁸²	5.22 ⁶⁰	51.361 ¹⁸³	50.02 ⁵⁹	23.39 ⁸⁴	66.55 ¹³¹
11.2	14.909 ¹⁶⁷	4.62 ⁶⁴	51.178 ¹⁷¹	49.43 ⁶⁴	22.55 ⁷⁹	65.24 ¹⁷⁹
21.2	14.742 ¹⁴²	3.98 ⁶⁶	51.007 ¹⁴⁰	48.79 ⁶⁵	21.76 ⁷¹	63.45 ²²³
31.1	14.600 ¹⁰⁷	3.32 ⁶³	50.867 ¹¹⁰	48.14 ⁶²	21.05 ⁶³	61.22 ²⁶³
Apr. 10.1	14.493 ⁶⁵	2.69 ⁵⁶	50.757 ⁶⁶	47.52 ⁵⁵	20.42 ⁵¹	58.59 ²⁹⁶
20.1	14.428 ¹⁸	2.13 ⁴⁶	50.691 ²¹	46.97 ⁴⁴	19.91 ⁴⁰	55.63 ³²⁴
30.0	14.410 ³²	1.67 ³²	50.670 ²⁸	46.53 ³¹	19.51 ²⁷	52.39 ³⁴⁶
May 10.0	14.442 ⁸³	1.35 ¹⁵	50.698 ⁸²	46.22 ¹⁸	19.24 ¹³	48.93 ³⁵⁵
20.0	14.525 ¹³¹	1.20 ³	50.780 ¹²⁷	46.04 ³	19.11 ²	45.38 ³⁵⁷
30.0	14.656 ¹⁷⁶	1.23 ²²	50.907 ¹⁷³	46.07 ²²	19.13 ¹⁵	41.81 ³⁵³
June 8.9	14.832 ²¹⁷	1.45 ⁴²	51.080 ²¹⁵	46.29 ³⁹	19.28 ²⁹	38.28 ³³⁹
18.9	15.049 ²⁵¹	1.87 ⁶⁰	51.295 ²⁴⁷	46.68 ⁶¹	19.57 ⁴²	34.89 ³¹⁶
28.9	15.300 ²⁷⁸	2.47 ⁷⁷	51.542 ²⁷⁷	47.29 ⁷³	19.99 ⁵³	31.73 ²⁸⁵
July 8.9	15.578 ²⁹⁸	3.24 ⁹⁰	51.819 ²⁹⁵	48.02 ⁹⁰	20.52 ⁶³	28.88 ²⁴⁷
18.8	15.876 ³¹¹	4.14 ¹⁰²	52.114 ³¹¹	48.92 ⁹⁸	21.15 ⁷²	26.41 ²⁰⁰
28.8	16.187 ³¹⁸	5.16 ¹¹⁰	52.425 ³¹⁶	49.90 ¹⁰⁹	21.87 ⁷⁸	24.41 ¹⁵⁰
Aug. 7.8	16.505 ³¹⁷	6.26 ¹¹⁴	52.741 ³¹⁷	50.99 ¹¹¹	22.65 ⁸³	22.91 ⁹¹
17.7	16.822 ³¹⁰	7.40 ¹¹⁴	53.058 ³¹⁴	52.10 ¹¹³	23.48 ⁸³	22.00 ²⁹
27.7	17.132 ³⁰⁰	8.54 ¹¹²	53.372 ³⁰²	53.23 ¹¹⁰	24.31 ⁸³	21.71 ³²
Sept. 6.7	17.432 ²⁸⁵	9.66 ¹⁰⁷	53.674 ²⁸⁶	54.33 ¹⁰⁶	25.14 ⁷⁸	22.03 ⁹⁸
16.7	17.717 ²⁶⁶	10.73 ¹⁰⁰	53.960 ²⁷⁰	55.39 ⁹⁸	25.92 ⁷³	23.01 ¹⁵⁵
26.6	17.983 ²⁴⁵	11.73 ⁹¹	54.230 ²⁴⁶	56.37 ⁹⁰	26.65 ⁶⁵	24.56 ²¹¹
Oct. 6.6	18.228 ²²¹	12.64 ⁸¹	54.476 ²²⁵	57.27 ⁷⁹	27.30 ⁵³	26.67 ²⁵⁷
16.6	18.449 ¹⁹⁴	13.45 ⁷²	54.701 ¹⁹⁵	58.06 ⁷¹	27.83 ⁴¹	29.24 ²⁹⁶
26.6	18.643 ¹⁶⁶	14.17 ⁶²	54.896 ¹⁷⁰	58.77 ⁶¹	28.24 ²⁸	32.20 ³²²
Nov. 5.5	18.809 ¹³⁵	14.79 ⁵³	55.066 ¹³⁸	59.38 ⁵²	28.52 ¹²	35.42 ³³⁹
15.5	18.944 ¹⁰²	15.32 ⁴⁵	55.204 ¹⁰⁵	59.90 ⁴⁵	28.64 ³	38.81 ³⁴¹
25.5	19.046 ⁶⁵	15.77 ³⁶	55.309 ⁶⁶	60.35 ³⁵	28.61 ¹⁸	42.22 ³³²
Dec. 5.4	19.111 ²⁷	16.13 ²⁸	55.375 ³⁰	60.70 ²⁸	28.43 ³²	45.54 ³¹⁰
15.4	19.138 ¹³	16.41 ¹⁹	55.405 ¹²	60.98 ²⁰	28.11 ⁴⁶	48.64 ²⁷⁸
25.4	19.125 ⁵²	16.60 ¹⁰	55.393 ⁴⁹	61.18 ¹⁰	27.65 ⁵⁸	51.42 ²³⁵
35.4	19.073	16.70	55.344	61.28	27.07	53.77
Mean Place	14.396	9.10	50.654	53.98	25.71	41.94
Sec δ, Tan δ	1.094	+0.442	1.093	+0.442	3.737	-3.601
L α, L δ	+0.01	+0.2	+0.01	+0.2	-0.08	+0.2
ω α, ω δ	-0.02	+0.8	-0.02	+0.8	+0.13	+0.8
AUTHORITY	A. N.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 301

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Persei. Mag. 2.9		ε Persei. Mag. 3.0		γ Eridani. Mag. 3.2	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 3 49	° ' 31 39	h m 3 52	° ' 39 46	h m 3 54	° ' 13 43
Jan. 0.4	15.219 ⁷⁶	10.23 ³⁷	38.875 ⁸⁹	69.35 ⁷⁸	24.625 ⁸⁰	57.90 ¹⁴⁸
10.4	15.143 ¹¹⁸	10.60 ²⁴	38.786 ¹³²	70.13 ⁵⁴	24.545 ¹¹¹	59.38 ¹²⁸
20.3	15.025 ¹⁵²	10.84 ⁵	38.654 ¹⁷¹	70.67 ³⁰	24.434 ¹⁴²	60.66 ⁹⁹
30.3	14.873 ¹⁷⁸	10.89 ¹⁵	38.483 ²⁰²	70.97 ⁴	24.292 ¹⁶⁰	61.65 ⁷⁵
Feb. 9.3	14.695 ¹⁹⁸	10.74 ³³	38.281 ²²⁵	71.01 ²⁴	24.132 ¹⁷⁸	62.40 ⁴⁴
19.2	14.497 ²⁰⁵	10.41 ⁵¹	38.056 ²³¹	70.77 ⁵¹	23.954 ¹⁸⁶	62.84 ¹⁵
Mar. 1.2	14.292 ²⁰¹	9.90 ⁶⁷	37.825 ²²⁵	70.26 ⁷⁷	23.768 ¹⁸⁶	62.99 ¹⁴
11.2	14.091 ¹⁸⁴	9.23 ⁸²	37.600 ²¹⁰	69.49 ⁹⁴	23.582 ¹⁷³	62.85 ⁴⁵
21.2	13.907 ¹⁶⁰	8.41 ⁸⁸	37.390 ¹⁸⁰	68.55 ¹¹²	23.409 ¹⁵¹	62.40 ⁷⁴
31.1	13.747 ¹²²	7.53 ⁹³	37.210 ¹⁴⁰	67.43 ¹²⁵	23.258 ¹²²	61.66 ¹⁰³
Apr. 10.1	13.625 ⁷⁹	6.60 ⁹¹	37.070 ⁹⁶	66.18 ¹²⁸	23.136 ⁸⁷	60.63 ¹²⁷
20.1	13.546 ³⁰	5.69 ⁸⁶	36.974 ³⁸	64.90 ¹²⁶	23.049 ⁴⁵	59.36 ¹⁵³
30.1	13.516 ²⁵	4.83 ⁷⁸	36.936 ²²	63.64 ¹²¹	23.004 ⁰	57.83 ¹⁷⁷
May 10.0	13.541 ⁷⁷	4.05 ⁶²	36.958 ⁷⁸	62.43 ¹⁰⁹	23.004 ⁴⁵	56.06 ¹⁹⁸
20.0	13.618 ¹²⁹	3.43 ⁴⁴	37.036 ¹³⁴	61.34 ⁹²	23.049 ⁸⁹	54.08 ²⁰⁸
30.0	13.747 ¹⁷⁹	2.99 ²⁹	37.170 ¹⁹¹	60.42 ⁷⁵	23.138 ¹³²	52.00 ²²²
June 8.9	13.926 ²²²	2.70 ⁴	37.361 ²³⁷	59.67 ⁵¹	23.270 ¹⁷³	49.78 ²²⁶
18.9	14.148 ²⁵⁹	2.66 ¹⁴	37.598 ²⁸¹	59.16 ²⁷	23.443 ²⁰⁸	47.52 ²²⁷
28.9	14.407 ²⁸⁸	2.80 ³⁸	37.879 ³¹⁰	58.89 ³	23.651 ²³⁶	45.25 ²¹⁹
July 8.9	14.695 ³¹²	3.18 ⁵⁵	38.189 ³⁴⁰	58.86 ²⁰	23.887 ²⁵⁹	43.06 ²⁰⁶
18.8	15.007 ³²⁹	3.73 ⁷²	38.529 ³⁵⁶	59.06 ⁴⁶	24.146 ²⁷⁶	41.00 ¹⁸⁷
28.8	15.336 ³³⁷	4.45 ⁸⁸	38.885 ³⁶⁸	59.52 ⁶⁵	24.422 ²⁸⁷	39.13 ¹⁶³
Aug. 7.8	15.673 ³³⁹	5.33 ⁹⁸	39.253 ³⁷¹	60.17 ⁸³	24.709 ²⁹⁰	37.50 ¹³³
17.8	16.012 ³³²	6.31 ¹⁰⁷	39.624 ³⁶⁵	61.00 ¹⁰¹	24.999 ²⁸⁷	36.17 ⁹⁸
27.7	16.344 ³²⁴	7.38 ¹¹²	39.989 ³⁶⁰	62.01 ¹¹⁴	25.286 ²⁷⁹	35.19 ⁵⁸
Sept. 6.7	16.668 ³⁰⁹	8.50 ¹¹⁶	40.349 ³³⁹	63.15 ¹²⁴	25.565 ²⁶⁷	34.61 ²⁰
16.7	16.977 ²⁹⁵	9.66 ¹¹⁴	40.688 ³²⁴	64.39 ¹³⁴	25.832 ²⁵¹	34.41 ²¹
26.6	17.272 ²⁶⁸	10.80 ¹¹⁵	41.012 ³⁰¹	65.73 ¹³⁹	26.083 ²³⁰	34.62 ⁶⁰
Oct. 6.6	17.540 ²⁴⁷	11.95 ¹¹⁰	41.313 ²⁷²	67.12 ¹⁴³	26.313 ²⁰⁸	35.22 ⁹⁴
16.6	17.787 ²²⁰	13.05 ¹⁰⁸	41.585 ²⁴³	68.55 ¹⁴³	26.521 ¹⁸⁰	36.16 ¹²⁷
26.6	18.007 ¹⁸⁷	14.13 ¹⁰³	41.828 ²⁰⁹	69.98 ¹⁴⁶	26.701 ¹⁵⁶	37.43 ¹⁵³
Nov. 5.5	18.194 ¹⁵³	15.16 ⁹⁸	42.037 ¹⁷⁴	71.44 ¹⁴³	26.857 ¹²²	38.96 ¹⁶⁹
15.5	18.347 ¹¹⁹	16.14 ⁹⁰	42.211 ¹³³	72.87 ¹³⁹	26.979 ⁸⁸	40.65 ¹⁸⁴
25.5	18.466 ⁷⁹	17.04 ⁸⁴	42.344 ⁸⁷	74.26 ¹³²	27.067 ⁵⁵	42.49 ¹⁸⁸
Dec. 5.5	18.545 ³⁷	17.88 ⁷⁶	42.431 ³⁹	75.58 ¹²²	27.122 ¹⁹	44.37 ¹⁸³
15.4	18.582 ⁸	18.64 ⁶¹	42.470 ¹¹	76.80 ¹⁰⁷	27.141 ¹⁷	46.20 ¹⁷⁴
25.4	18.574 ⁵⁰	19.25 ⁵⁰	42.459 ⁵⁶	77.87 ⁹⁴	27.124 ⁵⁷	47.94 ¹⁶⁰
35.4	18.524	19.75	42.403	78.81	27.067	49.54
Mean Place	13.469	11.35	36.888	69.03	23.383	46.21
Sec δ, Tan δ	1.175	+0.617	1.301	+0.833	1.029	-0.244
L α, L δ	+0.01	+0.2	+0.02	+0.2	-0.01	+0.2
ω α, ω δ	-0.02	+0.8	-0.03	+0.8	+0.01	+0.9
AUTHORITY	A. E.		A. E.		A. E.	

302 APPARENT PLACES OF STARS, 1922.

· AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	A Tauri. Mag. 4·5		43 Tauri. Mag. 5·7		o ¹ Eridani. Mag. 4·1	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 4 0	° ' " 52	h m 4 4	° ' " 24	h m 4 8	° ' " 7 2
Jan. 0·4	6·449 ^s ₅₉	7·92 ["] ₄	38·727 ^s ₅₃	9·56 ["] ₁₅	4·754 ^s ₆₃	34·22 ["] ₁₂₉
10·4	6·390 ^s ₉₇	7·88 ["] ₁₀	38·674 ^s ₉₂	9·41 ["] ₁₉	4·691 ^s ₉₈	35·51 ["] ₁₁₄
20·3	6·293 ^s ₁₃₁	7·78 ["] ₁₉	38·582 ^s ₁₂₇	9·22 ["] ₂₄	4·593 ^s ₁₂₅	36·65 ["] ₉₃
30·3	6·162 ^s ₁₅₈	7·59 ["] ₂₆	38·455 ^s ₁₅₅	8·98 ["] ₂₉	4·468 ^s ₁₅₄	37·58 ["] ₇₂
Feb. 9·3	6·004 ^s ₁₇₈	7·33 ["] ₃₄	38·300 ^s ₁₇₄	8·69 ["] ₃₅	4·314 ^s ₁₇₁	38·30 ["] ₄₉
19·2	5·826 ^s ₁₈₈	6·99 ["] ₄₁	38·126 ^s ₁₈₅	8·34 ["] ₃₈	4·143 ^s ₁₈₀	38·79 ["] ₂₇
Mar. 1·2	5·638 ^s ₁₈₆	6·58 ["] ₄₈	37·941 ^s ₁₈₄	7·96 ["] ₄₂	3·963 ^s ₁₈₃	39·06 ["] ₀
11·2	5·452 ^s ₁₇₅	6·10 ["] ₅₀	37·757 ^s ₁₇₄	7·54 ["] ₄₄	3·780 ^s ₁₇₄	39·06 ["] ₂₃
21·2	5·277 ^s ₁₅₂	5·60 ["] ₅₂	37·583 ^s ₁₅₂	7·10 ["] ₄₂	3·606 ^s ₁₅₃	38·83 ["] ₄₅
31·1	5·125 ^s ₁₂₁	5·08 ["] ₄₉	37·431 ^s ₁₂₃	6·68 ["] ₃₈	3·453 ^s ₁₂₅	38·38 ["] ₇₂
Apr. 10·1	5·004 ^s ₈₀	4·59 ["] ₄₄	37·308 ^s ₈₃	6·30 ["] ₃₁	3·328 ^s ₈₉	37·66 ["] ₉₅
20·1	4·924 ^s ₃₇	4·15 ["] ₃₄	37·225 ^s ₄₀	5·99 ["] ₂₀	3·239 ^s ₅₃	36·71 ["] ₁₁₇
30·1	4·887 ^s ₁₂	3·81 ["] ₂₂	37·185 ^s ₈	5·79 ["] ₉	3·186 ^s ₇	35·54 ["] ₁₃₉
May 10·0	4·899 ^s ₆₂	3·59 ["] ₇	37·193 ^s ₅₅	5·70 ["] ₇	3·179 ^s ₃₅	34·15 ["] ₁₅₇
20·0	4·961 ^s ₁₀₉	3·52 ["] ₉	37·248 ^s ₁₀₄	5·77 ["] ₂₃	3·214 ^s ₈₂	32·58 ["] ₁₇₅
30·0	5·070 ^s ₁₅₆	3·61 ["] ₂₆	37·352 ^s ₁₄₈	6·00 ["] ₃₉	3·296 ^s ₁₂₅	30·83 ["] ₁₈₆
June 8·9	5·226 ^s ₁₉₇	3·87 ["] ₄₄	37·500 ^s ₁₉₀	6·39 ["] ₅₅	3·421 ^s ₁₆₂	28·97 ["] ₁₉₂
18·9	5·423 ^s ₂₃₂	4·31 ["] ₅₉	37·690 ^s ₂₂₄	6·94 ["] ₇₁	3·583 ^s ₂₀₀	27·05 ["] ₁₉₈
28·9	5·655 ^s ₂₆₂	4·90 ["] ₇₄	37·914 ^s ₂₅₅	7·65 ["] ₈₂	3·783 ^s ₂₂₆	25·07 ["] ₁₉₅
July 8·9	5·917 ^s ₂₈₄	5·64 ["] ₈₆	38·169 ^s ₂₇₈	8·47 ["] ₉₃	4·009 ^s ₂₅₂	23·12 ["] ₁₈₈
18·8	6·201 ^s ₃₀₀	6·50 ["] ₉₅	38·447 ^s ₂₉₃	9·40 ["] ₁₀₀	4·261 ^s ₂₇₀	21·24 ["] ₁₇₅
28·8	6·501 ^s ₃₀₉	7·45 ["] ₁₀₀	38·740 ^s ₃₀₄	10·40 ["] ₁₀₃	4·531 ^s ₂₇₉	19·49 ["] ₁₅₆
Aug. 7·8	6·810 ^s ₃₁₂	8·45 ["] ₁₀₂	39·044 ^s ₃₀₆	11·43 ["] ₁₀₂	4·810 ^s ₂₈₆	17·93 ["] ₁₃₀
17·8	7·122 ^s ₃₀₉	9·47 ["] ₁₀₂	39·350 ^s ₃₀₅	12·45 ["] ₁₀₀	5·096 ^s ₂₈₄	16·63 ["] ₁₀₃
27·7	7·431 ^s ₃₀₂	10·49 ["] ₉₆	39·655 ^s ₂₉₈	13·45 ["] ₉₂	5·380 ^s ₂₇₉	15·60 ["] ₆₉
Sept. 6·7	7·733 ^s ₂₈₉	11·45 ["] ₉₁	39·953 ^s ₂₈₆	14·37 ["] ₈₄	5·659 ^s ₂₆₇	14·91 ["] ₃₇
16·7	8·022 ^s ₂₇₅	12·36 ["] ₈₂	40·239 ^s ₂₇₃	15·21 ["] ₇₃	5·926 ^s ₂₅₆	14·54 ["] ₀
26·6	8·297 ^s ₂₅₅	13·18 ["] ₇₂	40·512 ^s ₂₅₄	15·94 ["] ₆₀	6·182 ^s ₂₃₇	14·54 ["] ₃₄
Oct. 6·6	8·552 ^s ₂₃₅	13·90 ["] ₆₁	40·766 ^s ₂₃₄	16·54 ["] ₄₉	6·419 ^s ₂₁₉	14·88 ["] ₆₈
16·6	8·787 ^s ₂₁₁	14·51 ["] ₅₂	41·000 ^s ₂₁₁	17·03 ["] ₃₇	6·638 ^s ₁₉₁	15·56 ["] ₉₆
26·6	8·998 ^s ₁₈₃	15·03 ["] ₄₂	41·211 ^s ₁₈₅	17·40 ["] ₂₆	6·829 ^s ₁₇₀	16·52 ["] ₁₁₈
Nov. 5·5	9·181 ^s ₁₅₅	15·45 ["] ₃₄	41·396 ^s ₁₅₆	17·66 ["] ₁₈	6·999 ^s ₁₃₇	17·70 ["] ₁₃₈
15·5	9·336 ^s ₁₂₁	15·79 ["] ₂₇	41·552 ^s ₁₂₄	17·84 ["] ₉	7·136 ^s ₁₀₇	19·08 ["] ₁₄₉
25·5	9·457 ^s ₈₅	16·06 ["] ₂₀	41·676 ^s ₈₉	17·93 ["] ₄	7·243 ^s ₇₂	20·57 ["] ₁₅₅
Dec. 5·5	9·542 ^s ₄₈	16·26 ["] ₁₄	41·765 ^s ₅₁	17·97 ["] ₁	7·315 ^s ₃₈	22·12 ["] ₁₅₆
15·4	9·590 ^s ₆	16·40 ["] ₉	41·816 ^s ₁₁	17·96 ["] ₆	7·353 ^s ₁	23·68 ["] ₁₄₇
25·4	9·596 ^s ₃₄	16·49 ["] ₂	41·827 ^s ₃₀	17·90 ["] ₉	7·354 ^s ₃₇	25·15 ["] ₁₃₇
35·4	9·562 ^s	16·51 ["]	41·797 ^s	17·81 ["]	7·317 ^s	26·52 ["]
Mean Place	4·858	11·80	37·162	14·20	3·427	23·75
Sec δ, Tan δ	1·078	+0·401	1·060	+0·352	1·008	-0·123
L α, L δ	+0·01	+0·2	+0·01	+0·2	0·00	+0·2
ω α, ω δ	-0·01	+0·9	-0·01	+0·9	0·00	+0·9

AUTHORITY

A. E.

APPARENT PLACES OF STARS, 1922. 303

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Horologii. Mag. 3·8		α Reticuli. Mag. 3·4		ν^1 Eridani. Mag. 3·6	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 4 11	° 28'	h m 4 13	° 39'	h m 4 14	° 59'
Jan. 0·4	26·416 ¹⁴¹	87·93 ²²⁹	26·83 ³⁰	86·75 ²⁴⁶	57·760 ¹⁰⁶	31·70 ²¹⁷
10·4	26·275 ¹⁸⁴	90·22 ¹⁹²	26·53 ³⁶	89·21 ¹⁹⁹	57·654 ¹⁴⁵	33·87 ¹⁸³
20·3	26·091 ²²⁰	92·14 ¹⁴⁶	26·17 ⁴²	91·20 ¹⁴⁶	57·509 ¹⁸¹	35·70 ¹⁴³
30·3	25·871 ²⁴⁷	93·60 ⁹⁷	25·75 ⁴⁵	92·66 ⁹²	57·328 ²⁰⁹	37·13 ⁹⁹
Feb. 9·3	25·624 ²⁶⁸	94·57 ⁵⁰	25·30 ⁴⁸	93·58 ³⁵	57·119 ²²⁷	38·12 ⁵⁵
19·2	25·356 ²⁷⁸	95·07 ²	24·82 ⁴⁹	93·93 ²³	56·892 ²⁴⁰	38·67 ⁹
Mar. 1·2	25·078 ²⁷⁶	95·05 ⁵³	24·33 ⁴⁹	93·70 ⁷⁸	56·652 ²³⁹	38·76 ³⁶
11·2	24·802 ²⁶⁴	94·52 ⁹⁹	23·84 ⁴⁶	92·92 ¹³⁰	56·413 ²²⁶	38·40 ⁸¹
21·2	24·538 ²⁴²	93·53 ¹⁴⁴	23·38 ⁴³	91·62 ¹⁷⁷	56·187 ²⁰⁹	37·59 ¹²⁰
31·1	24·296 ²⁰⁷	92·09 ¹⁸⁸	22·95 ³⁷	89·85 ²²⁴	55·978 ¹⁸⁰	36·39 ¹⁶¹
Apr. 10·1	24·089 ¹⁶⁷	90·21 ²²³	22·58 ³²	87·61 ²⁶²	55·798 ¹⁴¹	34·78 ¹⁹⁷
20·1	23·922 ¹¹⁸	87·98 ²⁵⁶	22·26 ²⁵	84·99 ²⁹⁵	55·657 ⁹⁸	32·81 ²²⁷
30·1	23·804 ⁶⁶	85·42 ²⁸²	22·01 ¹⁷	82·04 ³²²	55·559 ⁵⁰	30·54 ²⁵⁵
May 10·0	23·738 ⁹	82·60 ³⁰³	21·84 ⁸	78·82 ³⁴²	55·509 ¹	27·99 ²⁷⁵
20·0	23·729 ⁴⁵	79·57 ³¹⁸	21·76 ¹	75·40 ³⁵¹	55·510 ⁵²	25·24 ²⁹⁰
30·0	23·774 ¹⁰²	76·39 ³²⁴	21·75 ⁸	71·89 ³⁵⁴	55·562 ¹⁰²	22·34 ²⁹⁹
June 8·9	23·876 ¹⁵³	73·15 ³²¹	21·83 ¹⁷	68·35 ³⁴⁸	55·664 ¹⁵⁰	19·35 ³⁰¹
18·9	24·029 ²⁰³	69·94 ³¹²	22·00 ²⁴	64·87 ³³³	55·814 ¹⁹²	16·34 ²⁹⁵
28·9	24·232 ²⁴⁴	66·82 ²⁹⁴	22·24 ³²	61·54 ³¹¹	56·006 ²³⁰	13·39 ²⁷⁹
July 8·9	24·476 ²⁸¹	63·88 ²⁶⁷	22·56 ³⁸	58·43 ²⁷⁷	56·236 ²⁶¹	10·60 ²⁵⁶
18·8	24·757 ³⁰⁹	61·21 ²³²	22·94 ⁴³	55·66 ²³⁵	56·497 ²⁸⁶	8·04 ²²⁶
28·8	25·066 ³³⁰	58·89 ¹⁸⁹	23·37 ⁴⁷	53·31 ¹⁸⁹	56·783 ³⁰⁴	5·78 ¹⁸⁹
Aug. 7·8	25·396 ³⁴⁵	57·00 ¹⁴⁴	23·84 ⁴⁹	51·42 ¹³³	57·087 ³¹⁶	3·89 ¹⁴⁷
17·8	25·741 ³⁴⁷	55·56 ⁸⁸	24·33 ⁵²	50·09 ⁷³	57·403 ³¹⁷	2·42 ⁹⁶
27·7	26·088 ³⁴³	54·68 ³²	24·85 ⁵¹	49·36 ¹²	57·720 ³¹³	1·46 ⁴⁵
Sept. 6·7	26·431 ³³³	54·36 ²⁷	25·36 ⁵⁰	49·24 ⁵³	58·033 ³⁰⁶	1·01 ⁹
16·7	26·764 ³¹⁵	54·63 ⁸⁵	25·86 ⁴⁶	49·77 ¹¹⁴	58·339 ²⁹⁰	1·10 ⁶³
26·6	27·079 ²⁹⁰	55·48 ¹³⁹	26·32 ⁴³	50·91 ¹⁷⁴	58·629 ²⁶⁷	1·73 ¹¹⁶
Oct. 6·6	27·369 ²⁵⁹	56·87 ¹⁹¹	26·75 ³⁸	52·65 ²²⁸	58·896 ²⁴³	2·89 ¹⁶⁵
16·6	27·628 ²²⁴	58·78 ²³⁴	27·13 ³¹	54·93 ²⁷²	59·139 ²¹³	4·54 ²⁰⁵
26·6	27·852 ¹⁸²	61·12 ²⁶⁷	27·44 ²⁴	57·65 ³⁰⁶	59·352 ¹⁷⁷	6·59 ²³⁹
Nov. 5·5	28·034 ¹³⁷	63·79 ²⁹³	27·68 ¹⁷	60·71 ³³²	59·529 ¹⁴⁰	8·98 ²⁶³
15·5	28·171 ⁸⁹	66·72 ³⁰⁵	27·85 ⁷	64·03 ³⁴⁴	59·669 ⁹⁹	11·61 ²⁷⁹
25·5	28·260 ⁴⁰	69·77 ³⁰⁹	27·92 ⁰	67·47 ³⁴²	59·768 ⁵⁵	14·40 ²⁸¹
Dec. 5·5	28·300 ¹¹	72·86 ²⁹⁹	27·92 ¹⁰	70·89 ³²⁸	59·823 ¹²	17·21 ²⁷⁶
15·4	28·289 ⁶³	75·85 ²⁸⁰	27·82 ¹⁸	74·17 ³⁰⁵	59·835 ³⁵	19·97 ²⁵⁹
25·4	28·226 ¹¹⁰	78·65 ²⁵¹	27·64 ²⁵	77·22 ²⁷⁰	59·800 ⁷⁹	22·56 ²³⁵
35·4	28·116	81·16	27·39	79·92	59·721	24·91
Mean Place	25·009	71·09	24·90	67·82	56·402	16·20
Sec δ , Tan δ	1·356	-0·916	2·178	-1·935	1·206	-0·674
L α , L δ	-0·02	+0·2	-0·05	+0·2	-0·02	+0·2
ω α , ω δ	+0·03	+0·9	+0·06	+0·9	+0·02	+0·9
AUTHORITY	A. E.		A. E.		A. E.	

304 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Tauri. Mag. 3.9		ϵ Tauri. Mag. 3.6		α Tauri. Mag. 1.1	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 4 15	15 26	h m 4 24	19 0	h m 4 31	16 21
Jan.	0.4 22.664 ⁴⁵	19.19 ³³	5.206 ³⁶	25.36 ¹⁴	28.158 ³²	6.68 ²⁸
	10.4 22.619 ⁸⁴	18.86 ³³	5.170 ⁸²	25.22 ¹⁸	28.126 ⁷⁵	6.40 ²⁹
	20.4 22.535 ¹¹⁹	18.53 ³⁴	5.088 ¹¹⁸	25.04 ¹⁹	28.051 ¹¹¹	6.11 ²⁹
	30.3 22.416 ¹⁴⁸	18.19 ³⁴	4.970 ¹⁴⁸	24.85 ²⁴	27.940 ¹⁴³	5.82 ²⁷
Feb.	9.3 22.268 ¹⁶⁹	17.85 ³⁴	4.822 ¹⁷²	24.61 ²⁸	27.797 ¹⁶⁶	5.55 ²⁹
	19.3 22.099 ¹⁸¹	17.51 ³⁵	4.650 ¹⁸⁴	24.33 ³²	27.631 ¹⁸²	5.26 ³¹
Mar.	1.2 21.918 ¹⁸³	17.16 ³³	4.466 ¹⁸⁷	24.01 ³⁵	27.449 ¹⁸⁸	4.95 ³¹
	11.2 21.735 ¹⁷⁴	16.83 ³¹	4.279 ¹⁸⁰	23.66 ³⁶	27.261 ¹⁸⁰	4.64 ²⁹
	21.2 21.561 ¹⁵⁶	16.52 ²⁷	4.099 ¹⁶²	23.30 ³⁴	27.081 ¹⁶⁴	4.35 ²⁶
	31.2 21.405 ¹²⁷	16.25 ²⁰	3.937 ¹³⁷	22.96 ³¹	26.917 ¹³⁷	4.09 ²²
Apr.	10.1 21.278 ⁹¹	16.05 ¹¹	3.800 ⁹⁷	22.65 ²⁶	26.780 ¹⁰⁴	3.87 ¹³
	20.1 21.187 ⁴⁹	15.94 ¹	3.703 ⁵⁵	22.39 ¹⁸	26.676 ⁶²	3.74 ³
	30.1 21.138 ⁴	15.95 ¹⁴	3.648 ¹²	22.21 ⁶	26.614 ²⁰	3.71 ⁸
May	10.1 21.134 ⁴⁴	16.09 ²⁸	3.636 ³⁶	22.15 ⁷	26.594 ²⁹	3.79 ²⁰
	20.0 21.178 ⁹⁰	16.37 ⁴⁴	3.672 ⁸⁴	22.22 ²⁰	26.623 ⁷⁶	3.99 ³⁰
	30.0 21.268 ¹³⁵	16.81 ⁵⁹	3.756 ¹³⁰	22.42 ³⁷	26.699 ¹²¹	4.35 ⁴⁷
June	9.0 21.403 ¹⁷⁶	17.40 ⁷⁴	3.886 ¹⁷⁰	22.79 ⁴⁸	26.820 ¹⁶⁰	4.82 ⁶³
	18.9 21.579 ²¹¹	18.14 ⁸⁶	4.056 ²¹⁰	23.27 ⁶⁵	26.980 ²⁰¹	5.45 ⁷²
	28.9 21.790 ²⁴¹	19.00 ⁹⁵	4.266 ²³⁹	23.92 ⁷²	27.181 ²²⁹	6.17 ⁸²
July	8.9 22.031 ²⁶⁶	19.95 ¹⁰³	4.505 ²⁶⁵	24.64 ⁸⁴	27.410 ²⁵⁶	6.99 ⁹²
	18.9 22.297 ²⁸²	20.98 ¹⁰⁷	4.770 ²⁸⁴	25.48 ⁸⁷	27.666 ²⁷⁶	7.91 ⁹³
	28.8 22.579 ²⁹³	22.05 ¹⁰⁷	5.054 ²⁹⁶	26.35 ⁹⁴	27.942 ²⁹⁰	8.84 ⁹⁶
Aug.	7.8 22.872 ²⁹⁹	23.12 ¹⁰²	5.350 ²⁹⁹	27.29 ⁹⁰	28.232 ²⁹³	9.80 ⁹³
	17.8 23.171 ²⁹⁸	24.14 ⁹⁵	5.649 ³⁰⁵	28.19 ⁸⁹	28.525 ²⁹⁹	10.73 ⁸⁴
	27.7 23.469 ²⁹³	25.09 ⁸⁵	5.954 ³⁰⁴	29.08 ⁸²	28.824 ³⁰⁰	11.57 ⁷⁷
Sept.	6.7 23.762 ²⁸⁴	25.94 ⁷²	6.258 ²⁹²	29.90 ⁷⁰	29.124 ²⁹⁰	12.34 ⁶⁴
	16.7 24.046 ²⁷¹	26.66 ⁵⁷	6.550 ²⁸¹	30.60 ⁶⁰	29.414 ²⁸⁰	12.98 ⁴⁹
	26.7 24.317 ²⁵⁶	27.23 ⁴¹	6.831 ²⁶⁶	31.20 ⁵⁰	29.694 ²⁶⁵	13.47 ³⁶
Oct.	6.6 24.573 ²³⁶	27.64 ²⁶	7.097 ²⁵⁰	31.70 ³⁷	29.959 ²⁵¹	13.83 ²⁴
	16.6 24.809 ²¹⁵	27.90 ¹³	7.347 ²²⁶	32.07 ²⁵	30.210 ²²⁸	14.07 ¹⁰
	26.6 25.024 ¹⁹⁰	28.03 ⁰	7.573 ²⁰³	32.32 ¹⁶	30.438 ²⁰⁶	14.17 ⁵
Nov.	5.6 25.214 ¹⁶²	28.03 ¹¹	7.776 ¹⁷⁵	32.48 ⁹	30.644 ¹⁷⁸	14.12 ¹⁰
	15.5 25.376 ¹³¹	27.92 ¹⁸	7.951 ¹⁴²	32.57 ¹	30.822 ¹⁴⁸	14.02 ¹⁷
	25.5 25.507 ⁹⁸	27.74 ²³	8.093 ¹¹⁰	32.58 ⁴	30.970 ¹¹⁵	13.85 ²²
Dec.	5.5 25.605 ⁵⁹	27.51 ²⁷	8.203 ⁶⁸	32.54 ⁶	31.085 ⁷⁴	13.63 ²⁵
	15.4 25.664 ²⁰	27.24 ²⁹	8.271 ³¹	32.48 ⁹	31.159 ³⁷	13.38 ²⁶
	25.4 25.684 ²⁰	26.95 ³⁰	8.302 ¹³	32.39 ¹¹	31.196 ⁸	13.12 ²⁷
	35.4 25.664	26.65	8.289	32.28	31.188	12.85
Mean Place	21.121	25.17	3.592	31.06	26.560	13.19
Sec δ , Tan δ	1.037	+0.276	1.058	+0.344	1.042	+0.293
L α , L δ	+0.01	+0.2	+0.01	+0.2	+0.01	+0.2
ω α , ω δ	-0.01	+0.9	-0.01	+0.9	-0.01	+0.9
AUTHORITY	A. N.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 305

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Doradus. Mag. 3.5		53 Eridani. Mag. 4.0		τ Tauri. Mag. 4.3	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 4 32	° ′ 55 12	h m 4 34	° ′ 14 27	h m 4 37	° ′ 22 48
Jan. 0.4	20.408 ¹⁹⁷	39.06 ²⁶⁶	37.779 ⁵⁰	31.80 ¹⁷¹	35.394 ²⁷	24.92 ⁶
10.4	20.211 ²⁵³	41.72 ²²¹	37.729 ⁹¹	33.51 ¹⁴⁸	35.367 ⁷⁵	24.98 ¹
20.4	19.958 ³⁰¹	43.93 ¹⁷⁴	37.638 ¹²³	34.99 ¹²³	35.292 ¹¹²	24.99 ⁴
30.3	19.657 ³⁴²	45.67 ¹²²	37.515 ¹⁵³	36.22 ⁹⁴	35.180 ¹⁴⁶	24.95 ¹⁰
Feb. 9.3	19.315 ³⁶⁹	46.89 ⁶⁶	37.362 ¹⁷⁸	37.16 ⁶⁴	35.034 ¹⁷²	24.85 ¹⁶
19.3	18.946 ³⁸⁴	47.55 ¹²	37.184 ¹⁹²	37.80 ³⁵	34.862 ¹⁹⁰	24.69 ²⁴
Mar. 1.3	18.562 ³⁸⁵	47.67 ⁴³	36.992 ¹⁹⁵	38.15 ³	34.672 ¹⁹⁵	24.45 ³¹
11.2	18.177 ³⁷³	47.24 ⁹³	36.797 ¹⁹⁰	38.18 ²⁶	34.477 ¹⁹¹	24.14 ³⁶
21.2	17.804 ³⁴⁸	46.31 ¹⁴⁴	36.607 ¹⁷⁵	37.92 ⁵⁹	34.286 ¹⁷³	23.78 ⁴²
31.2	17.456 ³¹³	44.87 ¹⁹¹	36.432 ¹⁵²	37.33 ⁸⁷	34.113 ¹⁴⁴	23.36 ⁴³
Apr. 10.1	17.143 ²⁶⁶	42.96 ²³³	36.280 ¹¹⁹	36.46 ¹¹⁵	33.969 ¹¹⁴	22.93 ³⁷
20.1	16.877 ²⁰⁹	40.63 ²⁶⁶	36.161 ⁸¹	35.31 ¹⁴¹	33.855 ⁶⁹	22.56 ³⁴
30.1	16.668 ¹⁴⁸	37.97 ²⁹⁸	36.080 ⁴⁰	33.90 ¹⁶⁵	33.786 ²⁵	22.22 ²⁹
May 10.1	16.520 ⁷⁹	34.99 ³²²	36.040 ⁵	32.25 ¹⁸⁷	33.761 ²⁶	21.93 ¹⁶
20.0	16.441 ¹³	31.77 ³³⁷	36.045 ⁵²	30.38 ²⁰²	33.787 ⁷²	21.77 ⁴
30.0	16.428 ⁶⁰	28.40 ³⁴⁶	36.097 ⁹⁶	28.36 ²¹⁵	33.859 ¹²¹	21.73 ⁹
June 9.0	16.488 ¹²⁷	24.94 ³⁴³	36.193 ¹³⁵	26.21 ²²⁴	33.980 ¹⁶²	21.82 ²¹
19.0	16.615 ¹⁹¹	21.51 ³³⁵	36.328 ¹⁷³	23.97 ²²⁵	34.142 ²⁰⁴	22.03 ³⁷
28.9	16.806 ²⁴⁹	18.16 ³¹⁵	36.501 ²⁰⁷	21.72 ²²⁰	34.346 ²³⁴	22.40 ⁴⁹
July 8.9	17.055 ³⁰³	15.01 ²⁸⁸	36.708 ²³⁴	19.52 ²¹⁰	34.580 ²⁶³	22.89 ⁵⁹
18.9	17.358 ³⁴⁶	12.13 ²⁵⁴	36.942 ²⁵⁵	17.42 ¹⁹⁴	34.843 ²⁸⁵	23.48 ⁶⁹
28.8	17.704 ³⁸²	9.59 ²⁰⁸	37.197 ²⁷¹	15.48 ¹⁷⁰	35.128 ²⁹⁶	24.17 ⁷⁰
Aug. 7.8	18.086 ⁴⁰⁵	7.51 ¹⁵⁸	37.468 ²⁸⁰	13.78 ¹⁴¹	35.424 ³⁰⁶	24.87 ⁷⁷
17.8	18.491 ⁴²²	5.93 ¹⁰²	37.748 ²⁸⁵	12.37 ¹⁰⁸	35.730 ³¹¹	25.64 ⁷⁴
27.8	18.913 ⁴²⁶	4.91 ⁴⁰	38.033 ²⁸⁵	11.29 ⁶⁷	36.041 ³⁰⁸	26.38 ⁷³
Sept. 6.7	19.339 ⁴¹⁹	4.51 ²²	38.318 ²⁷⁷	10.62 ²⁹	36.349 ³⁰⁶	27.11 ⁶⁵
16.7	19.758 ⁴⁰²	4.73 ⁸⁶	38.595 ²⁶⁸	10.33 ¹³	36.655 ²⁹⁴	27.76 ⁶¹
26.7	20.160 ³⁷³	5.59 ¹⁴⁵	38.863 ²⁵⁴	10.46 ⁵⁶	36.949 ²⁸⁰	28.37 ⁵²
Oct. 6.7	20.533 ³³⁷	7.04 ²⁰³	39.117 ²³⁶	11.02 ⁹⁵	37.229 ²⁶⁷	28.89 ⁴²
16.6	20.870 ²⁹³	9.07 ²⁴⁹	39.353 ²¹⁴	11.97 ¹²⁷	37.496 ²⁴⁴	29.31 ³⁶
26.6	21.163 ²⁴⁰	11.56 ²⁸⁹	39.567 ¹⁸⁸	13.24 ¹⁵⁷	37.740 ²²¹	29.67 ³¹
Nov. 5.6	21.403 ¹⁷⁹	14.45 ³¹⁶	39.755 ¹⁶²	14.81 ¹⁸⁰	37.961 ¹⁹¹	29.98 ²⁶
15.5	21.582 ¹¹⁶	17.61 ³³⁶	39.917 ¹³⁰	16.61 ¹⁹⁵	38.152 ¹⁶¹	30.24 ²⁰
25.5	21.698 ⁴⁷	20.97 ³⁴¹	40.047 ⁹³	18.56 ²⁰³	38.313 ¹²⁷	30.44 ¹⁷
Dec. 5.5	21.745 ²¹	24.38 ³³¹	40.140 ⁵⁵	20.59 ²⁰¹	38.440 ⁸⁵	30.61 ¹⁴
15.5	21.724 ⁹⁰	27.69 ³¹⁵	40.195 ¹⁶	22.60 ¹⁹⁴	38.525 ⁴⁵	30.75 ¹²
25.4	21.634 ¹⁵⁷	30.84 ²⁸⁵	40.211 ²⁵	24.54 ¹⁸¹	38.570 ³	30.87 ¹¹
35.4	21.477	33.69	40.186	26.35	38.567	30.98
Mean Place	18.584	21.48	36.375	19.65	33.688	30.58
Sec δ, Tan δ	1.752	-1.439	1.033	-0.258	1.085	+0.421
L α, L δ	-0.03	+0.1	-0.01	+0.1	+0.01	+0.1
ω α, ω δ	+0.03	+0.9	+0.01	+0.9	-0.01	+0.9
AUTHORITY	A. E.		A. E.		A. E.	

306 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	μ Eridani. Mag. 4.2		π^3 Orionis. Mag. 3.3		ϵ Aurigæ. Mag. 2.9	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 4 41 ^s	° ′ 3 23	h m 4 45 ^s	° ′ 6 49	h m 4 51 ^s	° ′ 33 2
Jan. 0.4	37.541 ³³	58.20 ¹²⁶	37.792 ²²	26.15 ⁷⁸	56.613 ²⁰	33.31 ⁶⁴
10.4	37.508 ⁷²	59.46 ¹¹¹	37.770 ⁶³	25.37 ⁶⁹	56.593 ⁷⁰	33.95 ⁵²
20.4	37.436 ¹⁰⁸	60.57 ⁹⁴	37.707 ¹⁰¹	24.68 ⁶¹	56.523 ¹¹⁷	34.47 ⁴¹
30.3	37.328 ¹⁴⁰	61.51 ⁷⁵	37.606 ¹³⁴	24.07 ⁵¹	56.406 ¹⁵⁴	34.88 ³⁰
Feb. 9.3	37.188 ¹⁶³	62.26 ⁵⁶	37.472 ¹⁵⁹	23.56 ⁴¹	56.252 ¹⁸⁹	35.18 ⁹
19.3	37.025 ¹⁸⁰	62.82 ³⁶	37.313 ¹⁷⁶	23.15 ³¹	56.063 ²⁰⁸	35.27 ⁶
Mar. 1.3	36.845 ¹⁸⁵	63.18 ¹⁵	37.137 ¹⁸²	22.84 ²¹	55.855 ²¹⁵	35.21 ²⁶
11.2	36.660 ¹⁸²	63.33 ⁷	36.955 ¹⁸⁰	22.63 ¹¹	55.640 ²¹⁴	34.95 ⁴³
21.2	36.478 ¹⁶⁷	63.26 ²⁷	36.775 ¹⁶⁷	22.52 ²	55.426 ¹⁹⁷	34.52 ⁵⁵
31.2	36.311 ¹⁴⁵	62.99 ⁴⁸	36.608 ¹⁴²	22.54 ¹⁴	55.229 ¹⁷³	33.97 ⁶⁷
Apr. 10.2	36.166 ¹¹³	62.51 ⁷⁰	36.466 ¹¹²	22.68 ²⁸	55.056 ¹³³	33.30 ⁷⁷
20.1	36.053 ⁷⁷	61.81 ⁹⁰	36.354 ⁷⁴	22.96 ⁴²	54.923 ⁹²	32.53 ⁷⁹
30.1	35.976 ³⁵	60.91 ¹¹⁰	36.280 ³²	23.38 ⁵⁷	54.831 ⁴⁰	31.74 ⁷⁹
May 10.1	35.941 ⁸	59.81 ¹²⁸	36.248 ¹³	23.95 ⁷³	54.791 ⁹	30.95 ⁷³
20.0	35.949 ⁵⁴	58.53 ¹⁴⁶	36.261 ⁵⁷	24.68 ⁸⁷	54.800 ⁶⁵	30.22 ⁶⁶
30.0	36.003 ⁹⁶	57.07 ¹⁵⁸	36.318 ¹⁰⁰	25.55 ¹⁰¹	54.865 ¹¹⁶	29.56 ⁵⁶
June 9.0	36.099 ¹³⁷	55.49 ¹⁶⁸	36.418 ¹⁴²	26.56 ¹¹²	54.981 ¹⁶¹	29.00 ⁴²
19.0	36.236 ¹⁷³	53.81 ¹⁷⁴	36.560 ¹⁷⁸	27.68 ¹²⁰	55.142 ²⁰⁸	28.58 ²⁸
28.9	36.409 ²⁰⁵	52.07 ¹⁷⁵	36.738 ²¹⁰	28.88 ¹²⁶	55.350 ²⁴¹	28.30 ¹³
July 8.9	36.614 ²³²	50.32 ¹⁷⁰	36.948 ²³⁷	30.14 ¹²⁷	55.591 ²⁷⁷	28.17 ²
18.9	36.846 ²⁵²	48.62 ¹⁶¹	37.185 ²⁵⁷	31.41 ¹²⁵	55.868 ²⁹⁷	28.19 ¹⁶
28.9	37.098 ²⁶⁷	47.01 ¹⁴⁶	37.442 ²⁷³	32.66 ¹¹⁷	56.165 ³²⁰	28.35 ³⁰
Aug. 7.8	37.365 ²⁷⁷	45.55 ¹²⁵	37.715 ²⁸¹	33.83 ¹⁰⁵	56.485 ³³¹	28.65 ³⁸
17.8	37.642 ²⁸¹	44.30 ¹⁰¹	37.996 ²⁸⁷	34.88 ⁹¹	56.816 ³³⁸	29.03 ⁴⁸
27.8	37.923 ²⁸¹	43.29 ⁷³	38.283 ²⁸⁶	35.79 ⁷⁰	57.154 ³³⁸	29.51 ⁵⁷
Sept. 6.7	38.204 ²⁷⁵	42.56 ⁴¹	38.569 ²⁸¹	36.49 ⁵⁰	57.492 ³³⁴	30.08 ⁶⁰
16.7	38.479 ²⁶⁷	42.15 ⁹	38.850 ²⁷⁴	36.99 ²⁷	57.826 ³²⁷	30.68 ⁶⁴
26.7	38.746 ²⁵⁵	42.06 ²⁴	39.124 ²⁶²	37.26 ⁴	58.153 ³¹⁸	31.32 ⁶⁷
Oct. 6.7	39.001 ²³⁹	42.30 ⁵⁵	39.386 ²⁴⁸	37.30 ¹⁹	58.471 ³⁰⁰	31.99 ⁶⁸
16.6	39.240 ²²⁰	42.85 ⁸²	39.634 ²³⁰	37.11 ³⁹	58.771 ²⁸⁰	32.67 ⁷⁰
26.6	39.460 ¹⁹⁸	43.67 ¹⁰⁶	39.864 ²⁰⁸	36.72 ⁵⁶	59.051 ²⁵⁵	33.37 ⁷¹
Nov. 5.6	39.658 ¹⁷²	44.73 ¹²⁵	40.072 ¹⁸⁴	36.16 ⁷¹	59.306 ²²⁸	34.08 ⁷⁴
15.6	39.830 ¹⁴²	45.98 ¹³⁸	40.256 ¹⁵⁴	35.45 ⁷⁹	59.534 ¹⁹¹	34.82 ⁷⁶
25.5	39.972 ¹⁰⁹	47.36 ¹⁴⁴	40.410 ¹²¹	34.66 ⁸⁵	59.725 ¹⁵³	35.58 ⁷⁶
Dec. 5.5	40.081 ⁷²	48.80 ¹⁴⁴	40.531 ⁸⁶	33.81 ⁸⁷	59.878 ¹¹¹	36.34 ⁷⁵
15.5	40.153 ³³	50.24 ¹⁴¹	40.617 ⁴⁴	32.94 ⁸⁴	59.989 ⁶⁰	37.09 ⁷³
25.4	40.186	51.65 ¹³¹	40.661	32.10	60.049	37.82 ⁶⁹
35.4	40.179	52.96	40.664	31.31	60.060	38.51
Mean Place	36.083	47.84	36.259	34.88	54.678	38.20
Sec δ , Tan δ	1.002	-0.059	1.007	+0.120	1.193	+0.650
L α , L δ	0.00	+0.1	0.00	+0.1	+0.02	+0.1
ω α , ω δ	0.00	+0.9	0.00	+0.9	-0.01	+1.0

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APPARENT PLACES OF STARS, 1922. 307

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Aurigæ. Mag. 3·4—4·1		η Aurigæ. Mag. 3·3		ε Leporis. Mag. 3·3	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 4 56	° ′ 43 42	h m 5 I	° ′ 41 7	h m 5 2	° ′ 22 28
Jan.	0·4 24·398 ²⁵	29·81 ¹²²	4·729 ¹⁷	45·11 ¹⁰⁸	11·023 ⁴⁰	42·67 ²¹⁴
	10·4 24·373 ⁸⁵	31·03 ¹⁰⁶	4·712 ⁷⁴	46·19 ⁹⁶	10·983 ⁸⁴	44·81 ¹⁹⁰
	20·4 24·288 ¹³⁷	32·09 ⁸⁸	4·638 ¹²⁵	47·15 ⁸⁰	10·899 ¹²³	46·71 ¹⁶⁰
	30·3 24·151 ¹⁸⁵	32·97 ⁶³	4·513 ¹⁷²	47·95 ⁵⁸	10·776 ¹⁵⁶	48·31 ¹²⁶
Feb.	0·3 23·966 ²²⁰	33·60 ³⁷	4·341 ²⁰⁹	48·53 ³⁶	10·620 ¹⁸⁶	49·57 ⁸⁹
	19·3 23·746 ²⁴⁷	33·97 ¹⁰	4·132 ²³⁴	48·89 ⁹	10·434 ²⁰⁴	50·46 ⁵¹
Mar.	1·3 23·499 ²⁵⁶	34·07 ²⁰	3·898 ²⁴⁴	48·98 ¹⁵	10·230 ²¹²	50·97 ¹⁶
	11·2 23·243 ²⁵³	33·87 ⁴⁸	3·654 ²⁴³	48·83 ⁴³	10·018 ²¹²	51·13 ²²
	21·2 22·990 ²³⁴	33·39 ⁷⁴	3·411 ²²⁵	48·40 ⁶⁵	9·806 ²⁰²	50·91 ⁵⁹
	31·2 22·756 ²⁰⁵	32·65 ⁹⁵	3·186 ¹⁹⁹	47·75 ⁸⁵	9·604 ¹⁷⁹	50·32 ⁹⁵
Apr.	10·2 22·551 ¹⁶⁵	31·70 ¹¹¹	2·987 ¹⁶⁰	46·90 ¹⁰¹	9·425 ¹⁵¹	49·37 ¹²⁷
	20·1 22·386 ¹¹⁴	30·59 ¹²⁴	2·827 ¹¹⁴	45·89 ¹¹⁰	9·274 ¹¹⁵	48·10 ¹⁶⁰
	30·1 22·272 ⁵⁸	29·35 ¹²⁹	2·713 ⁵⁸	44·79 ¹¹⁶	9·159 ⁷⁴	46·50 ¹⁸⁶
May	10·1 22·214 ²	28·06 ¹³⁰	2·655 ⁴	43·63 ¹¹⁷	9·085 ³⁰	44·64 ²¹¹
	20·0 22·216 ⁶³	26·76 ¹²⁷	2·651 ⁵⁷	42·46 ¹¹³	9·055 ¹⁷	42·53 ²³⁰
	30·0 22·279 ¹²⁰	25·49 ¹¹⁸	2·708 ¹¹³	41·33 ¹⁰⁵	9·072 ⁶²	40·23 ²⁴⁵
June	9·0 22·399 ¹⁷⁹	24·31 ¹⁰⁵	2·821 ¹⁶⁶	40·28 ⁹²	9·134 ¹⁰⁵	37·78 ²⁵²
	19·0 22·578 ²²⁶	23·26 ⁸⁷	2·987 ²¹⁶	39·36 ⁷⁸	9·239 ¹⁴⁵	35·26 ²⁵⁶
	28·9 22·804 ²⁷¹	22·39 ⁷¹	3·203 ²⁵⁶	38·58 ⁶⁰	9·384 ¹⁸³	32·70 ²⁴⁹
July	8·9 23·075 ³⁰⁷	21·68 ⁵¹	3·459 ²⁹³	37·98 ⁴³	9·567 ²¹⁵	30·21 ²³⁸
	18·9 23·382 ³³⁹	21·17 ³²	3·752 ³²⁴	37·55 ²⁶	9·782 ²⁴¹	27·83 ²¹⁸
	28·9 23·721 ³⁵⁹	20·85 ¹¹	4·076 ³⁴⁵	37·29 ⁶	10·023 ²⁶¹	25·65 ¹⁹³
Aug.	7·8 24·080 ³⁷⁶	20·74 ⁸	4·421 ³⁶¹	37·23 ⁸	10·284 ²⁷⁶	23·72 ¹⁵⁹
	17·8 24·456 ³⁸⁵	20·82 ²⁴	4·782 ³⁶⁹	37·31 ²⁴	10·560 ²⁸⁷	22·13 ¹²²
	27·8 24·841 ³⁸⁸	21·06 ⁴⁴	5·151 ³⁷⁴	37·55 ⁴¹	10·847 ²⁹¹	20·91 ⁷⁷
Sept.	6·7 25·229 ³⁸⁵	21·50 ⁵⁸	5·525 ³⁷¹	37·96 ⁵²	11·138 ²⁹⁰	20·14 ³⁰
	16·7 25·614 ³⁷⁷	22·08 ⁷³	5·896 ³⁶⁵	38·48 ⁶⁴	11·428 ²⁸⁴	19·84 ¹⁸
	26·7 25·991 ³⁶⁴	22·81 ⁸⁵	6·261 ³⁵⁴	39·12 ⁷⁵	11·712 ²⁷²	20·02 ⁶⁶
Oct.	6·7 26·355 ³⁴⁹	23·66 ⁹⁷	6·615 ³³⁸	39·87 ⁸⁶	11·984 ²⁶⁰	20·68 ¹¹⁰
	16·6 26·704 ³²³	24·63 ¹⁰⁷	6·953 ³¹⁷	40·73 ⁹²	12·244 ²³⁹	21·78 ¹⁵³
	26·6 27·027 ²⁹⁷	25·70 ¹¹⁸	7·270 ²⁹⁰	41·65 ¹⁰³	12·483 ²¹⁴	23·31 ¹⁸⁹
Nov.	5·6 27·324 ²⁶⁴	26·88 ¹²⁷	7·560 ²⁶⁰	42·68 ¹¹⁰	12·697 ¹⁸⁷	25·20 ²¹⁷
	15·6 27·588 ²²³	28·15 ¹³⁴	7·820 ²²²	43·78 ¹¹⁶	12·884 ¹⁵³	27·37 ²³⁶
	25·5 27·811 ¹⁷⁷	29·49 ¹³⁷	8·042 ¹⁷⁷	44·94 ¹²⁰	13·037 ¹¹⁷	29·73 ²⁴⁷
Dec.	5·5 27·988 ¹²⁸	30·86 ¹³⁹	8·219 ¹³¹	46·14 ¹²⁴	13·154 ⁷⁶	32·20 ²⁴⁷
	15·5 28·116 ⁶⁹	32·25 ¹³⁶	8·350 ⁷⁴	47·38 ¹²⁰	13·230 ³³	34·67 ²⁴¹
	25·4 28·185 ¹⁰	33·61 ¹³⁰	8·424 ¹⁹	48·58 ¹¹⁶	13·263 ¹³	37·08 ²²⁶
	35·4 28·195	34·91	8·443	49·74	13·250	39·34
Mean Place	22·130	33·59	2·550	49·53	9·505	29·48
Sec δ, Tan δ	1·383	+0·956	1·328	+0·873	1·082	-0·414
L α, L δ	+0·02	+0·1	+0·02	+0·1	-0·01	+0·1
ω α, ω δ	-0·02	+1·0	-0·02	+1·0	+0·01	+1·0
AUTHORITY	A. E.		A. E.		A. E.	

308 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Eridani. Mag. 2.9		μ Leporis. Mag. 3.3		β Orionis. Mag. 0.3	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 5 4	° ' " II 5 II	h m 5 9	° ' " I6 I7	h m 5 IO	° ' " 8 I7
Jan. 0.4	2.407 ¹⁷	21.04 ¹⁴¹	27.155 ²⁴	60.99 ¹⁹⁴	48.829 ¹⁴	37.84 ¹⁵⁹
10.4	2.390 ⁵⁷	22.45 ¹²⁶	27.131 ⁶⁷	62.93 ¹⁷²	48.815 ⁵⁶	39.43 ¹⁴¹
20.4	2.333 ¹⁰⁰	23.71 ¹⁰⁷	27.064 ¹⁰⁷	64.65 ¹⁴⁷	48.759 ⁹⁹	40.84 ¹²⁰
30.4	2.233 ¹³²	24.78 ⁸⁶	26.957 ¹⁴²	66.12 ¹¹⁶	48.660 ¹³⁰	42.04 ⁹⁶
Feb. 9.3	2.101 ¹⁶⁰	25.64 ⁶⁵	26.815 ¹⁷¹	67.28 ⁸⁶	48.530 ¹⁵⁷	43.00 ⁷²
19.3	1.941 ¹⁷⁵	26.29 ⁴¹	26.644 ¹⁹¹	68.14 ⁵³	48.373 ¹⁸⁰	43.72 ⁴⁸
Mar. 1.3	1.766 ¹⁸⁹	26.70 ²⁰	26.453 ²⁰¹	68.67 ²¹	48.193 ¹⁹¹	44.20 ²¹
11.2	1.577 ¹⁸⁶	26.90 ⁰	26.252 ²⁰²	68.88 ¹²	48.002 ¹⁹⁰	44.41 ⁵
21.2	1.391 ¹⁷⁷	26.90 ²⁶	26.050 ¹⁹¹	68.76 ⁴⁴	47.812 ¹⁸²	44.36 ²⁷
31.2	1.214 ¹⁵⁹	26.64 ⁴⁹	25.859 ¹⁷²	68.32 ⁷⁵	47.630 ¹⁶⁵	44.09 ⁵⁵
Apr. 10.2	1.055 ¹³⁰	26.15 ⁷²	25.687 ¹⁴⁵	67.57 ¹⁰⁵	47.465 ¹³⁵	43.54 ⁸¹
20.1	0.925 ⁹²	25.43 ⁹³	25.542 ¹¹¹	66.52 ¹³³	47.330 ¹⁰⁰	42.73 ¹⁰⁴
30.1	0.833 ⁵⁷	24.50 ¹¹³	25.431 ⁷⁰	65.19 ¹⁵⁸	47.230 ⁶⁵	41.69 ¹²³
May 10.1	0.776 ¹²	23.37 ¹³¹	25.361 ²⁸	63.61 ¹⁸²	47.165 ²¹	40.46 ¹⁴⁶
20.1	0.764 ³²	22.06 ¹⁴⁸	25.333 ¹⁷	61.79 ²⁰⁰	47.144 ²²	39.00 ¹⁶¹
30.0	0.796 ⁷⁴	20.58 ¹⁶¹	25.350 ⁶⁰	59.79 ²¹⁵	47.166 ⁶⁷	37.39 ¹⁷⁷
June 9.0	0.870 ¹¹⁴	18.97 ¹⁷³	25.410 ¹⁰³	57.64 ²²⁵	47.233 ¹⁰⁷	35.62 ¹⁸⁶
19.0	0.984 ¹⁵⁰	17.24 ¹⁷⁵	25.513 ¹⁴¹	55.39 ²²⁹	47.340 ¹⁴²	33.76 ¹⁸⁹
28.9	1.134 ¹⁸⁷	15.49 ¹⁷⁷	25.654 ¹⁷⁷	53.10 ²²⁶	47.482 ¹⁸¹	31.87 ¹⁹¹
July 8.9	1.321 ²¹⁵	13.72 ¹⁷⁴	25.831 ²⁰⁸	50.84 ²¹⁷	47.663 ²⁰⁸	29.96 ¹⁸⁶
18.9	1.536 ²³⁶	11.98 ¹⁶⁵	26.039 ²³⁴	48.67 ²⁰²	47.871 ²³²	28.10 ¹⁷⁴
28.9	1.772 ²⁵⁶	10.33 ¹⁴⁸	26.273 ²⁵⁴	46.65 ¹⁷⁹	48.103 ²⁵¹	26.36 ¹⁵⁹
Aug. 7.9	2.028 ²⁶⁹	8.85 ¹²⁸	26.527 ²⁶⁸	44.86 ¹⁵¹	48.354 ²⁶⁷	24.77 ¹³³
17.8	2.297 ²⁷⁸	7.57 ¹⁰²	26.795 ²⁷⁹	43.35 ¹¹⁷	48.621 ²⁷⁵	23.44 ¹⁰⁷
27.8	2.575 ²⁷⁹	6.55 ⁷²	27.074 ²⁸²	42.18 ⁷⁸	48.896 ²⁸⁰	22.37 ⁷³
Sept. 6.8	2.854 ²⁷⁸	5.83 ⁴⁰	27.356 ²⁸⁴	41.40 ³⁶	49.176 ²⁷⁹	21.64 ⁴⁰
16.7	3.132 ²⁷³	5.43 ⁴	27.640 ²⁷⁸	41.04 ⁸	49.455 ²⁷⁴	21.24 ¹
26.7	3.405 ²⁶⁴	5.39 ²⁹	27.918 ²⁷⁰	41.12 ⁵¹	49.729 ²⁶⁷	21.23 ³⁴
Oct. 6.7	3.669 ²⁵²	5.68 ⁶²	28.188 ²⁵⁷	41.63 ⁹³	49.996 ²⁵⁵	21.57 ⁷³
16.6	3.921 ²³⁴	6.30 ⁹³	28.445 ²⁴⁰	42.56 ¹³¹	50.251 ²³⁹	22.30 ¹⁰²
26.6	4.155 ²¹⁶	7.23 ¹¹⁷	28.685 ²¹⁹	43.87 ¹⁶⁴	50.490 ²²²	23.32 ¹³²
Nov. 5.6	4.371 ¹⁹⁰	8.40 ¹³⁸	28.904 ¹⁹³	45.51 ¹⁹¹	50.712 ¹⁹⁴	24.64 ¹⁵³
15.6	4.561 ¹⁶²	9.78 ¹⁵¹	29.097 ¹⁶²	47.42 ²⁰⁹	50.906 ¹⁶⁷	26.17 ¹⁶⁹
25.5	4.723 ¹²⁹	11.29 ¹⁶³	29.259 ¹²⁸	49.51 ²¹⁹	51.073 ¹³²	27.86 ¹⁷⁹
Dec. 5.5	4.852 ⁹²	12.92 ¹⁶⁰	29.387 ⁸⁹	51.70 ²²²	51.205 ⁹⁸	29.65 ¹⁷⁹
15.5	4.944 ⁵⁰	14.52 ¹⁵⁷	29.476 ⁴⁷	53.92 ²¹⁶	51.303 ⁵⁴	31.44 ¹⁷⁶
25.5	4.994 ¹⁰	16.09 ¹⁴⁸	29.523 ⁴	56.08 ²⁰²	51.357 ¹⁵	33.20 ¹⁶⁸
35.4	5.004	17.57	29.527	58.10	51.372	34.88
Mean Place	0.894	10.10	25.632	48.62	47.304	26.44
Sec δ , Tan δ	1.004	-0.091	1.042	-0.292	1.011	-0.146
L a. L δ	0.00	+0.1	-0.01	+0.1	0.00	+0.1
ω a. ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0

AUTHORITY

A. E.

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APPARENT PLACES OF STARS, 1922. 309

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Aurigæ. Mag. 0.2		β Orionis. Mag. 4.6		γ Orionis (mean). Mag. 3.4	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 5 10	° ' " 54	h m 5 17	° ' " 27	h m 5 20	° ' " 28
Jan. 0.4	57.820 ¹¹	68.31 ¹³³	48.324 ⁰	40.37 ¹²²	34.850 ⁰	14.93 ¹³³
10.4	57.809 ⁷⁵	69.64 ¹²³	48.324 ⁴⁵	41.59 ¹⁰⁸	34.850 ⁴³	16.26 ¹¹⁸
20.4	57.734 ¹³¹	70.87 ¹⁰⁴	48.279 ⁸⁴	42.67 ⁹⁴	34.807 ⁸⁴	17.44 ¹⁰²
30.4	57.603 ¹⁸²	71.91 ⁸⁰	48.195 ¹²¹	43.61 ⁷⁵	34.723 ¹²¹	18.46 ⁸³
Feb. 9.3	57.421 ²²³	72.71 ⁵⁴	48.074 ¹⁵³	44.36 ⁵⁸	34.602 ¹⁵²	19.29 ⁶³
19.3	57.198 ²⁵⁰	73.25 ²⁶	47.921 ¹⁷²	44.94 ⁴⁰	34.450 ¹⁷³	19.92 ⁴³
Mar. 1.3	56.948 ²⁶⁶	73.51 ⁸	47.749 ¹⁸⁵	45.34 ²²	34.277 ¹⁸⁶	20.35 ²³
11.2	56.682 ²⁶⁷	73.43 ³⁶	47.564 ¹⁸⁸	45.56 ⁴	34.091 ¹⁸⁸	20.58 ³
21.2	56.415 ²⁵²	73.07 ⁶⁶	47.376 ¹⁷⁸	45.60 ¹⁵	33.903 ¹⁸¹	20.61 ¹⁷
31.2	56.163 ²²⁴	72.41 ⁹¹	47.198 ¹⁶¹	45.45 ³³	33.722 ¹⁶²	20.44 ³⁸
Apr. 10.2	55.939 ¹⁸⁵	71.50 ¹⁰⁹	47.037 ¹³⁵	45.12 ⁵¹	33.560 ¹³⁷	20.06 ⁵⁷
20.1	55.754 ¹³⁵	70.41 ¹²⁴	46.902 ¹⁰¹	44.61 ⁶⁹	33.423 ¹⁰⁴	19.49 ⁷⁶
30.1	55.619 ⁷⁷	69.17 ¹³⁷	46.801 ⁶²	43.92 ⁸⁸	33.319 ⁶⁶	18.73 ⁹⁶
May 10.1	55.542 ¹⁹	67.80 ¹⁴⁰	46.739 ²⁰	43.04 ¹⁰⁴	33.253 ²⁴	17.77 ¹¹³
20.1	55.523 ⁴³	66.40 ¹³⁹	46.719 ²³	42.00 ¹¹⁹	33.229 ¹⁹	16.64 ¹³⁰
30.0	55.566 ¹⁰⁵	65.01 ¹³³	46.742 ⁶⁵	40.81 ¹³³	33.248 ⁶¹	15.34 ¹⁴²
June 9.0	55.671 ¹⁶³	63.68 ¹²⁴	46.807 ¹⁰⁶	39.48 ¹⁴³	33.309 ¹⁰²	13.92 ¹⁵³
19.0	55.834 ²¹⁸	62.44 ¹¹¹	46.913 ¹⁴⁴	38.05 ¹⁵⁰	33.411 ¹⁴¹	12.39 ¹⁶⁰
28.9	56.052 ²⁶²	61.33 ⁹³	47.057 ¹⁷⁸	36.55 ¹⁵²	33.552 ¹⁷⁴	10.79 ¹⁶²
July 8.9	56.314 ³⁰⁴	60.40 ⁷⁴	47.235 ²⁰⁶	35.03 ¹⁵⁰	33.726 ²⁰⁴	9.17 ¹⁵⁹
18.9	56.618 ³³⁸	59.66 ⁵⁵	47.441 ²³²	33.53 ¹⁴⁴	33.930 ²²⁸	7.58 ¹⁵¹
28.9	56.956 ³⁶³	59.11 ³⁵	47.673 ²⁵⁰	32.09 ¹³²	34.158 ²⁴⁷	6.07 ¹³⁸
Aug. 7.8	57.319 ³⁸²	58.76 ¹⁸	47.923 ²⁶⁵	30.77 ¹¹⁵	34.405 ²⁶³	4.69 ¹¹⁹
17.8	57.701 ³⁹⁴	58.58 ⁴	48.188 ²⁷³	29.62 ⁹⁴	34.668 ²⁷²	3.50 ⁹⁷
27.8	58.095 ⁴⁰¹	58.62 ²³	48.461 ²⁷⁸	28.68 ⁶⁷	34.940 ²⁷⁷	2.53 ⁷⁰
Sept. 6.8	58.496 ⁴⁰¹	58.85 ⁴⁰	48.739 ²⁷⁹	28.01 ⁴¹	35.217 ²⁷⁹	1.83 ³⁹
16.7	58.897 ³⁹⁸	59.25 ⁵⁷	49.018 ²⁷⁶	27.60 ⁹	35.496 ²⁷⁶	1.44 ⁸
26.7	59.295 ³⁸⁴	59.82 ⁷²	49.294 ²⁷⁰	27.51 ²⁰	35.772 ²⁶⁹	1.36 ²⁴
Oct. 6.7	59.679 ³⁷¹	60.54 ⁸⁴	49.564 ²⁵⁹	27.71 ⁴⁹	36.041 ²⁶⁰	1.60 ⁵⁵
16.6	60.050 ³⁵³	61.38 ¹⁰²	49.823 ²⁴⁶	28.20 ⁷⁷	36.301 ²⁴⁶	2.15 ⁸⁴
26.6	60.403 ³²²	62.40 ¹¹³	50.069 ²²⁷	28.97 ⁹⁹	36.547 ²²⁹	2.99 ¹⁰⁸
Nov. 5.6	60.725 ²⁹⁰	63.53 ¹²⁷	50.296 ²⁰⁵	29.96 ¹¹⁷	36.776 ²⁰⁵	4.07 ¹²⁸
15.6	61.015 ²⁵⁰	64.80 ¹³⁶	50.501 ¹⁷⁸	31.13 ¹³⁰	36.981 ¹⁷⁹	5.35 ¹⁴¹
25.5	61.265 ²⁰¹	66.16 ¹⁴³	50.679 ¹⁴⁶	32.43 ¹³⁸	37.160 ¹⁴⁷	6.76 ¹⁵⁰
Dec. 5.5	61.466 ¹⁵⁰	67.59 ¹⁴⁸	50.825 ¹⁰⁹	33.81 ¹³⁸	37.307 ¹¹¹	8.26 ¹⁵⁰
15.5	61.616 ⁹¹	69.07 ¹⁴⁶	50.934 ⁶⁹	35.19 ¹³⁵	37.418 ⁷⁰	9.76 ¹⁴⁷
25.5	61.707 ²⁸	70.53 ¹⁴²	51.003 ²⁷	36.54 ¹²⁷	37.488 ²⁷	11.23 ¹³⁸
35.4	61.735	71.95	51.030	37.81	37.515	12.61
Mean Place	55.453	72.90	46.763	29.86	33.290	4.15
Sec δ , Tan δ	1.437	+1.033	1.000	-0.008	1.001	-0.043
L α , L δ	+0.03	+0.1	0.00	+0.1	0.00	+0.1
ω α , ω δ	-0.01	+1.0	0.00	+1.0	0.00	+1.0
AUTHORITY	A. E.			A. N.		

310 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Orionis. Mag. 1·7		β Tauri. Mag. 1·8		β Leporis. Mag. 3·0	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 5 20	6 16	h m 5 21	28 32	h m 5 24	20 49
Jan. 0·4	58·397 ^s 6	38·77 87	23·466 ^s 9	27·32 40	55·780 ^s 16	27·54 220
10·4	58·403 38	37·90 75	23·475 37	27·72 37	55·764 62	29·74 198
20·4	58·365 81	37·15 67	23·438 89	28·09 32	55·702 105	31·72 169
30·4	58·284 116	36·48 54	23·349 128	28·41 26	55·597 142	33·41 137
Feb. 9·3	58·168 148	35·94 42	23·221 166	28·67 17	55·455 173	34·78 103
19·3	58·020 171	35·52 32	23·055 192	28·84 4	55·282 196	35·81 67
Mar. 1·3	57·849 183	35·20 19	22·863 205	28·88 9	55·086 209	36·48 31
11·3	57·666 187	35·01 9	22·658 207	28·79 17	54·877 211	36·79 5
21·2	57·479 178	34·92 4	22·451 198	28·62 32	54·666 205	36·74 41
31·2	57·301 160	34·96 15	22·253 178	28·30 42	54·461 187	36·33 76
Apr. 10·2	57·141 134	35·11 29	22·075 149	27·88 47	54·274 161	35·57 109
20·1	57·007 102	35·40 42	21·926 109	27·41 51	54·113 129	34·48 139
30·1	56·905 60	35·82 56	21·817 67	26·90 51	53·984 89	33·09 168
May 10·1	56·845 21	36·38 70	21·750 16	26·39 48	53·895 48	31·41 193
20·1	56·824 24	37·08 82	21·734 30	25·91 42	53·847 3	29·48 214
30·0	56·848 68	37·90 95	21·764 81	25·49 36	53·844 41	27·34 230
June 9·0	56·916 108	38·85 104	21·845 128	25·13 26	53·885 84	25·04 241
19·0	57·024 146	39·89 113	21·973 168	24·87 16	53·969 125	22·63 244
29·0	57·170 180	41·02 115	22·141 209	24·71 6	54·094 162	20·19 243
July 8·9	57·350 210	42·17 118	22·350 241	24·65 4	54·256 195	17·76 233
18·9	57·560 235	43·35 115	22·591 267	24·69 14	54·451 223	15·43 218
28·9	57·795 252	44·50 107	22·858 286	24·83 22	54·674 246	13·25 193
Aug. 7·8	58·047 268	45·57 94	23·144 306	25·05 25	54·920 264	11·32 163
17·8	58·315 277	46·51 81	23·450 315	25·30 32	55·184 277	9·69 127
27·8	58·592 281	47·32 59	23·765 321	25·62 32	55·461 285	8·42 86
Sept. 6·8	58·873 284	47·91 40	24·086 323	25·94 34	55·746 287	7·56 40
16·7	59·157 281	48·31 15	24·409 322	26·28 33	56·033 286	7·16 7
26·7	59·438 275	48·46 9	24·731 313	26·61 32	56·319 279	7·23 56
Oct. 6·7	59·713 264	48·37 31	25·044 303	26·93 30	56·598 269	7·79 98
16·7	59·977 253	48·06 53	25·347 290	27·23 30	56·867 252	8·77 142
26·6	60·230 234	47·53 70	25·637 270	27·53 28	57·119 233	10·19 179
Nov. 5·6	60·464 213	46·83 85	25·907 245	27·81 33	57·352 206	11·98 209
15·6	60·677 184	45·98 93	26·152 216	28·14 33	57·558 176	14·07 230
25·6	60·861 154	45·05 100	26·368 179	28·47 34	57·734 141	16·37 243
Dec. 5·5	61·015 118	44·05 99	26·547 138	28·81 38	57·875 101	18·80 247
15·5	61·133 77	43·06 96	26·685 93	29·19 42	57·976 58	21·27 242
25·5	61·210 33	42·10 90	26·778 45	29·61 42	58·034 12	23·69 230
35·4	61·243	41·20	26·823	30·03	58·046	25·99
Mean Place	56·796	48·54	21·593	34·52	54·196	14·86
Sec δ , Tan δ	1·006	+0·110	1·138	+0·544	1·070	-0·380
L α , L δ	0·00	+0·1	+0·01	+0·1	-0·01	+0·1
ω , α , ω δ	0·00	+1·0	-0·01	+1·0	0·00	+1·0
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 311

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	20 G. Pictoris. Mag. 5.5		8 Orionis Mag. 2.5		α Leporis. Mag. 2.7	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 5 27	° ′ 47 7	h m 5 28	° ′ 0 21	h m 5 29	° ′ 17 52
Jan.	0.4 62.682 ⁷⁹	76.83 ³⁰²	2.839 ⁶	31.34 ¹²⁴	18.970 ¹⁰	50.16 ²¹⁰
	10.4 62.603 ¹³⁹	79.85 ²⁷¹	2.845 ³⁴	32.58 ¹¹¹	18.960 ⁵²	52.26 ¹⁸⁶
	20.4 62.464 ¹⁹²	82.56 ²³²	2.811 ⁷⁹	33.69 ⁹⁵	18.908 ⁹⁸	54.12 ¹⁶⁴
	30.4 62.272 ²³⁸	84.88 ¹⁸⁷	2.732 ¹¹⁷	34.64 ⁷⁷	18.810 ¹³⁶	55.76 ¹³⁴
Feb.	9.3 62.034 ²⁷⁶	86.75 ¹⁴⁰	2.615 ¹⁴⁵	35.41 ⁶⁰	18.674 ¹⁶⁶	57.10 ⁹⁹
	19.3 61.758 ³⁰³	88.15 ⁸⁸	2.470 ¹⁷¹	36.01 ⁴²	18.508 ¹⁹¹	58.09 ⁶⁷
Mar.	1.3 61.455 ³¹⁷	89.03 ³⁷	2.299 ¹⁸⁴	36.43 ²³	18.317 ²⁰²	58.76 ³⁵
	11.3 61.138 ³²¹	89.40 ¹⁵	2.115 ¹⁸⁶	36.66 ⁷	18.115 ²⁰⁶	59.11 ²
	21.2 60.817 ³¹¹	89.25 ⁶⁵	1.929 ¹⁸⁰	36.73 ¹³	17.909 ¹⁹⁸	59.09 ³⁶
	31.2 60.506 ²⁹¹	88.60 ¹¹³	1.749 ¹⁶⁸	36.60 ³⁰	17.711 ¹⁸³	58.73 ⁶⁸
Apr.	10.2 60.215 ²⁵⁹	87.47 ¹⁵⁹	1.581 ¹³⁹	36.30 ⁵⁰	17.528 ¹⁵⁸	58.05 ⁹⁸
	20.1 59.956 ²²⁰	85.88 ²⁰⁰	1.442 ¹⁰⁸	35.80 ⁶⁹	17.370 ¹²⁶	57.07 ¹³⁰
	30.1 59.736 ¹⁷²	83.88 ²³⁷	1.334 ⁷⁰	35.11 ⁸⁵	17.244 ⁸⁹	55.77 ¹⁵⁵
May	10.1 59.564 ¹²⁰	81.51 ²⁶⁹	1.264 ²⁸	34.26 ¹⁰¹	17.155 ⁴⁶	54.22 ¹⁸¹
	20.1 59.444 ⁶³	78.82 ²⁹⁴	1.236 ¹⁵	33.25 ¹¹⁶	17.109 ⁵	52.41 ¹⁹⁹
	30.0 59.381 ⁶	75.88 ³¹³	1.251 ⁵⁴	32.09 ¹³⁰	17.104 ³⁹	50.42 ²¹⁶
June	9.0 59.375 ⁵¹	72.75 ³²³	1.305 ⁹⁹	30.79 ¹⁴⁰	17.143 ⁸³	48.26 ²²⁷
	19.0 59.426 ¹⁰⁷	69.52 ³²⁵	1.404 ¹³²	29.39 ¹⁴⁶	17.226 ¹²³	45.99 ²³¹
	29.0 59.533 ¹⁶¹	66.27 ³¹⁹	1.536 ¹⁶⁹	27.93 ¹⁵⁰	17.349 ¹⁵⁷	43.68 ²³²
July	8.9 59.694 ²⁰⁹	63.08 ³⁰⁴	1.705 ²⁰⁰	26.43 ¹⁴⁴	17.506 ¹⁹³	41.36 ²²¹
	18.9 59.903 ²⁵¹	60.04 ²⁷⁸	1.905 ²²³	24.99 ¹⁴¹	17.699 ²¹⁷	39.15 ²⁰⁸
	28.9 60.154 ²⁹⁰	57.26 ²⁴⁶	2.128 ²⁴⁵	23.58 ¹²⁹	17.916 ²⁴³	37.07 ¹⁸⁶
Aug.	7.8 60.444 ³¹⁹	54.80 ²⁰³	2.373 ²⁶¹	22.29 ¹¹⁴	18.159 ²⁵⁹	35.21 ¹⁵⁹
	17.8 60.763 ³⁴³	52.77 ¹⁵⁵	2.634 ²⁷⁰	21.15 ⁹¹	18.418 ²⁷⁴	33.62 ¹²⁴
	27.8 61.106 ³⁵⁷	51.22 ⁹⁹	2.904 ²⁷⁸	20.24 ⁶⁶	18.692 ²⁸¹	32.38 ⁸³
Sept.	6.8 61.463 ³⁶⁶	50.23 ⁴⁰	3.182 ²⁸⁰	19.58 ⁴⁰	18.973 ²⁸⁴	31.55 ⁴²
	16.7 61.829 ³⁶⁴	49.83 ²²	3.462 ²⁷⁷	19.18 ⁶	19.257 ²⁸⁵	31.13 ³
	26.7 62.193 ³⁵⁵	50.05 ⁸⁴	3.739 ²⁷⁴	19.12 ²⁰	19.542 ²⁷⁷	31.16 ⁴⁸
Oct.	6.7 62.548 ³³⁸	50.89 ¹⁴³	4.013 ²⁶²	19.32 ⁵²	19.819 ²⁶⁸	31.64 ⁹⁰
	16.7 62.886 ³¹³	52.32 ¹⁹⁸	4.275 ²⁵³	19.84 ⁷⁸	20.087 ²⁵⁴	32.54 ¹³³
	26.6 63.199 ²⁸⁰	54.30 ²⁴⁷	4.528 ²³⁵	20.62 ⁹⁹	20.341 ²³⁵	33.87 ¹⁶⁷
Nov.	5.6 63.479 ²³⁹	56.77 ²⁸⁵	4.763 ²¹⁴	21.61 ¹¹⁸	20.576 ²¹⁰	35.54 ¹⁹⁶
	15.6 63.718 ¹⁹²	59.62 ³¹⁵	4.977 ¹⁸⁶	22.79 ¹³²	20.786 ¹⁸¹	37.50 ²¹⁷
	25.6 63.910 ¹³⁹	62.77 ³³¹	5.163 ¹⁵⁴	24.11 ¹³⁹	20.967 ¹⁴⁴	39.67 ²³⁰
Dec.	5.5 64.049 ⁸¹	66.08 ³³⁸	5.317 ¹²¹	25.50 ¹⁴⁰	21.111 ¹⁰⁸	41.97 ²³⁵
	15.5 64.130 ²⁰	69.46 ³³²	5.438 ⁷⁷	26.90 ¹³⁷	21.219 ⁶⁴	44.32 ²³³
	25.5 64.150 ⁴¹	72.78 ³¹⁵	5.515 ³⁵	28.27 ¹²⁹	21.283 ²²	46.65 ²¹⁸
	35.4 64.109	75.93	5.550	29.56	21.305	48.83
Mean Place	60.713	62.30	1.259	20.71	17.385	37.82
Sec δ, Tan δ	1.470	-1.077	1.000	-0.006	1.051	-0.322
L α, L δ	-0.03	+0.1	0.00	+0.1	-0.01	+0.1
ω α, ω δ	+0.01	+1.0	0.00	+1.0	0.00	+1.0

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312 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ι Orionis. Mag. 2·9		ε Orionis. Mag. 1·7		β Doradus. Mag. 3·8	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m	° ′	h m	° ′	h m	° ′
	5 31	5 57	5 32	1 15	5 32	62 32
Jan. 0·5	38·606 ^s 6	47·47 ^s 155	16·879 ^s 10	12·81 ^s 131	59·65 ^s 17	42·65 ^s 322
10·4	38·612 37	49·02 138	16·889 34	14·12 117	59·48 26	45·87 290
20·4	38·575 81	50·40 119	16·855 76	15·29 100	59·22 32	48·77 248
30·4	38·494 118	51·59 97	16·779 114	16·29 80	58·90 40	51·25 202
Feb. 9·3	38·376 149	52·56 75	16·665 146	17·09 63	58·50 44	53·27 149
19·3	38·227 172	53·31 51	16·519 168	17·72 45	58·06 48	54·76 97
Mar. 1·3	38·055 188	53·82 28	16·351 184	18·17 26	57·58 50	55·73 41
11·3	37·867 191	54·10 5	16·167 187	18·43 5	57·08 50	56·14 13
21·2	37·676 185	54·15 21	15·980 182	18·48 12	56·58 49	56·01 68
31·2	37·491 170	53·94 40	15·798 170	18·36 33	56·09 47	55·33 119
Apr. 10·2	37·321 144	53·54 66	15·628 141	18·03 51	55·62 42	54·14 168
20·2	37·177 115	52·88 88	15·487 110	17·52 72	55·20 37	52·46 211
30·1	37·062 75	52·00 108	15·377 73	16·80 86	54·83 31	50·35 250
May 10·1	36·987 37	50·92 127	15·304 33	15·94 106	54·52 23	47·85 285
20·1	36·950 7	49·65 144	15·271 9	14·88 120	54·29 16	45·00 311
30·0	36·957 50	48·21 158	15·280 51	13·68 134	54·13 8	41·89 329
June 9·0	37·007 87	46·63 168	15·331 93	12·34 144	54·05 1	38·60 341
19·0	37·094 129	44·95 175	15·424 129	10·90 150	54·06 8	35·19 344
29·0	37·223 162	43·20 176	15·553 164	9·40 151	54·14 17	31·75 336
July 8·9	37·385 195	41·44 171	15·717 197	7·89 150	54·31 25	28·39 319
18·9	37·580 218	39·73 164	15·914 219	6·39 143	54·56 31	25·20 294
28·9	37·798 240	38·09 149	16·133 242	4·96 132	54·87 37	22·26 259
Aug. 7·9	38·038 255	36·60 128	16·375 257	3·64 115	55·24 42	19·67 214
17·8	38·293 269	35·32 102	16·632 270	2·49 93	55·66 47	17·53 162
27·8	38·562 274	34·30 73	16·902 276	1·56 66	56·13 49	15·91 106
Sept. 6·8	38·836 279	33·57 40	17·178 279	0·90 38	56·62 51	14·85 43
16·7	39·115 277	33·17 4	17·457 278	0·52 9	57·13 51	14·42 23
26·7	39·392 273	33·13 30	17·735 275	0·43 23	57·64 49	14·65 87
Oct. 6·7	39·665 264	33·43 65	18·010 265	0·66 57	58·13 47	15·52 151
16·7	39·929 254	34·08 97	18·275 253	1·23 81	58·60 43	17·03 209
26·6	40·183 235	35·05 123	18·528 238	2·04 104	59·03 38	19·12 259
Nov. 5·6	40·418 212	36·28 146	18·766 216	3·08 122	59·41 32	21·71 302
15·6	40·630 186	37·74 161	18·982 190	4·30 139	59·73 23	24·73 331
25·6	40·816 155	39·35 171	19·172 158	5·69 145	59·96 16	28·04 353
Dec. 5·5	40·971 119	41·06 173	19·330 122	7·14 147	60·12 7	31·57 359
15·5	41·090 77	42·79 170	19·452 82	8·61 143	60·19 3	35·16 353
25·5	41·167 35	44·49 161	19·534 37	10·04 135	60·16 11	38·69 336
35·4	41·202	46·10	19·571	11·39	60·05	42·05
Mean Place	37·031	36·25	15·294	2·04	56·90	27·81
Sec δ, Tan δ	1·005	-0·104	1·000	-0·022	2·169	-1·924
L α, L δ	0·00	0·0	0·00	0·0	-0·05	0·0
ω α, ω δ	0·00	+1·0	0·00	+1·0	+0·01	+1·0
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 313

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Tauri. Mag. 3.0		ζ Orionis. Mag. 2.0		α Columbae. Mag. 2.7	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 5 32	21 5	h m 5 36	1 58	h m 5 36	34 6
Jan.	0.5 60.706 ²⁴	37.52 ⁴	50.954 ¹⁵	69.27 ¹³⁵	51.217 ³⁰	67.43 ²⁷³
	10.4 60.730 ²⁶	37.48 ⁰	50.969 ³⁰	70.62 ¹²¹	51.187 ⁸³	70.16 ²⁵¹
	20.4 60.704 ⁷²	37.48 ¹	50.939 ⁷³	71.83 ¹⁰⁴	51.104 ¹²⁷	72.67 ²¹⁴
	30.4 60.632 ¹¹⁵	37.49 ²	50.866 ¹¹¹	72.87 ⁸⁵	50.977 ¹⁷⁰	74.81 ¹⁷⁶
Feb.	9.3 60.517 ¹⁴⁹	37.51 ¹	50.755 ¹⁴⁵	73.72 ⁶⁶	50.807 ²⁰⁵	76.57 ¹³⁷
	19.3 60.368 ¹⁷⁷	37.50 ³	50.610 ¹⁶⁹	74.38 ⁴⁶	50.602 ²³²	77.94 ⁸⁹
Mar.	1.3 60.191 ¹⁹²	37.47 ⁷	50.441 ¹⁸⁴	74.84 ²⁶	50.370 ²⁴⁸	78.83 ⁴⁵
	11.3 59.999 ¹⁹⁷	37.40 ¹¹	50.257 ¹⁸⁹	75.10 ⁶	50.122 ²⁵⁰	79.28 ⁰
	21.2 59.802 ¹⁹⁰	37.29 ¹⁵	50.068 ¹⁸⁴	75.16 ¹³	49.872 ²⁴⁴	79.28 ⁴⁵
	31.2 59.612 ¹⁷⁴	37.14 ¹⁸	49.884 ¹⁶⁹	75.03 ³³	49.628 ²²⁷	78.83 ⁹⁰
Apr.	10.2 59.438 ¹⁴⁵	36.96 ¹⁸	49.715 ¹⁴⁴	74.70 ⁵²	49.401 ²⁰²	77.93 ¹²⁹
	20.2 59.293 ¹¹²	36.78 ¹⁶	49.571 ¹¹⁴	74.18 ⁷¹	49.199 ¹⁶⁹	76.64 ¹⁶⁸
	30.1 59.181 ⁷¹	36.62 ¹⁴	49.457 ⁷⁸	73.47 ⁹⁰	49.030 ¹²⁹	74.96 ²⁰³
May	10.1 59.110 ²⁸	36.48 ⁸	49.379 ³⁶	72.57 ¹⁰⁶	48.901 ⁸⁵	72.93 ²³⁰
	20.1 59.082 ²⁰	36.40 ²	49.343 ⁵	71.51 ¹²³	48.816 ³⁸	70.63 ²⁵⁶
	30.0 59.102 ⁶⁶	36.38 ⁷	49.348 ⁴⁷	70.28 ¹³⁵	48.778 ¹⁰	68.07 ²⁷⁷
June	9.0 59.168 ¹⁰⁸	36.45 ¹⁵	49.395 ⁸⁸	68.93 ¹⁴⁶	48.788 ⁵⁹	65.30 ²⁸⁷
	19.0 59.276 ¹⁴⁹	36.60 ²³	49.483 ¹²⁵	67.47 ¹⁵³	48.847 ¹⁰⁴	62.43 ²⁹²
	29.0 59.425 ¹⁸⁷	36.83 ³⁰	49.608 ¹⁶¹	65.94 ¹⁵⁵	48.951 ¹⁴⁶	59.51 ²⁸⁸
July	8.9 59.612 ²¹⁸	37.13 ³⁸	49.769 ¹⁹¹	64.39 ¹⁵³	49.097 ¹⁸⁹	56.63 ²⁷⁷
	18.9 59.830 ²⁴⁴	37.51 ⁴²	49.960 ²¹⁷	62.86 ¹⁴⁶	49.286 ²²²	53.86 ²⁵⁷
	28.9 60.074 ²⁶⁶	37.93 ⁴⁴	50.177 ²³⁸	61.40 ¹³³	49.508 ²⁴⁸	51.29 ²²⁸
Aug.	7.9 60.340 ²⁸²	38.37 ⁴³	50.415 ²⁵⁵	60.07 ¹¹⁶	49.756 ²⁷⁶	49.01 ¹⁹²
	17.8 60.622 ²⁹³	38.80 ⁴⁰	50.670 ²⁶⁷	58.91 ⁹⁴	50.032 ²⁹⁵	47.09 ¹⁵⁰
	27.8 60.915 ³⁰⁰	39.20 ³⁶	50.937 ²⁷⁴	57.97 ⁶⁸	50.327 ³⁰⁵	45.59 ¹⁰⁰
Sept.	6.8 61.215 ³⁰²	39.56 ²⁷	51.211 ²⁷⁸	57.29 ³⁸	50.632 ³¹³	44.59 ⁵¹
	16.7 61.517 ³⁰⁵	39.83 ²¹	51.489 ²⁷⁸	56.91 ⁷	50.945 ³¹⁴	44.08 ⁸
	26.7 61.822 ²⁹⁸	40.04 ¹⁰	51.767 ²⁷⁴	56.84 ²⁵	51.259 ³¹⁰	44.16 ⁶⁵
Oct.	6.7 62.120 ²⁹²	40.14 ²	52.041 ²⁶⁷	57.09 ⁵⁶	51.569 ²⁹⁶	44.81 ¹²⁰
	16.7 62.412 ²⁷⁹	40.16 ⁵	52.308 ²⁵⁶	57.65 ⁸⁴	51.865 ²⁷⁸	46.01 ¹⁶⁷
	26.6 62.691 ²⁶³	40.11 ¹¹	52.564 ²⁴⁰	58.49 ¹⁰⁹	52.143 ²⁵⁸	47.68 ²¹⁴
Nov.	5.6 62.954 ²⁴⁰	40.00 ¹⁴	52.804 ²¹⁹	59.58 ¹²⁹	52.401 ²²⁵	49.82 ²⁵¹
	15.6 63.194 ²¹⁴	39.86 ¹⁵	53.023 ¹⁹⁴	60.87 ¹⁴³	52.626 ¹⁹⁰	52.33 ²⁷⁸
	25.6 63.408 ¹⁸¹	39.71 ¹⁴	53.217 ¹⁶²	62.30 ¹⁵⁰	52.816 ¹⁵¹	55.11 ²⁹⁷
Dec.	5.5 63.589 ¹⁴³	39.57 ¹³	53.379 ¹²⁷	63.80 ¹⁵³	52.967 ¹⁰³	58.08 ³⁰²
	15.5 63.732 ¹⁰⁰	39.44 ⁷	53.506 ⁸⁶	65.33 ¹⁴⁹	53.070 ⁵⁴	61.10 ²⁹⁸
	25.5 63.832 ⁵³	39.37 ⁴	53.592 ⁴⁴	66.82 ¹⁴¹	53.124 ³	64.08 ²⁸⁵
	35.4 63.885	39.33	53.636	68.23	53.127	66.93
Mean Place	58.946	46.09	49.363	58.37	49.472	54.03
Sec δ, Tan δ	1.072	+0.386	1.001	-0.035	1.208	-0.677
L α, L δ	+0.01	0.0	0.00	0.0	-0.02	0.0
ω α, ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0

AUTHORITY

A. E.

A. E.

314 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	130 Tauri. Mag. 5.5		κ Orionis. Mag. 2.2		β Columbae. Mag. 3.2	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 5 42	[°] ['] 17 41	^h ^m 5 44	[°] ['] 9 41	^h ^m 5 48	[°] ['] 35 47
Jan. 0.5	55.027 ^s 33	54.85 25	5.009 ^s 13	58.20 178	14.338 ^s 21	61.68 285
10.4	55.060 17	54.60 19	5.022 32	59.98 162	14.317 73	64.53 260
20.4	55.043 63	54.41 14	4.990 74	61.60 138	14.244 124	67.13 227
30.4	54.980 105	54.27 10	4.916 116	62.98 114	14.120 168	69.40 188
Feb. 9.4	54.875 142	54.17 7	4.800 148	64.12 88	13.952 205	71.28 146
19.3	54.733 169	54.10 6	4.652 172	65.00 62	13.747 233	72.74 102
Mar. 1.3	54.564 187	54.04 7	4.480 189	65.62 35	13.514 251	73.76 56
11.3	54.377 194	53.97 7	4.291 195	65.97 8	13.263 258	74.32 10
21.2	54.183 189	53.90 7	4.096 190	66.05 18	13.005 254	74.42 37
31.2	53.994 173	53.83 7	3.906 176	65.87 46	12.751 239	74.05 80
Apr. 10.2	53.821 149	53.76 5	3.730 155	65.41 71	12.512 215	73.25 123
20.2	53.672 116	53.71 2	3.575 123	64.70 95	12.297 183	72.02 162
30.1	53.556 77	53.69 3	3.452 90	63.75 119	12.114 143	70.40 198
May 10.1	53.479 35	53.72 9	3.362 48	62.56 141	11.971 100	68.42 229
20.1	53.444 9	53.81 16	3.314 8	61.15 157	11.871 53	66.13 256
30.1	53.453 54	53.97 24	3.306 33	59.58 170	11.818 4	63.57 276
June 9.0	53.507 97	54.21 32	3.339 76	57.88 184	11.814 44	60.81 290
19.0	53.604 137	54.53 40	3.415 114	56.04 191	11.858 92	57.91 296
29.0	53.741 173	54.93 47	3.529 147	54.13 191	11.950 135	54.95 294
July 8.9	53.914 204	55.40 51	3.676 182	52.22 188	12.085 176	52.01 284
18.9	54.118 232	55.91 53	3.858 209	50.34 176	12.261 213	49.17 265
28.9	54.350 253	56.44 52	4.067 230	48.58 162	12.474 244	46.52 239
Aug. 7.9	54.603 271	56.96 49	4.297 250	46.96 137	12.718 271	44.13 202
17.8	54.874 283	57.45 44	4.547 263	45.59 112	12.989 291	42.11 160
27.8	55.157 292	57.89 34	4.810 273	44.47 78	13.280 306	40.51 111
Sept. 6.8	55.449 296	58.23 24	5.083 279	43.69 43	13.586 315	39.40 58
16.8	55.745 297	58.47 13	5.362 280	43.26 3	13.901 319	38.82 2
26.7	56.042 294	58.60 1	5.642 276	43.23 34	14.220 315	38.80 57
Oct. 6.7	56.336 288	58.59 12	5.918 268	43.57 73	14.535 306	39.37 112
16.7	56.624 278	58.47 22	6.186 262	44.30 107	14.841 291	40.49 165
26.6	56.902 263	58.25 31	6.448 242	45.37 138	15.132 268	42.14 211
Nov. 5.6	57.165 243	57.94 37	6.690 222	46.75 162	15.400 239	44.25 251
15.6	57.408 218	57.57 39	6.912 196	48.37 182	15.639 204	46.76 280
25.6	57.626 187	57.18 39	7.108 163	50.19 192	15.843 163	49.56 300
Dec. 5.5	57.813 149	56.79 36	7.271 126	52.11 197	16.006 116	52.56 309
15.5	57.962 108	56.43 32	7.397 89	54.08 195	16.122 66	55.65 306
25.5	58.070 61	56.11 25	7.486 43	56.03 183	16.188 12	58.71 296
35.5	58.131	55.86 25	7.529 43	57.86	16.200	61.67
Mean Place	53.303	64.15	3.411	46.66	12.527	48.62
Sec δ, Tan δ	1.050	+0.319	1.014	-0.171	1.233	-0.721
L α, L δ	+0.01	0.0	0.00	0.0	-0.02	0.0
ω α, ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0
AUTHORITY	A. N.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 315

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Orionis. Mag. 1.0-1.4		β Aurigæ. Mag. 2.1		θ Aurigæ. Mag. 2.7	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 5 50	° ' " 7 23	h m 5 53	° ' " 44 56	h m 5 54	° ' " 37 12
Jan. 0.5	58.568 ^s 33	27.04 86	50.784 45	20.11 137	26.211 47	22.23 92
10.4	58.601 13	26.18 76	50.829 19	21.48 132	26.258 13	23.15 90
20.4	58.588 58	25.42 63	50.810 83	22.80 124	26.245 67	24.05 86
30.4	58.530 101	24.79 52	50.727 138	24.04 106	26.178 118	24.91 75
Feb. 9.4	58.429 132	24.27 40	50.589 191	25.10 86	26.060 166	25.66 60
19.3	58.297 161	23.87 29	50.398 228	25.96 64	25.894 200	26.26 46
Mar. 1.3	58.136 180	23.58 17	50.170 253	26.60 34	25.694 221	26.72 23
11.3	57.956 187	23.41 8	49.917 264	26.94 7	25.473 232	26.95 4
21.2	57.769 185	23.33 4	49.653 261	27.01 23	25.241 231	26.99 18
31.2	57.584 170	23.37 13	49.392 243	26.78 52	25.010 211	26.81 36
Apr. 10.2	57.414 146	23.50 25	49.149 210	26.26 73	24.799 183	26.45 55
20.2	57.268 123	23.75 37	48.939 173	25.53 96	24.616 150	25.90 67
30.1	57.145 81	24.12 48	48.766 122	24.57 109	24.466 103	25.23 80
May 10.1	57.064 45	24.60 60	48.644 65	23.48 122	24.363 57	24.43 86
20.1	57.019 0	25.20 72	48.579 14	22.26 130	24.306 7	23.57 89
30.1	57.019 41	25.92 82	48.565 51	20.96 130	24.299 50	22.68 88
June 9.0	57.060 81	26.74 88	48.616 106	19.66 127	24.349 99	21.80 84
19.0	57.141 121	27.62 97	48.722 161	18.39 123	24.448 147	20.96 78
29.0	57.262 154	28.59 101	48.883 209	17.16 113	24.595 193	20.18 74
July 8.9	57.416 188	29.60 103	49.092 251	16.03 101	24.788 229	19.44 58
18.9	57.604 212	30.63 100	49.343 294	15.02 85	25.017 261	18.86 51
28.9	57.816 236	31.63 89	49.637 324	14.17 72	25.278 294	18.35 38
Aug. 7.9	58.052 254	32.52 82	49.961 349	13.45 58	25.572 311	17.97 32
17.8	58.306 265	33.34 68	50.310 368	12.87 39	25.883 333	17.65 22
27.8	58.571 277	34.02 50	50.678 385	12.48 28	26.216 346	17.43 10
Sept. 6.8	58.848 282	34.52 30	51.063 393	12.20 10	26.562 351	17.33 3
16.8	59.130 285	34.82 5	51.456 396	12.10 5	26.913 355	17.30 3
26.7	59.415 282	34.87 16	51.852 395	12.15 19	27.268 353	17.33 12
Oct. 6.7	59.697 280	34.71 38	52.247 387	12.34 37	27.621 349	17.45 22
16.7	59.977 269	34.33 58	52.634 377	12.71 51	27.970 339	17.67 28
26.6	60.246 256	33.75 75	53.011 357	13.22 69	28.309 321	17.95 39
Nov. 5.6	60.502 237	33.00 90	53.368 331	13.91 86	28.630 301	18.34 49
15.6	60.739 212	32.10 98	53.699 299	14.77 101	28.931 271	18.83 60
25.6	60.951 182	31.12 101	53.998 255	15.78 113	29.202 231	19.43 71
Dec. 5.5	61.133 148	30.11 102	54.253 205	16.91 125	29.433 187	20.14 81
15.5	61.281 108	29.09 98	54.458 149	18.16 136	29.620 140	20.95 85
25.5	61.389 62	28.11 90	54.607 86	19.52 138	29.760 84	21.80 92
35.5	61.451	27.21	54.693	20.90	29.844	22.72
Mean Place	56.922	37.38	48.474	27.97	24.144	30.63
Sec δ , Tan δ	1.008	+0.130	1.413	+0.998	1.256	+0.759
L α , L δ	0.00	0.0	+0.03	0.0	+0.02	0.0
ω α , ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0
AUTHORITY	A. E.		A. E.		A. E.	

316 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ι Geminorum. Mag. 4·3		ν Orionis. Mag. 4·4		η Geminorum. Mag. 3·2-4·2	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 5 ^m 59	[°] 23 ['] 15	^h 6 ^m 3	[°] 14 ['] 46	^h 6 ^m 10	[°] 22 ['] 31
Jan. 0·5	24·539 ⁵¹	58·08 ⁶	8·848 ⁴⁷	34·20 ⁴⁵	11·996 ⁵⁹	40·43 ¹
10·4	24·590 ¹	58·14 ¹²	8·895 ³	33·75 ³⁵	12·055 ⁹	40·44 ⁸
20·4	24·589 ⁵¹	58·26 ¹⁶	8·898 ⁴⁸	33·40 ²⁹	12·064 ⁴²	40·52 ¹³
30·4	24·538 ⁹⁷	58·42 ¹⁷	8·850 ⁹³	33·11 ²⁰	12·022 ⁹¹	40·65 ¹⁵
Feb. 9·4	24·441 ¹³⁸	58·59 ¹⁵	8·757 ¹²⁶	32·91 ¹⁴	11·931 ¹²⁷	40·80 ¹⁶
19·3	24·303 ¹⁶⁸	58·74 ¹³	8·631 ¹⁶⁰	32·77 ¹¹	11·804 ¹⁶³	40·96 ¹⁴
Mar. 1·3	24·135 ¹⁹¹	58·87 ⁷	8·471 ¹⁸⁰	32·66 ⁴	11·641 ¹⁸⁶	41·10 ¹⁰
11·3	23·944 ¹⁹⁹	58·94 ¹	8·291 ¹⁸⁹	32·62 ³	11·455 ¹⁹⁶	41·20 ⁷
21·2	23·745 ¹⁹⁸	58·95 ⁶	8·102 ¹⁸⁸	32·59 ¹	11·259 ¹⁹⁶	41·27 ²
31·2	23·547 ¹⁸⁵	58·89 ¹¹	7·914 ¹⁷⁶	32·60 ³	11·063 ¹⁸⁸	41·25 ⁵
Apr. 10·2	23·362 ¹⁶²	58·78 ¹⁶	7·738 ¹⁵⁶	32·63 ⁶	10·875 ¹⁶⁵	41·20 ⁹
20·2	23·200 ¹³⁰	58·62 ¹⁸	7·582 ¹²⁹	32·69 ¹²	10·710 ¹³⁴	41·11 ¹⁰
30·1	23·070 ⁹²	58·44 ²⁰	7·453 ⁸⁹	32·81 ¹⁸	10·576 ¹⁰⁰	41·01 ¹⁴
May 10·1	22·978 ⁵⁰	58·24 ¹⁸	7·364 ⁵⁰	32·99 ²³	10·476 ⁵⁸	40·87 ¹¹
20·1	22·928 ⁵	58·06 ¹⁴	7·314 ¹⁰	33·22 ³¹	10·418 ¹⁷	40·76 ¹²
30·1	22·923 ⁴¹	57·92 ¹⁰	7·304 ³⁴	33·53 ³⁸	10·401 ³¹	40·64 ⁶
June 9·0	22·964 ⁸⁵	57·82 ⁵	7·338 ⁷⁴	33·91 ⁴⁵	10·432 ⁷²	40·58 ¹
19·0	23·049 ¹²⁶	57·77 ²	7·412 ¹¹⁶	34·36 ⁵⁰	10·504 ¹¹⁷	40·57 ¹
29·0	23·175 ¹⁶⁴	57·79 ⁷	7·528 ¹⁴⁹	34·86 ⁵⁴	10·621 ¹⁵⁰	40·58 ⁸
July 8·9	23·339 ¹⁹⁸	57·86 ¹³	7·677 ¹⁸⁶	35·40 ⁵⁸	10·771 ¹⁹⁰	40·66 ¹²
18·9	23·537 ²²⁸	57·99 ¹⁶	7·863 ²¹⁰	35·98 ⁵⁸	10·961 ²¹⁵	40·78 ¹⁶
28·9	23·765 ²⁵¹	58·15 ¹⁹	8·073 ²³⁷	36·56 ⁵⁶	11·176 ²⁴⁵	40·94 ¹⁵
Aug. 7·9	24·016 ²⁷²	58·34 ¹⁹	8·310 ²⁵⁴	37·12 ⁴⁷	11·421 ²⁵⁹	41·09 ¹⁵
17·8	24·288 ²⁸⁶	58·53 ¹⁶	8·564 ²⁶⁹	37·59 ⁴¹	11·680 ²⁸⁰	41·24 ¹⁴
27·8	24·574 ²⁹⁸	58·69 ¹³	8·833 ²⁸²	38·00 ³¹	11·960 ²⁹⁴	41·38 ⁵
Sept. 6·8	24·872 ³⁰⁵	58·82 ⁷	9·115 ²⁹⁰	38·31 ¹⁷	12·254 ²⁹⁹	41·43 ¹
16·8	25·177 ³⁰⁹	58·89 ²	9·405 ²⁹³	38·48 ²	12·553 ³⁰⁷	41·44 ⁸
26·7	25·486 ³⁰⁸	58·91 ⁶	9·698 ²⁹⁴	38·46 ¹⁴	12·860 ³⁰⁸	41·36 ¹²
Oct. 6·7	25·794 ³⁰⁵	58·85 ¹¹	9·992 ²⁹⁰	38·32 ²⁷	13·168 ³⁰⁹	41·24 ²⁰
16·7	26·099 ²⁹⁷	58·74 ¹⁶	10·282 ²⁸³	38·05 ⁴⁵	13·477 ³⁰¹	41·04 ²⁴
26·6	26·396 ²⁸⁴	58·58 ²⁰	10·565 ²⁷³	37·60 ⁵¹	13·778 ²⁸⁷	40·80 ³⁰
Nov. 5·6	26·680 ²⁶⁶	58·38 ¹⁹	10·838 ²⁵⁴	37·09 ⁶⁰	14·065 ²⁷³	40·50 ²⁸
15·6	26·946 ²⁴²	58·19 ¹⁹	11·092 ²³²	36·49 ⁶⁶	14·338 ²⁵⁰	40·22 ²⁶
25·6	27·188 ²¹⁰	58·00 ¹³	11·324 ¹⁹⁹	35·83 ⁶⁴	14·588 ²²⁰	39·96 ²⁵
Dec. 5·5	27·398 ¹⁷³	57·87 ⁹	11·523 ¹⁶⁸	35·19 ⁶¹	14·808 ¹⁸²	39·71 ¹⁷
15·5	27·571 ¹²⁹	57·78 ²	11·691 ¹²⁵	34·58 ⁵⁵	14·990 ¹³⁹	39·54 ¹⁰
25·5	27·700 ⁸²	57·76 ⁶	11·816 ⁷⁹	34·03 ⁴⁸	15·129 ⁹¹	39·44 ²
35·5	27·782	57·82	11·895	33·55	15·220	39·42
Mean Place	22·743	67·63	7·143	44·37	10·212	50·45
Sec δ, Tan δ	1·089	+0·430	1·034	+0·264	1·083	+0·415
L α, L δ	+0·01	0·0	+0·01	0·0	+0·01	0·0
ω α, ω δ	0·00	+1·0	0·00	+1·0	0·00	+1·0
AUTHORITY			A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 317

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Canis Majoris. Mag. 3.1		μ Geminorum. Mag. 3.2		β Canis Majoris. Mag. 2.0	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 6 17	° ′ 30 1	h m 6 18	° ′ 22 33	h m 6 19	° ′ 17 54
Jan. 0.5	20.843 ²³	53.37 ²⁸¹	16.320 ⁶⁷	7.49 ⁰	17.549 ³⁹	69.49 ²³¹
10.4	20.866 ³²	56.18 ²⁶²	16.387 ¹⁷	7.49 ⁷	17.588 ¹⁰	71.80 ²¹¹
20.4	20.834 ⁸²	58.80 ²³¹	16.404 ³³	7.56 ¹³	17.578 ⁵⁷	73.91 ¹⁸⁸
30.4	20.752 ¹²⁷	61.11 ¹⁹⁹	16.371 ⁸⁴	7.69 ¹⁷	17.521 ¹⁰¹	75.79 ¹⁶⁰
Feb. 9.4	20.625 ¹⁶⁸	63.10 ¹⁶³	16.287 ¹²¹	7.86 ¹⁸	17.420 ¹⁴¹	77.39 ¹³¹
19.3	20.457 ¹⁹⁸	64.73 ¹²¹	16.166 ¹⁶⁰	8.04 ¹⁷	17.279 ¹⁶⁹	78.70 ⁹⁶
Mar. 1.3	20.259 ²²³	65.94 ⁷⁹	16.006 ¹⁸⁴	8.21 ¹³	17.110 ¹⁹¹	79.66 ⁶²
11.3	20.036 ²³⁴	66.73 ³⁷	15.822 ¹⁹⁴	8.34 ¹⁰	16.919 ²⁰⁴	80.28 ³⁰
21.3	19.802 ²³⁵	67.10 ⁴	15.628 ¹⁹⁶	8.44 ²	16.715 ²⁰⁶	80.58 ⁶
31.2	19.567 ²²⁶	67.06 ⁴⁷	15.432 ¹⁹⁰	8.46 ³	16.509 ¹⁹⁶	80.52 ³⁷
Apr. 10.2	19.341 ²⁰⁶	66.59 ⁸⁹	15.242 ¹⁶⁷	8.43 ⁶	16.313 ¹⁷⁹	80.15 ⁷¹
20.2	19.135 ¹⁸¹	65.70 ¹²⁵	15.075 ¹³⁹	8.37 ⁸	16.134 ¹⁵⁵	79.44 ¹⁰¹
30.2	18.954 ¹⁴⁷	64.45 ¹⁶¹	14.936 ¹⁰⁴	8.29 ¹²	15.979 ¹²²	78.43 ¹²⁹
May 10.1	18.807 ¹⁰⁹	62.84 ¹⁹³	14.832 ⁶⁶	8.17 ¹²	15.857 ⁸⁶	77.14 ¹⁵⁴
20.1	18.698 ⁶⁶	60.91 ²²¹	14.766 ²³	8.05 ¹¹	15.771 ⁴⁵	75.60 ¹⁷⁹
30.1	18.632 ²²	58.70 ²⁴²	14.743 ²³	7.94 ⁷	15.726 ⁷	73.81 ¹⁹⁶
June 9.0	18.610 ²¹	56.28 ²⁵⁸	14.766 ⁶⁶	7.87 ⁴	15.719 ³⁶	71.85 ²¹⁰
19.0	18.631 ⁶⁶	53.70 ²⁶⁹	14.832 ¹⁰⁷	7.83 ¹	15.755 ⁷⁵	69.75 ²²⁰
29.0	18.697 ¹⁰⁶	51.01 ²⁶⁹	14.939 ¹⁴⁵	7.82 ⁵	15.830 ¹¹²	67.55 ²²¹
July 9.0	18.803 ¹⁴⁵	48.32 ²⁶⁶	15.084 ¹⁷⁹	7.87 ⁹	15.942 ¹⁴⁷	65.34 ²¹⁸
18.9	18.948 ¹⁸²	45.66 ²⁵³	15.263 ²¹⁰	7.96 ¹⁰	16.089 ¹⁷⁷	63.16 ²⁰⁹
28.9	19.130 ²¹³	43.13 ²³¹	15.473 ²³⁸	8.06 ⁹	16.266 ²⁰⁷	61.07 ¹⁹⁰
Aug. 7.9	19.343 ²⁴⁰	40.82 ²⁰⁰	15.711 ²⁵⁶	8.15 ¹²	16.473 ²²⁹	59.17 ¹⁶⁷
17.9	19.583 ²⁶¹	38.82 ¹⁶⁵	15.967 ²⁷⁷	8.27 ⁶	16.702 ²⁴⁹	57.50 ¹³⁵
27.8	19.844 ²⁸²	37.17 ¹²⁰	16.244 ²⁹¹	8.33 ⁰	16.951 ²⁶⁴	56.15 ⁹⁹
Sept. 6.8	20.126 ²⁹⁴	35.97 ⁷²	16.535 ²⁹⁷	8.33 ⁵	17.215 ²⁷⁵	55.16 ⁵⁸
16.8	20.420 ³⁰¹	35.25 ¹⁹	16.832 ³⁰⁷	8.28 ¹³	17.490 ²⁸⁴	54.58 ¹⁴
26.7	20.721 ³⁰⁶	35.06 ³⁵	17.139 ³⁰⁹	8.15 ¹⁹	17.774 ²⁸⁶	54.44 ³²
Oct. 6.7	21.027 ³⁰³	35.41 ⁹⁰	17.448 ³¹¹	7.96 ²⁷	18.060 ²⁸⁶	54.76 ⁷⁸
16.7	21.330 ²⁹⁴	36.31 ¹³⁹	17.759 ³⁰⁴	7.69 ³⁰	18.346 ²⁷⁸	55.54 ¹²⁰
26.7	21.624 ²⁷⁹	37.70 ¹⁸⁷	18.063 ²⁹³	7.39 ³⁵	18.624 ²⁶⁶	56.74 ¹⁵⁸
Nov. 5.6	21.903 ²⁵⁶	39.57 ²²⁸	18.356 ²⁸¹	7.04 ³³	18.890 ²⁵⁰	58.32 ¹⁹³
15.6	22.159 ²³⁰	41.85 ²⁵⁷	18.637 ²⁵⁴	6.71 ³¹	19.140 ²²⁴	60.25 ²¹⁷
25.6	22.389 ¹⁹⁰	44.42 ²⁸¹	18.891 ²²⁷	6.40 ³⁰	19.364 ¹⁹³	62.42 ²³⁶
Dec. 5.6	22.579 ¹⁵²	47.23 ²⁹⁴	19.118 ¹⁸⁸	6.10 ²⁰	19.557 ¹⁵⁷	64.78 ²⁴⁵
15.5	22.731 ¹⁰⁵	50.17 ²⁹⁶	19.306 ¹⁴⁸	5.90 ¹²	19.714 ¹¹⁷	67.23 ²⁴⁵
25.5	22.836 ⁵³	53.13 ²⁸⁸	19.454 ¹⁰⁰	5.78 ³	19.831 ⁶⁸	69.68 ²³⁷
35.5	22.889	56.01	19.554	5.75	19.899	72.05
Mean Place	19.039	41.67	14.540	17.82	15.863	58.03
Sec δ, Tan δ	1.155	-0.578	1.083	+0.415	1.051	-0.323
L α, L δ	-0.02	0.0	+0.01	0.0	-0.01	0.0
ω α, ω δ	0.00	+1.0	0.00	+1.0	0.00	+1.0
AUTHORITY	A. E.		A. E.		A. E.	

318 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Argûs. Mag. -0.9		ν Geminorum. Mag. 4.1		γ Geminorum. Mag. 1.9	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 6 ^m 22	[°] 52 ['] 38	^h 6 ^m 24	[°] 20 ['] 15	^h 6 ^m 33	[°] 16 ['] 27
Jan. 0.5	15.666 ^s	81.19 ^s	21.668 ^s	35.47 ^s	14.107 ^s	50.43 ^s
10.5	15.643 ²³	84.65 ³⁴⁶	21.743 ⁷⁵	35.31 ¹⁶	14.188 ⁸¹	50.02 ⁴¹
20.4	15.546 ⁹⁷	87.87 ³²²	21.766 ²³	35.25 ⁶	14.216 ²⁸	49.73 ²⁹
30.4	15.382 ¹⁶⁴	90.78 ²⁹¹	21.738 ²⁸	35.26 ¹	14.197 ¹⁹	49.53 ²⁰
Feb. 9.4	15.158 ²²⁴	93.29 ²⁵¹	21.662 ⁷⁶	35.34 ⁸	14.127 ⁷⁰	49.42 ¹¹
19.4	14.880 ²⁷⁸	95.35 ²⁰⁶	21.543 ¹¹⁹	35.46 ¹²	14.016 ¹¹¹	49.40 ²
Mar. 1.3	14.563 ³¹⁷	96.96 ¹⁶¹	21.390 ¹⁵³	35.58 ¹²	13.873 ¹⁴³	49.41 ¹
11.3	14.216 ³⁴⁷	98.05 ¹⁰⁹	21.211 ¹⁷⁹	35.70 ¹²	13.703 ¹⁷⁰	49.47 ⁶
21.3	13.853 ³⁶³	98.60 ⁵⁵	21.019 ¹⁹²	35.80 ¹⁰	13.515 ¹⁸⁸	49.54 ⁷
31.2	13.488 ³⁶⁵	98.65 ⁵	20.824 ¹⁹⁵	35.86 ⁶	13.325 ¹⁹⁰	49.65 ¹¹
Apr. 10.2	13.133 ³⁵⁵	98.16 ⁴⁹	20.637 ¹⁸⁷	35.90 ⁴	13.142 ¹⁸³	49.74 ⁹
20.2	12.800 ³³³	97.16 ¹⁰⁰	20.470 ¹⁶⁷	35.90 ⁰	12.975 ¹⁶⁷	49.83 ⁹
30.2	12.499 ³⁰¹	95.72 ¹⁴⁴	20.329 ¹⁴¹	35.89 ¹	12.835 ¹⁴⁰	49.95 ¹²
May 10.1	12.236 ²⁶³	93.81 ¹⁹¹	20.221 ¹⁰⁸	35.87 ²	12.722 ¹¹³	50.09 ¹⁴
20.1	12.026 ²¹⁰	91.50 ²³¹	20.154 ⁶⁷	35.86 ¹	12.650 ⁷²	50.26 ¹⁷
30.1	11.870 ¹⁵⁶	88.86 ²⁶⁴	20.127 ²⁷	35.88 ²	12.616 ³⁴	50.47 ²¹
June 9.1	11.770 ¹⁰⁰	85.94 ²⁹²	20.144 ¹⁷	35.93 ⁵	12.622 ⁶	50.73 ²⁶
19.0	11.733 ³⁷	82.86 ³⁰⁸	20.203 ⁵⁹	36.01 ⁸	12.673 ⁵¹	51.01 ²⁸
29.0	11.756 ²³	79.63 ³²³	20.302 ⁹⁹	36.14 ¹³	12.760 ⁸⁷	51.34 ³³
July 9.0	11.841 ⁸⁵	76.36 ³²⁷	20.439 ¹³⁷	36.31 ¹⁷	12.885 ¹²⁵	51.70 ³⁶
18.9	11.981 ¹⁴⁰	73.15 ³²¹	20.610 ¹⁷¹	36.50 ¹⁹	13.043 ¹⁵⁸	52.07 ³⁷
28.9	12.179 ¹⁹⁸	70.08 ³⁰⁷	20.812 ²⁰²	36.69 ¹⁹	13.231 ¹⁸⁸	52.42 ³⁵
Aug. 7.9	12.427 ²⁴⁸	67.25 ²⁸³	21.039 ²²⁷	36.89 ²⁰	13.447 ²¹⁶	52.76 ³⁴
17.9	12.717 ²⁹⁰	64.78 ²⁴⁷	21.288 ²⁴⁹	37.05 ¹⁶	13.686 ²³⁹	53.04 ²⁸
27.8	13.050 ³³³	62.76 ²⁰²	21.556 ²⁶⁸	37.15 ¹⁰	13.939 ²⁵³	53.25 ²¹
Sept. 6.8	13.413 ¹⁵³	61.23 ⁹⁶	21.837 ²⁸¹	37.19 ⁴	14.211 ²⁷²	53.32 ⁷
16.8	13.800 ³⁸⁷	60.27 ³³	22.130 ²⁹³	37.14 ⁵	14.496 ²⁸⁵	53.29 ³
26.8	14.200 ⁴⁰⁰	59.94 ³³	22.430 ³⁰⁰	36.99 ¹⁵	14.789 ²⁹³	53.13 ¹⁶
Oct. 6.7	14.605 ⁴⁰⁵	60.23 ²⁹	22.734 ³⁰⁴	36.75 ²⁴	15.086 ²⁹⁷	52.81 ³²
16.7	15.006 ⁴⁰¹	61.18 ⁹⁵	23.039 ³⁰⁵	36.42 ³³	15.386 ³⁰⁰	52.38 ⁴³
26.7	15.391 ³⁸⁵	62.74 ¹⁵⁶	23.339 ³⁰⁰	36.01 ⁴¹	15.683 ²⁹⁷	51.84 ⁵⁴
Nov. 5.6	15.752 ³⁶¹	64.88 ²¹⁴	23.631 ²⁹²	35.55 ⁴⁶	15.971 ²⁸⁸	51.20 ⁶⁴
15.6	16.075 ³²³	67.47 ²⁵⁹	23.909 ²⁷⁸	35.07 ⁴⁸	16.247 ²⁷⁶	50.52 ⁶⁸
25.6	16.351 ²⁷⁶	70.49 ³⁰²	24.165 ²⁵⁶	34.58 ⁴⁹	16.506 ²⁵⁹	49.80 ⁷²
Dec. 5.6	16.573 ²²²	73.82 ³³³	24.394 ²²⁹	34.15 ⁴³	16.736 ²³⁰	49.12 ⁶⁸
15.5	16.732 ¹⁵⁹	77.31 ³⁴⁹	24.588 ¹⁹⁴	33.77 ³⁸	16.932 ¹⁹⁶	48.48 ⁶⁴
25.5	16.822 ⁹⁰	80.88 ³⁵⁷	24.739 ¹⁵¹	33.49 ²⁸	17.090 ¹⁵⁸	47.93 ⁵⁵
35.5	16.843 ²¹	84.40 ³⁵²	24.844 ¹⁰⁵	33.30 ¹⁹	17.201 ¹¹¹	47.46 ⁴⁷
Mean Place	13.225	69.68	19.919	46.12	12.398	61.42
Sec δ, Tan δ	1.648	-1.310	1.066	+0.369	1.043	+0.296
L α, L δ	-0.03	0.0	+0.01	0.0	+0.01	-0.1
ω α, ω δ	-0.01	+1.0	0.00	+1.0	0.00	+1.0
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 319

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ν Argûs. Mag. 3·2		ε Geminorum. Mag. 3·2		ξ Geminorum. Mag. 3·4	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 6 35	[°] ['] 43 7	^h ^m 6 39	[°] ['] 25 12	^h ^m 6 40	[°] ['] 12 58
Jan. 0·5	24·691 ^s 20	47·83 331	9·845 ^s 90	23·82 10	56·418 ^s 86	40·14 64
10·5	24·711 41	51·14 310	9·935 39	23·92 21	56·504 35	39·50 53
20·4	24·670 101	54·24 283	9·974 13	24·13 29	56·539 14	38·97 40
30·4	24·569 156	57·07 247	9·961 69	24·42 38	56·525 63	38·57 29
Feb. 9·4	24·413 205	59·54 207	9·892 110	24·80 35	56·462 104	38·28 17
19·4	24·208 241	61·61 163	9·782 150	25·15 32	56·358 140	38·11 8
Mar. 1·3	23·967 271	63·24 114	9·632 179	25·47 30	56·218 166	38·03 2
11·3	23·696 286	64·38 66	9·453 193	25·77 22	56·052 182	38·01 4
21·3	23·410 291	65·04 17	9·260 201	25·99 16	55·870 188	38·05 9
31·2	23·119 286	65·21 31	9·059 196	26·15 4	55·682 182	38·14 13
Apr. 10·2	22·833 269	64·90 80	8·863 178	26·19 3	55·500 168	38·27 18
20·2	22·564 242	64·10 125	8·685 154	26·16 7	55·332 143	38·45 21
30·2	22·322 206	62·85 167	8·531 120	26·09 16	55·189 113	38·66 27
May 10·1	22·116 169	61·18 206	8·411 83	25·93 20	55·076 78	38·93 31
20·1	21·947 122	59·12 239	8·328 39	25·73 21	54·998 41	39·24 38
30·1	21·825 74	56·73 264	8·289 2	25·52 22	54·957 1	39·62 42
June 9·1	21·751 24	54·09 287	8·291 49	25·30 21	54·958 40	40·04 46
19·0	21·727 27	51·22 301	8·340 86	25·09 20	54·998 79	40·50 51
29·0	21·754 77	48·21 306	8·426 126	24·89 18	55·077 114	41·01 54
July 9·0	21·831 123	45·15 303	8·552 163	24·71 17	55·191 148	41·55 53
18·9	21·954 168	42·12 292	8·715 195	24·54 13	55·339 178	42·08 52
28·9	22·122 210	39·20 269	8·910 225	24·41 13	55·517 204	42·60 48
Aug. 7·9	22·332 246	36·51 238	9·135 246	24·28 16	55·721 228	43·08 39
17·9	22·578 279	34·13 199	9·381 269	24·12 16	55·949 246	43·47 29
27·8	22·857 306	32·14 153	9·650 287	23·96 22	56·195 262	43·76 14
Sept. 6·8	23·163 327	30·61 100	9·937 297	23·74 25	56·457 276	43·90 1
16·8	23·490 343	29·61 41	10·234 310	23·49 28	56·733 285	43·89 16
26·8	23·833 349	29·20 20	10·544 315	23·21 36	57·018 292	43·73 35
Oct. 6·7	24·182 349	29·40 82	10·859 318	22·85 37	57·310 295	43·38 52
16·7	24·531 339	30·22 139	11·177 317	22·48 41	57·605 293	42·86 66
26·7	24·870 324	31·61 195	11·494 312	22·07 39	57·898 288	42·20 78
Nov. 5·6	25·194 299	33·56 244	11·806 297	21·68 38	58·186 275	41·42 87
15·6	25·493 265	36·00 283	12·103 275	21·30 33	58·461 258	40·55 91
25·6	25·758 222	38·83 312	12·378 252	20·97 25	58·719 231	39·64 91
Dec. 5·6	25·980 173	41·95 332	12·630 214	20·72 14	58·950 199	38·73 88
15·5	26·153 118	45·27 340	12·844 173	20·58 2	59·149 160	37·85 80
25·5	26·271 57	48·67 335	13·017 125	20·56 6	59·309 116	37·05 71
35·5	26·328	52·02	13·142	20·62	59·425	36·34
Mean Place	22·566	37·04	8·053	34·90	54·738	51·33
Sec δ, Tan δ	1·370	-0·937	1·105	+0·471	1·026	+0·231
L α, L δ	-0·02	-0·1	+0·01	-0·1	+0·01	-0·1
ω α, ω δ	-0·01	+1·0	+0·01	+1·0	0·00	+1·0
AUTHORITY	A. E.		A. E.		A. E.	

320 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Canis Majoris. Mag. -1.6		α Pictoris. Mag. 3.3		γ Argus. Mag. 2.8	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	$\begin{matrix} h & m \\ 6 & 41 \\ s \end{matrix}$	$\begin{matrix} 16 & 36 \\ s \end{matrix}$	$\begin{matrix} h & m \\ 6 & 47 \\ s \end{matrix}$	$\begin{matrix} 61 & 51 \\ s \end{matrix}$	$\begin{matrix} h & m \\ 6 & 47 \\ s \end{matrix}$	$\begin{matrix} 50 & 31 \\ s \end{matrix}$
Jan. 0.5	44.213 ⁵⁶	41.89 ²³⁶	26.75 ²	36.78 ³⁶⁵	62.457 ²⁴	26.70 ³⁵²
10.5	44.269 ⁸	44.25 ²¹⁶	26.73 ¹¹	40.43 ³⁴⁸	62.481 ⁵¹	30.22 ³³⁴
20.4	44.277 ³⁹	46.41 ¹⁹⁵	26.62 ²⁰	43.91 ³²²	62.430 ¹¹⁶	33.56 ³⁰⁹
30.4	44.238 ⁸⁵	48.36 ¹⁶⁸	26.42 ²⁷	47.13 ²⁸⁵	62.314 ¹⁷⁹	36.65 ²⁷³
Feb. 9.4	44.153 ¹²⁷	50.04 ¹³⁵	26.15 ³⁵	49.98 ²⁴⁷	62.135 ²³³	39.38 ²³³
19.4	44.026 ¹⁶⁰	51.39 ¹⁰⁶	25.80 ⁴⁰	52.45 ¹⁹⁷	61.902 ²⁷⁹	41.71 ¹⁸⁸
Mar. 1.3	43.866 ¹⁸⁴	52.45 ⁷⁴	25.40 ⁴⁵	54.42 ¹⁴⁹	61.623 ³¹²	43.59 ¹³⁹
11.3	43.682 ¹⁹⁸	53.19 ⁴⁰	24.95 ⁴⁷	55.91 ⁹⁶	61.311 ³³³	44.98 ⁸⁹
21.3	43.484 ²⁰³	53.59 ⁷	24.48 ⁴⁸	56.87 ⁴³	60.978 ³⁴²	45.87 ³⁷
31.2	43.281 ¹⁹⁷	53.66 ²⁴	24.00 ⁴⁸	57.30 ¹²	60.636 ³³⁹	46.24 ¹⁵
Apr. 10.2	43.084 ¹⁸²	53.42 ⁵⁷	23.52 ⁴⁶	57.18 ⁶⁵	60.297 ³²³	46.09 ⁶⁵
20.2	42.902 ¹⁶⁰	52.85 ⁸⁷	23.06 ⁴³	56.53 ¹¹⁶	59.974 ²⁹⁷	45.44 ¹¹³
30.2	42.742 ¹²⁹	51.98 ¹¹³	22.63 ³⁹	55.37 ¹⁶²	59.677 ²⁶²	44.31 ¹⁵⁹
May 10.1	42.613 ⁹⁵	50.85 ¹³⁹	22.24 ³³	53.75 ²⁰⁹	59.415 ²²⁰	42.72 ²⁰⁰
20.1	42.518 ⁶¹	49.46 ¹⁵⁹	21.91 ²⁷	51.66 ²⁴⁵	59.195 ¹⁷²	40.72 ²³⁸
30.1	42.457 ²²	47.87 ¹⁸⁰	21.64 ²⁰	49.21 ²⁷⁹	59.023 ¹¹⁹	38.34 ²⁶⁸
June 9.1	42.435 ²⁰	46.07 ¹⁹⁴	21.44 ¹³	46.42 ³⁰⁴	58.904 ⁶⁴	35.66 ²⁹⁴
19.0	42.455 ⁵⁹	44.13 ²⁰³	21.31 ⁵	43.38 ³²³	58.840 ⁷	32.72 ³¹⁰
29.0	42.514 ⁹⁶	42.10 ²⁰⁷	21.26 ²	40.15 ³³²	58.833 ⁴⁹	29.62 ³¹⁸
July 9.0	42.610 ¹²⁸	40.03 ²⁰⁴	21.28 ¹¹	36.83 ³³¹	58.882 ¹⁰⁶	26.44 ³¹⁸
18.9	42.738 ¹⁶¹	37.99 ¹⁹⁵	21.39 ¹⁷	33.52 ³²²	58.988 ¹⁵⁸	23.26 ³⁰⁷
28.9	42.899 ¹⁹²	36.04 ¹⁸⁰	21.56 ²⁵	30.30 ³⁰³	59.146 ²⁰⁸	20.19 ²⁸⁸
Aug. 7.9	43.091 ²¹⁶	34.24 ¹⁵⁷	21.81 ³¹	27.27 ²⁷³	59.354 ²⁵⁴	17.31 ²⁵⁸
17.9	43.307 ²³⁷	32.67 ¹²⁸	22.12 ³⁷	24.54 ³¹	59.608 ²⁹⁵	14.73 ²¹⁹
27.8	43.544 ²⁵⁴	31.39 ⁹³	22.49 ⁴²	22.23 ¹⁸⁵	59.903 ³³⁰	12.54 ¹⁷³
Sept. 6.8	43.798 ²⁶⁷	30.46 ⁵⁴	22.91 ⁴⁶	20.38 ¹²⁸	60.233 ³⁵⁷	10.81 ¹¹⁸
16.8	44.065 ²⁷⁸	29.92 ¹⁴	23.37 ⁴⁹	19.10 ⁶⁶	60.590 ³⁷⁸	9.63 ⁵⁹
26.8	44.343 ²⁸⁵	29.78 ³³	23.86 ⁵⁰	18.44 ⁴	60.968 ³⁸⁹	9.04 ⁴
Oct. 6.7	44.628 ²⁸⁹	30.11 ⁷⁹	24.36 ⁵¹	18.40 ⁶⁵	61.357 ³⁹³	9.08 ⁶⁸
16.7	44.917 ²⁸³	30.90 ¹²⁰	24.87 ⁴⁹	19.05 ¹³⁰	61.750 ³⁸⁵	9.76 ¹³¹
26.7	45.200 ²⁷⁴	32.10 ¹⁵⁶	25.36 ⁴⁷	20.35 ¹⁹⁰	62.135 ³⁶⁸	11.07 ¹⁹⁰
Nov. 5.6	45.474 ²⁵⁹	33.66 ¹⁹³	25.83 ⁴²	22.25 ²⁴⁵	62.503 ³³⁹	12.97 ²⁴²
15.6	45.733 ²³⁸	35.59 ²¹⁸	26.25 ³⁶	24.70 ²⁹¹	62.842 ³⁰²	15.39 ²⁸⁷
25.6	45.971 ²⁰⁷	37.77 ²³⁷	26.61 ³⁰	27.61 ³²⁸	63.144 ²⁵²	18.26 ³²¹
Dec. 5.6	46.178 ¹⁷⁵	40.14 ²⁴⁶	26.91 ²²	30.89 ³⁵³	63.396 ¹⁹⁹	21.47 ³⁴³
15.5	46.353 ¹³⁴	42.60 ²⁴⁷	27.13 ¹³	34.42 ³⁶⁷	63.595 ¹³¹	24.90 ³⁵⁵
25.5	46.487 ⁸⁶	45.07 ²⁴³	27.26 ⁴	38.09 ³⁶⁷	63.726 ⁶⁴	28.45 ³⁵⁶
35.5	46.573	47.50	27.30	41.76	63.790	32.01
Mean Place	42.651	29.52	23.56	27.28	60.023	16.89
Sec δ , Tan δ	1.044	-0.298	2.120	-1.869	1.573	-1.214
L α , L δ	-0.01	-0.1	-0.05	-0.1	-0.03	-0.1
ω α , ω δ	0.00	+1.0	-0.03	+1.0	-0.02	+1.0
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 321

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	θ Canis Majoris. Mag. 4.3		ϵ Canis Majoris. Mag. 1.6		ζ Canis Majoris. Mag. 3.7	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 6 50	° 11 56	h m 6 55	° 28 51	h m 6 58	° 27 49
Jan.	0.5 35.661 ^s 75	33.99 ^s 211	35.454 ^s 64	64.19 ^s 291	38.537 ^s 70	29.90 ^s 288
	10.5 35.736 ^s 28	36.10 ^s 195	35.518 ^s 12	67.10 ^s 276	38.607 ^s 17	32.78 ^s 271
	20.5 35.764 ^s 22	38.05 ^s 176	35.530 ^s 42	69.86 ^s 251	38.624 ^s 36	35.49 ^s 251
	30.4 35.742 ^s 70	39.81 ^s 151	35.488 ^s 90	72.37 ^s 221	38.588 ^s 85	38.00 ^s 219
Feb.	9.4 35.672 ^s 109	41.32 ^s 124	35.398 ^s 136	74.58 ^s 189	38.503 ^s 132	40.19 ^s 186
	19.4 35.563 ^s 145	42.56 ^s 94	35.262 ^s 174	76.47 ^s 149	38.371 ^s 168	42.05 ^s 149
Mar.	1.3 35.418 ^s 170	43.50 ^s 66	35.088 ^s 200	77.96 ^s 110	38.203 ^s 197	43.54 ^s 110
	11.3 35.248 ^s 187	44.16 ^s 38	34.888 ^s 221	79.06 ^s 70	38.006 ^s 216	44.64 ^s 69
	21.3 35.061 ^s 194	44.54 ^s 10	34.667 ^s 225	79.76 ^s 27	37.790 ^s 224	45.33 ^s 29
	31.3 34.867 ^s 191	44.64 ^s 19	34.442 ^s 227	80.03 ^s 14	37.566 ^s 222	45.62 ^s 11
Apr.	10.2 34.676 ^s 178	44.45 ^s 47	34.215 ^s 212	79.89 ^s 54	37.344 ^s 210	45.51 ^s 51
	20.2 34.498 ^s 159	43.98 ^s 74	34.003 ^s 192	79.35 ^s 93	37.134 ^s 191	45.00 ^s 89
	30.2 34.339 ^s 131	43.24 ^s 98	33.811 ^s 165	78.42 ^s 130	36.943 ^s 163	44.11 ^s 124
May	10.2 34.208 ^s 97	42.26 ^s 121	33.646 ^s 132	77.12 ^s 158	36.780 ^s 131	42.87 ^s 158
	20.1 34.111 ^s 61	41.05 ^s 141	33.514 ^s 94	75.54 ^s 194	36.649 ^s 94	41.29 ^s 186
	30.1 34.050 ^s 25	39.64 ^s 157	33.420 ^s 55	73.60 ^s 218	36.555 ^s 55	39.43 ^s 213
June	9.1 34.025 ^s 14	38.07 ^s 174	33.365 ^s 13	71.42 ^s 237	36.500 ^s 15	37.30 ^s 231
	19.0 34.039 ^s 51	36.33 ^s 180	33.352 ^s 25	69.05 ^s 251	36.485 ^s 27	34.99 ^s 246
	29.0 34.090 ^s 88	34.53 ^s 187	33.377 ^s 70	66.54 ^s 255	36.512 ^s 66	32.53 ^s 254
July	9.0 34.178 ^s 120	32.66 ^s 185	33.447 ^s 105	63.99 ^s 257	36.578 ^s 104	29.99 ^s 253
	19.0 34.298 ^s 152	30.81 ^s 178	33.552 ^s 145	61.42 ^s 249	36.682 ^s 141	26.46 ^s 246
	28.9 34.450 ^s 181	29.03 ^s 167	33.697 ^s 177	58.93 ^s 233	36.823 ^s 173	25.00 ^s 229
Aug.	7.9 34.631 ^s 205	27.36 ^s 145	33.874 ^s 206	56.60 ^s 209	36.996 ^s 204	22.71 ^s 205
	17.9 34.836 ^s 228	25.91 ^s 122	34.080 ^s 235	54.51 ^s 177	37.200 ^s 231	20.66 ^s 175
	27.8 35.064 ^s 245	24.69 ^s 89	34.315 ^s 259	52.74 ^s 138	37.431 ^s 254	18.91 ^s 134
Sept.	6.8 35.309 ^s 260	23.80 ^s 53	34.574 ^s 277	51.36 ^s 89	37.685 ^s 273	17.57 ^s 92
	16.8 35.569 ^s 274	23.27 ^s 16	34.851 ^s 294	50.47 ^s 40	37.958 ^s 289	16.65 ^s 41
	26.8 35.843 ^s 281	23.11 ^s 26	35.145 ^s 301	50.07 ^s 9	38.247 ^s 300	16.24 ^s 11
Oct.	6.7 36.124 ^s 285	23.37 ^s 66	35.446 ^s 308	50.16 ^s 67	38.547 ^s 305	16.35 ^s 64
	16.7 36.409 ^s 284	24.03 ^s 105	35.754 ^s 306	50.83 ^s 118	38.852 ^s 304	16.99 ^s 115
	26.7 36.693 ^s 279	25.08 ^s 141	36.060 ^s 295	52.01 ^s 166	39.156 ^s 297	18.14 ^s 164
Nov.	5.7 36.972 ^s 268	26.49 ^s 171	36.355 ^s 285	53.67 ^s 207	39.453 ^s 284	19.78 ^s 207
	15.6 37.240 ^s 248	28.20 ^s 196	36.640 ^s 261	55.74 ^s 245	39.737 ^s 262	21.85 ^s 242
	25.6 37.488 ^s 223	30.16 ^s 212	36.901 ^s 229	58.19 ^s 273	39.999 ^s 231	24.27 ^s 269
Dec.	5.6 37.711 ^s 187	32.28 ^s 220	37.130 ^s 189	60.92 ^s 290	40.230 ^s 196	26.96 ^s 287
	15.5 37.898 ^s 151	34.48 ^s 224	37.319 ^s 149	63.82 ^s 299	40.426 ^s 151	29.83 ^s 294
	25.5 38.049 ^s 105	36.72 ^s 217	37.468 ^s 97	66.81 ^s 295	40.577 ^s 102	32.77 ^s 291
	35.5 38.154 ^s	38.89 ^s	37.565 ^s	69.76 ^s	40.679 ^s	35.68 ^s
Mean Place	33.987	23.17	33.604	54.10	36.701	19.89
Sec δ , Tan δ	1.022	-0.211	1.142	-0.551	1.131	-0.528
L α , L δ	-0.01	-0.1	-0.01	-0.1	-0.01	-0.1
ω α , ω δ	0.00	+1.0	-0.01	+1.0	-0.01	+1.0
AUTHORITY	A. E.		A. E.		Y	

322 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Geminorum. Mag. 3·7-4·3		ο ³ Canis Majoris. Mag. 3·1		γ Canis Majoris. Mag. 4·1	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 6 59	° ' 20 40	h m 6 59	° ' 23 43	h m 7 0	° ' 15 31
Jan. 0·5	30·762 ^s 108	57·64 21	47·820 ^s 76	16·64 271	15·493 ^s 83	11·80 232
10·5	30·870 59	57·43 8	47·896 76	19·35 256	15·576 83	14·12 216
20·5	30·929 3	57·35 5	47·919 27	21·91 232	15·609 16	16·29 196
30·4	30·932 44	57·40 12	47·892 77	24·23 205	15·593 65	18·25 171
Feb. 9·4	30·888 96	57·52 20	47·815 121	26·28 172	15·528 107	19·96 141
19·4	30·792 130	57·72 22	47·694 158	28·00 138	15·421 144	21·37 112
Mar. 1·4	30·662 162	57·94 25	47·536 185	29·38 101	15·277 170	22·49 80
11·3	30·500 183	58·19 24	47·351 206	30·39 63	15·107 189	23·29 49
21·3	30·317 192	58·43 20	47·145 213	31·02 26	14·918 197	23·78 17
31·3	30·125 187	58·63 16	46·932 211	31·28 12	14·721 195	23·95 13
Apr. 10·2	29·938 179	58·79 16	46·721 200	31·16 49	14·526 185	23·82 45
20·2	29·759 156	58·95 8	46·521 181	30·67 83	14·341 164	23·37 75
30·2	29·603 126	59·03 5	46·340 154	29·84 117	14·177 139	22·62 101
May 10·2	29·477 95	59·08 3	46·186 122	28·67 147	14·038 109	21·61 127
20·1	29·382 54	59·11 2	46·064 86	27·20 176	13·929 72	20·34 150
30·1	29·328 13	59·13 3	45·978 48	25·44 198	13·857 37	18·84 167
June 9·1	29·315 24	59·16 3	45·930 9	23·46 217	13·820 2	17·17 185
19·1	29·339 65	59·19 2	45·921 31	21·29 230	13·822 39	15·32 194
29·0	29·404 103	59·21 3	45·952 69	18·99 237	13·861 77	13·38 201
July 9·0	29·507 139	59·24 4	46·021 106	16·62 236	13·938 109	11·37 200
19·0	29·646 169	59·28 2	46·127 140	14·26 230	14·047 143	9·37 194
28·9	29·815 198	59·30 0	46·267 171	11·96 214	14·190 171	7·43 181
Aug. 7·9	30·013 226	59·30 7	46·438 201	9·82 192	14·361 199	5·62 160
17·9	30·239 243	59·23 10	46·639 226	7·90 161	14·560 221	4·02 134
27·9	30·482 265	59·13 19	46·865 248	6·29 125	14·781 243	2·68 101
Sept. 6·8	30·747 280	58·94 27	47·113 267	5·04 83	15·024 258	1·67 64
16·8	31·027 295	58·67 41	47·380 282	4·21 35	15·282 273	1·03 22
26·8	31·322 303	58·26 46	47·662 291	3·86 13	15·555 282	0·81 19
Oct. 6·8	31·625 309	57·80 59	47·953 298	3·99 65	15·837 290	1·00 66
16·7	31·934 312	57·21 62	48·251 298	4·64 112	16·127 289	1·66 106
26·7	32·246 308	56·59 69	48·549 292	5·76 158	16·416 285	2·72 145
Nov. 5·7	32·554 300	55·90 67	48·841 279	7·34 199	16·701 273	4·17 180
15·6	32·854 282	55·23 65	49·120 259	9·33 231	16·974 256	5·97 207
25·6	33·136 259	54·58 60	49·379 231	11·64 256	17·230 229	8·04 227
Dec. 5·6	33·395 226	53·98 51	49·610 195	14·20 271	17·459 197	10·31 239
15·6	33·621 185	53·47 40	49·805 154	16·91 278	17·656 158	12·70 242
25·5	33·806 143	53·07 27	49·959 106	19·69 274	17·814 113	15·12 238
35·5	33·949	52·80	50·065	22·43	17·927	17·50
Mean Place	29·050	69·36	46·040	6·50	13·794	1·32
Sec δ, Tan δ	1·069	+0·378	1·092	-0·439	1·038	-0·278
L α, L δ	+0·01	-0·1	-0·01	-0·1	-0·01	-0·1
ω α, ω δ	+0·01	+1·0	-0·01	+1·0	0·00	+1·0
AUTHORITY	A. E.		A. N.		A. E.	

APPARENT PLACES OF STARS, 1922. 323

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	♄ Canis Majoris. Mag. 2.0		♊ Geminorum. Mag. 5.3		♄ Argūs. Mag. 2.7	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 7 5	° ′ 26 16	h m 7 8	° ′ 16 17	h m 7 14	° ′ 36 57
Jan.	0.5 14.939 ⁷⁶	16.24 ²⁸⁴	55.319 ¹¹⁷	21.33 ⁵²	25.304 ⁷⁷	33.63 ³²⁶
	10.5 15.015 ²⁸	19.08 ²⁶⁸	55.436 ⁶⁶	20.81 ³⁷	25.381 ²¹	36.89 ³¹²
	20.5 15.043 ²⁸	21.76 ²⁴⁶	55.502 ¹³	20.44 ²³	25.402 ³⁸	40.01 ²⁹⁰
	30.4 15.015 ⁷⁶	24.22 ²¹⁹	55.515 ³⁶	20.21 ¹¹	25.364 ⁹¹	42.91 ²⁶²
Feb.	9.4 14.939 ¹²¹	26.41 ¹⁸⁴	55.479 ⁸⁵	20.10 ⁰	25.273 ¹⁴²	45.53 ²²⁵
	19.4 14.818 ¹⁶⁰	28.25 ¹⁴⁹	55.394 ¹²³	20.10 ⁸	25.131 ¹⁸⁵	47.78 ¹⁸⁶
Mar.	1.4 14.658 ¹⁸⁹	29.74 ¹¹²	55.271 ¹⁵⁴	20.18 ¹⁴	24.946 ²¹⁷	49.64 ¹⁴⁵
	11.3 14.469 ²⁰⁸	30.86 ⁷²	55.117 ¹⁷⁵	20.32 ¹⁸	24.729 ²⁴⁰	51.09 ¹⁰¹
	21.3 14.261 ²¹⁸	31.58 ³⁴	54.942 ¹⁸⁶	20.50 ²⁰	24.489 ²⁵¹	52.10 ⁵⁴
	31.3 14.043 ²¹⁷	31.92 ⁶	54.756 ¹⁸⁵	20.70 ²⁰	24.238 ²⁵³	52.64 ⁹
Apr.	10.2 13.826 ²⁰⁷	31.86 ⁴⁷	54.571 ¹⁷⁴	20.90 ²⁰	23.985 ²⁴⁴	52.73 ³⁶
	20.2 13.619 ¹⁸⁹	31.39 ⁸³	54.397 ¹⁵⁵	21.10 ²⁰	23.741 ²²⁴	52.37 ⁸²
	30.2 13.430 ¹⁶¹	30.56 ¹¹⁸	54.242 ¹²⁹	21.30 ²¹	23.517 ²⁰¹	51.55 ¹²²
May	10.2 13.269 ¹³¹	29.38 ¹⁴⁸	54.113 ⁹⁶	21.51 ²¹	23.316 ¹⁶⁹	50.33 ¹⁵⁹
	20.1 13.138 ⁹⁶	27.90 ¹⁸⁰	54.017 ⁶⁰	21.72 ²²	23.147 ¹³¹	48.74 ¹⁹⁶
	30.1 13.042 ⁵⁸	26.10 ²⁰⁴	53.957 ²²	21.94 ²⁴	23.016 ⁹¹	46.78 ²²⁶
June	9.1 12.984 ¹⁸	24.06 ²²⁴	53.935 ¹⁷	22.18 ²⁵	22.925 ⁴⁷	44.52 ²⁴⁸
	19.1 12.966 ²¹	21.82 ²³⁹	53.952 ⁵⁴	22.43 ²⁷	22.878 ⁶	42.04 ²⁶⁸
	29.0 12.987 ⁶²	19.43 ²⁴⁵	54.006 ⁹¹	22.70 ²⁷	22.872 ³⁹	39.36 ²⁸⁰
July	9.0 13.049 ⁹⁹	16.98 ²⁴⁵	54.097 ¹²⁵	22.97 ²⁷	22.911 ⁸²	36.56 ²⁸⁰
	19.0 13.148 ¹³³	14.53 ²³⁹	54.222 ¹⁵⁷	23.24 ²³	22.993 ¹²¹	33.76 ²⁷⁶
	28.9 13.281 ¹⁶⁷	12.14 ²²³	54.379 ¹⁸⁵	23.47 ¹⁹	23.114 ¹⁶¹	31.00 ²⁶³
Aug.	7.9 13.448 ¹⁹⁷	9.91 ²⁰²	54.564 ²⁰⁹	23.66 ¹²	23.275 ¹⁹⁹	28.37 ²³⁷
	17.9 13.645 ²²⁶	7.89 ¹⁷¹	54.773 ²³³	23.78 ²	23.474 ²³⁰	26.00 ²⁰⁵
	27.9 13.871 ²⁴⁸	6.18 ¹³³	55.006 ²⁵¹	23.80 ⁸	23.704 ²⁵⁹	23.95 ¹⁶⁶
Sept.	6.8 14.119 ²⁶⁸	4.85 ⁸⁹	55.257 ²⁶⁸	23.72 ²²	23.963 ²⁸⁶	22.29 ¹¹⁸
	16.8 14.387 ²⁸⁵	3.96 ⁴⁵	55.525 ²⁸²	23.50 ³⁶	24.249 ³⁰⁵	21.11 ⁶⁵
	26.8 14.672 ²⁹⁸	3.51 ⁶	55.807 ²⁹³	23.14 ⁵⁰	24.554 ³²¹	20.46 ¹⁰
Oct.	6.8 14.970 ³⁰²	3.57 ⁶⁴	56.100 ³⁰¹	22.64 ⁶⁴	24.875 ³³⁰	20.36 ⁵⁰
	16.7 15.272 ³⁰⁴	4.21 ¹¹²	56.401 ³⁰⁴	22.00 ⁷⁵	25.205 ³³¹	20.86 ¹⁰⁸
	26.7 15.576 ²⁹⁷	5.33 ¹⁵⁹	56.705 ³⁰³	21.25 ⁸⁵	25.536 ³²⁵	21.94 ¹⁶¹
Nov.	5.7 15.873 ²⁸⁴	6.92 ²⁰¹	57.008 ²⁹⁶	20.40 ⁸⁹	25.861 ³¹¹	23.55 ²¹³
	15.6 16.157 ²⁶³	8.93 ²³⁷	57.304 ²⁸⁰	19.51 ⁹¹	26.172 ²⁸⁷	25.68 ²⁵³
	25.6 16.420 ²³⁹	11.30 ²⁶²	57.584 ²⁵⁹	18.60 ⁸⁷	26.459 ²⁵⁶	28.21 ²⁸⁸
Dec.	5.6 16.659 ²⁰⁰	13.92 ²⁸¹	57.843 ²²⁹	17.73 ⁸¹	26.715 ²¹⁴	31.09 ³¹¹
	15.6 16.859 ¹⁵⁹	16.73 ²⁸⁸	58.072 ¹⁹¹	16.92 ⁷¹	26.929 ¹⁶⁷	34.20 ³²⁵
	25.5 17.018 ¹¹⁰	19.61 ²⁸⁷	58.263 ¹⁴⁷	16.21 ⁵⁸	27.096 ¹¹⁵	37.45 ³²⁶
	35.5 17.128	22.48	58.410	15.63	27.211	40.71
Mean Place	13.122	6.45	53.656	33.16	23.275	24.92
Sec δ, Tan δ	1.115	-0.494	1.042	+0.292	1.251	-0.752
L α, L δ	-0.01	-0.1	+0.01	-0.1	-0.02	-0.1
ω α, ω δ	-0.01	+1.0	+0.01	+1.0	-0.02	+0.9
AUTHORITY	A. E.		A. E.		A. E.	

324 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	δ Geminorum. Mag. 3.5		δ Volantis. Mag. 4.0		η Canis Majoris. Mag. 2.4	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 7 15	[°] ['] 22 7	^h ^m 7 16	[°] ['] 67 48	^h ^m 7 21	[°] ['] 29 8
Jan.	0.5 29.708 ¹²⁷	25.70 ¹⁶	56.92 ²	59.17 ³⁷⁷	2.444 ⁹⁴	68.93 ²⁹⁹
	10.5 29.835 ⁷⁵	25.54 ⁰	56.94 ⁸	62.94 ³⁶⁶	2.538 ⁴⁰	71.92 ²⁸⁶
	20.5 29.910 ²¹	25.54 ¹⁰	56.86 ²⁰	66.60 ³⁴⁷	2.578 ¹⁴	74.78 ²⁶⁵
	30.4 29.931 ³²	25.64 ¹⁹	56.66 ³¹	70.07 ³¹⁹	2.564 ⁶⁷	77.43 ²³⁷
Feb.	9.4 29.899 ⁸⁰	25.83 ²⁸	56.35 ³⁹	73.26 ²⁸²	2.497 ¹¹⁴	79.80 ²⁰⁶
	19.4 29.819 ¹²¹	26.11 ³⁶	55.96 ⁴⁷	76.08 ²⁴²	2.383 ¹⁵⁵	81.86 ¹⁶⁹
Mar.	1.4 29.698 ¹⁵⁵	26.47 ³⁵	55.49 ⁵³	78.50 ¹⁹³	2.228 ¹⁸⁶	83.55 ¹³⁰
	11.3 29.543 ¹⁸⁰	26.82 ³²	54.96 ⁵⁸	80.43 ¹⁴⁵	2.042 ²¹⁰	84.85 ⁹¹
	21.3 29.363 ¹⁹⁰	27.14 ³⁰	54.38 ⁶⁰	81.88 ⁸⁹	1.832 ²²²	85.76 ⁴⁹
	31.3 29.173 ¹⁹⁰	27.44 ²³	53.78 ⁶⁰	82.77 ³⁸	1.610 ²²⁶	86.25 ⁸
Apr.	10.3 28.983 ¹⁸¹	27.67 ¹⁷	53.18 ⁶⁰	83.15 ¹⁶	1.384 ²¹³	86.33 ³²
	20.2 28.802 ¹⁶³	27.84 ¹⁵	52.58 ⁵⁷	82.99 ⁷²	1.171 ¹⁹⁹	86.01 ⁷¹
	30.2 28.639 ¹³⁶	27.99 ⁶	52.01 ⁵³	82.27 ¹²⁰	0.972 ¹⁷⁷	85.30 ¹⁰⁸
May	10.2 28.503 ¹⁰³	28.05 ¹	51.48 ⁴⁸	81.07 ¹⁶⁸	0.795 ¹⁴⁶	84.22 ¹⁴³
	20.1 28.400 ⁶⁸	28.06 ²	51.00 ⁴¹	79.39 ²¹²	0.649 ¹¹³	82.79 ¹⁷⁵
	30.1 28.332 ²⁸	28.04 ⁵	50.59 ³³	77.27 ²⁵⁰	0.536 ⁷⁵	81.04 ²⁰¹
June	9.1 28.304 ¹¹	27.99 ⁷	50.26 ²⁵	74.77 ²⁸³	0.461 ³⁷	79.03 ²²⁵
	19.1 28.315 ⁵²	27.92 ⁸	50.01 ¹⁶	71.94 ³⁰⁶	0.424 ³	76.78 ²⁴¹
	29.0 28.367 ⁸⁸	27.84 ⁷	49.85 ⁶	68.88 ³²³	0.427 ⁴²	74.37 ²⁵¹
July	9.0 28.455 ¹²³	27.77 ¹¹	49.79 ²	65.65 ³²⁹	0.469 ⁸⁰	71.86 ²⁵³
	19.0 28.578 ¹⁵⁵	27.66 ¹²	49.81 ¹³	62.36 ³²⁸	0.549 ¹¹⁸	69.33 ²⁴⁹
	29.0 28.733 ¹⁸⁷	27.54 ¹⁵	49.94 ²²	59.08 ³¹⁵	0.667 ¹⁵²	66.84 ²³⁶
Aug.	7.9 28.920 ²¹²	27.39 ²⁰	50.16 ³¹	55.93 ²⁹¹	0.819 ¹⁸⁴	64.48 ²¹⁴
	17.9 29.132 ²³⁷	27.19 ²⁷	50.47 ³⁹	53.02 ²⁵⁹	1.003 ²¹⁴	62.34 ¹⁸⁵
	27.9 29.369 ²⁵⁶	26.92 ³⁴	50.86 ⁴⁶	50.43 ²¹⁴	1.217 ²⁴¹	60.49 ¹⁴⁸
Sept.	6.8 29.625 ²⁷⁵	26.58 ⁴²	51.32 ⁵³	48.29 ¹⁶⁴	1.458 ²⁶⁴	59.01 ¹⁰⁴
	16.8 29.900 ²⁹²	26.16 ⁵⁴	51.85 ⁵⁷	46.65 ¹⁰⁵	1.722 ²⁸³	57.97 ⁵⁶
	26.8 30.192 ³⁰³	25.62 ⁵⁹	52.42 ⁶¹	45.60 ⁴²	2.005 ²⁹⁹	57.41 ⁴
Oct.	6.8 30.495 ³¹³	25.03 ⁶⁵	53.03 ⁶²	45.18 ²⁴	2.304 ³⁰⁸	57.37 ⁵⁰
	16.7 30.808 ³¹⁶	24.38 ⁷⁴	53.65 ⁶²	45.42 ⁹¹	2.612 ³¹¹	57.87 ¹⁰³
	26.7 31.124 ³¹⁶	23.64 ⁷⁴	54.27 ⁶⁰	46.33 ¹⁵⁵	2.923 ³⁰⁹	58.90 ¹⁵⁴
Nov.	5.7 31.440 ³⁰⁹	22.90 ⁷⁶	54.87 ⁵⁵	47.88 ²¹⁵	3.232 ²⁹⁹	60.44 ¹⁹⁹
	15.7 31.749 ²⁹⁶	22.14 ⁶⁹	55.42 ⁴⁸	50.03 ²⁶⁷	3.531 ²⁷⁹	62.43 ²³⁷
	25.6 32.045 ²⁷¹	21.45 ⁶²	55.90 ⁴¹	52.70 ³¹⁰	3.810 ²⁵³	64.80 ²⁶⁸
Dec.	5.6 32.316 ²⁴⁵	20.83 ⁵²	56.31 ³²	55.80 ³⁴⁴	4.063 ²¹⁷	67.48 ²⁸⁸
	15.6 32.561 ²⁰³	20.31 ³⁶	56.63 ²¹	59.24 ³⁶⁴	4.280 ¹⁷⁵	70.36 ³⁰⁰
	25.5 32.764 ¹⁵⁹	19.95 ²⁶	56.84 ⁹	62.88 ³⁷⁴	4.455 ¹²⁶	73.36 ³⁰⁰
	35.5 32.923	19.69	56.93	66.62	4.581	76.36
Mean Place	28.016	37.93	52.86	52.36	0.575	60.04
Sec δ, Tan δ	1.080	+0.407	2.649	-2.452	1.145	-0.558
L α, L δ	+0.01	-0.1	-0.06	-0.1	-0.01	-0.1
ω α, ω δ	+0.01	+0.9	-0.05	+0.9	-0.01	+0.9
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 325

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Canis Minoris. Mag. 3.1		σ Argùs. Mag. 3.3		α Geminorum. Mag. 2.0	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 7 22	° ' 8 26	h m 7 26	° ' 43 8	h m 7 29	° ' 32 3
Jan. 0.5	56.937 ¹²⁵	39.68 ¹⁰³	47.525 ⁹⁰	41.71 ³⁴⁶	39.329 ¹⁵¹	27.29 ⁴²
10.5	57.062 ⁷¹	38.65 ⁸⁹	47.615 ²⁶	45.17 ³³⁵	39.480 ⁹⁹	27.71 ⁵⁷
20.5	57.133 ²⁵	37.76 ⁷¹	47.641 ³⁷	48.52 ³¹⁵	39.579 ³⁷	28.28 ⁷⁰
30.5	57.158 ²⁸	37.05 ⁵⁶	47.604 ⁹⁷	51.67 ²⁸⁷	39.616 ²¹	28.98 ⁷⁸
Feb. 9.4	57.130 ⁷¹	36.49 ³⁹	47.507 ¹⁵²	54.54 ²⁵³	39.595 ⁷⁶	29.76 ⁸¹
19.4	57.059 ¹¹²	36.10 ²⁵	47.355 ¹⁹⁸	57.07 ²¹³	39.519 ¹²⁵	30.57 ⁸²
Mar. 1.4	56.947 ¹⁴⁴	35.85 ¹⁰	47.157 ²³⁶	59.20 ¹⁶⁹	39.394 ¹⁵⁹	31.39 ⁷⁴
11.3	56.803 ¹⁶³	35.75 ²	46.921 ²⁶²	60.89 ¹²³	39.235 ¹⁹⁰	32.13 ⁶²
21.3	56.640 ¹⁷⁸	35.77 ¹⁰	46.659 ²⁷⁸	62.12 ⁷⁶	39.045 ²⁰⁴	32.75 ⁵²
31.3	56.462 ¹⁷⁹	35.87 ¹⁹	46.381 ²⁸¹	62.88 ²⁷	38.841 ²⁰⁷	33.27 ³⁵
Apr. 10.3	56.283 ¹⁷¹	36.06 ²⁸	46.100 ²⁷⁵	63.15 ²¹	38.634 ²⁰²	33.62 ¹⁹
20.2	56.112 ¹⁵⁵	36.34 ³⁶	45.825 ²⁵⁹	62.94 ⁶⁸	38.432 ¹⁸³	33.81 ²
30.2	55.957 ¹³¹	36.70 ⁴²	45.566 ²³⁴	62.26 ¹¹³	38.249 ¹⁶¹	33.83 ¹⁴
May 10.2	55.826 ¹⁰⁶	37.12 ⁴⁹	45.332 ²⁰²	61.13 ¹⁵⁴	38.088 ¹²³	33.69 ²⁵
20.2	55.720 ⁶⁸	37.61 ⁵⁶	45.130 ¹⁶⁶	59.59 ¹⁹⁴	37.965 ⁸⁶	33.44 ⁴²
30.1	55.652 ³⁵	38.17 ⁶¹	44.964 ¹²⁴	57.65 ²²⁸	37.879 ⁴⁸	33.02 ⁵⁰
June 9.1	55.617 ²	38.78 ⁶⁵	44.840 ⁷⁹	55.37 ²⁵⁵	37.831 ⁵	32.52 ⁵⁹
19.1	55.619 ³⁷	39.43 ⁶⁸	44.761 ³⁴	52.82 ²⁷⁷	37.826 ⁴¹	31.93 ⁶⁵
29.0	55.656 ⁷³	40.11 ⁶⁹	44.727 ¹⁴	50.05 ²⁹¹	37.867 ⁷⁷	31.28 ⁷⁰
July 9.0	55.729 ¹⁰⁴	40.80 ⁶⁸	44.741 ⁶⁰	47.14 ²⁹⁷	37.944 ¹¹⁷	30.58 ⁷³
19.0	55.833 ¹³⁶	41.48 ⁶⁴	44.801 ¹⁰⁶	44.17 ²⁹⁴	38.061 ¹⁵⁵	29.85 ⁷⁵
29.0	55.969 ¹⁶⁴	42.12 ⁵⁶	44.907 ¹⁵¹	41.23 ²⁸¹	38.216 ¹⁸⁸	29.10 ⁷⁶
Aug. 7.9	56.133 ¹⁹¹	42.68 ⁴⁷	45.058 ¹⁹²	38.42 ²⁵⁸	38.404 ²¹⁶	28.34 ⁷⁹
17.9	56.324 ²¹³	43.15 ³²	45.250 ²³⁰	35.84 ²²⁸	38.620 ²⁴⁶	27.55 ⁸¹
27.9	56.537 ²³²	43.47 ¹⁵	45.480 ²⁶⁶	33.56 ¹⁴⁰	38.866 ²⁶⁹	26.74 ⁸²
Sept. 6.9	56.769 ²⁵³	43.62 ⁶	45.746 ²⁹⁶	31.68 ¹⁸⁰	39.135 ²⁹³	25.92 ⁸⁴
16.8	57.022 ²⁶⁹	43.56 ²⁷	46.042 ³²²	30.28 ⁸⁶	39.428 ³⁰⁸	25.08 ⁸⁰
26.8	57.291 ²⁸²	43.29 ⁴⁷	46.364 ³⁴⁰	29.42 ²⁷	39.736 ³²⁸	24.28 ⁸⁴
Oct. 6.8	57.573 ²⁹⁰	42.82 ⁷⁰	46.704 ³⁵⁴	29.15 ³³	40.064 ³³⁸	23.44 ⁷⁹
16.7	57.863 ²⁹⁷	42.12 ⁹⁰	47.058 ³⁵⁷	29.48 ⁹⁵	40.402 ³⁴⁶	22.65 ⁷⁴
26.7	58.160 ²⁹⁵	41.22 ¹⁰⁶	47.415 ³⁵²	30.43 ¹⁵⁴	40.748 ³⁴⁶	21.91 ⁶⁵
Nov. 5.7	58.455 ²⁹¹	40.16 ¹¹⁸	47.767 ³³⁸	31.97 ²⁰⁸	41.094 ³⁴⁰	21.26 ⁵⁵
15.7	58.746 ²⁷⁷	38.98 ¹²⁷	48.105 ³¹⁵	34.05 ²⁵⁵	41.434 ³²⁸	20.71 ⁴¹
25.6	59.023 ²⁶⁰	37.71 ¹³⁰	48.420 ²⁷⁹	36.60 ²⁹³	41.762 ³⁰⁸	20.30 ²⁶
Dec. 5.6	59.283 ²²⁹	36.41 ¹²⁸	48.699 ²³⁷	39.53 ³²¹	42.070 ²⁷⁶	20.04 ⁶
15.6	59.512 ¹⁹³	35.13 ¹²³	48.936 ¹⁸⁵	42.74 ³³⁹	42.346 ²³⁶	19.98 ¹²
25.6	59.705 ¹⁵⁴	33.90 ¹¹²	49.121 ¹²⁷	46.13 ³⁴⁴	42.582 ¹⁸⁶	20.10 ³²
35.5	59.859	32.78	49.248	49.57	42.768	20.42
Mean Place	55.325	51.27	45.309	34.19	37.565	40.52
Sec δ , Tan δ	1.011	+0.149	1.371	-0.937	1.180	+0.626
L α , L δ	0.00	-0.1	-0.02	-0.1	+0.02	-0.2
ω α , ω δ	0.00	+0.9	-0.02	+0.9	+0.02	+0.9
AUTHORITY	A. E.		A. E.		A. E.	

326 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	Q Carinae. Mag. 4.9		α Canis Minoris. Mag. 0.5		26 Monocerotis. Mag. 4.1	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m	° ′	h m	° ′	h m	° ′
	7 33	52 21	7 35	5 25	7 37	9 22
Jan. 0.5	46.267 ⁹²	40.87 ³⁶⁶	14.744 ¹³⁰	21.96 ¹²⁹	32.861 ¹²⁵	15.62 ²¹¹
10.5	46.359 ¹⁷	44.53 ³⁵⁹	14.874 ⁷⁷	20.67 ¹¹¹	32.986 ⁷⁷	17.73 ¹⁹⁷
20.5	46.376 ⁵⁶	48.12 ³⁴¹	14.951 ²⁹	19.56 ⁹⁵	33.063 ²⁵	19.70 ¹⁷⁸
30.5	46.320 ¹²⁶	51.53 ³¹⁵	14.980 ²⁰	18.61 ⁷⁶	33.088 ²⁴	21.48 ¹⁵⁵
Feb. 9.4	46.194 ¹⁹⁰	54.68 ²⁸⁰	14.960 ⁶⁷	17.85 ⁵⁶	33.064 ⁷⁰	23.03 ¹³⁰
19.4	46.004 ²⁴⁴	57.48 ²⁴⁰	14.893 ¹⁰⁶	17.29 ³⁷	32.994 ¹⁰⁹	24.33 ¹⁰⁴
Mar. 1.4	45.760 ²⁸⁹	59.88 ¹⁹⁶	14.787 ¹⁴⁰	16.92 ²³	32.885 ¹⁴²	25.37 ⁷⁶
11.4	45.471 ³²⁰	61.84 ¹⁴⁸	14.647 ¹⁶²	16.69 ⁹	32.743 ¹⁶⁶	26.13 ⁵⁰
21.3	45.151 ³³⁹	63.32 ⁹⁸	14.485 ¹⁷⁶	16.60 ⁷	32.577 ¹⁸⁰	26.63 ²⁴
31.3	44.812 ³⁴⁷	64.30 ⁴⁶	14.309 ¹⁷⁶	16.67 ¹⁸	32.397 ¹⁸³	26.87 ²
Apr. 10.3	44.465 ³⁴³	64.76 ⁵	14.133 ¹⁷¹	16.85 ²⁷	32.214 ¹⁷⁸	26.85 ²
20.2	44.122 ³²⁶	64.71 ⁵⁵	13.962 ¹⁶⁰	17.12 ³⁸	32.036 ¹⁶⁵	26.58 ⁵¹
30.2	43.796 ³⁰¹	64.16 ¹⁰⁶	13.802 ¹³⁵	17.50 ⁴⁹	31.871 ¹⁴⁵	26.07 ⁷³
May 10.2	43.495 ²⁶⁷	63.10 ¹⁵⁰	13.667 ¹⁰⁷	17.99 ⁵⁷	31.726 ¹¹⁸	25.34 ⁹⁴
20.2	43.228 ²²⁵	61.60 ¹⁹³	13.560 ⁷⁴	18.56 ⁶³	31.608 ⁸⁹	24.40 ¹¹⁴
30.1	43.003 ¹⁸¹	59.67 ²³¹	13.486 ⁴²	19.19 ⁷⁰	31.519 ⁵⁶	23.26 ¹³⁰
June 9.1	42.822 ¹²⁹	57.36 ²⁶³	13.444 ⁹	19.89 ⁷⁶	31.463 ²¹	21.96 ¹⁴⁴
19.1	42.693 ⁷⁵	54.73 ²⁸⁸	13.435 ²⁷	20.65 ⁷⁹	31.442 ¹³	20.52 ¹⁵⁵
29.1	42.618 ¹⁹	51.85 ³⁰⁵	13.462 ⁶³	21.44 ⁸⁰	31.455 ⁴⁶	18.97 ¹⁶⁰
July 9.0	42.599 ³⁷	48.80 ³¹³	13.525 ⁹⁵	22.24 ⁷⁸	31.501 ⁸⁰	17.37 ¹⁶²
19.0	42.636 ⁹⁴	45.67 ³¹³	13.620 ¹²³	23.02 ⁷⁵	31.581 ¹¹¹	15.75 ¹⁵⁷
29.0	42.730 ¹⁴⁸	42.54 ³⁰²	13.743 ¹⁵²	23.77 ⁶⁵	31.692 ¹⁴⁰	14.18 ¹⁴⁷
Aug. 7.9	42.878 ²⁰¹	39.52 ²⁸¹	13.895 ¹⁸¹	24.42 ⁵⁴	31.832 ¹⁶⁸	12.71 ¹³²
17.9	43.079 ²⁵⁰	36.71 ²⁵⁰	14.076 ²⁰⁵	24.96 ³⁶	32.000 ¹⁹³	11.39 ¹¹⁰
27.9	43.329 ²⁹⁵	34.21 ²¹⁰	14.281 ²²⁶	25.32 ²⁰	32.193 ²¹⁶	10.29 ⁸⁴
Sept. 6.9	43.624 ³³⁵	32.11 ¹⁶²	14.507 ²⁴²	25.52 ²	32.409 ²³⁷	9.45 ⁵¹
16.8	43.959 ³⁶⁷	30.49 ¹⁰⁶	14.749 ²⁶¹	25.50 ²⁷	32.646 ²⁵⁶	8.94 ¹⁶
26.8	44.326 ³⁹²	29.43 ⁴⁶	15.010 ²⁷⁶	25.23 ⁵¹	32.902 ²⁷¹	8.78 ²¹
Oct. 6.8	44.718 ⁴⁰⁸	28.97 ¹⁸	15.286 ²⁸⁷	24.72 ⁷⁷	33.173 ²⁸⁴	8.99 ⁶⁰
16.8	45.126 ⁴¹⁴	29.15 ⁸³	15.573 ²⁹²	23.95 ⁹⁹	33.457 ²⁹⁰	9.59 ⁹⁷
26.7	45.540 ⁴⁰⁷	29.98 ¹⁴⁶	15.865 ²⁹⁴	22.96 ¹¹⁹	33.747 ²⁹³	10.56 ¹³³
Nov. 5.7	45.947 ³⁸⁹	31.44 ²⁰⁵	16.159 ²⁹⁰	21.77 ¹³⁴	34.040 ²⁸⁹	11.89 ¹⁶³
15.7	46.336 ³⁶¹	33.49 ²⁵⁶	16.449 ²⁷⁹	20.43 ¹⁴⁶	34.329 ²⁷⁷	13.52 ¹⁸⁷
25.6	46.697 ³¹⁸	36.05 ²⁹⁹	16.728 ²⁶²	18.97 ¹⁵¹	34.606 ²⁵⁸	15.39 ²⁰⁶
Dec. 5.6	47.015 ²⁶⁶	39.04 ³³¹	16.990 ²³²	17.46 ¹⁵¹	34.864 ²³⁰	17.45 ²¹⁶
15.6	47.281 ²⁰⁴	42.35 ³⁵⁴	17.222 ¹⁹⁷	15.95 ¹⁴⁶	35.094 ¹⁹⁵	19.61 ²¹⁷
25.6	47.485 ¹³⁵	45.89 ³⁶⁴	17.419 ¹⁵⁷	14.49 ¹³⁴	35.289 ¹⁵³	21.78 ²¹⁶
35.5	47.620	49.53	17.576	13.15	35.442	23.94
Mean Place	43.643	34.53	13.185	32.78	31.225	5.66
Sec δ, Tan δ	1.637	-1.297	1.004	+0.095	1.014	-0.165
L α, L δ	-0.03	-0.2	0.00	-0.2	0.00	-0.2
ω α, ω δ	-0.03	+0.9	0.00	+0.9	0.00	+0.9
AUTHORITY			A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 327

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Geminorum. Mag. 1.2		ξ Argûs. Mag. 3.5		χ Geminorum. Mag. 5.0	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 7 40	° ' " 12 28 12	h m 7 46	° ' " 39 24 39	h m 7 58	° ' " 0 28 0
Jan.	0.5 34.426 ¹⁵⁸	43.52 ¹¹	2.618 ¹²⁶	55.34 ²⁸⁶	45.502 ¹⁷⁸	36.96 ⁵
	10.5 34.584 ¹⁰⁶	43.63 ³¹	2.744 ⁷²	58.20 ²⁷⁵	45.680 ¹²⁶	37.01 ²³
	20.5 34.690 ⁴⁸	43.94 ⁴⁶	2.816 ¹⁹	60.95 ²⁵⁶	45.806 ⁶⁸	37.24 ⁴³
	30.5 34.738 ¹¹	44.40 ⁵⁷	2.835 ³³	63.51 ²³²	45.874 ¹¹	37.67 ⁵⁷
Feb.	9.4 34.727 ⁶⁴	44.97 ⁶⁶	2.802 ⁸²	65.83 ²⁰³	45.885 ⁴⁴	38.24 ⁶⁶
	19.4 34.663 ¹⁰⁸	45.63 ⁶⁷	2.720 ¹²⁴	67.86 ¹⁷⁰	45.841 ⁹²	38.90 ⁷²
Mar.	1.4 34.555 ¹⁴⁶	46.30 ⁶⁵	2.596 ¹⁵⁹	69.56 ¹³⁵	45.749 ¹³³	39.62 ⁷²
	11.4 34.409 ¹⁷⁷	46.95 ⁵⁸	2.437 ¹⁸⁵	70.91 ⁹⁷	45.616 ¹⁶³	40.34 ⁷⁰
	21.3 34.232 ¹⁹⁴	47.53 ⁵¹	2.252 ²⁰⁰	71.88 ⁶¹	45.453 ¹⁸⁴	41.04 ⁵⁹
	31.3 34.038 ¹⁹⁹	48.04 ⁴¹	2.052 ²⁰⁶	72.49 ²³	45.269 ¹⁹⁴	41.63 ⁵⁰
Apr.	10.3 33.839 ¹⁹²	48.45 ²⁸	1.846 ²⁰³	72.72 ¹⁴	45.075 ¹⁹²	42.13 ³⁹
	20.2 33.647 ¹⁸¹	48.73 ¹⁶	1.643 ¹⁹¹	72.58 ⁵¹	44.883 ¹⁸⁰	42.52 ²⁶
	30.2 33.466 ¹⁵⁶	48.89 ⁰	1.452 ¹⁷¹	72.07 ⁸⁵	44.703 ¹⁶¹	42.78 ¹¹
May	10.2 33.310 ¹²⁵	48.89 ¹¹	1.281 ¹⁴⁶	71.22 ¹¹⁸	44.542 ¹³⁴	42.89 ²
	20.2 33.185 ⁹³	48.78 ²¹	1.135 ¹¹⁷	70.04 ¹⁴⁷	44.408 ⁹⁹	42.87 ¹⁴
	30.1 33.092 ⁵³	48.57 ²⁷	1.018 ⁸⁴	68.57 ¹⁷⁵	44.309 ⁶⁶	42.73 ²⁴
June	9.1 33.039 ¹²	48.30 ³⁸	0.934 ⁴⁹	66.82 ¹⁹⁶	44.243 ²⁹	42.49 ³⁴
	19.1 33.027 ²⁵	47.92 ⁴⁴	0.885 ¹³	64.86 ²¹³	44.214 ¹⁰	42.15 ⁴³
	29.1 33.052 ⁶⁴	47.48 ⁴⁹	0.872 ²⁴	62.73 ²²⁵	44.224 ⁵⁰	41.72 ⁴⁹
July	9.0 33.116 ¹⁰³	46.99 ⁵³	0.896 ⁵⁹	60.48 ²³⁰	44.274 ⁸³	41.23 ⁵⁶
	19.0 33.219 ¹³⁷	46.46 ⁵⁶	0.955 ⁹⁴	58.18 ²²⁷	44.357 ¹¹⁹	40.67 ⁶¹
	29.0 33.356 ¹⁶⁸	45.90 ⁶¹	1.049 ¹²⁸	55.91 ²¹⁷	44.476 ¹⁵⁰	40.06 ⁶⁷
Aug.	7.9 33.524 ²⁰¹	45.29 ⁶⁷	1.177 ¹⁵⁹	53.74 ²⁰⁰	44.626 ¹⁸²	39.39 ⁷²
	17.9 33.725 ²²³	44.62 ⁶⁸	1.336 ¹⁸⁹	51.74 ¹⁷⁴	44.808 ²⁰⁹	38.67 ⁷⁹
	27.9 33.948 ²⁵¹	43.94 ⁷³	1.525 ²¹⁷	50.00 ¹⁴²	45.017 ²³⁷	37.88 ⁸⁵
Sept.	6.9 34.199 ²⁷³	43.21 ⁷⁸	1.742 ²⁴²	48.58 ¹⁰³	45.254 ²⁶⁰	37.03 ⁹¹
	16.8 34.472 ²⁹⁴	42.43 ⁸⁴	1.984 ²⁶⁴	47.55 ⁵⁸	45.514 ²⁸²	36.12 ⁹⁶
	26.8 34.766 ³⁰⁷	41.59 ⁸⁶	2.248 ²⁸⁴	46.97 ¹⁰	45.796 ³⁰¹	35.16 ⁹⁹
Oct.	6.8 35.073 ³²⁴	40.73 ⁸⁹	2.532 ²⁹⁷	46.87 ⁴⁰	46.097 ³¹⁹	34.17 ¹⁰²
	16.8 35.397 ³³²	39.84 ⁸⁵	2.829 ³⁰⁶	47.27 ⁹¹	46.416 ³³¹	33.15 ¹⁰⁴
	26.7 35.729 ³³⁵	38.99 ⁸³	3.135 ³⁰⁸	48.18 ¹³⁸	46.747 ³³⁹	32.11 ⁹⁷
Nov.	5.7 36.064 ³³²	38.16 ⁷⁷	3.443 ³⁰³	49.56 ¹⁸³	47.086 ³³⁷	31.14 ⁹¹
	15.7 36.396 ³²³	37.39 ⁶²	3.746 ²⁹¹	51.39 ²²⁰	47.423 ³³¹	30.23 ⁷⁹
	25.6 36.719 ³⁰⁴	36.77 ⁵²	4.037 ²⁶⁹	53.59 ²⁵⁰	47.754 ³¹⁵	29.44 ⁶⁵
Dec.	5.6 37.023 ²⁷⁶	36.25 ³³	4.306 ²³⁸	56.09 ²⁷²	48.069 ²⁸⁹	28.79 ⁴⁸
	15.6 37.299 ²³⁶	35.92 ¹⁸	4.544 ²⁰¹	58.81 ²⁸³	48.358 ²⁵⁵	28.31 ²⁹
	25.6 37.535 ¹⁹⁰	35.74 ⁴	4.745 ¹⁵⁵	61.64 ²⁸⁷	48.613 ²¹⁰	28.02 ⁵
	35.5 37.725	35.78	4.900	64.51	48.823	27.97
Mean Place	32.745	56.84	0.828	47.25	43.887	50.78
Sec δ , Tan δ	1.135	+0.537	1.100	-0.459	1.133	+0.532
L α , L δ	+0.01	-0.2	-0.01	-0.2	+0.01	-0.2
ω α , ω δ	+0.02	+0.9	-0.01	+0.9	+0.02	+0.9
AUTHORITY	A. E.				A. E.	

328 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Argûs. Mag. 2·3		ρ Argûs. Mag. 2·9		γ Argûs. Mag. 2·2	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 8 0	° 46	h m 8 4	° 4	h m 8 7	° 6
Jan. 0·6	52·619 ¹³⁷	64 ¹⁴ 342	15·073 ¹⁴⁵	49 ⁸⁹ 285	10·171 ¹⁴⁶	26 ⁸⁵ 358
10·5	52·756 ⁷⁶	67·56 ³³⁵	15·218 ⁹³	52·74 ²⁷⁸	10·317 ⁷⁷	30·43 ³⁵⁷
20·5	52·832 ¹⁶	70·91 ³²¹	15·311 ³⁹	55·52 ²⁶⁰	10·394 ¹²	34·00 ³⁴³
30·5	52·848 ⁴⁵	74 ¹² 297	15·350 ¹⁴	58·12 ²³⁶	10·406 ⁵⁷	37·43 ³²²
Feb. 9·4	52·803 ¹⁰¹	77·09 ²⁶⁸	15·336 ⁶⁴	60·48 ²⁰⁸	10·349 ¹¹⁷	40·65 ²⁹⁵
19·4	52·702 ¹⁵⁰	79·77 ²³⁴	15·272 ¹⁰⁵	62·56 ¹⁸⁰	10·232 ¹⁷²	43·60 ²⁶⁰
Mar. 1·4	52·552 ¹⁸⁹	82·11 ¹⁹³	15·167 ¹⁴⁴	64·36 ¹⁴³	10·060 ²¹⁷	46·20 ²¹⁹
11·4	52·363 ²²¹	84·04 ¹⁵⁰	15·023 ¹⁷²	65·79 ¹⁰⁸	9·843 ²⁵¹	48·39 ¹⁷⁵
21·3	52·142 ²⁴²	85·54 ¹⁰⁶	14·851 ¹⁹¹	66·87 ⁷¹	9·592 ²⁷⁷	50·14 ¹²⁹
31·3	51·900 ²⁵²	86·60 ⁶⁰	14·660 ¹⁹⁸	67·58 ³⁵	9·315 ²⁹⁰	51·43 ⁷⁹
Apr. 10·3	51·648 ²⁵³	87·20 ¹⁴	14·462 ¹⁹⁶	67·93 ¹	9·025 ²⁹³	52·22 ³⁰
20·3	51·395 ²⁴³	87·34 ³¹	14·266 ¹⁹²	67·92 ³⁸	8·732 ²⁸⁴	52·52 ¹⁸
30·2	51·152 ²²⁷	87·03 ⁷⁶	14·074 ¹⁷⁴	67·54 ⁷⁴	8·448 ²⁶⁹	52·34 ⁶⁷
May 10·2	50·925 ²⁰⁰	86·27 ¹¹⁹	13·900 ¹⁵³	66·80 ¹⁰²	8·179 ²⁴³	51·67 ¹¹³
20·2	50·725 ¹⁷²	85·08 ¹⁵⁷	13·747 ¹²⁵	65·78 ¹³⁵	7·936 ²¹²	50·54 ¹⁵⁵
30·2	50·553 ¹³⁷	83·51 ¹⁹²	13·622 ⁹³	64·43 ¹⁶²	7·724 ¹⁷⁶	48·99 ¹⁹⁵
June 9·1	50·416 ⁹⁸	81·59 ²²⁴	13·529 ⁶²	62·81 ¹⁸⁴	7·548 ¹³³	47·04 ²³⁰
19·1	50·318 ⁶⁰	79·35 ²⁴⁸	13·467 ²⁹	60·97 ²⁰³	7·415 ⁹²	44·74 ²⁵⁸
29·1	50·258 ¹⁶	76·87 ²⁶⁸	13·438 ⁷	58·94 ²¹⁶	7·323 ⁴³	42·16 ²⁷⁸
July 9·0	50·242 ²⁵	74·19 ²⁷⁷	13·445 ⁴¹	56·78 ²²⁰	7·280 ²	39·38 ²⁹³
19·0	50·267 ⁶⁷	71·42 ²⁷⁹	13·486 ⁷⁸	54·58 ²²¹	7·282 ⁵³	36·45 ²⁹⁷
29·0	50·334 ¹⁰⁸	68·63 ²⁷²	13·564 ¹⁰⁸	52·37 ²¹⁶	7·335 ¹⁰⁰	33·48 ²⁹²
Aug. 8·0	50·442 ¹⁵²	65·91 ²⁵⁶	13·672 ¹⁴³	50·21 ¹⁹⁷	7·435 ¹⁴⁸	30·56 ²⁷⁷
17·9	50·594 ¹⁸⁸	63·35 ²³¹	13·815 ¹⁷³	48·24 ¹⁷⁴	7·583 ¹⁹⁵	27·79 ²⁵⁴
27·9	50·782 ²²⁵	61·04 ¹⁹⁶	13·988 ²⁰²	46·50 ¹⁴⁴	7·778 ²³⁷	25·25 ²²⁰
Sept. 6·9	51·007 ²⁶⁰	59·08 ¹⁵⁴	14·190 ²³⁰	45·06 ¹⁰⁶	8·015 ²⁷⁸	23·05 ¹⁷⁶
16·9	51·267 ²⁸⁹	57·54 ¹⁰⁵	14·420 ²⁵⁴	44·00 ⁶⁵	8·293 ³¹³	21·29 ¹²⁷
26·8	51·556 ³¹⁵	56·49 ⁴⁹	14·674 ²⁷⁶	43·35 ¹⁸	8·606 ³⁴³	20·02 ⁶⁹
Oct. 6·8	51·871 ³³⁴	56·00 ⁷	14·950 ²⁹⁴	43·17 ³²	8·949 ³⁶⁷	19·33 ¹¹
16·8	52·205 ³⁴⁶	56·07 ⁶⁸	15·244 ³⁰¹	43·49 ⁸³	9·316 ³⁸¹	19·22 ⁵⁶
26·7	52·551 ³⁵⁰	56·75 ¹²⁶	15·545 ³¹⁴	44·32 ¹²⁹	9·697 ³⁸⁶	19·78 ¹¹⁵
Nov. 5·7	52·901 ³⁴⁴	58·01 ¹⁸²	15·859 ³⁰⁸	45·61 ¹⁷²	10·083 ³⁷⁹	20·93 ¹⁷⁴
15·7	53·245 ³²⁹	59·83 ²³⁰	16·167 ³⁰⁰	47·33 ²¹¹	10·462 ³⁶²	22·67 ²²⁹
25·7	53·574 ³⁰⁴	62·13 ²⁷²	16·467 ²⁷⁸	49·44 ²⁴⁵	10·824 ³³¹	24·96 ²⁷³
Dec. 5·6	53·878 ²⁶⁹	64·85 ³⁰⁵	16·745 ²⁵⁵	51·89 ²⁶⁵	11·155 ²⁹²	27·69 ³¹⁰
15·6	54·147 ²²⁴	67·90 ³²⁴	17·000 ²¹⁶	54·54 ²⁸¹	11·447 ²⁴²	30·79 ³³⁸
25·6	54·371 ¹⁷¹	71·14 ³³⁷	17·216 ¹⁷⁴	57·35 ²⁸⁷	11·689 ¹⁸⁴	34·17 ³⁵¹
35·6	54·542	74·51	17·390	60·22	11·873	37·68
Mean Place	50·506	58·60	13·310	42·59	7·796	22·58
Sec δ, Tan δ	1·301	-0·833	1·095	-0·447	1·469	-1·076
L α, L δ	-0·02	-0·2	-0·01	-0·2	-0·02	-0·2
ω α, ω δ	-0·03	+0·9	-0·02	+0·9	-0·04	+0·9
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 329

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	20 Puppis. Mag. 5.1		β Cancri. Mag. 3.8		d ¹ Cancri. Mag. 5.9	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h 8 m 9	° 15 ′ 33	h 8 m 12	° 9 ′ 25	h 8 m 18	° 18 ′ 34
Jan. 0.6	46.506 ¹⁵³	16.53 ²⁴⁹	18.695 ¹⁶⁹	25.28 ¹¹⁵	55.495 ¹⁸⁷	48.06 ⁶¹
10.5	46.659 ¹⁰⁵	19.02 ²³⁷	18.864 ¹²⁵	24.13 ⁹⁵	55.682 ¹³⁹	47.45 ⁴¹
20.5	46.764 ⁵²	21.39 ²²⁰	18.989 ⁷⁰	23.18 ⁷⁵	55.821 ⁸⁵	47.04 ²⁰
30.5	46.816 ³	23.59 ¹⁹⁶	19.059 ²³	22.43 ⁵⁸	55.906 ³¹	46.84 ²
Feb. 9.5	46.819 ⁴⁸	25.55 ¹⁷³	19.082 ³¹	21.85 ³⁶	55.937 ²²	46.82 ¹⁶
19.4	46.771 ⁹⁰	27.28 ¹⁴³	19.051 ⁷³	21.49 ²⁰	55.915 ⁶⁸	46.98 ²⁸
Mar. 1.4	46.681 ¹²⁵	28.71 ¹¹⁴	18.978 ¹¹⁰	21.29 ⁵	55.847 ¹⁰⁹	47.26 ³⁸
11.4	46.556 ¹⁵⁴	29.85 ⁸²	18.868 ¹⁴¹	21.24 ⁸	55.738 ¹⁴¹	47.64 ⁴⁴
21.3	46.402 ¹⁷²	30.67 ⁵²	18.727 ¹⁵⁸	21.32 ¹⁸	55.597 ¹⁶²	48.08 ⁴⁶
31.3	46.230 ¹⁸¹	31.19 ²²	18.569 ¹⁶⁷	21.50 ²⁸	55.435 ¹⁷³	48.54 ⁴⁶
Apr. 10.3	46.049 ¹⁸²	31.41 ⁹	18.402 ¹⁶⁹	21.78 ³⁴	55.262 ¹⁷⁶	49.00 ⁴⁴
20.3	45.867 ¹⁷⁴	31.32 ³⁸	18.233 ¹⁶¹	22.12 ⁴⁰	55.086 ¹⁶⁷	49.44 ³⁹
30.2	45.693 ¹⁶⁰	30.94 ⁶⁶	18.072 ¹⁴⁵	22.52 ⁴⁴	54.919 ¹⁵¹	49.83 ³⁴
May 10.2	45.533 ¹³⁷	30.28 ⁹²	17.927 ¹²⁶	22.96 ⁴⁸	54.768 ¹³¹	50.17 ²⁹
20.2	45.396 ¹¹³	29.36 ¹¹³	17.801 ⁹⁶	23.44 ⁵¹	54.637 ¹⁰³	50.46 ²⁴
30.2	45.283 ⁸²	28.23 ¹³⁷	17.705 ⁶⁷	23.95 ⁵²	54.534 ⁷²	50.70 ¹⁹
June 9.1	45.201 ⁵²	26.86 ¹⁵⁶	17.638 ³⁶	24.47 ⁵⁵	54.462 ⁴¹	50.89 ¹³
19.1	45.149 ²⁰	25.30 ¹⁶⁷	17.602 ⁴	25.02 ⁵⁴	54.421 ⁷	51.02 ⁸
29.1	45.129 ¹³	23.63 ¹⁷⁷	17.598 ²⁹	25.56 ⁵⁴	54.414 ²⁶	51.10 ³
July 9.0	45.142 ⁴⁵	21.86 ¹⁸³	17.627 ⁵⁹	26.10 ⁵⁰	54.440 ⁵⁹	51.13 ⁴
19.0	45.187 ⁷⁷	20.03 ¹⁸⁰	17.686 ⁹²	26.60 ⁴⁵	54.499 ⁹⁰	51.09 ¹¹
29.0	45.264 ¹⁰⁷	18.23 ¹⁷⁴	17.778 ¹¹⁸	27.05 ³⁷	54.589 ¹²⁰	50.98 ¹⁸
Aug. 8.0	45.371 ¹³⁸	16.49 ¹⁵⁹	17.896 ¹⁴⁹	27.42 ²⁶	54.709 ¹⁵⁰	50.80 ²⁹
17.9	45.509 ¹⁶⁶	14.90 ¹³⁸	18.045 ¹⁷³	27.68 ¹¹	54.859 ¹⁷⁶	50.51 ³⁹
27.9	45.675 ¹⁹⁵	13.52 ¹¹⁰	18.218 ²⁰⁰	27.79 ⁵	55.035 ²⁰³	50.12 ⁵²
Sept. 6.9	45.870 ²¹⁹	12.42 ⁷⁸	18.418 ²²²	27.74 ²⁴	55.238 ²²⁷	49.60 ⁶⁵
16.9	46.089 ²⁴³	11.64 ⁴⁰	18.640 ²⁴⁵	27.50 ⁴⁵	55.465 ²⁵¹	48.95 ⁷⁸
26.8	46.332 ²⁶²	11.24 ¹	18.885 ²⁶⁵	27.05 ⁶⁷	55.716 ²⁷²	48.17 ⁹³
Oct. 6.8	46.594 ²⁸¹	11.25 ⁴⁷	19.150 ²⁸²	26.38 ⁸⁸	55.988 ²⁹¹	47.24 ¹⁰⁴
16.8	46.875 ²⁹⁴	11.72 ⁸⁷	19.432 ²⁹⁶	25.50 ¹⁰⁶	56.279 ³⁰⁶	46.20 ¹¹⁵
26.7	47.169 ³⁰²	12.59 ¹²⁸	19.728 ³⁰⁴	24.44 ¹²¹	56.585 ³¹⁷	45.05 ¹²²
Nov. 5.7	47.471 ³⁰²	13.87 ¹⁶⁵	20.032 ³⁰⁷	23.23 ¹³⁶	56.902 ³²¹	43.83 ¹²⁴
15.7	47.773 ²⁹⁵	15.52 ¹⁹⁸	20.339 ³⁰³	21.87 ¹⁴⁵	57.223 ³¹⁷	42.59 ¹²³
25.7	48.068 ²⁷⁹	17.50 ²²⁴	20.642 ²⁸⁷	20.42 ¹⁴⁷	57.540 ³⁰⁶	41.36 ¹¹⁶
Dec. 5.6	48.347 ²⁵⁵	19.74 ²³⁹	20.929 ²⁶⁹	18.95 ¹⁴³	57.846 ²⁸⁵	40.20 ¹⁰⁶
15.6	48.602 ²²²	22.13 ²⁴⁹	21.198 ²³⁸	17.52 ¹³⁴	58.131 ²⁵⁴	39.14 ⁹⁰
25.6	48.824 ¹⁸¹	24.62 ²⁵⁰	21.436 ¹⁹⁷	16.18 ¹²²	58.385 ²¹⁶	38.24 ⁷²
35.6	49.005	27.12	21.633	14.96	58.601	37.52
Mean Place	44.861	8.29	17.192	37.03	54.008	61.11
Sec δ, Tan δ	1.038	-0.278	1.014	+0.166	1.055	+0.336
L α, L δ	-0.01	-0.2	0.00	-0.2	+0.01	-0.2
ω α, ω δ	-0.01	+0.8	+0.01	+0.8	+0.01	+0.8
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 331

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	η Cancri. Mag. 5.5		γ Cancri. Mag. 4.7		α Mali. Mag. 3.7	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 8 28	^o ['] 20 42	^h ^m 8 38	^o ['] 21 44	^h ^m 8 40	^o ['] 32 54
Jan.	0.6 13.536 ²⁰⁰	12.09 ⁵³	47.953 ²¹²	46.31 ⁵²	29.317 ¹⁸³	20.11 ³¹⁹
	10.5 13.736 ¹⁴⁹	11.56 ²⁹	48.165 ¹⁵⁹	45.79 ²⁷	29.500 ¹³⁰	23.30 ³¹⁸
	20.5 13.885 ⁹⁵	11.27 ⁹	48.324 ¹⁰⁸	45.52 ⁶	29.630 ⁷²	26.48 ³⁰⁸
	30.5 13.980 ⁴¹	11.18 ⁹	48.432 ⁵²	45.46 ¹⁶	29.702 ¹⁷	29.56 ²⁸⁸
Feb.	9.5 14.021 ¹¹	11.27 ²⁶	48.484 ¹	45.62 ³⁴	29.719 ³⁷	32.44 ²⁶⁵
	19.4 14.010 ⁶¹	11.53 ⁴²	48.483 ⁵¹	45.96 ⁴⁸	29.682 ⁸⁸	35.09 ²³⁴
Mar.	1.4 13.949 ¹⁰⁰	11.95 ⁴⁸	48.432 ⁹⁴	46.44 ⁵⁷	29.594 ¹²⁹	37.43 ¹⁹⁹
	11.4 13.849 ¹³⁷	12.43 ⁵⁴	48.338 ¹²⁹	47.01 ⁶¹	29.465 ¹⁶⁵	39.42 ¹⁶²
	21.4 13.712 ¹⁶¹	12.97 ⁵⁵	48.209 ¹⁵⁵	47.62 ⁶³	29.300 ¹⁸⁸	41.04 ¹²⁵
	31.3 13.551 ¹⁶⁸	13.52 ⁵⁴	48.054 ¹⁷⁰	48.25 ⁶⁰	29.112 ²⁰⁵	42.29 ⁸¹
Apr.	10.3 13.383 ¹⁷⁶	14.06 ⁵¹	47.884 ¹⁷⁴	48.85 ⁵⁵	28.907 ²¹¹	43.10 ⁴²
	20.3 13.207 ¹⁷⁰	14.57 ⁴²	47.710 ¹⁷¹	49.40 ⁴⁷	28.696 ²¹¹	43.52 ²
	30.2 13.037 ¹⁵⁶	14.99 ³⁶	47.539 ¹⁵⁹	49.87 ³⁹	28.485 ²⁰⁰	43.50 ⁴¹
May	10.2 12.881 ¹³⁶	15.35 ²⁷	47.380 ¹³⁹	50.26 ²⁹	28.285 ¹⁸⁴	43.09 ⁸¹
	20.2 12.745 ¹¹⁰	15.62 ²⁰	47.241 ¹¹⁴	50.55 ²⁰	28.101 ¹⁶³	42.28 ¹¹⁶
	30.2 12.635 ⁷⁸	15.82 ¹³	47.127 ⁸⁷	50.75 ¹²	27.938 ¹³⁶	41.12 ¹⁴⁹
June	9.1 12.557 ⁵⁰	15.95 ⁶	47.040 ⁵⁶	50.87 ¹	27.802 ¹⁰⁷	39.63 ¹⁸²
	19.1 12.507 ¹⁸	16.01 ³	46.984 ²⁵	50.88 ⁷	27.695 ⁷⁴	37.81 ²⁰⁷
	29.1 12.489 ¹⁹	15.98 ¹¹	46.959 ⁹	50.81 ¹⁵	27.621 ⁴⁰	35.74 ²²⁷
July	9.1 12.508 ⁵¹	15.87 ¹⁸	46.968 ⁴⁰	50.66 ²⁴	27.581 ⁵	33.47 ²³⁹
	19.0 12.559 ⁸⁰	15.69 ²⁴	47.008 ⁷²	50.42 ³³	27.576 ³⁰	31.08 ²⁴⁶
	29.0 12.639 ¹¹¹	15.45 ³²	47.080 ¹⁰³	50.09 ⁴⁴	27.606 ⁶⁹	28.62 ²⁴⁴
Aug.	8.0 12.750 ¹⁴⁴	15.13 ⁴⁴	47.183 ¹³²	49.65 ⁵³	27.675 ¹⁰⁴	26.18 ²³⁵
	17.9 12.894 ¹⁶⁹	14.69 ⁵⁵	47.315 ¹⁶¹	49.12 ⁶⁴	27.779 ¹⁴¹	23.83 ²¹⁴
	27.9 13.063 ¹⁹⁸	14.14 ⁶⁹	47.476 ¹⁸⁹	48.48 ⁷⁶	27.920 ¹⁷⁷	21.69 ¹⁸⁶
Sept.	6.9 13.261 ²²⁵	13.45 ⁷⁸	47.665 ²¹⁶	47.72 ⁸⁸	28.097 ²¹²	19.83 ¹⁵²
	16.9 13.486 ²⁴⁸	12.67 ⁹²	47.881 ²⁴²	46.84 ¹⁰¹	28.309 ²⁴⁴	18.31 ¹⁰⁹
	26.8 13.734 ²⁷²	11.75 ¹⁰²	48.123 ²⁶⁷	45.83 ¹¹¹	28.553 ²⁷³	17.22 ⁶²
Oct.	6.8 14.006 ²⁹²	10.73 ¹¹⁴	48.390 ²⁸⁸	44.72 ¹²²	28.826 ³⁰⁰	16.60 ⁷
	16.8 14.298 ³⁰⁹	9.59 ¹²¹	48.678 ³⁰⁷	43.50 ¹²⁹	29.126 ³¹⁹	16.53 ⁴⁷
	26.8 14.607 ³²⁰	8.38 ¹²⁵	48.985 ³²¹	42.21 ¹³³	29.445 ³³¹	17.00 ¹⁰⁰
Nov.	5.7 14.927 ³²⁶	7.13 ¹²⁹	49.306 ³²⁹	40.88 ¹³³	29.776 ³³⁸	18.00 ¹⁵⁴
	15.7 15.253 ³²⁴	5.84 ¹²⁴	49.635 ³²⁹	39.55 ¹²⁷	30.114 ³³¹	19.54 ²⁰²
	25.7 15.577 ³¹⁵	4.60 ¹¹³	49.964 ³²⁰	38.28 ¹¹⁹	30.445 ³¹⁷	21.56 ²⁴²
Dec.	5.6 15.892 ²⁹⁴	3.47 ¹⁰⁰	50.284 ³⁰³	37.09 ¹⁰³	30.762 ²⁹³	23.98 ²⁷⁶
	15.6 16.186 ²⁶⁵	2.47 ⁸⁴	50.587 ²⁷⁴	36.06 ⁸⁴	31.055 ²⁵⁷	26.74 ²⁹⁸
	25.6 16.451 ²²⁶	1.63 ⁶⁵	50.861 ²³⁸	35.22 ⁶³	31.312 ²¹³	29.72 ³¹³
	35.6 16.677	0.98	51.099	34.59	31.525	32.85
Mean Place	12.078	25.51	46.536	59.99	27.440	16.17
Sec δ , Tan δ	1.069	+0.378	1.077	+0.399	1.191	-0.647
$L \alpha$, $L \delta$	+0.01	-0.2	+0.01	-0.3	-0.01	-0.3
$\omega \alpha$, $\omega \delta$	+0.02	+0.8	+0.02	+0.8	-0.03	+0.8
AUTHORITY	A. E.		A. E.		A. E.	

332 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	δ Argūs. Mag. 2.0		ε Hydræ. Mag. 3.5		ζ Hydræ. Mag. 3.3	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 8 42	° ′ 54 25	h m 8 42	° ′ 6 41	h m 8 51	° ′ 6 14
Jan. 0.6	35.486 ²⁰⁶	20.77 ³⁶⁶	40.242 ¹⁹⁷	70.10 ¹³⁹	17.756 ²⁰⁴	24.87 ¹⁴³
10.6	35.692 ¹³⁴	24.43 ³⁷³	40.439 ¹⁵⁰	68.71 ¹²¹	17.960 ¹⁵⁸	23.44 ¹²⁷
20.5	35.826 ⁵⁵	28.16 ³⁷¹	40.589 ¹⁰¹	67.50 ¹⁰⁰	18.118 ¹⁰⁹	22.17 ¹⁰³
30.5	35.881 ²⁰	31.87 ³⁵⁷	40.690 ⁵⁰	66.50 ⁷⁸	18.227 ⁵⁷	21.14 ⁸³
Feb. 9.5	35.861 ⁹³	35.44 ³³³	40.740 ¹	65.72 ⁵⁷	18.284 ⁸	20.31 ⁶⁰
19.5	35.768 ¹⁵⁹	38.77 ³⁰⁶	40.739 ⁴⁷	65.15 ³⁶	18.292 ³⁹	19.71 ³⁹
Mar. 1.4	35.609 ²¹⁷	41.83 ²⁷⁰	40.692 ⁸⁷	64.79 ¹⁸	18.253 ⁸⁰	19.32 ²¹
11.4	35.392 ²⁶³	44.53 ²²⁹	40.605 ¹¹⁹	64.61 ¹	18.173 ¹¹²	19.11 ²
21.4	35.129 ²⁹⁸	46.82 ¹⁸⁴	40.486 ¹⁴³	64.60 ¹³	18.061 ¹³⁸	19.09 ¹²
31.3	34.831 ³²²	48.66 ¹³⁶	40.343 ¹⁵⁷	64.73 ²⁵	17.923 ¹⁵¹	19.21 ²³
Apr. 10.3	34.509 ³³⁶	50.02 ⁸⁵	40.186 ¹⁶²	64.98 ³⁴	17.772 ¹⁵⁹	19.44 ³⁴
20.3	34.173 ³³⁸	50.87 ³⁵	40.024 ¹⁵⁸	65.32 ⁴²	17.613 ¹⁵⁶	19.78 ⁴²
30.3	33.835 ³²⁸	51.22 ¹⁶	39.866 ¹⁴⁸	65.74 ⁴⁸	17.457 ¹⁴⁸	20.20 ⁵¹
May 10.2	33.507 ³¹²	51.06 ⁶⁷	39.718 ¹³¹	66.22 ⁵⁴	17.309 ¹³²	20.71 ⁵⁵
20.2	33.195 ²⁸³	50.39 ¹¹⁴	39.587 ¹⁰⁹	66.76 ⁵⁸	17.177 ¹¹³	21.26 ⁵⁹
30.2	32.912 ²⁵²	49.25 ¹⁵⁹	39.478 ⁸⁴	67.34 ⁶¹	17.064 ⁸⁷	21.85 ⁶³
June 9.2	32.660 ²¹²	47.66 ²⁰¹	39.394 ⁵⁶	67.95 ⁶⁴	16.977 ⁶²	22.48 ⁶⁵
19.1	32.448 ¹⁶⁸	45.65 ²³⁶	39.338 ²⁸	68.59 ⁶⁴	16.915 ³⁵	23.13 ⁶⁵
29.1	32.280 ¹²⁰	43.29 ²⁶⁵	39.310 ¹	69.23 ⁶³	16.880 ⁵	23.78 ⁶⁴
July 9.1	32.160 ⁶⁷	40.64 ²⁸⁷	39.311 ³¹	69.86 ⁶⁰	16.875 ²³	24.42 ⁶¹
19.0	32.093 ¹²	37.77 ³⁰¹	39.342 ⁶⁰	70.46 ⁵⁴	16.898 ⁵⁴	25.03 ⁵⁴
29.0	32.081 ⁴⁵	34.76 ³⁰⁴	39.402 ⁸⁹	71.00 ⁴⁵	16.952 ⁷⁹	25.57 ⁴⁷
Aug. 8.0	32.126 ¹⁰¹	31.72 ²⁹⁹	39.491 ¹¹⁷	71.45 ³⁴	17.031 ¹⁰⁸	26.04 ³⁴
18.0	32.227 ¹⁶¹	28.73 ²⁸¹	39.608 ¹⁴⁴	71.79 ¹⁸	17.139 ¹³⁷	26.38 ²⁰
27.9	32.388 ²¹⁹	25.92 ²⁵⁶	39.752 ¹⁷¹	71.97 ⁰	17.276 ¹⁶²	26.58 ⁰
Sept. 6.9	32.607 ²⁷²	23.36 ²¹⁶	39.923 ¹⁹⁷	71.97 ²⁰	17.438 ¹⁹²	26.58 ²⁰
16.9	32.879 ³²²	21.20 ¹⁷²	40.120 ²²³	71.77 ⁴³	17.630 ²¹⁶	26.38 ⁴³
26.9	33.201 ³⁶⁵	19.48 ¹¹⁹	40.343 ²⁴⁶	71.34 ⁶⁷	17.846 ²⁴²	25.95 ⁶⁸
Oct. 6.8	33.566 ⁴⁰¹	18.29 ⁵⁷	40.589 ²⁶⁸	70.67 ⁹¹	18.088 ²⁶³	25.27 ⁹¹
16.8	33.967 ⁴²⁸	17.72 ⁵	40.857 ²⁸⁶	69.76 ¹¹⁵	18.351 ²⁸⁵	24.36 ¹¹⁵
26.8	34.395 ⁴⁴³	17.77 ⁷⁰	41.143 ³⁰⁰	68.61 ¹³³	18.636 ²⁹⁹	23.21 ¹³⁵
Nov. 5.7	34.838 ⁴⁴³	18.47 ¹³⁰	41.443 ³⁰⁸	67.28 ¹⁴⁸	18.935 ³⁰⁸	21.86 ¹⁵²
15.7	35.281 ⁴³⁰	19.77 ¹⁹²	41.751 ³⁰⁹	65.80 ¹⁶¹	19.243 ³⁰⁹	20.34 ¹⁶³
25.7	35.711 ⁴⁰⁵	21.69 ²⁴⁷	42.060 ³⁰¹	64.19 ¹⁶⁶	19.552 ³⁰⁵	18.71 ¹⁷⁰
5.7	36.116 ³⁶⁵	24.16 ²⁹⁵	42.361 ²⁸³	62.53 ¹⁶⁵	19.857 ²⁸⁸	17.01 ¹⁶⁹
Dec. 15.6	36.481 ³¹²	27.11 ³²⁸	42.644 ²⁵⁷	60.88 ¹⁵⁸	20.145 ²⁶³	15.32 ¹⁶⁵
25.6	36.793 ²⁴⁸	30.39 ³⁵⁴	42.901 ²²²	59.30 ¹⁴⁷	20.408 ²³⁰	13.67 ¹⁵²
35.6	37.041	33.93	43.123	57.83	20.638	12.15
Mean Place	32.760	20.22	38.831	81.19	16.374	35.76
Sec δ, Tan δ	1.719	-1.398	1.007	+0.118	1.006	+0.109
L α, L δ	-0.03	-0.3	0.00	-0.3	0.00	-0.3
ω α, ω δ	-0.06	+0.8	+0.01	+0.8	0.00	+0.7
AUTHORITY	A. E.		A. N.		A. E.	

334 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ξ Cancri. Mag. 5.2		λ Argûs. Mag. 2.2		β Argûs. Mag. 1.8	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 9 4	° ' " 21	h m 9 5	° ' " 43 7	h m 9 12	° ' " 69 23
Jan. 0.6	54.022 ²³⁵	28.78 ⁶⁰	9.703 ²²⁰	2.75 ³⁴³	25.34 ³⁵	41.16 ³⁵⁷
10.6	54.257 ¹⁸⁷	28.18 ³⁴	9.923 ¹⁶²	6.18 ³⁴⁸	25.69 ²³	44.73 ³⁷⁹
20.6	54.444 ¹³⁵	27.84 ⁸	10.085 ¹⁰¹	9.66 ³⁴⁴	25.92 ¹¹	48.52 ³⁸⁶
30.5	54.579 ⁸¹	27.76 ¹⁶	10.186 ³⁵	13.10 ³³⁴	26.03 ⁰	52.38 ³⁸⁴
Feb. 9.5	54.660 ²⁶	27.92 ³⁶	10.221 ²⁴	16.44 ³¹⁴	26.03 ¹²	56.22 ³⁷¹
19.5	54.686 ²⁵	28.28 ⁵³	10.197 ⁸²	19.58 ²⁸⁵	25.91 ²³	59.93 ³⁵⁰
Mar. 1.4	54.661 ⁷¹	28.81 ⁶⁵	10.115 ¹³¹	22.43 ²⁵⁴	25.68 ³²	63.43 ³²⁴
11.4	54.590 ¹⁰⁹	29.46 ⁷²	9.984 ¹⁷¹	24.97 ²¹⁵	25.36 ⁴⁰	66.67 ²⁸⁸
21.4	54.481 ¹³⁸	30.18 ⁷⁵	9.813 ²⁰⁵	27.12 ¹⁷⁶	24.96 ⁴⁷	69.55 ²⁴⁹
31.4	54.343 ¹⁵⁸	30.93 ⁷³	9.608 ²²⁷	28.88 ¹³²	24.49 ⁵³	72.04 ¹⁹⁹
Apr. 10.3	54.185 ¹⁶⁷	31.66 ⁶⁸	9.381 ²⁴²	30.20 ⁸⁵	23.96 ⁵⁵	74.03 ¹⁵³
20.3	54.018 ¹⁶⁷	32.34 ⁶⁰	9.139 ²⁴⁴	31.05 ⁴¹	23.41 ⁵⁸	75.56 ¹⁰⁰
30.3	53.851 ¹⁶⁰	32.94 ⁵⁰	8.895 ²⁴⁰	31.46 ⁵	22.83 ⁵⁸	76.56 ⁴⁶
May 10.3	53.691 ¹⁴⁵	33.44 ³⁹	8.655 ²²⁹	31.41 ⁵⁰	22.25 ⁵⁷	77.02 ⁵
20.2	53.546 ¹²⁵	33.83 ²⁸	8.426 ²¹¹	30.91 ⁹⁷	21.68 ⁵⁵	76.97 ⁶²
30.2	53.421 ¹⁰¹	34.11 ¹⁶	8.215 ¹⁸⁶	29.94 ¹³⁴	21.13 ⁵¹	76.35 ¹¹¹
June 9.2	53.320 ⁷⁴	34.27 ⁵	8.029 ¹⁶⁰	28.60 ¹⁷³	20.62 ⁴⁷	75.24 ¹⁶¹
19.1	53.246 ⁴⁵	34.32 ⁶	7.869 ¹²⁸	26.87 ²⁰⁷	20.15 ⁴⁰	73.63 ²⁰⁷
29.1	53.201 ¹⁵	34.26 ¹⁸	7.741 ⁸⁸	24.80 ²³⁴	19.75 ³³	71.56 ²⁴³
July 9.1	53.186 ¹⁵	34.08 ²⁸	7.653 ⁵⁴	22.46 ²⁵⁴	19.42 ²⁴	69.13 ²⁷⁴
19.1	53.201 ⁴⁷	33.80 ⁴⁰	7.599 ¹³	19.92 ²⁶⁸	19.18 ¹⁶	66.39 ²⁹⁸
29.0	53.248 ⁷⁶	33.40 ⁵²	7.586 ²⁹	17.24 ²⁷³	19.02 ⁷	63.41 ³¹³
Aug. 8.0	53.324 ¹⁰⁶	32.88 ⁶⁴	7.615 ⁷⁴	14.51 ²⁶⁸	18.95 ⁴	60.28 ³¹⁸
18.0	53.430 ¹³⁵	32.24 ⁷⁷	7.689 ¹¹⁷	11.83 ²⁵⁶	18.99 ¹⁴	57.10 ³¹³
27.9	53.565 ¹⁶⁵	31.47 ⁹⁰	7.806 ¹⁶¹	9.27 ²²⁹	19.13 ²⁵	53.97 ²⁹⁴
Sept. 6.9	53.730 ¹⁹⁴	30.57 ¹⁰³	7.967 ²⁰⁷	6.98 ¹⁹⁸	19.38 ³⁴	51.03 ²⁶⁶
16.9	53.924 ²²³	29.54 ¹¹⁶	8.174 ²⁴⁷	5.00 ¹⁵⁸	19.72 ⁴⁴	48.37 ²²⁶
26.9	54.147 ²⁵⁰	28.38 ¹²⁸	8.421 ²⁸⁷	3.42 ¹⁰⁸	20.16 ⁵²	46.11 ¹⁷⁸
Oct. 6.8	54.397 ²⁷⁷	27.10 ¹³⁸	8.708 ³²¹	2.34 ⁵³	20.68 ⁶⁰	44.33 ¹²⁰
16.8	54.674 ²⁹⁹	25.72 ¹⁴⁶	9.029 ³⁵⁰	1.81 ⁶	21.28 ⁶⁴	43.13 ⁶⁰
26.8	54.973 ³¹⁷	24.26 ¹⁵⁰	9.379 ³⁶⁶	1.87 ⁶⁵	21.92 ⁶⁸	42.53 ⁵
Nov. 5.8	55.290 ³³⁰	22.76 ¹⁵⁰	9.745 ³⁷⁷	2.52 ¹²⁵	22.60 ⁶⁹	42.58 ⁷⁴
15.7	55.620 ³³⁵	21.26 ¹⁴⁴	10.122 ³⁷⁵	3.77 ¹⁸¹	23.29 ⁶⁷	43.32 ¹³⁹
25.7	55.955 ³³²	19.82 ¹³²	10.497 ³⁶³	5.58 ²³⁰	23.96 ⁶⁴	44.71 ²⁰²
Dec. 5.7	56.287 ³¹⁷	18.50 ¹¹⁸	10.860 ³³⁴	7.88 ²⁷¹	24.60 ⁵⁸	46.73 ²⁵⁵
15.6	56.604 ²⁹⁶	17.32 ⁹⁷	11.194 ³⁰⁰	10.59 ³⁰⁶	25.18 ⁵¹	49.28 ³⁰²
25.6	56.900 ²⁵⁹	16.35 ⁷⁴	11.494 ²⁵⁴	13.65 ³³¹	25.69 ⁴⁰	52.30 ³³⁷
35.6	57.159	15.61	11.748	16.96	26.09	55.67
Mean Place	52.722	42.71	7.582	2.24	21.01	44.94
Sec δ, Tan δ	1.081	+0.411	1.370	-0.936	2.842	-2.660
L α, L δ	+0.01	-0.3	-0.02	-0.3	-0.05	-0.3
ω α, ω δ	+0.02	+0.7	-0.04	+0.7	-0.13	+0.7
AUTHORITY			A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 335

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	83 Cancri. Mag. 6.6		ι Argūs. Mag. 2.3		40 Lynceis. Mag. 3.3	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 9 14	18 1	h m 9 14	58 56	h m 9 16	34 42
Jan. 0.6	39.153 ²³⁴	59.40 ⁸⁹	63.074 ²⁷⁸	48.44 ³⁵⁷	19.790 ²⁶⁷	67.49 ⁵
10.6	39.387 ¹⁹²	58.51 ⁶⁴	63.352 ¹⁹⁸	52.01 ³⁷³	20.057 ²¹⁹	67.54 ³²
20.6	39.579 ¹⁴²	57.87 ³⁷	63.550 ¹¹⁶	55.74 ³⁷⁹	20.276 ¹⁶¹	67.86 ⁶⁵
30.5	39.721 ⁸⁸	57.50 ¹⁴	63.666 ³¹	59.53 ³⁷³	20.437 ¹⁰³	68.51 ⁸⁸
Feb. 9.5	39.809 ³³	57.36 ⁸	63.697 ⁵¹	63.26 ³⁵⁸	20.540 ³⁹	69.39 ¹⁰⁹
19.5	39.842 ¹⁵	57.44 ²⁷	63.646 ¹²⁶	66.84 ³³⁶	20.579 ¹⁹	70.48 ¹²²
Mar. 1.4	39.827 ⁶⁰	57.71 ⁴⁴	63.520 ¹⁹⁵	70.20 ³⁰⁶	20.560 ⁷⁰	71.70 ¹³¹
11.4	39.767 ¹⁰⁰	58.15 ⁵⁴	63.325 ²⁵²	73.26 ²⁷⁰	20.490 ¹¹³	73.01 ¹³⁰
21.4	39.667 ¹²⁶	58.69 ⁵⁹	63.073 ³⁰⁰	75.96 ²²⁸	20.377 ¹⁵¹	74.31 ¹²²
31.4	39.541 ¹⁴⁷	59.28 ⁶⁴	62.773 ³³⁴	78.24 ¹⁸³	20.226 ¹⁷⁶	75.53 ¹¹⁴
Apr. 10.3	39.394 ¹⁵⁷	59.92 ⁶³	62.439 ³⁵⁷	80.07 ¹³⁵	20.050 ¹⁸⁶	76.67 ⁹⁴
20.3	39.237 ¹⁶⁰	60.55 ⁶¹	62.082 ³⁶⁹	81.42 ⁸⁴	19.864 ¹⁹¹	77.61 ⁷⁷
30.3	39.077 ¹⁵⁴	61.16 ⁵⁵	61.713 ³⁷⁰	82.26 ³³	19.673 ¹⁸⁶	78.38 ⁵²
May 10.3	38.923 ¹⁴²	61.71 ⁴⁷	61.343 ³⁶¹	82.59 ¹⁹	19.487 ¹⁷²	78.90 ³³
20.2	38.781 ¹²⁵	62.18 ³⁹	60.982 ³⁴²	82.40 ⁷¹	19.315 ¹⁵⁵	79.23 ⁶
30.2	38.656 ¹⁰²	62.57 ³¹	60.640 ³¹⁷	81.69 ¹¹⁹	19.160 ¹²⁹	79.29 ¹⁶
June 9.2	38.554 ⁷⁷	62.88 ²³	60.323 ²⁸²	80.50 ¹⁶⁵	19.031 ⁹⁹	79.13 ⁴⁰
19.1	38.477 ⁵⁰	63.11 ¹⁵	60.041 ²⁴⁰	78.85 ²⁰⁷	18.932 ⁶⁵	78.73 ⁶⁰
29.1	38.427 ²³	63.26 ³	59.801 ¹⁹³	76.78 ²⁴²	18.867 ³³	78.13 ⁷⁸
July 9.1	38.404 ⁶	63.29 ⁶	59.608 ¹³⁸	74.36 ²⁷¹	18.834 ⁰	77.35 ⁹⁵
19.1	38.410 ³⁴	63.23 ¹⁷	59.470 ⁸¹	71.65 ²⁹²	18.834 ³⁴	76.40 ¹¹⁰
29.0	38.444 ⁶⁴	63.06 ²⁷	59.389 ¹⁸	68.73 ³⁰⁴	18.868 ⁷¹	75.30 ¹²⁵
Aug. 8.0	38.508 ⁹⁴	62.79 ⁴²	59.371 ⁴⁸	65.69 ³⁰⁵	18.939 ¹⁰²	74.05 ¹³⁸
18.0	38.602 ¹²¹	62.37 ⁵⁵	59.419 ¹¹⁵	62.64 ²⁹⁸	19.041 ¹³⁸	72.67 ¹⁵⁰
27.9	38.723 ¹⁵⁰	61.82 ⁷⁰	59.534 ¹⁸³	59.66 ²⁷⁸	19.179 ¹⁶⁸	71.17 ¹⁵⁹
Sept. 6.9	38.873 ¹⁸¹	61.12 ⁸⁷	59.717 ²⁵⁰	56.88 ²⁴⁷	19.347 ²⁰⁴	69.58 ¹⁶⁷
16.9	39.054 ²⁰⁸	60.25 ¹⁰²	59.967 ³¹³	54.41 ²⁰⁸	19.551 ²⁴⁰	67.91 ¹⁷²
26.9	39.262 ²³⁹	59.23 ¹¹⁸	60.280 ³⁷⁰	52.33 ¹⁵⁹	19.791 ²⁶⁷	66.19 ¹⁷⁷
Oct. 6.8	39.501 ²⁶³	58.05 ¹³³	60.650 ⁴²⁰	50.74 ¹⁰²	20.058 ²⁹⁹	64.42 ¹⁷⁵
16.8	39.764 ²⁸⁷	56.72 ¹⁴⁴	61.070 ⁴⁵⁹	49.72 ⁴²	20.357 ³²⁵	62.67 ¹⁷²
26.8	40.051 ³⁰⁷	55.28 ¹⁵³	61.529 ⁴⁸⁶	49.30 ²⁴	20.682 ³⁴⁷	60.95 ¹⁶⁴
Nov. 5.8	40.358 ³²²	53.75 ¹⁵⁷	62.015 ⁴⁹⁷	49.54 ⁹⁰	21.029 ³⁶⁵	59.31 ¹⁴⁹
15.7	40.680 ³²⁷	52.18 ¹⁵⁷	62.512 ⁴⁹⁴	50.44 ¹⁵³	21.394 ³⁷⁰	57.82 ¹³²
25.7	41.007 ³²⁶	50.61 ¹⁵⁰	63.006 ⁴⁷³	51.97 ²¹¹	21.764 ³⁶⁸	56.50 ¹⁰⁷
Dec. 5.7	41.333 ³¹⁴	49.11 ¹³⁸	63.479 ⁴³⁶	54.08 ²⁶³	22.132 ³⁵⁶	55.43 ⁷⁹
15.6	41.647 ²⁹¹	47.73 ¹²⁴	63.915 ³⁸⁵	56.71 ³⁰⁷	22.488 ³³⁰	54.64 ⁵⁰
25.6	41.938 ²⁶²	46.49 ¹⁰²	64.300 ³²⁴	59.78 ³⁴⁴	22.818 ²⁹⁸	54.14 ¹⁷
35.6	42.200	45.47	64.624	63.22	23.116	53.97
Mean Place	37.896	72.44	60.099	51.17	18.516	83.77
Sec δ, Tan δ	1.052	+0.326	1.939	-1.661	1.217	+0.693
L α, L δ	+0.01	-0.3	-0.03	-0.3	+0.01	-0.3
ω α, ω δ	+0.02	+0.7	-0.08	+0.7	+0.03	+0.7
AUTHORITY	A. E.		A. N.		A. E.	

336 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	h Mali. Mag. 4·9		κ Argūs. Mag. 2·6		α Hydræ. Mag. 2·2	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 9 18	° ′ 25 37	h m 9 19	° ′ 54 40	h m 9 23	° ′ 8 19
Jan. 0·6	3·767 ²²⁰	62·91 ²⁹¹	44·435 ²⁶⁸	36·14 ³⁵¹	46·664 ²²⁴	17·92 ²²³
10·6	3·987 ¹⁷³	65·82 ²⁹¹	44·703 ¹⁹⁸	39·65 ³⁶⁹	46·888 ¹⁷⁸	20·15 ²¹³
20·6	4·160 ¹²¹	68·73 ²⁸²	44·901 ¹²³	43·34 ³⁷¹	47·066 ¹³³	22·28 ¹⁹⁶
30·5	4·281 ⁶⁷	71·55 ²⁶⁶	45·024 ⁴⁶	47·05 ³⁶⁶	47·199 ⁸²	24·24 ¹⁷⁷
Feb. 9·5	4·348 ¹⁵	74·21 ²⁴⁵	45·070 ²⁷	50·71 ³⁵³	47·281 ³⁴	26·01 ¹⁵³
19·5	4·363 ³⁴	76·66 ²¹⁸	45·043 ⁹⁹	54·24 ³²⁸	47·315 ¹³	27·54 ¹²⁸
Mar. 1·4	4·329 ⁷⁸	78·84 ¹⁸⁹	44·944 ¹⁶⁰	57·52 ²⁹⁹	47·302 ⁵⁵	28·82 ¹⁰²
11·4	4·251 ¹¹⁴	80·73 ¹⁵⁶	44·784 ²¹¹	60·51 ²⁶²	47·247 ⁹²	29·84 ⁷⁶
21·4	4·137 ¹⁴⁴	82·29 ¹²¹	44·573 ²⁵⁵	63·13 ²²²	47·155 ¹¹⁹	30·60 ⁵¹
31·4	3·993 ¹⁶³	83·50 ⁸⁷	44·318 ²⁸⁶	65·35 ¹⁷⁸	47·036 ¹³⁵	31·11 ²⁹
Apr. 10·3	3·830 ¹⁷⁵	84·37 ⁵²	44·032 ³⁰⁸	67·13 ¹³²	46·901 ¹⁴⁹	31·40 ¹
20·3	3·655 ¹⁷⁸	84·89 ¹⁶	43·724 ³¹⁹	68·45 ⁸¹	46·752 ¹⁵³	31·41 ¹⁷
30·3	3·477 ¹⁷⁵	85·05 ¹⁹	43·405 ³²⁰	69·26 ³⁰	46·599 ¹⁴⁸	31·24 ⁴⁰
May 10·3	3·302 ¹⁶⁵	84·86 ⁵³	43·085 ³¹¹	69·56 ¹⁹	46·451 ¹⁴⁰	30·84 ⁵⁸
20·2	3·137 ¹⁵¹	84·33 ⁸⁵	42·774 ²⁹⁷	69·37 ⁷⁰	46·311 ¹²⁵	30·26 ⁷³
30·2	2·986 ¹³¹	83·48 ¹¹⁵	42·477 ²⁷¹	68·67 ¹¹⁶	46·186 ¹¹⁰	29·53 ⁹¹
June 9·2	2·855 ¹⁰⁹	82·33 ¹⁴²	42·206 ²⁴³	67·51 ¹⁶¹	46·076 ⁸⁶	28·62 ¹⁰⁴
19·1	2·746 ⁸⁵	80·91 ¹⁶⁵	41·963 ²⁰⁷	65·90 ²⁰¹	45·990 ⁶²	27·58 ¹¹⁴
29·1	2·661 ⁵⁶	79·26 ¹⁸⁵	41·756 ¹⁶³	63·89 ²³⁹	45·928 ⁴⁰	26·44 ¹²²
July 9·1	2·605 ²⁸	77·41 ¹⁹⁷	41·593 ¹¹⁶	61·50 ²⁶³	45·888 ¹³	25·22 ¹²⁶
19·1	2·577 ²	75·44 ²⁰⁵	41·477 ⁶⁸	58·87 ²⁸³	45·875 ¹⁴	23·96 ¹²⁶
29·0	2·579 ³⁴	73·39 ²⁰⁶	41·409 ¹²	56·04 ²⁹⁷	45·889 ⁴²	22·70 ¹²³
Aug. 8·0	2·613 ⁶⁸	71·33 ¹⁹⁹	41·397 ⁴⁵	53·07 ²⁹⁶	45·931 ⁷⁰	21·47 ¹¹²
18·0	2·681 ¹⁰⁰	69·34 ¹⁸⁵	41·442 ¹⁰⁵	50·11 ²⁹⁰	46·001 ¹⁰⁰	20·35 ⁹⁵
28·0	2·781 ¹³⁵	67·49 ¹⁶²	41·547 ¹⁶²	47·21 ²⁶⁸	46·101 ¹²⁹	19·40 ⁷³
Sept. 6·9	2·916 ¹⁶⁹	65·87 ¹³⁴	41·709 ²²³	44·53 ²⁴⁰	46·230 ¹⁵⁷	18·67 ⁵⁰
16·9	3·085 ²⁰³	64·53 ⁹⁷	41·932 ²⁷⁹	42·13 ²⁰¹	46·387 ¹⁹²	18·17 ²¹
26·9	3·288 ²³⁶	63·56 ⁵⁵	42·211 ³³⁰	40·12 ¹⁵³	46·579 ²¹⁹	17·96 ¹³
Oct. 6·9	3·524 ²⁶⁵	63·01 ⁹	42·541 ³⁷⁸	38·59 ⁹⁷	46·798 ²⁴³	18·09 ⁵¹
16·8	3·789 ²⁹¹	62·92 ⁴¹	42·919 ⁴¹⁵	37·62 ³⁶	47·041 ²⁷²	18·60 ⁸⁴
26·8	4·080 ³¹¹	63·33 ⁸⁸	43·334 ⁴³⁹	37·26 ²⁸	47·313 ²⁹¹	19·44 ¹²⁰
Nov. 5·8	4·391 ³²⁴	64·21 ¹³⁷	43·773 ⁴⁵⁴	37·54 ⁹²	47·604 ³⁰⁶	20·64 ¹⁵⁰
15·7	4·715 ³²⁸	65·58 ¹⁸⁰	44·227 ⁴⁵³	38·46 ¹⁵⁴	47·910 ³¹¹	22·14 ¹⁸⁰
25·7	5·043 ³²²	67·38 ²¹⁹	44·680 ⁴³⁸	40·00 ²¹¹	48·221 ³⁰⁹	23·94 ²⁰²
Dec. 5·7	5·365 ³⁰⁸	69·57 ²⁴⁹	45·118 ⁴⁰⁷	42·11 ²⁶²	48·530 ³⁰¹	25·96 ²¹⁶
15·6	5·673 ²⁸⁰	72·06 ²⁷²	45·525 ³⁶³	44·73 ³⁰²	48·831 ²⁷⁷	28·12 ²²³
25·6	5·953 ²⁴⁶	74·78 ²⁸⁵	45·888 ³⁰⁷	47·75 ³³⁵	49·108 ²⁴⁵	30·35 ²²⁵
35·6	6·199	77·63	46·195	51·10	49·353	32·60
Mean Place	2·141	59·77	41·793	38·64	45·294	11·06
Sec δ, Tan δ	1·109	-0·480	1·730	-1·411	1·011	-0·146
L α, L δ	-0·01	-0·3	-0·02	-0·3	0·00	-0·3
ω α, ω δ	-0·02	+0·7	-0·07	+0·7	-0·01	+0·6
AUTHORITY			A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 337

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ψ Argûs. Mag. 3·6		θ Ursæ Majoris. Mag. 3·3				ξ Leonis. Mag. 5·1	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.		
	h m	° ' "	h m	° ' "	h m	° ' "		
	9 27	40 7	9 27	52 1	9 27	11 38		
Jan. 0·6	39·427 ²⁴³	29·60 ³²⁸	40·414 ³⁴⁸	42·41 ⁸⁴	45·842 ²³⁹	34·08 ¹²⁸		
10·6	39·670 ¹⁸⁹	32·88 ³³⁷	40·762 ²⁸³	43·25 ¹²⁰	46·081 ¹⁹⁷	32·80 ¹⁰⁶		
20·6	39·859 ¹³²	36·25 ³³⁶	41·045 ²¹³	44·45 ¹⁵⁴	46·278 ¹⁴⁸	31·74 ⁸¹		
30·5	39·991 ⁶⁹	39·61 ³²⁷	41·258 ¹³⁸	45·99 ¹⁸²	46·426 ⁹⁸	30·93 ⁵⁷		
Feb. 9·5	40·060 ¹¹	42·88 ³¹²	41·396 ⁵⁷	47·81 ¹⁹⁹	46·524 ⁴⁶	30·36 ³³		
19·5	40·071 ⁴³	46·00 ²⁸⁵	41·453 ²¹	49·80 ²⁰⁸	46·570 ³	30·03 ¹⁰		
Mar. 1·5	40·028 ⁹⁶	48·85 ²⁵⁶	41·432 ⁸⁹	51·88 ²⁰⁸	46·567 ⁴⁷	29·93 ⁹		
11·4	39·932 ¹³⁴	51·41 ²²¹	41·343 ¹⁵¹	53·96 ²⁰⁰	46·520 ⁸⁵	30·02 ²⁵		
21·4	39·798 ¹⁷¹	53·62 ¹⁸³	41·192 ²⁰⁶	55·96 ¹⁸⁰	46·435 ¹¹⁴	30·27 ³⁷		
31·4	39·627 ¹⁹⁶	55·45 ¹⁴²	40·986 ²⁴⁰	57·76 ¹⁵⁶	46·321 ¹³⁴	30·64 ⁴⁶		
Apr. 10·3	39·431 ²¹¹	56·87 ¹⁰¹	40·746 ²⁵⁹	59·32 ¹²⁶	46·187 ¹⁴⁷	31·10 ⁵²		
20·3	39·220 ²¹⁹	57·88 ⁵⁵	40·487 ²⁷²	60·58 ⁹¹	46·040 ¹⁵¹	31·62 ⁵⁴		
30·3	39·001 ²²²	58·43 ¹³	40·215 ²⁷⁰	61·49 ⁵⁵	45·889 ¹⁴⁷	32·16 ⁵⁶		
May 10·3	38·779 ²¹³	58·56 ³¹	39·945 ²⁶⁰	62·04 ¹⁴	45·742 ¹³⁷	32·72 ⁵⁵		
20·2	38·566 ²⁰⁰	58·25 ⁷³	39·685 ²³⁵	62·18 ²⁴	45·605 ¹²³	33·27 ⁵³		
30·2	38·366 ¹⁸⁰	57·52 ¹¹³	39·450 ²⁰⁴	61·94 ⁶¹	45·482 ¹⁰³	33·80 ⁵¹		
June 9·2	38·186 ¹⁵⁸	56·39 ¹⁵⁰	39·246 ¹⁶⁹	61·33 ⁹⁸	45·379 ⁸²	34·31 ⁴⁶		
19·2	38·028 ¹³³	54·89 ¹⁸⁵	39·077 ¹²⁹	60·35 ¹²⁶	45·297 ⁵⁸	34·77 ⁴¹		
29·1	37·895 ¹⁰⁰	53·04 ²¹²	38·948 ⁸⁵	59·09 ¹⁵⁸	45·239 ³²	35·18 ³⁵		
July 9·1	37·795 ⁶⁶	50·92 ²³⁵	38·863 ³⁶	57·51 ¹⁸⁰	45·207 ⁶	35·53 ²⁸		
19·1	37·729 ³³	48·57 ²⁵⁰	38·827 ¹¹	55·71 ²⁰³	45·201 ²⁰	35·81 ¹⁹		
29·1	37·696 ⁷	46·07 ²⁵⁷	38·838 ⁵⁷	53·68 ²²⁰	45·221 ⁴⁸	36·00 ⁷		
Aug. 8·0	37·703 ⁴⁸	43·50 ²⁵⁷	38·895 ¹⁰⁵	51·48 ²³³	45·269 ⁷⁶	36·07 ⁶		
18·0	37·751 ⁸⁹	40·93 ²⁴⁵	39·000 ¹⁴⁹	49·15 ²⁴¹	45·345 ¹⁰⁴	36·01 ²⁰		
28·0	37·840 ¹³²	38·48 ²²⁵	39·149 ¹⁹⁸	46·74 ²⁴⁶	45·449 ¹³³	35·81 ³⁸		
Sept. 6·9	37·972 ¹⁷⁵	36·23 ¹⁹⁵	39·347 ²⁴⁵	44·28 ²⁴⁶	45·582 ¹⁶²	35·43 ⁵⁷		
16·9	38·147 ²¹⁸	34·28 ¹⁶⁰	39·592 ²⁸⁸	41·82 ²⁴³	45·744 ¹⁹²	34·86 ⁷⁷		
26·9	38·365 ²⁵⁷	32·68 ¹¹⁵	39·880 ³³⁰	39·39 ²³⁴	45·936 ²²⁰	34·09 ⁹⁷		
Oct. 6·9	38·622 ²⁹⁵	31·53 ⁶¹	40·210 ³⁷⁰	37·05 ²²²	46·156 ²⁴⁸	33·12 ¹¹⁸		
16·8	38·917 ³²⁵	30·92 ⁷	40·580 ⁴⁰⁶	34·83 ²⁰⁰	46·404 ²⁷⁴	31·94 ¹³⁶		
26·8	39·242 ³⁵¹	30·85 ⁵²	40·986 ⁴³⁷	32·83 ¹⁷⁸	46·678 ²⁹⁶	30·58 ¹⁵²		
Nov. 5·8	39·593 ³⁶⁵	31·37 ¹⁰⁸	41·423 ⁴⁵⁷	31·05 ¹⁴⁷	46·974 ³¹¹	29·06 ¹⁶³		
15·8	39·958 ³⁶⁸	32·45 ¹⁶³	41·880 ⁴⁷²	29·58 ¹¹⁵	47·285 ³²⁰	27·43 ¹⁷⁰		
25·7	40·326 ³⁶²	34·08 ²¹³	42·352 ⁴⁶⁶	28·43 ⁷³	47·605 ³²⁰	25·73 ¹⁷¹		
Dec. 5·7	40·688 ³⁴²	36·21 ²⁵⁶	42·818 ⁴⁵⁴	27·70 ³³	47·925 ³¹⁰	24·02 ¹⁶⁶		
15·7	41·030 ³¹³	38·77 ²⁹¹	43·272 ⁴²⁴	27·37 ¹²	48·235 ²⁹¹	22·36 ¹⁵⁴		
25·6	41·343 ²⁷²	41·68 ³¹⁵	43·696 ³⁸³	27·49 ⁵⁸	48·526 ²⁶²	20·82 ¹³⁹		
35·6	41·615	44·83	44·079	28·07	48·788	19·43		
Mean Place	37·480	30·14	39·054	61·55	44·629	45·60		
Sec δ , Tan δ	1·308	-0·843	1·625	+1·281	1·021	+0·206		
L α , L δ	-0·01	-0·3	+0·02	-0·3	0·00	-0·3		
ω α , ω δ	-0·04	+0·6	+0·07	+0·6	+0·01	+0·6		

AUTHORITY

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338 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	N Velorum. Mag. 3.0		κ Hydræ. Mag. 5.0		ο Leonis. Mag. 3.8	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 9 28	56 41	h m 9 36	13 58	h m 9 36	10 14
Jan. 0.6	53.855 ²⁹¹	19.53 ³⁴⁹	35.398 ²³⁴	44.61 ²⁴⁷	60.572 ²⁴⁴	41.35 ¹³⁸
10.6	54.146 ²¹⁹	23.02 ³⁶⁷	35.632 ¹⁹⁰	47.08 ²⁴¹	60.816 ²⁰³	39.97 ¹¹⁷
20.6	54.365 ¹⁴¹	26.69 ³⁷⁵	35.822 ¹⁴⁴	49.49 ²²⁸	61.019 ¹⁵⁶	38.80 ⁹²
30.5	54.506 ⁶¹	30.44 ³⁷¹	35.966 ⁹⁴	51.77 ²¹⁰	61.175 ¹⁰⁶	37.88 ⁶⁷
Feb. 9.5	54.567 ¹⁶	34.15 ³⁵⁸	36.060 ⁴³	53.87 ¹⁸⁷	61.281 ⁵⁵	37.21 ⁴³
19.5	54.551 ⁸⁸	37.73 ³³⁹	36.103 ⁴	55.74 ¹⁶²	61.336 ⁶	36.78 ¹⁹
Mar. 1.5	54.463 ¹⁵⁵	41.12 ³¹⁰	36.099 ⁴⁶	57.36 ¹³⁶	61.342 ³⁸	36.59 ¹
11.4	54.308 ²¹¹	44.22 ²⁷⁵	36.053 ⁸⁴	58.72 ¹⁰⁸	61.304 ⁷⁶	36.60 ¹⁸
21.4	54.097 ²⁵⁸	46.97 ²³⁶	35.969 ¹¹³	59.80 ⁷⁹	61.228 ¹⁰⁶	36.78 ³²
31.4	53.839 ²⁹³	49.33 ¹⁹³	35.856 ¹³⁴	60.59 ⁵²	61.122 ¹²⁹	37.10 ⁴³
Apr. 10.4	53.546 ³¹⁸	51.26 ¹⁴⁶	35.722 ¹⁴⁷	61.11 ²⁵	60.993 ¹⁴¹	37.53 ⁵⁰
20.3	53.228 ³³²	52.72 ⁹⁶	35.575 ¹⁵²	61.36 ¹	60.852 ¹⁴⁷	38.03 ⁵⁴
30.3	52.896 ³³⁶	53.68 ⁴⁶	35.423 ¹⁵²	61.35 ²⁶	60.705 ¹⁴⁵	38.57 ⁵⁷
May 10.3	52.560 ³³¹	54.14 ⁵	35.271 ¹⁴⁴	61.09 ⁵⁰	60.560 ¹³⁷	39.14 ⁵⁸
20.2	52.229 ³¹⁸	54.09 ⁵⁵	35.127 ¹³²	60.59 ⁷³	60.423 ¹²³	39.72 ⁵⁶
30.2	51.911 ²⁹⁵	53.54 ¹⁰⁵	34.995 ¹¹⁷	59.86 ⁹²	60.300 ¹⁰⁷	40.28 ⁵⁵
June 9.2	51.616 ²⁶⁷	52.49 ¹⁵⁰	34.878 ⁹⁷	58.94 ¹¹¹	60.193 ⁸⁵	40.83 ⁵¹
19.2	51.349 ²³⁰	50.99 ¹⁹²	34.781 ⁷⁶	57.83 ¹²⁷	60.108 ⁶⁴	41.34 ⁴⁷
29.1	51.119 ¹⁸⁹	49.07 ²³⁰	34.705 ⁵³	56.56 ¹³⁸	60.044 ³⁹	41.81 ⁴¹
July 9.1	50.930 ¹⁴²	46.77 ²⁵⁹	34.652 ²⁸	55.18 ¹⁴⁵	60.005 ¹⁴	42.22 ³⁴
19.1	50.788 ⁸⁹	44.18 ²⁸²	34.624 ²	53.73 ¹⁴⁹	59.991 ¹²	42.56 ²⁶
29.1	50.699 ³³	41.36 ²⁹⁵	34.622 ²⁶	52.24 ¹⁴⁷	60.003 ³⁸	42.82 ¹⁴
Aug. 8.0	50.666 ²⁷	38.41 ³⁰⁰	34.648 ⁵⁵	50.77 ¹³⁹	60.041 ⁶⁶	42.96 ²
18.0	50.693 ⁹⁰	35.41 ²⁹³	34.703 ⁸⁵	49.38 ¹²⁵	60.107 ⁹⁴	42.98 ¹⁴
28.0	50.783 ¹⁵⁴	32.48 ²⁷⁷	34.788 ¹¹⁵	48.13 ¹⁰⁵	60.201 ¹²³	42.84 ³²
Sept. 6.9	50.937 ²¹⁷	29.71 ²⁵²	34.903 ¹⁴⁸	47.08 ⁷⁹	60.324 ¹⁵²	42.52 ⁵¹
16.9	51.154 ²⁷⁹	27.19 ²¹⁰	35.051 ¹⁸⁰	46.29 ⁴⁸	60.476 ¹⁸³	42.01 ⁷³
26.9	51.433 ³³⁵	25.09 ¹⁶⁵	35.231 ²¹¹	45.81 ¹³	60.659 ²¹²	41.28 ⁹³
Oct. 6.9	51.768 ³⁸⁶	23.44 ¹¹¹	35.442 ²⁴¹	45.68 ²⁶	60.871 ²⁴²	40.35 ¹¹⁶
16.8	52.154 ⁴²⁷	22.33 ⁵¹	35.683 ²⁶⁹	45.94 ⁶⁵	61.113 ²⁶⁸	39.19 ¹³⁵
26.8	52.581 ⁴⁵⁷	21.82 ¹³	35.952 ²⁹¹	46.59 ¹⁰⁶	61.381 ²⁹¹	37.84 ¹⁵³
Nov. 5.8	53.038 ⁴⁷³	21.95 ⁷⁷	36.243 ³⁰⁸	47.65 ¹⁴³	61.672 ³⁰⁸	36.31 ¹⁶⁶
15.8	53.511 ⁴⁷⁶	22.72 ¹⁴⁰	36.551 ³¹⁶	49.08 ¹⁷⁷	61.980 ³¹⁹	34.65 ¹⁷⁴
25.7	53.987 ⁴⁶¹	24.12 ¹⁹⁹	36.867 ³¹⁶	50.85 ²⁰⁴	62.299 ³²⁰	32.91 ¹⁷⁷
Dec. 5.7	54.448 ⁴³¹	26.11 ²⁵²	37.183 ³⁰⁶	52.89 ²²⁶	62.619 ³¹²	31.14 ¹⁷³
15.7	54.879 ³⁸⁸	28.63 ²⁹⁷	37.489 ²⁸⁵	55.15 ²⁴⁰	62.931 ²⁹⁴	29.41 ¹⁶³
25.6	55.267 ³³⁰	31.60 ³³¹	37.774 ²⁵⁶	57.55 ²⁴⁵	63.225 ²⁶⁶	27.78 ¹⁴⁸
35.6	55.597	34.91	38.030	60.00	63.491	26.30
Mean Place	51.111	23.09	34.014	39.64	59.394	52.39
Sec δ, Tan δ	1.821	-1.522	1.031	-0.249	1.016	+0.181
L α, L δ	-0.02	-0.3	0.00	-0.3	0.00	-0.3
ω α, ω δ	-0.08	+0.6	-0.01	+0.6	+0.01	+0.6
AUTHORITY	A. N.		A. N.		A. N.	

APPARENT PLACES OF STARS, 1922. 339

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Leonis. Mag. 3·1		μ Leonis. Mag. 4·1		π Leonis. Mag. 4·9	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 9 41	° ′ 24 7	h m 9 48	° ′ 26 22	h m 9 56	° ′ 8 24
Jan. 0·6	26·753 ²⁶⁷	48·25 ⁷⁰	20·952 ²⁷⁶	15·36 ⁶³	6·673 ²⁶⁰	58·49 ¹⁵⁵
10·6	27·020 ²²³	47·55 ⁴⁰	21·228 ²³³	14·73 ³¹	6·933 ²¹⁶	56·94 ¹³²
20·6	27·243 ¹⁷³	47·15 ⁹	21·461 ¹⁸⁴	14·42 ¹	7·149 ¹⁷²	55·62 ¹⁰⁷
30·5	27·416 ¹²¹	47·06 ¹⁸	21·645 ¹²⁹	14·43 ³⁰	7·321 ¹²⁴	54·55 ⁸⁴
Feb. 9·5	27·537 ⁶⁴	47·24 ⁴²	21·774 ⁷⁴	14·73 ⁵⁶	7·445 ⁷⁴	53·71 ⁵⁵
19·5	27·601 ¹³	47·66 ⁶⁴	21·848 ¹⁹	15·29 ⁷⁷	7·519 ²⁵	53·16 ³⁴
Mar. 1·5	27·614 ³³	48·30 ⁸¹	21·867 ³¹	16·06 ⁹³	7·544 ¹⁸	52·82 ¹⁰
11·4	27·581 ⁷⁸	49·11 ⁹⁰	21·836 ⁷²	16·99 ¹⁰³	7·526 ⁵⁸	52·72 ¹⁰
21·4	27·503 ¹¹³	50·01 ⁹⁴	21·764 ¹¹⁰	18·02 ¹⁰⁶	7·468 ⁹¹	52·82 ²⁵
31·4	27·390 ¹³⁸	50·95 ⁹⁴	21·654 ¹³⁶	19·08 ¹⁰⁴	7·377 ¹¹⁴	53·07 ³⁸
Apr. 10·4	27·252 ¹⁵⁴	51·89 ⁸⁸	21·518 ¹⁵³	20·12 ⁹⁸	7·263 ¹³¹	53·45 ⁴⁸
20·3	27·098 ¹⁵⁸	52·77 ⁷⁹	21·365 ¹⁶²	21·10 ⁸⁷	7·132 ¹³⁷	53·93 ⁵⁴
30·3	26·940 ¹⁵⁹	53·56 ⁶⁸	21·203 ¹⁶²	21·97 ⁷⁴	6·995 ¹³⁹	54·47 ⁵⁸
May 10·3	26·781 ¹⁵⁰	54·24 ⁵⁸	21·041 ¹⁵⁵	22·71 ⁵⁷	6·856 ¹³⁵	55·05 ⁵⁸
20·2	26·631 ¹³⁷	54·82 ⁴⁰	20·886 ¹⁴³	23·28 ⁴¹	6·721 ¹²⁶	55·63 ⁶⁵
30·2	26·494 ¹²⁰	55·22 ²⁵	20·743 ¹²⁵	23·69 ²³	6·595 ¹¹⁰	56·28 ⁶⁰
June 9·2	26·374 ⁹⁷	55·47 ¹¹	20·618 ¹⁰³	23·92 ⁵	6·485 ⁹³	56·88 ⁵⁷
19·2	26·277 ⁷⁴	55·58 ⁷	20·515 ⁸⁰	23·97 ¹³	6·392 ⁷⁶	57·45 ⁵⁴
29·1	26·203 ⁴⁶	55·51 ²¹	20·435 ⁵³	23·84 ³⁰	6·316 ⁵⁴	57·99 ⁴⁸
July 9·1	26·157 ²¹	55·30 ³⁵	20·382 ²⁶	23·54 ⁴⁷	6·262 ²⁹	58·47 ⁴¹
19·1	26·136 ⁹	54·95 ⁵⁴	20·356 ¹	23·07 ⁶⁴	6·233 ⁶	58·88 ³⁵
29·1	26·145 ³⁹	54·41 ⁶⁵	20·357 ³¹	22·43 ⁸⁰	6·227 ²⁰	59·23 ²⁴
Aug. 8·0	26·184 ⁶⁹	53·76 ⁸³	20·388 ⁶¹	21·63 ⁹⁵	6·247 ⁴⁷	59·47 ⁷
18·0	26·253 ⁹⁹	52·93 ⁹⁸	20·449 ⁹²	20·68 ¹¹¹	6·294 ⁷⁶	59·54 ⁷
28·0	26·352 ¹²⁸	51·95 ¹¹¹	20·541 ¹²³	19·57 ¹²⁷	6·370 ¹⁰¹	59·47 ²³
Sept. 6·9	26·480 ¹⁶¹	50·84 ¹²⁸	20·664 ¹⁵⁵	18·30 ¹⁴¹	6·471 ¹³⁵	59·24 ⁴⁵
16·9	26·641 ¹⁹⁴	49·56 ¹⁴¹	20·819 ¹⁸⁹	16·89 ¹⁵⁵	6·606 ¹⁶⁶	58·79 ⁶⁸
26·9	26·835 ²²³	48·15 ¹⁵⁴	21·008 ²²¹	15·34 ¹⁶⁴	6·772 ¹⁹⁶	58·11 ⁹⁰
Oct. 6·9	27·058 ²⁵⁷	46·61 ¹⁶²	21·229 ²⁵⁴	13·70 ¹⁷⁶	6·968 ²²⁹	57·21 ¹¹⁴
16·8	27·315 ²⁸⁵	44·99 ¹⁷¹	21·483 ²⁸³	11·94 ¹⁸⁰	7·197 ²⁵⁹	56·07 ¹³⁵
26·8	27·600 ³⁰⁶	43·28 ¹⁷³	21·766 ³¹⁰	10·14 ¹⁸²	7·456 ²⁸¹	54·72 ¹⁵⁵
Nov. 5·8	27·906 ³²⁹	41·55 ¹⁷⁵	22·076 ³³⁰	8·32 ¹⁷⁸	7·737 ³⁰²	53·17 ¹⁶⁸
15·8	28·235 ³⁴²	39·80 ¹⁶⁶	22·406 ³⁴⁴	6·54 ¹⁶⁹	8·039 ³¹⁶	51·49 ¹⁸⁰
25·7	28·577 ³⁴²	38·14 ¹⁵⁴	22·750 ³⁴⁹	4·85 ¹⁵⁵	8·355 ³²¹	49·69 ¹⁸⁶
Dec. 5·7	28·919 ³³⁴	36·60 ¹³⁴	23·099 ³⁴³	3·30 ¹³⁴	8·676 ³¹⁵	47·83 ¹⁸⁴
15·7	29·253 ³¹⁸	35·26 ¹¹⁵	23·442 ³²⁸	1·96 ¹⁰⁹	8·991 ³⁰²	45·99 ¹⁷⁶
25·6	29·571 ²⁸⁸	34·11 ⁸⁵	23·770 ²⁹⁶	0·87 ⁸⁰	9·293 ²⁷⁸	44·23 ¹⁶⁴
35·6	29·859	33·26	24·066	0·07	9·571	42·59
Mean Place	25·644	62·49	19·885	30·09	5·579	68·66
Sec δ, Tan δ	1·096	+0·448	1·116	+0·496	1·011	+0·148
L α, L δ	+0·01	-0·3	+0·01	-0·3	0·00	-0·3
ω α, ω δ	+0·02	+0·6	+0·03	+0·5	+0·01	+0·5
AUTHORITY	A. E.		A. N.		A. E.	

340 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Leonis. Mag. 1.3		η Velorum. Mag. 4.1		22 Sextantis. Mag. 5.4	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 10 4	° ' 12 20	h m 10 11	° ' 41 44	h m 10 13	° ' 7 40
Jan. 0.6	14.240 ²⁶⁷	45.29 ¹⁴¹	29.272 ²⁹⁵	2.36 ³¹²	46.426 ²⁶²	49.16 ²²³
10.6	14.507 ²²⁶	43.88 ¹¹³	29.567 ²⁴⁴	5.48 ³²⁸	46.688 ²²³	51.39 ²¹⁴
20.6	14.733 ¹⁸²	42.75 ⁸⁹	29.811 ¹⁹¹	8.76 ³³⁴	46.911 ¹⁸²	53.53 ²⁰⁰
30.6	14.915 ¹³⁴	41.86 ⁵⁹	30.002 ¹³⁰	12.10 ³³³	47.093 ¹³³	55.53 ¹⁸⁰
Feb. 9.5	15.049 ⁸³	41.27 ³⁴	30.132 ⁷¹	15.43 ³²⁴	47.226 ⁸⁵	57.33 ¹⁵⁷
19.5	15.132 ³⁵	40.93 ⁹	30.203 ¹⁵	18.67 ³⁰⁵	47.311 ³⁸	58.90 ¹³³
Mar. 1.5	15.167 ¹¹	40.84 ¹³	30.218 ³⁹	21.72 ²⁸²	47.349 ⁷	60.23 ¹⁰⁷
11.5	15.156 ⁵²	40.97 ³¹	30.179 ⁸⁵	24.54 ²⁵²	47.342 ⁴⁵	61.30 ⁸¹
21.4	15.104 ⁸⁴	41.28 ⁴⁶	30.094 ¹²⁶	27.06 ²¹⁸	47.297 ⁷⁷	62.11 ⁵⁸
31.4	15.020 ¹¹⁰	41.74 ⁵²	29.968 ¹⁵⁷	29.24 ¹⁸²	47.220 ¹⁰³	62.69 ³³
Apr. 10.4	14.910 ¹³⁰	42.26 ⁶²	29.811 ¹⁸¹	31.06 ¹⁴²	47.117 ¹²⁰	63.02 ¹²
20.3	14.780 ¹³⁶	42.88 ⁶⁷	29.630 ¹⁹⁸	32.48 ¹⁰⁰	46.997 ¹³¹	63.14 ¹⁰
30.3	14.644 ¹⁴⁰	43.55 ⁶⁶	29.432 ²⁰⁶	33.48 ⁵⁷	46.866 ¹³⁵	63.04 ²⁷
May 10.3	14.504 ¹³⁶	44.21 ⁶⁶	29.226 ²⁰⁹	34.05 ¹⁵	46.731 ¹³³	62.77 ⁴⁵
20.3	14.368 ¹²⁸	44.87 ⁶¹	29.017 ²⁰⁴	34.20 ²⁹	46.598 ¹²⁷	62.32 ⁶¹
30.2	14.240 ¹¹⁵	45.48 ⁵⁶	28.813 ¹⁹⁵	33.91 ⁷¹	46.471 ¹¹⁸	61.71 ⁷⁵
June 9.2	14.125 ¹⁰²	46.04 ⁴⁸	28.618 ¹⁸⁰	33.20 ¹⁰⁹	46.353 ¹⁰⁴	60.96 ⁸⁷
19.2	14.023 ⁷⁸	46.52 ⁴⁰	28.438 ¹⁶⁴	32.11 ¹⁴⁵	46.249 ⁸⁸	60.09 ⁹⁸
29.2	13.945 ⁵⁸	46.92 ³⁴	28.274 ¹³⁷	30.66 ¹⁸¹	46.161 ⁷⁰	59.11 ¹⁰⁵
July 9.1	13.887 ³⁵	47.26 ²⁵	28.137 ¹¹²	28.85 ²⁰⁷	46.091 ⁴⁹	58.06 ¹⁰⁸
19.1	13.852 ¹⁴	47.51 ¹²	28.025 ⁸⁰	26.78 ²³⁰	46.042 ²⁸	56.98 ¹⁰⁹
29.1	13.838 ¹³	47.63 ¹	27.945 ⁴⁵	24.48 ²⁴⁴	46.014 ⁴	55.89 ¹⁰⁶
Aug. 8.0	13.851 ⁴⁰	47.62 ¹⁵	27.900 ⁸	22.04 ²⁴⁹	46.010 ²³	54.83 ⁹⁸
18.0	13.891 ⁶⁹	47.47 ³⁰	27.892 ³⁵	19.55 ²³⁸	46.033 ⁵¹	53.85 ⁸⁵
28.0	13.960 ⁹⁷	47.17 ⁵¹	27.927 ⁸⁰	17.07 ²⁴⁶	46.084 ⁸⁰	53.00 ⁶⁸
Sept. 7.0	14.057 ¹²⁷	46.66 ⁶⁹	28.007 ¹²⁶	14.71 ²¹⁴	46.164 ¹¹²	52.32 ⁴⁵
16.9	14.184 ¹⁶¹	45.97 ⁹⁰	28.133 ¹⁷⁴	12.57 ¹⁸³	46.276 ¹⁴⁶	51.87 ¹⁸
26.9	14.345 ¹⁹²	45.07 ¹⁰⁹	28.307 ²²²	10.74 ¹⁴⁵	46.422 ¹⁷⁹	51.69 ¹²
Oct. 6.9	14.537 ²²⁴	43.98 ¹³²	28.529 ²⁶⁵	9.29 ⁹⁹	46.601 ²¹³	51.81 ⁴⁵
16.9	14.761 ²⁵⁴	42.66 ¹⁴⁹	28.794 ³⁰⁵	8.30 ⁴⁹	46.814 ²⁴⁵	52.26 ⁷⁹
26.8	15.015 ²⁸³	41.17 ¹⁶³	29.099 ³⁴²	7.81 ⁸	47.059 ²⁷³	53.05 ¹¹⁴
Nov. 5.8	15.298 ³⁰²	39.54 ¹⁷⁷	29.441 ³⁶⁵	7.89 ⁶⁷	47.332 ²⁹⁷	54.19 ¹⁴⁵
15.8	15.600 ³¹⁹	37.77 ¹⁸²	29.806 ³⁸⁰	8.56 ¹²¹	47.629 ³¹¹	55.64 ¹⁷³
25.7	15.919 ³²⁶	35.95 ¹⁸⁴	30.186 ³⁸⁴	9.77 ¹⁷⁵	47.940 ³¹⁹	57.37 ¹⁹⁶
Dec. 5.7	16.245 ³²¹	34.11 ¹⁷⁹	30.570 ³⁷⁴	11.52 ²²³	48.259 ³¹⁶	59.33 ²¹³
15.7	16.566 ³⁰⁹	32.32 ¹⁶⁷	30.944 ³⁵²	13.75 ²⁶³	48.575 ³⁰³	61.46 ²²²
25.7	16.875 ²⁸⁴	30.65 ¹⁵¹	31.296 ³²⁰	16.38 ²⁹⁴	48.878 ²⁸¹	63.68 ²²⁴
35.6	17.159	29.14	31.616	19.32	49.159	65.92
Mean Place	13.209	56.31	27.454	6.29	45.273	44.06
Sec δ , Tan δ	1.024	+0.219	1.340	-0.892	1.009	-0.135
$L \alpha$, $L \delta$	0.00	-0.3	-0.01	-0.4	0.00	-0.4
$\omega \alpha$, $\omega \delta$	+0.01	+0.5	-0.05	+0.5	-0.01	+0.5
AUTHORITY	A. E.		A. E.			

APPARENT PLACES OF STARS, 1922. 341

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	<i>γ</i> Carinae. Mag. 3·4		<i>γ</i> Leonis (1st star). Mag. 2·6		<i>μ</i> Ursæ Majoris. Mag. 3·2	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 10 14	[°] ['] 60 56	^h ^m 10 15	[°] ['] 20 13	^h ^m 10 17	[°] ['] 41 52
Jan. 0·6	31·37 ⁴⁰	23·84 ³²⁰	41·420 ²⁸⁵	59·02 ¹⁰⁸	42·224 ³⁴²	74·46 ⁹
10·6	31·77 ³²	27·04 ³⁵⁰	41·705 ²⁴⁸	57·94 ⁷⁸	42·566 ³⁰¹	74·37 ³²
20·6	32·09 ²⁴	30·54 ³⁶⁹	41·953 ²⁰²	57·16 ⁴⁷	42·867 ²⁴⁵	74·69 ⁷⁵
30·6	32·33 ¹⁶	34·23 ³⁷⁶	42·155 ¹⁵³	56·69 ¹⁶	43·112 ¹⁸⁵	75·44 ¹¹⁰
Feb. 9·5	32·49 ⁷	37·99 ³⁷⁴	42·308 ¹⁰⁰	56·53 ¹³	43·297 ¹²⁰	76·54 ¹⁴³
19·5	32·56 ¹	41·73 ³⁶⁴	42·408 ⁴⁹	56·66 ³⁹	43·417 ⁵⁷	77·97 ¹⁶³
Mar. 1·5	32·55 ⁸	45·37 ³⁴⁵	42·457 ¹	57·05 ⁵⁹	43·474 ⁴	79·60 ¹⁷⁸
11·5	32·47 ¹⁶	48·82 ³¹⁸	42·458 ⁴³	57·64 ⁷⁶	43·470 ⁶⁰	81·38 ¹⁸⁵
21·4	32·31 ²¹	52·00 ²⁸⁷	42·415 ⁷⁹	58·40 ⁸⁶	43·410 ¹⁰⁸	83·23 ¹⁸¹
31·4	32·10 ²⁷	54·87 ²⁴⁸	42·336 ¹⁰⁶	59·26 ⁹²	43·302 ¹⁴⁶	85·04 ¹⁷²
Apr. 10·4	31·83 ³¹	57·35 ²⁰⁶	42·230 ¹²⁷	60·18 ⁹²	43·156 ¹⁷³	86·76 ¹⁵⁴
20·3	31·52 ³³	59·41 ¹⁶⁰	42·103 ¹³⁹	61·10 ⁸⁸	42·983 ¹⁹¹	88·30 ¹³²
30·3	31·19 ³⁵	61·01 ¹¹¹	41·964 ¹⁴⁴	61·98 ⁸¹	42·792 ¹⁹⁸	89·62 ¹⁰⁵
May 10·3	30·84 ³⁷	62·12 ⁶¹	41·820 ¹⁴²	62·79 ⁷¹	42·594 ¹⁹⁹	90·67 ⁷⁵
20·3	30·47 ³⁶	62·73 ⁹	41·678 ¹³⁵	63·50 ⁶⁰	42·395 ¹⁹⁰	91·42 ⁴¹
30·2	30·11 ³⁵	62·82 ⁴³	41·543 ¹²³	64·10 ⁴⁶	42·205 ¹⁷⁶	91·83 ⁹
June 9·2	29·76 ³⁴	62·39 ⁹³	41·420 ¹⁰⁶	64·56 ³²	42·029 ¹⁵⁶	91·92 ²²
19·2	29·42 ³¹	61·46 ¹⁴⁰	41·314 ⁸⁹	64·88 ¹⁸	41·873 ¹³¹	91·70 ⁵⁶
29·2	29·11 ²⁸	60·06 ¹⁸⁴	41·225 ⁶⁸	65·06 ³	41·742 ¹⁰³	91·14 ⁸⁵
July 9·1	28·83 ²³	58·22 ²²³	41·157 ⁴⁵	65·09 ¹⁴	41·639 ⁷⁴	90·29 ¹¹³
19·1	28·60 ¹⁹	55·99 ²⁵⁴	41·112 ²²	64·95 ²⁹	41·565 ⁴¹	89·16 ¹³⁹
29·1	28·41 ¹³	53·45 ²⁷⁹	41·090 ⁴	64·66 ⁴⁶	41·524 ⁸	87·77 ¹⁶²
Aug. 8·0	28·28 ⁶	50·66 ²⁹³	41·094 ³¹	64·20 ⁶²	41·516 ²⁷	86·15 ¹⁸⁴
18·0	28·22 ¹	47·73 ²⁹⁹	41·125 ⁵⁹	63·58 ⁸¹	41·543 ⁶⁶	84·31 ²⁰²
28·0	28·23 ⁸	44·74 ²⁹³	41·184 ⁹⁰	62·77 ⁹⁸	41·609 ¹⁰³	82·29 ²¹⁷
Sept. 7·0	28·31 ¹⁵	41·81 ²⁷⁸	41·274 ¹²²	61·79 ¹¹⁵	41·712 ¹⁴²	80·12 ²²⁹
16·9	28·46 ²⁴	39·03 ²⁵⁰	41·396 ¹⁵⁵	60·64 ¹³⁴	41·854 ¹⁸⁵	77·83 ²³⁶
26·9	28·70 ³⁰	36·53 ²¹²	41·551 ¹⁸⁹	59·30 ¹⁵¹	42·039 ²²⁵	75·47 ²⁴¹
Oct. 6·9	29·00 ³⁷	34·41 ¹⁶⁶	41·740 ²²⁴	57·79 ¹⁶⁶	42·264 ²⁶⁷	73·06 ²⁴²
16·9	29·37 ⁴⁴	32·75 ¹¹¹	41·964 ²⁵⁵	56·13 ¹⁷⁸	42·531 ³⁰⁴	70·64 ²³⁵
26·8	29·81 ⁴⁹	31·64 ⁵¹	42·219 ²⁸⁶	54·35 ¹⁸⁸	42·835 ³⁴²	68·29 ²²³
Nov. 5·8	30·30 ⁵¹	31·13 ¹⁴	42·505 ³¹⁰	52·47 ¹⁹¹	43·177 ³⁷⁰	66·06 ²⁰⁶
15·8	30·81 ⁵⁴	31·27 ⁷⁸	42·815 ³²⁹	50·56 ¹⁸⁹	43·547 ³⁹¹	64·00 ¹⁸¹
25·7	31·35 ⁵⁴	32·05 ¹⁴¹	43·144 ³³⁷	48·67 ¹⁸²	43·938 ⁴⁰⁴	62·19 ¹⁵³
Dec. 5·7	31·89 ⁵¹	33·46 ¹⁹⁹	43·481 ³³⁸	46·85 ¹⁶⁹	44·342 ⁴⁰⁵	60·66 ¹¹⁹
15·7	32·40 ⁴⁸	35·45 ²⁵³	43·819 ³²⁶	45·16 ¹⁴⁸	44·747 ³⁹³	59·47 ⁷⁷
25·7	32·88 ⁴⁷	37·98 ²⁹⁷	44·145 ³⁰⁴	43·68 ¹²⁴	45·140 ³⁶⁸	58·70 ³⁶
35·6	33·35	40·95	44·449	42·44	45·508	58·34
Mean Place	28·53	31·79	40·493	71·96	41·368	92·50
Sec δ, Tan δ	2·059	-1·800	1·066	+0·369	1·343	+0·897
<i>L</i> α, <i>L</i> δ	-0·02	-0·4	0·00	-0·4	+0·01	-0·4
<i>ω</i> α, <i>ω</i> δ	-0·11	+0·4	+0·02	+0·4	+0·05	+0·4

AUTHORITY

A. E.

342 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	μ Hydræ. Mag. 4.1		α Antliæ. Mag. 4.4		ρ Leonis. Mag. 3.9	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 10 22	16 26	h m 10 23	30 40	h m 10 28	9 42
Jan. 0.7	20.265 ²⁶⁸	17.47 ²⁵¹	36.296 ²⁸³	12.19 ²⁸⁷	43.268 ²⁷⁹	20.64 ¹⁵⁹
10.6	20.533 ²³⁰	19.98 ²⁴⁹	36.579 ²⁴²	15.06 ²⁹⁷	43.547 ²⁴⁴	19.05 ¹³⁶
20.6	20.763 ¹⁸⁸	22.47 ²⁴²	36.821 ¹⁹²	18.03 ²⁹⁸	43.791 ²⁰²	17.69 ¹¹⁰
30.6	20.951 ¹⁴³	24.89 ²²⁷	37.013 ¹⁴⁴	21.01 ²⁹⁴	43.993 ¹⁵⁷	16.59 ⁸²
Feb. 9.6	21.094 ⁹⁰	27.16 ²⁰⁷	37.157 ⁹¹	23.95 ²⁷⁸	44.150 ¹⁰⁷	15.77 ⁵⁴
19.5	21.184 ⁴⁴	29.23 ¹⁸⁴	37.248 ³⁹	26.73 ²⁵⁹	44.257 ⁵⁹	15.23 ²⁷
Mar. 1.5	21.228 ³	31.07 ¹⁶²	37.287 ⁸	29.32 ²³⁷	44.316 ¹³	14.96 ⁴
11.5	21.225 ³⁸	32.69 ¹³¹	37.279 ⁵³	31.69 ²⁰⁶	44.329 ²⁸	14.92 ¹⁸
21.4	21.187 ⁷⁶	34.00 ¹⁰⁵	37.226 ⁹⁰	33.75 ¹⁷⁶	44.301 ⁶²	15.10 ³⁵
31.4	21.111 ¹⁰¹	35.05 ⁷⁹	37.136 ¹¹⁴	35.51 ¹⁴⁴	44.239 ⁹¹	15.45 ⁴⁸
Apr. 10.4	21.010 ¹¹⁷	35.84 ⁴⁸	37.022 ¹⁴⁰	36.95 ¹⁰⁸	44.148 ¹¹⁰	15.93 ⁵⁸
20.4	20.893 ¹³⁴	36.32 ²²	36.882 ¹⁵⁵	38.03 ⁷³	44.038 ¹²³	16.51 ⁶⁴
30.3	20.759 ¹³⁸	36.54 ²	36.727 ¹⁵⁹	38.76 ³⁷	43.915 ¹³⁰	17.15 ⁶⁷
May 10.3	20.621 ¹⁴⁰	36.52 ²⁹	36.568 ¹⁶⁶	39.13 ¹	43.785 ¹³⁰	17.82 ⁶⁷
20.3	20.481 ¹³⁶	36.23 ⁵²	36.402 ¹⁶²	39.14 ³⁵	43.655 ¹²⁵	18.49 ⁶⁶
30.2	20.345 ¹²⁶	35.71 ⁷⁶	36.240 ¹⁵⁶	38.79 ⁷⁰	43.530 ¹¹⁷	19.15 ⁶³
June 9.2	20.219 ¹¹⁶	34.95 ⁹¹	36.084 ¹⁴⁵	38.09 ⁹⁷	43.413 ¹⁰⁴	19.78 ⁵⁸
19.2	20.103 ¹⁰⁰	34.04 ¹¹¹	35.939 ¹²⁸	37.12 ¹³⁰	43.309 ⁸⁹	20.36 ⁵²
29.2	20.003 ⁸⁶	32.93 ¹²⁷	35.811 ¹¹⁸	35.82 ¹⁵⁵	43.220 ⁷²	20.88 ⁴⁴
July 9.1	19.917 ⁶⁴	31.66 ¹³⁷	35.701 ⁹¹	34.27 ¹⁷⁵	43.148 ⁵³	21.32 ³⁵
19.1	19.853 ⁴²	30.29 ¹⁴⁴	35.610 ⁶³	32.52 ¹⁹³	43.095 ³³	21.67 ²⁵
29.1	19.811 ¹⁸	28.85 ¹⁴⁵	35.547 ³⁸	30.59 ²⁰⁴	43.062 ⁹	21.92 ¹³
Aug. 8.1	19.793 ⁷	27.40 ¹⁴⁰	35.509 ²	28.55 ²⁰⁵	43.053 ¹⁵	22.05 ²
18.0	19.800 ⁴¹	26.00 ¹³¹	35.507 ²⁷	26.50 ²⁰¹	43.068 ⁴²	22.03 ¹⁹
28.0	19.841 ⁷²	24.69 ¹¹⁸	35.534 ⁶⁸	24.49 ¹⁸⁷	43.110 ⁷²	21.84 ³⁷
Sept. 7.0	19.913 ¹⁰³	23.51 ⁹²	35.602 ¹⁰⁵	22.62 ¹⁶⁸	43.182 ¹⁰²	21.47 ⁵⁷
16.9	20.016 ¹⁴⁰	22.59 ⁶⁵	35.707 ¹⁴⁹	20.94 ¹³⁷	43.284 ¹³⁵	20.90 ⁸⁰
26.9	20.156 ¹⁷⁶	21.94 ³³	35.856 ¹⁸⁶	19.57 ¹⁰⁵	43.419 ¹⁶⁹	20.10 ¹⁰²
Oct. 6.9	20.332 ²¹³	21.61 ⁴	36.042 ²³¹	18.52 ⁶⁰	43.588 ²⁰⁴	19.08 ¹²⁵
16.9	20.545 ²⁴⁶	21.65 ⁴⁵	36.273 ²⁶⁶	17.92 ¹⁵	43.792 ²³⁷	17.83 ¹⁴⁵
26.8	20.791 ²⁷⁴	22.10 ⁸³	36.539 ²⁹⁹	17.77 ³⁵	44.029 ²⁶⁷	16.38 ¹⁶⁵
Nov. 5.8	21.065 ²⁹⁹	22.93 ¹²³	36.838 ³²⁵	18.12 ⁸⁵	44.296 ²⁹³	14.73 ¹⁸⁰
15.8	21.364 ³¹⁹	24.16 ¹⁵⁹	37.163 ³⁴³	18.97 ¹³⁴	44.589 ³¹³	12.93 ¹⁹⁰
25.8	21.683 ³²⁵	25.75 ¹⁹³	37.506 ³⁴⁹	20.31 ¹⁷⁹	44.902 ³²³	11.03 ¹⁹⁵
Dec. 5.7	22.008 ³²⁷	27.68 ²¹⁷	37.855 ³⁴³	22.10 ²¹⁷	45.225 ³²⁵	9.08 ¹⁹²
15.7	22.335 ³¹⁰	29.85 ²³⁷	38.198 ³²⁹	24.27 ²⁵⁰	45.550 ³¹⁶	7.16 ¹⁸⁴
25.7	22.645 ²⁸⁵	32.22 ²⁴⁵	38.527 ³⁰⁵	26.77 ²⁷⁵	45.866 ²⁹⁶	5.32 ¹⁶⁹
35.6	22.930	34.67	38.832	29.52	46.162	3.63
Mean Place	19.040	15.30	34.829	14.13	42.346	30.35
Sec δ , Tan δ	1.043	-0.295	1.163	-0.593	1.015	+0.171
L α , L δ	0.00	-0.4	-0.01	-0.4	0.00	-0.4
ω α , ω δ	-0.02	+0.4	-0.04	+0.4	+0.01	+0.4
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 343

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	34 Sextantis. Mag. 6.6		θ Argūs. Mag. 3.0		η Argūs. Mag. >1-7.4	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 10 38	° ' " 3 59	h m 10 40	° ' " 63 58	h m 10 42	° ' " 59 16
Jan. 0.7	36.807 ²⁸¹	20.50 ¹⁸³	13.10 ⁴⁶	59.61 ²⁹⁷	4.346 ⁴²¹	17.33 ²⁹⁸
10.6	37.088 ²⁴⁷	18.67 ¹⁶⁶	13.56 ⁴⁰	62.58 ³³³	4.767 ³⁵⁹	20.31 ³³¹
20.6	37.335 ²⁰⁸	17.01 ¹⁴²	13.96 ³¹	65.91 ³⁵⁷	5.126 ²⁸⁹	23.62 ³⁵⁴
30.6	37.543 ¹⁶²	15.59 ¹¹⁷	14.27 ²³	69.48 ³⁷²	5.415 ²¹⁰	27.16 ³⁶⁶
Feb. 9.6	37.705 ¹¹⁴	14.42 ⁹²	14.50 ¹⁴	73.20 ³⁷⁸	5.625 ¹³²	30.82 ³⁷⁰
19.5	37.819 ⁶⁷	13.50 ⁶⁴	14.64 ⁴	76.98 ³⁷³	5.757 ⁵⁴	34.52 ³⁶⁴
Mar. 1.5	37.886 ²²	12.86 ³⁹	14.68 ⁴	80.71 ³⁶¹	5.811 ²¹	38.16 ³⁴⁹
11.5	37.908 ¹⁸	12.47 ¹⁵	14.64 ¹¹	84.32 ³³⁸	5.790 ⁸⁸	41.65 ³²⁷
21.4	37.890 ⁵³	12.32 ⁴	14.53 ¹⁹	87.70 ³¹⁴	5.702 ¹⁵⁰	44.92 ³⁰⁰
31.4	37.837 ⁸¹	12.36 ²²	14.34 ²⁵	90.84 ²⁷⁸	5.552 ²⁰¹	47.92 ²⁶⁶
Apr. 10.4	37.756 ¹⁰²	12.58 ³⁶	14.09 ²⁹	93.62 ²³⁹	5.351 ²⁴⁴	50.58 ²²⁶
20.4	37.654 ¹¹⁵	12.94 ⁴⁷	13.80 ³⁴	96.01 ¹⁹⁶	5.107 ²⁷⁹	52.84 ¹⁸⁴
30.3	37.539 ¹²⁴	13.41 ⁵⁵	13.46 ³⁷	97.97 ¹⁴⁸	4.828 ³⁰³	54.68 ¹³⁸
May 10.3	37.415 ¹²⁵	13.96 ⁶¹	13.09 ³⁹	99.45 ⁹⁹	4.525 ³²¹	56.06 ⁸⁹
20.3	37.290 ¹²³	14.57 ⁶⁵	12.70 ⁴⁰	100.44 ⁴⁹	4.204 ³²⁸	56.95 ³⁹
30.2	37.167 ¹¹⁶	15.22 ⁶⁷	12.30 ⁴⁰	100.93 ⁵	3.876 ³²⁸	57.34 ¹⁰
June 9.2	37.051 ¹⁰⁵	15.89 ⁶⁸	11.90 ³⁸	100.88 ⁵⁸	3.548 ³²⁰	57.24 ⁶²
19.2	36.946 ⁹³	16.57 ⁶⁷	11.52 ³⁸	100.30 ¹⁰⁶	3.228 ³⁰⁴	56.62 ¹⁰⁹
29.2	36.853 ⁷⁸	17.24 ⁶⁴	11.14 ³⁴	99.24 ¹⁵²	2.924 ²⁷⁹	55.53 ¹⁵⁵
July 9.1	36.775 ⁶⁰	17.88 ⁵⁸	10.80 ³⁰	97.72 ¹⁹⁷	2.645 ²⁴⁶	53.98 ¹⁹⁵
19.1	36.715 ⁴¹	18.46 ⁵²	10.50 ²⁵	95.75 ²³⁴	2.399 ²⁰⁶	52.03 ²³¹
29.1	36.674 ²⁰	18.98 ⁴²	10.25 ¹⁹	93.41 ²⁶³	2.193 ¹⁵⁷	49.72 ²⁵⁸
Aug. 8.1	36.654 ⁵	19.40 ³⁰	10.06 ¹³	90.78 ²⁸⁶	2.036 ¹⁰¹	47.14 ²⁷⁹
18.0	36.659 ³⁰	19.70 ¹³	9.93 ⁵	87.92 ²⁹⁷	1.935 ³⁸	44.35 ²⁸⁸
28.0	36.689 ⁶⁰	19.83 ³	9.88 ²	84.95 ³⁰⁰	1.897 ³¹	41.47 ²⁸⁹
Sept. 7.0	36.749 ⁹⁰	19.80 ²⁵	9.90 ¹²	81.95 ²⁸⁹	1.928 ¹⁰²	38.58 ²⁷⁹
16.9	36.839 ¹²⁴	19.55 ⁴⁸	10.02 ²⁰	79.06 ²⁷⁰	2.030 ¹⁷⁷	35.79 ²⁵⁷
26.9	36.963 ¹⁵⁸	19.07 ⁷³	10.22 ²⁹	76.36 ²³⁷	2.207 ²⁵¹	33.22 ²²⁶
Oct. 6.9	37.121 ¹⁹⁴	18.34 ⁹⁹	10.51 ³⁷	73.99 ¹⁹⁵	2.458 ³²²	30.96 ¹⁸³
16.9	37.315 ²²⁷	17.35 ¹²⁵	10.88 ⁴⁴	72.04 ¹⁴⁷	2.780 ³⁸⁵	29.13 ¹³³
26.8	37.542 ²⁶⁰	16.10 ¹⁴⁹	11.32 ⁵⁰	70.57 ⁸⁷	3.165 ⁴⁴²	27.80 ⁷⁶
Nov. 5.8	37.802 ²⁸⁶	14.61 ¹⁶⁹	11.82 ⁵⁵	69.70 ²⁷	3.607 ⁴⁸³	27.04 ¹⁵
15.8	38.088 ³⁰⁷	12.92 ¹⁸⁷	12.37 ⁵⁸	69.43 ³⁹	4.090 ⁵¹²	26.89 ⁴⁸
25.8	38.395 ³¹⁹	11.05 ¹⁹⁷	12.95 ⁵⁹	69.82 ¹⁰²	4.602 ⁵²²	27.37 ¹¹¹
Dec. 5.7	38.714 ³²³	9.08 ²⁰²	13.54 ⁵⁹	70.84 ¹⁶⁵	5.124 ⁵¹⁶	28.48 ¹⁷¹
15.7	39.037 ³¹⁴	7.06 ¹⁹⁹	14.13 ⁵⁵	72.49 ²²²	5.640 ⁴⁹¹	30.19 ²²⁵
25.7	39.351 ²⁹⁷	5.07 ¹⁹¹	14.68 ⁵⁰	74.71 ²⁶⁹	6.131 ⁴⁵⁰	32.44 ²⁷²
35.6	39.648	3.16	15.18	77.40	6.581 ⁴⁵⁰	35.16
Mean Place	35.892	28.19	10.16	70.03	1.843	27.09
Sec δ, Tan δ	1.002	+0.070	2.280	-2.049	1.957	-1.682
L α, L δ	0.00	-0.4	-0.02	-0.4	-0.01	-0.4
ω α, ω δ	+0.01	+0.3	-0.13	+0.3	-0.11	+0.3

AUTHORITY

A. E.

344 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	μ Argûs. Mag. 2·8		ι Leonis. Mag. 5·3		ν Hydræ. Mag. 3·3	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m IO 43	° ' 0	h m IO 45	° ' 57	h m IO 45	° ' 47
Jan. 0·7	26·543 ³⁵⁵	21·24 ²⁹⁷	10·387 ²⁸⁹	19·97 ¹⁶¹	47·618 ²⁸⁵	7·87 ²⁴⁵
10·6	26·898 ³⁰⁶	24·21 ³²³	10·676 ²⁶⁰	18·36 ¹³⁴	47·903 ²⁵¹	10·32 ²⁴⁴
20·6	27·204 ²⁴⁸	27·44 ³⁴¹	10·936 ²¹⁵	17·02 ¹⁰⁸	48·154 ²¹⁰	12·76 ²³⁷
30·6	27·452 ¹⁸⁷	30·85 ³⁴⁷	11·151 ¹⁷³	15·94 ⁷⁸	48·364 ¹⁶⁴	15·13 ²²³
Feb. 9·6	27·639 ¹²³	34·32 ³⁴⁵	11·324 ¹²⁴	15·16 ⁵⁰	48·528 ¹¹⁷	17·36 ²⁰⁵
19·5	27·762 ⁵⁹	37·77 ³³⁶	11·448 ⁷⁷	14·66 ²¹	48·645 ⁷⁰	19·41 ¹⁸²
Mar. 1·5	27·821 ²	41·13 ³¹⁷	11·525 ³⁰	14·45 ¹	48·715 ²⁵	21·23 ¹⁵⁹
11·5	27·823 ⁵⁵	44·30 ²⁹⁶	11·555 ¹¹	14·46 ²⁵	48·740 ¹⁶	22·82 ¹³²
21·4	27·768 ¹⁰²	47·26 ²⁶⁵	11·544 ⁴⁸	14·71 ⁴⁴	48·724 ⁵¹	24·14 ¹⁰⁵
31·4	27·666 ¹⁴⁴	49·91 ²³¹	11·496 ⁷⁶	15·15 ⁵⁷	48·673 ⁷⁹	25·19 ⁷⁹
Apr. 10·4	27·522 ¹⁷⁶	52·22 ¹⁹²	11·420 ¹⁰⁰	15·72 ⁶⁷	48·594 ¹⁰⁰	25·98 ⁵³
20·4	27·346 ²⁰⁰	54·14 ¹⁵³	11·320 ¹¹⁵	16·39 ⁷¹	48·494 ¹¹⁷	26·51 ²⁷
30·3	27·146 ²²¹	55·67 ¹⁰⁸	11·205 ¹²¹	17·10 ⁷³	48·377 ¹²⁶	26·78 ²
May 10·3	26·925 ²³¹	56·75 ⁶³	11·084 ¹²⁷	17·83 ⁷³	48·251 ¹³⁰	26·80 ²¹
20·3	26·694 ²³⁵	57·38 ¹⁹	10·957 ¹²⁵	18·56 ⁷¹	48·121 ¹³⁰	26·59 ⁴³
30·3	26·459 ²³⁴	57·57 ²⁸	10·832 ¹²⁰	19·27 ⁶⁵	47·991 ¹²⁵	26·16 ⁶⁵
June 9·2	26·225 ²²⁴	57·29 ⁷³	10·712 ¹⁰⁹	19·92 ⁵⁹	47·866 ¹¹⁸	25·51 ⁸³
19·2	26·001 ²¹³	56·56 ¹¹⁴	10·603 ⁹⁶	20·51 ⁵⁰	47·748 ¹⁰⁷	24·68 ¹⁰¹
29·2	25·788 ¹⁹²	55·42 ¹⁵⁵	10·507 ⁸⁵	21·01 ⁴¹	47·641 ⁹³	23·67 ¹¹⁵
July 9·1	25·596 ¹⁷¹	53·87 ¹⁹⁰	10·422 ⁶⁴	21·42 ³²	47·548 ⁷⁸	22·52 ¹²⁵
19·1	25·425 ¹³⁸	51·97 ²²⁰	10·358 ⁴⁴	21·74 ¹⁹	47·470 ⁵⁸	21·27 ¹³³
29·1	25·287 ¹⁰⁵	49·77 ²⁴³	10·314 ²⁵	21·93 ⁴	47·412 ³⁷	19·94 ¹³⁶
Aug. 8·1	25·182 ⁶⁰	47·34 ²⁵⁶	10·289 ²	21·97 ¹¹	47·375 ¹²	18·58 ¹³³
18·0	25·122 ¹⁵	44·78 ²⁶³	10·291 ²⁵	21·86 ²⁶	47·363 ¹⁶	17·25 ¹²⁵
28·0	25·107 ³⁶	42·15 ²⁶¹	10·316 ⁵⁶	21·60 ⁴⁷	47·379 ⁴⁷	16·00 ¹¹⁰
Sept. 7·0	25·143 ⁹⁰	39·54 ²⁴⁵	10·372 ⁸⁶	21·13 ⁶⁸	47·426 ⁸¹	14·90 ⁹¹
17·0	25·233 ¹⁴⁸	37·09 ²²⁴	10·458 ¹²¹	20·45 ⁹⁰	47·507 ¹¹⁷	13·99 ⁶⁵
26·9	25·381 ²⁰⁷	34·85 ¹⁸⁹	10·579 ¹⁵⁵	19·55 ¹¹⁰	47·624 ¹⁵⁵	13·34 ³⁵
Oct. 6·9	25·588 ²⁶⁰	32·96 ¹⁴⁸	10·734 ¹⁹³	18·45 ¹³⁴	47·779 ¹⁹³	12·99 ¹
16·9	25·848 ³¹²	31·48 ⁹⁹	10·927 ²²⁴	17·11 ¹⁵⁴	47·972 ²²⁹	13·00 ³⁸
26·8	26·160 ³⁵⁸	30·49 ⁴⁵	11·151 ²⁵⁹	15·57 ¹⁷³	48·201 ²⁶⁴	13·38 ⁷⁷
Nov. 5·8	26·518 ³⁹⁴	30·04 ¹³	11·410 ²⁸⁷	13·84 ¹⁸⁶	48·465 ²⁹¹	14·15 ¹¹⁵
15·8	26·912 ⁴¹⁹	30·17 ⁷⁵	11·697 ³⁰⁹	11·98 ¹⁹⁶	48·756 ³¹³	15·30 ¹⁵¹
25·8	27·331 ⁴²⁹	30·92 ¹³¹	12·006 ³²²	10·02 ¹⁹⁸	49·069 ³²⁶	16·81 ¹⁸⁴
Dec. 5·7	27·760 ⁴²⁴	32·23 ¹⁸⁶	12·328 ³²⁷	8·04 ¹⁹⁷	49·395 ³²⁸	18·65 ²⁰⁹
15·7	28·184 ⁴¹⁰	34·09 ²³⁴	12·655 ³²¹	6·07 ¹⁸⁷	49·723 ³²⁰	20·74 ²²⁸
25·7	28·594 ³⁷⁸	36·43 ²⁷⁵	12·976 ³⁰⁵	4·20 ¹⁷²	50·043 ³⁰⁰	23·02 ²⁴⁰
35·7	28·972	39·18	13·281	2·48	50·343	25·42
Mean Place	24·631	29·01	9·567	29·59	46·518	6·64
Sec δ , Tan δ	1·524	-1·150	1·019	+0·194	1·039	-0·283
$L \alpha$, $L \delta$	-0·01	-0·4	0·00	-0·4	0·00	-0·4
$\omega \alpha$, $\omega \delta$	-0·07	+0·3	+0·01	+0·3	-0·02	+0·3
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 345

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ι Antilæ. Mag. 4.7		d Leonis. Mag. 5.1		β Ursæ Majoris. Mag. 2.4	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 10 53	[°] ['] 36 43	^h ^m 10 56	[°] ['] 4 1	^h ^m 10 57	[°] ['] 56 47
Jan. 0.7	6.233 ³²⁰	0.22 ²⁸¹	32.795 ²⁹⁰	64.49 ¹⁸⁷	9.225 ⁴⁷¹	42.39 ¹²
10.6	6.553 ²⁸⁰	3.03 ³⁰⁰	33.085 ²⁶⁰	62.62 ¹⁶⁹	9.696 ⁴²⁶	42.51 ⁶⁶
20.6	6.833 ²³⁵	6.03 ³⁰⁸	33.345 ²²²	60.93 ¹⁴⁶	10.122 ³⁶⁵	43.17 ¹¹⁸
30.6	7.068 ¹⁸²	9.11 ³¹⁰	33.567 ¹⁷⁹	59.47 ¹²¹	10.487 ²⁹⁴	44.35 ¹⁶¹
Feb. 9.6	7.250 ¹²⁹	12.21 ³⁰²	33.746 ¹³²	58.26 ⁹³	10.781 ²¹²	45.96 ²⁰²
19.5	7.379 ⁷⁵	15.23 ²⁹⁰	33.878 ⁸⁵	57.33 ⁶⁷	10.993 ¹³²	47.98 ²²⁹
Mar. 1.5	7.454 ²⁵	18.13 ²⁶⁹	33.963 ⁴¹	56.66 ³⁹	11.125 ⁴⁹	50.27 ²⁴⁷
11.5	7.479 ²²	20.82 ²⁴⁴	34.004 ¹	56.27 ¹⁶	11.174 ³⁰	52.74 ²⁵⁵
21.5	7.457 ⁶³	23.26 ²¹⁷	34.003 ³⁶	56.11 ⁵	11.144 ¹⁰⁰	55.29 ²⁵⁰
31.4	7.394 ⁹⁷	25.43 ¹⁸⁴	33.967 ⁶⁵	56.16 ²³	11.044 ¹⁶¹	57.79 ²³⁸
Apr. 10.4	7.297 ¹²⁴	27.27 ¹⁵¹	33.902 ⁸⁸	56.39 ³⁷	10.883 ²¹¹	60.17 ²¹⁵
20.4	7.173 ¹⁴⁵	28.78 ¹¹³	33.814 ¹⁰⁴	56.76 ⁴⁹	10.672 ²⁴⁸	62.32 ¹⁸⁵
30.3	7.028 ¹⁶⁰	29.91 ⁷⁸	33.710 ¹¹⁶	57.25 ⁵⁷	10.424 ²⁷⁴	64.17 ¹⁵⁰
May 10.3	6.868 ¹⁶⁸	30.69 ³⁹	33.594 ¹¹⁹	57.82 ⁶³	10.150 ²⁸⁵	65.67 ¹⁰⁹
20.3	6.700 ¹⁷²	31.08 ¹	33.475 ¹¹⁹	58.45 ⁶⁶	9.865 ²⁹¹	66.76 ⁶⁴
30.3	6.528 ¹⁷¹	31.09 ³⁷	33.356 ¹¹⁶	59.11 ⁶⁹	9.574 ²⁸¹	67.40 ²⁰
June 9.2	6.357 ¹⁶⁶	30.72 ⁷⁴	33.240 ¹⁰⁹	59.80 ⁶⁸	9.293 ²⁶⁸	67.60 ²⁴
19.2	6.191 ¹⁵⁵	29.98 ¹⁰⁹	33.131 ⁹⁹	60.48 ⁶⁶	9.025 ²⁴³	67.36 ⁷⁰
29.2	6.036 ¹⁴²	28.89 ¹³⁹	33.032 ⁸⁶	61.14 ⁶³	8.782 ²¹⁴	66.66 ¹¹¹
July 9.2	5.894 ¹²⁴	27.50 ¹⁶⁸	32.946 ⁷¹	61.77 ⁵⁷	8.568 ¹⁸⁰	65.55 ¹⁵¹
19.1	5.770 ¹⁰²	25.82 ¹⁹⁰	32.875 ⁵⁴	62.34 ⁵⁰	8.388 ¹⁴⁰	64.04 ¹⁸⁸
29.1	5.668 ⁷⁵	23.92 ²⁰⁷	32.821 ³⁴	62.84 ⁴⁰	8.248 ⁹⁷	62.16 ²¹⁸
Aug. 8.1	5.593 ⁴⁴	21.85 ²¹⁶	32.787 ¹²	63.24 ²⁷	8.151 ⁵¹	59.98 ²⁴⁵
18.0	5.549 ⁹	19.69 ²¹⁹	32.775 ¹³	63.51 ¹²	8.100 ³	57.53 ²⁷¹
28.0	5.540 ³¹	17.50 ²¹³	32.788 ⁴²	63.63 ⁵	8.097 ⁵²	54.82 ²⁸⁹
Sept. 7.0	5.571 ⁷⁴	15.37 ¹⁹⁷	32.830 ⁷²	63.58 ²⁷	8.149 ¹⁰⁶	51.93 ³⁰²
17.0	5.645 ¹²⁰	13.40 ¹⁷⁴	32.902 ¹⁰⁷	63.31 ⁵⁰	8.255 ¹⁶²	48.91 ³¹⁰
26.9	5.765 ¹⁶⁷	11.66 ¹⁴¹	33.009 ¹⁴²	62.81 ⁷⁵	8.417 ²²²	45.81 ³¹¹
Oct. 6.9	5.932 ²¹⁴	10.25 ¹⁰²	33.151 ¹⁷⁹	62.06 ¹⁰¹	8.639 ²⁸⁰	42.70 ³⁰⁸
16.9	6.146 ²⁵⁸	9.23 ⁵⁷	33.330 ²¹⁵	61.05 ¹²⁶	8.919 ³³⁸	39.62 ²⁹⁴
26.9	6.404 ²⁹⁹	8.66 ⁷	33.545 ²⁴⁸	59.79 ¹⁵⁰	9.257 ³⁹²	36.68 ²⁷⁷
Nov. 5.8	6.703 ³³²	8.59 ⁴⁴	33.793 ²⁷⁸	58.29 ¹⁷¹	9.649 ⁴³⁸	33.91 ²⁴⁸
15.8	7.035 ³⁵⁶	9.03 ⁹⁸	34.071 ³⁰³	56.58 ¹⁸⁹	10.087 ⁴⁷⁹	31.43 ²¹⁵
25.8	7.391 ³⁶⁹	10.01 ¹⁴⁷	34.374 ³¹⁸	54.69 ¹⁹⁹	10.566 ⁵⁰⁴	29.28 ¹⁷⁴
Dec. 5.7	7.760 ³⁷¹	11.48 ¹⁹³	34.692 ³²³	52.70 ²⁰³	11.070 ⁵¹⁷	27.54 ¹²⁷
15.7	8.131 ³⁶¹	13.41 ²³²	35.015 ³²⁰	50.65 ²⁰⁵	11.587 ⁵¹⁴	26.27 ⁷⁵
25.7	8.492 ³³⁸	15.73 ²⁶⁵	35.335 ³⁰⁵	48.62 ¹⁹⁵	12.101 ⁴⁹⁵	25.52 ²²
35.7	8.830	18.38	35.640	46.67	12.596	25.30
Mean Place	4.779	5.54	31.976	71.58	8.784	63.02
Sec δ , Tan δ	1.248	-0.746	1.002	+0.071	1.826	+1.528
$L \alpha$, $L \delta$	-0.01	-0.4	0.00	-0.4	+0.01	-0.4
$\omega \alpha$, $\omega \delta$	-0.05	+0.3	0.00	+0.3	+0.10	+0.3
AUTHORITY	A. N.				A. E.	

346 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Ursæ Majoris. Mag. 2.0		χ Leonis. Mag. 4.7		ψ Ursæ Majoris. Mag. 3.2		
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.	
	$\begin{matrix} h & m \\ 10 & 58 \end{matrix}$	$\begin{matrix} \circ & ' \\ 62 & 9 \end{matrix}$	$\begin{matrix} h & m \\ 11 & 0 \end{matrix}$	$\begin{matrix} \circ & ' \\ 7 & 45 \end{matrix}$	$\begin{matrix} h & m \\ 11 & 5 \end{matrix}$	$\begin{matrix} \circ & ' \\ 44 & 54 \end{matrix}$	
Jan.	0.7 10.7 20.6 30.6	$\begin{matrix} 56.14 & 54 \\ 56.68 & 49 \\ 57.17 & 41 \\ 57.58 & 34 \end{matrix}$	$\begin{matrix} 59.29 & 30 \\ 59.59 & 83 \\ 60.42 & 139 \\ 61.81 & 184 \end{matrix}$	$\begin{matrix} 60.442 & 295 \\ 60.737 & 265 \\ 61.002 & 228 \\ 61.230 & 183 \end{matrix}$	$\begin{matrix} 21.14 & 175 \\ 19.39 & 155 \\ 17.84 & 129 \\ 16.55 & 101 \end{matrix}$	$\begin{matrix} 17.597 & 387 \\ 17.984 & 350 \\ 18.334 & 305 \\ 18.639 & 250 \end{matrix}$	$\begin{matrix} 60.93 & 40 \\ 60.53 & 9 \\ 60.62 & 55 \\ 61.17 & 100 \end{matrix}$
Feb.	9.6 19.5	$\begin{matrix} 57.92 & 24 \\ 58.16 & 15 \end{matrix}$	$\begin{matrix} 63.65 & 223 \\ 65.88 & 247 \end{matrix}$	$\begin{matrix} 61.413 & 137 \\ 61.550 & 91 \end{matrix}$	$\begin{matrix} 15.54 & 71 \\ 14.83 & 43 \end{matrix}$	$\begin{matrix} 18.889 & 186 \\ 19.075 & 120 \end{matrix}$	$\begin{matrix} 62.17 & 142 \\ 63.59 & 170 \end{matrix}$
Mar.	1.5 11.5 21.5 31.4	$\begin{matrix} 58.31 & 5 \\ 58.36 & 3 \\ 58.33 & 13 \\ 58.20 & 19 \end{matrix}$	$\begin{matrix} 68.35 & 268 \\ 71.03 & 272 \\ 73.75 & 264 \\ 76.39 & 252 \end{matrix}$	$\begin{matrix} 61.641 & 43 \\ 61.684 & 5 \\ 61.689 & 32 \\ 61.657 & 62 \end{matrix}$	$\begin{matrix} 14.40 & 19 \\ 14.21 & 7 \\ 14.28 & 25 \\ 14.53 & 42 \end{matrix}$	$\begin{matrix} 19.195 & 59 \\ 19.254 & 1 \\ 19.253 & 57 \\ 19.196 & 105 \end{matrix}$	$\begin{matrix} 65.29 & 195 \\ 67.24 & 208 \\ 69.32 & 213 \\ 71.45 & 208 \end{matrix}$
Apr.	10.4 20.4 30.4	$\begin{matrix} 58.01 & 26 \\ 57.75 & 30 \\ 57.45 & 33 \end{matrix}$	$\begin{matrix} 78.91 & 224 \\ 81.15 & 191 \\ 83.06 & 153 \end{matrix}$	$\begin{matrix} 61.595 & 88 \\ 61.507 & 104 \\ 61.403 & 115 \end{matrix}$	$\begin{matrix} 14.95 & 55 \\ 15.50 & 63 \\ 16.13 & 69 \end{matrix}$	$\begin{matrix} 19.091 & 142 \\ 18.949 & 169 \\ 18.780 & 189 \end{matrix}$	$\begin{matrix} 73.53 & 195 \\ 75.48 & 177 \\ 77.25 & 148 \end{matrix}$
May	10.3 20.3 30.3	$\begin{matrix} 57.12 & 35 \\ 56.77 & 36 \\ 56.41 & 35 \end{matrix}$	$\begin{matrix} 84.59 & 106 \\ 85.65 & 62 \\ 86.27 & 12 \end{matrix}$	$\begin{matrix} 61.288 & 118 \\ 61.170 & 121 \\ 61.049 & 119 \end{matrix}$	$\begin{matrix} 16.82 & 71 \\ 17.53 & 71 \\ 18.24 & 70 \end{matrix}$	$\begin{matrix} 18.591 & 199 \\ 18.392 & 205 \\ 18.187 & 199 \end{matrix}$	$\begin{matrix} 78.73 & 119 \\ 79.92 & 82 \\ 80.74 & 47 \end{matrix}$
June	9.2 19.2 29.2	$\begin{matrix} 56.06 & 33 \\ 55.73 & 30 \\ 55.43 & 27 \end{matrix}$	$\begin{matrix} 86.39 & 35 \\ 86.04 & 85 \\ 85.19 & 127 \end{matrix}$	$\begin{matrix} 60.930 & 110 \\ 60.820 & 102 \\ 60.718 & 89 \end{matrix}$	$\begin{matrix} 18.94 & 65 \\ 19.59 & 59 \\ 20.18 & 52 \end{matrix}$	$\begin{matrix} 17.988 & 188 \\ 17.800 & 173 \\ 17.627 & 156 \end{matrix}$	$\begin{matrix} 81.21 & 11 \\ 81.32 & 28 \\ 81.04 & 66 \end{matrix}$
July	9.2 19.1 29.1	$\begin{matrix} 55.16 & 23 \\ 54.93 & 18 \\ 54.75 & 13 \end{matrix}$	$\begin{matrix} 83.92 & 168 \\ 82.24 & 205 \\ 80.19 & 242 \end{matrix}$	$\begin{matrix} 60.629 & 75 \\ 60.554 & 57 \\ 60.497 & 37 \end{matrix}$	$\begin{matrix} 20.70 & 44 \\ 21.14 & 33 \\ 21.47 & 22 \end{matrix}$	$\begin{matrix} 17.471 & 129 \\ 17.342 & 104 \\ 17.238 & 71 \end{matrix}$	$\begin{matrix} 80.38 & 99 \\ 79.39 & 134 \\ 78.05 & 161 \end{matrix}$
Aug.	8.1 18.1 28.0	$\begin{matrix} 54.62 & 8 \\ 54.54 & 1 \\ 54.53 & 5 \end{matrix}$	$\begin{matrix} 77.77 & 267 \\ 75.10 & 293 \\ 72.17 & 308 \end{matrix}$	$\begin{matrix} 60.460 & 17 \\ 60.443 & 9 \\ 60.452 & 38 \end{matrix}$	$\begin{matrix} 21.69 & 6 \\ 21.75 & 10 \\ 21.65 & 28 \end{matrix}$	$\begin{matrix} 17.167 & 41 \\ 17.126 & 3 \\ 17.123 & 35 \end{matrix}$	$\begin{matrix} 76.44 & 194 \\ 74.52 & 212 \\ 72.38 & 237 \end{matrix}$
Sept.	7.0 17.0 26.9	$\begin{matrix} 54.58 & 11 \\ 54.69 & 17 \\ 54.86 & 25 \end{matrix}$	$\begin{matrix} 69.09 & 321 \\ 65.88 & 328 \\ 62.60 & 327 \end{matrix}$	$\begin{matrix} 60.490 & 69 \\ 60.559 & 102 \\ 60.661 & 140 \end{matrix}$	$\begin{matrix} 21.37 & 50 \\ 20.87 & 73 \\ 20.14 & 97 \end{matrix}$	$\begin{matrix} 17.158 & 82 \\ 17.240 & 124 \\ 17.364 & 169 \end{matrix}$	$\begin{matrix} 70.01 & 255 \\ 67.46 & 269 \\ 64.77 & 277 \end{matrix}$
Oct.	6.9 16.9 26.9	$\begin{matrix} 55.11 & 32 \\ 55.43 & 38 \\ 55.81 & 44 \end{matrix}$	$\begin{matrix} 59.33 & 319 \\ 56.14 & 303 \\ 53.11 & 282 \end{matrix}$	$\begin{matrix} 60.801 & 174 \\ 60.975 & 212 \\ 61.187 & 245 \end{matrix}$	$\begin{matrix} 19.17 & 118 \\ 17.99 & 144 \\ 16.55 & 164 \end{matrix}$	$\begin{matrix} 17.533 & 220 \\ 17.753 & 265 \\ 18.018 & 311 \end{matrix}$	$\begin{matrix} 62.00 & 278 \\ 59.22 & 278 \\ 56.44 & 270 \end{matrix}$
Nov.	5.8 15.8 25.8	$\begin{matrix} 56.25 & 50 \\ 56.75 & 54 \\ 57.29 & 57 \end{matrix}$	$\begin{matrix} 50.29 & 250 \\ 47.79 & 211 \\ 45.68 & 169 \end{matrix}$	$\begin{matrix} 61.432 & 278 \\ 61.710 & 300 \\ 62.010 & 318 \end{matrix}$	$\begin{matrix} 14.91 & 181 \\ 13.10 & 196 \\ 11.14 & 203 \end{matrix}$	$\begin{matrix} 18.329 & 351 \\ 18.680 & 385 \\ 19.065 & 406 \end{matrix}$	$\begin{matrix} 53.74 & 252 \\ 51.22 & 229 \\ 48.93 & 196 \end{matrix}$
Dec.	5.8 15.7 25.7 35.7	$\begin{matrix} 57.86 & 60 \\ 58.46 & 58 \\ 59.04 & 56 \\ 59.60 & 56 \end{matrix}$	$\begin{matrix} 43.99 & 116 \\ 42.83 & 62 \\ 42.21 & 8 \\ 42.13 & 8 \end{matrix}$	$\begin{matrix} 62.328 & 326 \\ 62.654 & 322 \\ 62.976 & 309 \\ 63.285 & 309 \end{matrix}$	$\begin{matrix} 9.11 & 202 \\ 7.09 & 198 \\ 5.11 & 185 \\ 3.26 & 185 \end{matrix}$	$\begin{matrix} 19.471 & 419 \\ 19.890 & 419 \\ 20.309 & 406 \\ 20.715 & 406 \end{matrix}$	$\begin{matrix} 46.97 & 162 \\ 45.35 & 118 \\ 44.17 & 70 \\ 43.47 & 70 \end{matrix}$
Mean Place Sec δ , Tan δ		$\begin{matrix} 55.76 & 80.67 \\ 2.142 & +1.894 \end{matrix}$		$\begin{matrix} 59.684 & 29.27 \\ 1.009 & +0.136 \end{matrix}$		$\begin{matrix} 17.155 & 79.27 \\ 1.412 & +0.997 \end{matrix}$	
L α , L δ $\omega \alpha$, $\omega \delta$		$\begin{matrix} +0.01 & -0.4 \\ +0.12 & +0.3 \end{matrix}$		$\begin{matrix} 0.00 & -0.4 \\ +0.01 & +0.3 \end{matrix}$		$\begin{matrix} +0.01 & -0.4 \\ +0.06 & +0.2 \end{matrix}$	
AUTHORITY		A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 347

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Crateris. Mag. 4.5		δ Leonis. Mag. 2.6		θ Leonis. Mag. 3.4	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m II 7	° ' 22 23	h m II 9	° ' 20 56	h m II 10	° ' 15 50
Jan. 0.7	50.250 ³⁰⁴	57.61 ²⁵²	58.390 ³¹⁵	52.51 ¹³²	9.543 ³⁰⁸	71.65 ¹⁵²
10.7	50.554 ²⁷³	60.13 ²⁶¹	58.705 ²⁸⁵	51.19 ¹⁰³	9.851 ²⁷⁷	70.13 ¹²³
20.6	50.827 ²³³	62.74 ²⁶¹	58.990 ²⁴⁷	50.16 ⁶⁴	10.128 ²⁴²	68.90 ⁹³
30.6	51.060 ¹⁸⁷	65.35 ²⁵¹	59.237 ²⁰⁵	49.52 ³²	10.370 ¹⁹⁹	67.97 ⁵⁷
Feb. 9.6	51.247 ¹⁴⁰	67.86 ²⁴¹	59.442 ¹⁵⁵	49.20 ⁵	10.569 ¹⁵¹	67.40 ²⁶
19.5	51.387 ⁹³	70.27 ²²¹	59.597 ¹⁰⁷	49.25 ³⁵	10.720 ¹⁰⁴	67.14 ⁵
Mar. 1.5	51.480 ⁴⁶	72.48 ¹⁹⁶	59.704 ⁶⁰	49.60 ⁶²	10.824 ⁵⁶	67.19 ³²
11.5	51.526 ⁶	74.44 ¹⁷⁵	59.764 ¹²	50.22 ⁸⁶	10.880 ¹⁴	67.51 ⁵⁴
21.5	51.532 ³¹	76.19 ¹⁴⁷	59.776 ²⁷	51.08 ⁹⁷	10.894 ²⁵	68.05 ⁷³
31.4	51.501 ⁶²	77.66 ¹²⁰	59.749 ⁶⁰	52.05 ¹¹¹	10.869 ⁵⁷	68.78 ⁸⁴
Apr. 10.4	51.439 ⁸⁸	78.86 ⁹⁰	59.689 ⁸⁷	53.16 ¹¹⁴	10.812 ⁸⁴	69.62 ⁹³
20.4	51.351 ¹⁰⁷	79.76 ⁶²	59.602 ¹¹⁰	54.30 ¹¹³	10.728 ¹⁰⁴	70.55 ⁹⁶
30.4	51.244 ¹²⁰	80.38 ³⁵	59.492 ¹²⁰	55.43 ¹⁰⁷	10.624 ¹¹⁴	71.51 ⁹⁴
May 10.3	51.124 ¹²⁹	80.73 ⁶	59.372 ¹²⁸	56.50 ¹⁰¹	10.510 ¹²³	72.45 ⁹⁰
20.3	50.995 ¹³⁴	80.79 ²¹	59.244 ¹³¹	57.51 ⁸⁴	10.387 ¹²⁵	73.35 ⁸⁰
30.3	50.861 ¹³²	80.58 ⁴⁷	59.113 ¹²⁸	58.35 ⁶⁹	10.262 ¹²²	74.15 ⁷²
June 9.2	50.729 ¹²⁹	80.11 ⁷²	58.985 ¹²⁴	59.04 ⁵²	10.140 ¹¹⁸	74.87 ⁵⁸
19.2	50.600 ¹²³	79.39 ⁹⁴	58.861 ¹¹³	59.56 ³⁴	10.022 ¹⁰⁷	75.45 ⁴⁵
29.2	50.477 ¹¹²	78.45 ¹¹⁴	58.748 ¹⁰¹	59.90 ¹⁷	9.915 ⁹⁸	75.90 ³¹
July 9.2	50.365 ⁹⁹	77.31 ¹³¹	58.647 ⁸⁷	60.07 ⁵	9.817 ⁸⁰	76.21 ¹⁵
19.1	50.266 ⁸³	76.00 ¹⁴⁵	58.560 ⁶⁷	60.02 ²⁵	9.737 ⁶⁶	76.36 ²
29.1	50.183 ⁶²	74.55 ¹⁵⁴	58.493 ⁴⁷	59.77 ⁴³	9.671 ⁴⁵	76.34 ¹⁸
Aug. 8.1	50.121 ³⁹	73.01 ¹⁵⁵	58.446 ²⁵	59.34 ⁶⁷	9.626 ²⁴	76.16 ³⁸
18.1	50.082 ⁸	71.46 ¹⁵¹	58.421 ²	58.67 ⁸⁹	9.602 ²	75.78 ⁵⁹
28.0	50.074 ²¹	69.95 ¹⁴⁴	58.423 ³¹	57.78 ¹⁰⁵	9.604 ²⁹	75.19 ⁷⁸
Sept. 7.0	50.095 ⁵⁸	68.51 ¹²⁷	58.454 ⁶⁴	56.73 ¹³⁰	9.633 ⁶²	74.41 ⁹⁸
17.0	50.153 ⁹⁷	67.24 ¹⁰¹	58.518 ⁹⁹	55.43 ¹⁵¹	9.695 ⁹⁶	73.43 ¹²¹
26.9	50.250 ¹³⁸	66.23 ⁷³	58.617 ¹³⁶	53.92 ¹⁷⁰	9.791 ¹³³	72.22 ¹⁴²
Oct. 6.9	50.388 ¹⁸⁰	65.50 ³⁹	58.753 ¹⁷³	52.22 ¹⁸⁵	9.924 ¹⁷⁰	70.80 ¹⁶¹
16.9	50.568 ²²⁰	65.11 ¹	58.926 ²¹⁵	50.37 ²⁰⁰	10.094 ²⁰⁹	69.19 ¹⁸⁰
26.9	50.788 ²⁵⁶	65.12 ⁴²	59.141 ²⁴⁹	48.37 ²¹²	10.303 ²⁴⁵	67.39 ¹⁹⁵
Nov. 5.8	51.044 ²⁹¹	65.54 ⁸⁵	59.390 ²⁸⁵	46.25 ²¹⁷	10.548 ²⁷⁷	65.44 ²⁰⁶
15.8	51.335 ³¹⁶	66.39 ¹²⁶	59.675 ³¹¹	44.08 ²¹⁹	10.825 ³⁰⁴	63.38 ²¹¹
25.8	51.651 ³³³	67.65 ¹⁶³	59.986 ³³⁰	41.89 ²¹⁰	11.129 ³²⁴	61.27 ²⁰⁸
Dec. 5.8	51.984 ³³⁹	69.28 ¹⁹⁸	60.316 ³⁴⁰	39.79 ¹⁹⁷	11.453 ³³²	59.19 ²⁰¹
15.7	52.323 ³³³	71.26 ²²⁶	60.656 ³⁴¹	37.82 ¹⁸⁰	11.785 ³³²	57.18 ¹⁸⁸
25.7	52.656 ³¹⁹	73.52 ²⁴⁴	60.997 ³²⁷	36.02 ¹⁵⁰	12.117 ³¹⁹	55.30 ¹⁶⁷
35.7	52.975	75.96	61.324	34.52	12.436	53.63
Mean Place	49.166	59.56	57.797	64.47	8.910	82.04
Sec δ , Tan δ	1.082	-0.412	1.071	+0.383	1.040	+0.284
L α , L δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω α , ω δ	-0.03	+0.2	+0.02	+0.2	+0.02	+0.2
AUTHORITY	A. E.		A. E.		A. E.	

348 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	δ Crateris. Mag. 3·8		τ Leonis. Mag. 5·2		λ Draconis. Mag. 4·1	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m II 15	[°] ['] 14 21	^h ^m II 23	[°] ['] 3 16	^h ^m II 26	[°] ['] 69 45
Jan. 0·7	27·287 ³⁰²	22·83 ²³⁴	56·257 ³⁰³	63·77 ¹⁹⁴	47·39 ⁷²	20·33 ¹⁹
10·7	27·589 ²⁷¹	25·17 ²³⁴	56·560 ²⁷⁶	61·83 ¹⁷⁶	48·11 ⁶⁶	20·52 ⁸²
20·6	27·860 ²³⁴	27·51 ²²⁸	56·836 ²⁴²	60·07 ¹⁵⁵	48·77 ⁵⁹	21·34 ¹³⁸
30·6	28·094 ¹⁹¹	29·79 ²¹⁵	57·078 ²⁰³	58·52 ¹³⁰	49·36 ⁴⁹	22·72 ¹⁹⁰
Feb. 9·6	28·285 ¹⁴⁷	31·94 ¹⁹⁶	57·281 ¹⁵⁷	57·22 ¹⁰¹	49·85 ³⁷	24·62 ²³³
19·5	28·432 ¹⁰²	33·90 ¹⁷⁸	57·438 ¹¹³	56·21 ⁷⁴	50·22 ²⁶	26·95 ²⁶⁵
Mar. 1·5	28·534 ⁵⁵	35·68 ¹⁵²	57·551 ⁶⁹	55·47 ⁴⁶	50·48 ¹³	29·60 ²⁸⁷
11·5	28·589 ¹⁸	37·20 ¹²⁷	57·620 ²⁷	55·01 ²¹	50·61 ¹	32·47 ²⁹⁵
21·5	28·607 ¹⁸	38·47 ¹⁰³	57·647 ⁹	54·80 ¹	50·62 ¹¹	35·42 ²⁹⁴
31·4	28·589 ⁵²	39·50 ⁷⁷	57·638 ⁴¹	54·81 ²⁰	50·51 ²¹	38·36 ²⁸¹
Apr. 10·4	28·537 ⁷⁷	40·27 ⁵¹	57·597 ⁶⁶	55·01 ³⁷	50·30 ³¹	41·17 ²⁵⁴
20·4	28·460 ⁹²	40·78 ³⁰	57·531 ⁸⁶	55·38 ⁴⁸	49·99 ³⁹	43·71 ²²²
30·4	28·368 ¹¹⁰	41·08 ⁴	57·445 ⁹⁹	55·86 ⁵⁸	49·60 ⁴⁴	45·93 ¹⁸⁴
May 10·3	28·258 ¹¹⁵	41·12 ¹⁴	57·346 ¹⁰⁸	56·44 ⁶⁴	49·16 ⁴⁸	47·77 ¹³³
20·3	28·143 ¹²²	40·98 ³⁶	57·238 ¹¹³	57·08 ⁶⁹	48·68 ⁵⁰	49·10 ⁸⁶
30·3	28·021 ¹²¹	40·62 ⁵⁵	57·125 ¹¹⁴	57·77 ⁶⁹	48·18 ⁵¹	49·96 ³²
June 9·2	27·900 ¹²¹	40·07 ⁷³	57·011 ¹¹¹	58·46 ⁷¹	47·67 ⁵⁰	50·28 ¹⁹
19·2	27·779 ¹¹²	39·34 ⁸⁹	56·900 ¹⁰⁵	59·17 ⁶⁸	47·17 ⁴⁷	50·09 ⁷⁴
29·2	27·667 ¹⁰⁴	38·45 ¹⁰⁰	56·795 ⁹⁷	59·85 ⁶⁴	46·70 ⁴⁴	49·35 ¹²⁰
July 9·2	27·563 ⁹¹	37·45 ¹¹¹	56·698 ⁸⁶	60·49 ⁵⁹	46·26 ³⁹	48·15 ¹⁶⁸
19·1	27·472 ⁸⁰	36·34 ¹¹⁵	56·612 ⁷³	61·08 ⁵¹	45·87 ³³	46·47 ²¹⁰
29·1	27·392 ⁵⁷	35·19 ¹²⁰	56·539 ⁵⁵	61·59 ⁴²	45·54 ²⁷	44·37 ²⁴⁹
Aug. 8·1	27·335 ³⁶	33·99 ¹¹⁹	56·484 ³⁶	62·01 ²⁹	45·27 ²⁰	41·88 ²⁸³
18·1	27·299 ¹³	32·80 ¹¹⁰	56·448 ¹³	62·30 ¹⁴	45·07 ¹²	39·05 ³⁰⁹
28·0	27·286 ¹⁷	31·70 ¹⁰⁰	56·435 ¹⁴	62·44 ⁴	44·95 ⁴	35·96 ³³¹
Sept. 7·0	27·303 ⁵²	30·70 ⁸⁰	56·449 ⁴⁵	62·40 ²³	44·91 ⁵	32·65 ³⁴⁶
17·0	27·355 ⁸⁸	29·90 ⁵⁸	56·494 ⁷⁹	62·17 ⁴⁷	44·96 ¹⁴	29·19 ³⁵³
26·9	27·443 ¹²⁷	29·32 ³⁰	56·573 ¹¹⁶	61·70 ⁷²	45·10 ²³	25·66 ³⁵⁴
Oct. 6·9	27·570 ¹⁶⁵	29·02 ³	56·689 ¹⁵⁴	60·98 ⁹⁷	45·33 ³³	22·12 ³⁴⁹
16·9	27·735 ²⁰⁷	29·05 ³⁵	56·843 ¹⁹³	60·01 ¹²⁴	45·66 ⁴²	18·63 ³³²
26·9	27·942 ²⁴³	29·40 ⁷⁴	57·036 ²³⁰	58·77 ¹⁴⁸	46·08 ⁵¹	15·31 ³¹¹
Nov. 5·8	28·185 ²⁷⁴	30·14 ¹⁰⁹	57·266 ²⁶⁴	57·29 ¹⁷¹	46·59 ⁵⁹	12·20 ²⁷⁶
15·8	28·459 ³⁰³	31·23 ¹⁴⁴	57·530 ²⁹¹	55·58 ¹⁸⁹	47·18 ⁶⁶	9·44 ²⁴⁰
25·8	28·762 ³²⁰	32·67 ¹⁷⁴	57·821 ³¹²	53·69 ²⁰¹	47·84 ⁷¹	7·04 ¹⁹¹
Dec. 5·8	29·082 ³³¹	34·41 ²⁰²	58·133 ³²⁴	51·68 ²⁰⁸	48·55 ⁷⁴	5·13 ¹³⁹
15·7	29·413 ³²⁵	36·43 ²¹⁶	58·457 ³²⁴	49·60 ²⁰⁸	49·29 ⁷⁶	3·74 ⁸⁰
25·7	29·738 ³¹⁴	38·59 ²³³	58·781 ³¹⁴	47·52 ²⁰²	50·05 ⁷⁴	2·94 ¹⁷
35·7	30·052	40·92	59·095	45·50	50·79	2·77
Mean Place	26·364	22·54	55·584	69·61	47·59	42·28
Sec δ, Tan δ	1·032	-0·256	1·002	+0·057	2·891	+2·712
L α, L δ	0·00	-0·4	0·00	-0·4	+0·01	-0·4
ω α, ω δ	-0·02	+0·2	0·00	+0·2	+0·18	+0·1
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 349

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ξ Hydræ. Mag. 3·7		λ Centauri. Mag. 3·3		ν Leonis. Mag. 4·5	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m	° ' "	h m	° ' "	h m	° ' "
	II 29	31 25	II 32	62 35	II 32	0 23
Jan. 0·7	10·861 ³³³	27·73 ²⁵¹	12·70 ⁵²	3·71 ²⁴⁶	57·959 ³⁰⁸	38·91 ²⁰²
10·7	11·194 ²⁹⁹	30·24 ²⁷²	13·22 ⁴⁸	6·17 ²⁸⁶	58·267 ²⁷⁹	40·93 ¹⁹¹
20·6	11·493 ²⁶³	32·96 ²⁸⁰	13·70 ⁴⁰	9·03 ³²¹	58·546 ²⁴⁶	42·84 ¹⁷³
30·6	11·756 ²¹⁵	35·76 ²⁸¹	14·10 ³³	12·24 ³⁴⁴	58·792 ²⁰⁶	44·57 ¹⁴⁷
Feb. 9·6	11·971 ¹⁷⁰	38·57 ²⁷⁵	14·43 ²⁶	15·68 ³⁵⁹	58·998 ¹⁶⁸	46·04 ¹²⁴
19·6	12·141 ¹¹⁸	41·32 ²⁶⁴	14·69 ¹⁷	19·27 ³⁶⁴	59·166 ¹²²	47·28 ⁹⁶
Mar. 1·5	12·259 ⁷²	43·96 ²⁴⁸	14·86 ⁹	22·91 ³⁶¹	59·288 ⁷⁶	48·24 ⁶⁹
11·5	12·331 ²⁹	46·44 ²²³	14·95 ¹	26·52 ³⁴⁹	59·364 ³⁵	48·93 ⁴⁴
21·5	12·360 ¹³	48·67 ¹⁹⁹	14·96 ⁵	30·01 ³³¹	59·399 ¹	49·37 ²¹
31·4	12·347 ⁴⁶	50·66 ¹⁷³	14·91 ¹²	33·32 ³⁰⁷	59·400 ³¹	49·58 ⁰
Apr. 10·4	12·301 ⁷⁹	52·39 ¹⁴¹	14·79 ¹⁸	36·39 ²⁷⁶	59·369 ⁵⁷	49·58 ¹⁸
20·4	12·222 ¹⁰¹	53·80 ¹¹³	14·61 ²³	39·15 ²³⁹	59·312 ⁷⁹	49·40 ³⁴
30·4	12·121 ¹¹⁹	54·93 ⁷⁸	14·38 ²⁸	41·54 ¹⁹⁶	59·233 ⁹⁴	49·06 ⁴⁴
May 10·3	12·002 ¹³⁴	55·71 ⁴⁶	14·10 ³⁰	43·50 ¹⁵⁴	59·139 ¹⁰²	48·62 ⁵⁴
20·3	11·868 ¹⁴⁴	56·17 ¹⁴	13·80 ³³	45·04 ¹⁰⁶	59·037 ¹¹⁰	48·08 ⁶⁴
30·3	11·724 ¹⁴⁷	56·31 ¹⁷	13·47 ³⁵	46·10 ⁵⁶	58·927 ¹¹²	47·44 ⁶⁷
June 9·3	11·577 ¹⁴⁹	56·14 ⁵²	13·12 ³⁶	46·66 ⁶	58·815 ¹¹²	46·77 ⁷⁰
19·2	11·428 ¹⁴⁵	55·62 ⁸³	12·76 ³⁶	46·72 ⁴⁴	58·703 ¹⁰⁷	46·07 ⁷²
29·2	11·283 ¹⁴⁰	54·79 ¹⁰⁶	12·40 ³⁵	46·28 ⁹⁴	58·596 ¹⁰¹	45·35 ⁷³
July 9·2	11·143 ¹²⁹	53·73 ¹³⁵	12·05 ³²	45·34 ¹⁴⁰	58·495 ⁹³	44·62 ⁶⁹
19·1	11·014 ¹¹³	52·38 ¹⁵⁵	11·73 ³⁰	43·94 ¹⁸³	58·402 ⁷⁸	43·93 ⁶⁴
29·1	10·901 ⁹⁷	50·83 ¹⁷²	11·43 ²⁶	42·11 ²²¹	58·324 ⁶³	43·29 ⁵⁸
Aug. 8·1	10·804 ⁶⁸	49·11 ¹⁸²	11·17 ²⁰	39·90 ²⁴⁹	58·261 ⁴⁵	42·71 ⁴⁷
18·1	10·736 ⁴²	47·29 ¹⁸⁶	10·97 ¹⁵	37·41 ²⁷⁴	58·216 ²¹	42·24 ³⁴
28·0	10·694 ⁴	45·43 ¹⁸¹	10·82 ⁷	34·67 ²⁸⁴	58·195 ⁵	41·90 ¹⁷
Sept. 7·0	10·690 ³³	43·62 ¹⁷²	10·75 ¹	31·83 ²⁸⁷	58·200 ³⁷	41·73 ²
17·0	10·723 ⁷⁷	41·90 ¹⁵⁴	10·76 ⁹	28·96 ²⁷⁹	58·237 ⁷²	41·75 ²⁵
27·0	10·800 ¹²¹	40·36 ¹²⁶	10·85 ¹⁸	26·17 ²⁵⁸	58·309 ¹⁰⁶	42·00 ⁵³
Oct. 6·9	10·921 ¹⁷⁰	39·10 ⁹⁰	11·03 ²⁷	23·59 ²²⁸	58·415 ¹⁴⁷	42·53 ⁷⁷
16·9	11·091 ²¹⁶	38·20 ⁵⁵	11·30 ³⁵	21·31 ¹⁸⁷	58·562 ¹⁸⁶	43·30 ¹⁰⁴
26·9	11·307 ²⁵⁶	37·65 ⁹	11·65 ⁴²	19·44 ¹³⁸	58·748 ²²⁴	44·34 ¹³²
Nov. 5·8	11·563 ²⁹⁷	37·56 ³⁷	12·07 ⁴⁹	18·06 ⁸³	58·972 ²⁵⁶	45·66 ¹⁵⁷
15·8	11·860 ³²⁸	37·93 ⁸⁷	12·56 ⁵³	17·23 ²²	59·228 ²⁸⁹	47·23 ¹⁸⁰
25·8	12·188 ³⁴⁸	38·80 ¹²⁸	13·09 ⁵⁷	17·01 ⁴⁰	59·517 ³⁰⁹	49·03 ¹⁹⁶
Dec. 5·8	12·536 ³⁵⁸	40·08 ¹⁷³	13·66 ⁵⁸	17·41 ¹⁰³	59·826 ³²¹	50·99 ²⁰⁸
15·7	12·894 ³⁶⁰	41·81 ²⁰⁸	14·24 ⁵⁷	18·44 ¹⁶¹	60·147 ³²³	53·07 ²¹¹
25·7	13·254 ³⁴¹	43·89 ²³⁹	14·81 ⁵⁵	20·05 ²¹⁶	60·470 ³¹⁵	55·18 ²⁰⁸
35·7	13·595	46·28	15·36	22·21	60·785	57·26
Mean Place	9·739	33·60	10·40	17·49	57·299	34·67
Sec δ, Tan δ	1·172	-0·611	2·172	-1·928	1·000	-0·007
L α, L δ	0·00	-0·4	-0·01	-0·4	0·00	-0·4
ω α, ω δ	-0·04	+0·1	-0·13	+0·1	0·00	+0·1
AUTHORITY	A. E.		A. E.		A. E.	

350 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ν Virginis. Mag. 4.2		β Leonis. Mag. 2.2		β Virginis. Mag. 3.8	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m II 41	° 57'	h m II 45	° 0'	h m II 46	° 21'
Jan. 0.7	51.589 ³¹¹	53.28 ¹⁸⁹	5.393 ³¹⁷	20.35 ¹⁷¹	38.489 ³¹²	71.16 ¹⁹⁹
10.7	51.900 ²⁸⁷	51.39 ¹⁶⁷	5.710 ²⁹⁶	18.64 ¹⁴⁰	38.801 ²⁸⁸	69.17 ¹⁸⁴
20.7	52.187 ²⁵⁷	49.72 ¹⁴⁴	6.006 ²⁶⁵	17.24 ¹⁰⁷	39.089 ²⁶¹	67.33 ¹⁶³
30.6	52.444 ²¹⁸	48.28 ¹¹⁴	6.271 ²²⁵	16.17 ⁷⁶	39.350 ²²⁰	65.70 ¹³⁹
Feb. 9.6	52.662 ¹⁷⁶	47.14 ⁸⁴	6.496 ¹⁸⁴	15.41 ⁴⁰	39.570 ¹⁷⁹	64.31 ¹¹¹
19.6	52.838 ¹³¹	46.30 ⁵⁴	6.680 ¹³⁷	15.01 ⁷	39.749 ¹³⁷	63.20 ⁸⁴
Mar. 1.6	52.969 ⁸⁸	45.76 ²⁵	6.817 ⁹³	14.94 ²³	39.886 ⁹²	62.36 ⁵⁴
11.5	53.057 ⁴⁵	45.51 ¹	6.910 ⁴⁵	15.17 ⁵²	39.978 ⁵²	61.82 ²⁹
21.5	53.102 ⁸	45.52 ²³	6.955 ¹⁰	15.69 ⁶⁹	40.030 ¹⁵	61.53 ⁵
31.5	53.110 ²⁵	45.75 ⁴²	6.965 ²³	16.38 ⁸⁸	40.045 ¹⁷	61.48 ¹⁴
Apr. 10.4	53.085 ⁵²	46.17 ⁵⁷	6.942 ⁵⁵	17.26 ⁹⁷	40.028 ⁴⁵	61.62 ³²
20.4	53.033 ⁷³	46.74 ⁶⁷	6.887 ⁷⁶	18.23 ¹⁰⁴	39.983 ⁶⁶	61.94 ⁴⁶
30.4	52.960 ⁹⁰	47.41 ⁷³	6.811 ⁹⁶	19.27 ¹⁰³	39.917 ⁸⁵	62.40 ⁵⁵
May 10.4	52.870 ¹⁰¹	48.14 ⁷⁷	6.715 ¹⁰⁸	20.30 ¹⁰¹	39.832 ⁹⁵	62.95 ⁶³
20.3	52.769 ¹⁰⁹	48.91 ⁷⁷	6.607 ¹¹⁷	21.31 ⁹³	39.737 ¹⁰³	63.58 ⁶⁸
30.3	52.660 ¹¹²	49.68 ⁷⁶	6.490 ¹¹⁵	22.24 ⁸²	39.634 ¹⁰⁸	64.26 ⁷⁰
June 9.3	52.548 ¹¹²	50.44 ⁷¹	6.375 ¹¹⁹	23.06 ⁷²	39.526 ¹⁰⁹	64.96 ⁷⁰
19.3	52.436 ¹⁰⁹	51.15 ⁶⁵	6.256 ¹¹⁷	23.78 ⁵⁷	39.417 ¹⁰⁷	65.66 ⁶⁹
29.2	52.327 ¹⁰³	51.80 ⁵⁷	6.139 ¹¹³	24.35 ⁴⁴	39.310 ¹⁰³	66.35 ⁶⁶
July 9.2	52.224 ⁹⁶	52.37 ⁴⁸	6.026 ¹⁰¹	24.79 ²⁵	39.207 ⁹⁵	67.01 ⁶¹
19.2	52.128 ⁸³	52.85 ³⁷	5.925 ⁸⁷	25.04 ⁷	39.112 ⁸⁵	67.62 ⁵³
29.2	52.045 ⁶⁹	53.22 ²⁵	5.838 ⁷⁴	25.11 ¹⁰	39.027 ⁷¹	68.15 ⁴⁴
Aug. 8.1	51.976 ⁵²	53.47 ⁹	5.764 ⁵⁷	25.01 ³¹	38.956 ⁵⁴	68.59 ³²
18.1	51.924 ²⁸	53.56 ⁷	5.707 ³³	24.70 ⁵¹	38.902 ³²	68.91 ¹⁹
28.1	51.896 ²	53.49 ²⁷	5.674 ⁷	24.19 ⁷⁴	38.870 ⁶	69.10 ⁰
Sept. 7.0	51.894 ²⁷	53.22 ⁴⁷	5.667 ²⁴	23.45 ⁹⁵	38.864 ²³	69.10 ¹⁸
17.0	51.921 ⁶⁰	52.75 ⁷⁰	5.691 ⁵⁹	22.50 ¹¹⁹	38.887 ⁵⁸	68.92 ⁴³
27.0	51.981 ⁹⁸	52.05 ⁹⁴	5.750 ⁹⁶	21.31 ¹⁴²	38.945 ⁹⁵	68.49 ⁶⁶
Oct. 7.0	52.079 ¹³⁸	51.11 ¹¹⁹	5.846 ¹³⁵	19.89 ¹⁶¹	39.040 ¹³⁴	67.83 ⁹⁴
16.9	52.217 ¹⁷⁸	49.92 ¹⁴³	5.981 ¹⁷⁶	18.28 ¹⁸³	39.174 ¹⁷⁵	66.89 ¹¹⁷
26.9	52.395 ²¹⁷	48.49 ¹⁶⁵	6.157 ²¹⁶	16.45 ²⁰¹	39.349 ²¹⁵	65.72 ¹⁴⁵
Nov. 5.9	52.612 ²⁵²	46.84 ¹⁸⁴	6.373 ²⁵³	14.44 ²¹²	39.564 ²⁵⁰	64.27 ¹⁶⁶
15.8	52.864 ²⁸⁴	45.00 ²⁰⁰	6.626 ²⁸⁷	12.32 ²²⁰	39.814 ²⁸³	62.61 ¹⁸⁷
25.8	53.148 ³⁰⁸	43.00 ²⁰⁹	6.913 ³⁰⁹	10.12 ²²¹	40.097 ³⁰⁶	60.74 ²⁰²
Dec. 5.8	53.456 ³²³	40.91 ²¹³	7.222 ³²⁶	7.91 ²¹⁶	40.403 ³²¹	58.72 ²¹⁰
15.8	53.779 ³²⁷	38.78 ²⁰⁹	7.548 ³³²	5.75 ²⁰²	40.724 ³²⁶	56.62 ²¹²
25.7	54.106 ³²⁰	36.69 ¹⁹⁷	7.880 ³²⁷	3.73 ¹⁸⁴	41.050 ³²¹	54.50 ²⁰⁵
35.7	54.426	34.72	8.207	1.89	41.371	52.45
Mean Place	51.057	59.68	4.963	29.32	37.936	75.74
Sec δ , Tan δ	1.007	+0.122	1.035	+0.268	1.001	+0.038
L α , L δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω α , ω δ	+0.01	+0.1	+0.02	+0.1	0.00	+0.1
AUTHORITY			A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 351

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	B Centauri. Mag. 4.7		γ Ursæ Majoris. Mag. 2.5		π Virginis. Mag. 4.6	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m II 47	° ′ 44 44	h m II 49	° ′ 54 7	h m II 56	° ′ 7 2
Jan. 0.7	15.571 ³⁸⁸	12.15 ²⁴²	44.077 ⁴⁷⁰	23.06 ⁵⁵	52.993 ³¹⁵	51.50 ¹⁹¹
10.7	15.959 ³⁵⁵	14.57 ²⁷³	44.547 ⁴⁴²	22.51 ⁰	53.308 ²⁹⁵	49.59 ¹⁷¹
20.7	16.314 ³¹³	17.30 ²⁹⁵	44.989 ³⁹⁹	22.51 ⁵⁶	53.603 ²⁶⁶	47.88 ¹⁴⁵
30.6	16.627 ²⁶⁵	20.25 ³¹⁰	45.388 ³⁴⁴	23.07 ¹⁰⁷	53.869 ²³⁰	46.43 ¹¹⁶
Feb. 9.6	16.892 ²¹¹	23.35 ³¹⁴	45.732 ²⁸⁰	24.14 ¹⁶⁰	54.099 ¹⁸⁹	45.27 ⁸⁶
19.6	17.103 ¹⁵⁶	26.49 ³¹²	46.012 ²⁰⁶	25.74 ¹⁹⁶	54.288 ¹⁴⁵	44.41 ⁵⁵
Mar. 1.6	17.259 ¹⁰²	29.61 ³⁰³	46.218 ¹³⁵	27.70 ²³¹	54.433 ¹⁰³	43.86 ²⁵
11.5	17.361 ⁵⁰	32.64 ²⁸⁸	46.353 ⁵⁹	30.01 ²⁴⁹	54.536 ⁶¹	43.61 ²
21.5	17.411 ²	35.52 ²⁶⁷	46.412 ⁷	32.50 ²⁵⁸	54.597 ²³	43.63 ²⁴
31.5	17.413 ⁴¹	38.19 ²⁴¹	46.405 ⁷⁰	35.08 ²⁵⁹	54.620 ¹⁰	43.87 ⁴⁵
Apr. 10.4	17.372 ⁷⁸	40.60 ²¹³	46.335 ¹²⁶	37.67 ²⁴⁹	54.610 ³⁸	44.32 ⁵⁹
20.4	17.294 ¹¹⁰	42.73 ¹⁸⁰	46.209 ¹⁷¹	40.12 ²²⁶	54.572 ⁶²	44.91 ⁷¹
30.4	17.184 ¹³⁶	44.53 ¹⁴⁴	46.038 ²⁰⁷	42.38 ²⁰⁰	54.510 ⁸⁰	45.62 ⁷⁷
May 10.4	17.048 ¹⁵⁹	45.97 ¹⁰⁶	45.831 ²³³	44.38 ¹⁶³	54.430 ⁹³	46.39 ⁸⁰
20.3	16.889 ¹⁷⁵	47.03 ⁶⁸	45.598 ²⁵³	46.01 ¹²⁸	54.337 ¹⁰³	47.19 ⁸¹
30.3	16.714 ¹⁸⁶	47.71 ²⁶	45.345 ²⁵⁵	47.29 ⁸⁰	54.234 ¹⁰⁹	48.00 ⁷⁹
June 9.3	16.528 ¹⁹⁴	47.97 ¹⁴	45.090 ²⁶¹	48.09 ³⁹	54.125 ¹¹¹	48.79 ⁷⁴
19.3	16.334 ¹⁹⁶	47.83 ⁵⁴	44.829 ²⁵⁰	48.48 ⁷	54.014 ¹¹¹	49.53 ⁶⁸
29.2	16.138 ¹⁹³	47.29 ⁹³	44.579 ²³⁸	48.41 ⁵⁴	53.903 ¹⁰⁷	50.21 ⁵⁹
July 9.2	15.945 ¹⁸⁴	46.36 ¹²⁸	44.341 ²¹⁹	47.87 ⁹⁵	53.796 ¹⁰¹	50.80 ⁵⁰
19.2	15.761 ¹⁶⁹	45.08 ¹⁶¹	44.122 ¹⁹⁵	46.92 ¹³⁸	53.695 ⁹³	51.30 ³⁸
29.2	15.592 ¹⁴⁸	43.47 ¹⁸⁹	43.927 ¹⁶³	45.54 ¹⁷⁷	53.602 ⁷⁹	51.68 ²⁵
Aug. 8.1	15.444 ¹²¹	41.58 ²¹⁰	43.764 ¹²⁹	43.77 ²¹²	53.523 ⁶³	51.93 ⁹
18.1	15.323 ⁸⁵	39.48 ²²⁵	43.635 ⁸⁸	41.65 ²⁴³	53.460 ⁴²	52.02 ⁷
28.1	15.238 ⁴⁵	37.23 ²³¹	43.547 ⁴⁵	39.22 ²⁷²	53.418 ¹⁸	51.95 ²⁷
Sept. 7.0	15.193 ⁴	34.92 ²²⁸	43.502 ⁶	36.50 ²⁹²	53.400 ¹²	51.68 ⁴⁷
17.0	15.197 ⁵⁶	32.64 ²¹⁷	43.508 ⁶¹	33.58 ³¹³	53.412 ⁴⁶	51.21 ⁷¹
27.0	15.253 ¹¹³	30.47 ¹⁹⁵	43.569 ¹¹⁷	30.45 ³²²	53.458 ⁸²	50.50 ⁹⁴
Oct. 7.0	15.366 ¹⁷²	28.52 ¹⁶⁴	43.686 ¹⁷⁷	27.23 ³²⁸	53.540 ¹²³	49.56 ¹¹⁹
16.9	15.538 ²²⁸	26.88 ¹²⁷	43.863 ²³⁷	23.95 ³²⁶	53.663 ¹⁶⁴	48.37 ¹⁴³
26.9	15.766 ²⁸²	25.61 ⁸¹	44.100 ²⁹⁸	20.69 ³¹⁷	53.827 ²⁰⁵	46.94 ¹⁶⁷
Nov. 5.9	16.048 ³³⁰	24.80 ³⁰	44.398 ³⁵⁵	17.52 ²⁹⁷	54.032 ²⁴³	45.27 ¹⁸⁵
15.8	16.378 ³⁶⁹	24.50 ²²	44.753 ⁴⁰³	14.55 ²⁷⁵	54.275 ²⁷⁶	43.42 ²⁰⁰
25.8	16.747 ³⁹⁷	24.72 ⁷⁶	45.156 ⁴⁴¹	11.80 ²³⁵	54.551 ³⁰²	41.42 ²¹¹
Dec. 5.8	17.144 ⁴¹¹	25.48 ¹²⁹	45.597 ⁴⁷¹	9.45 ¹⁹⁶	54.853 ³²⁰	39.31 ²¹⁵
15.8	17.555 ⁴¹²	26.77 ¹⁷⁶	46.068 ⁴⁸⁴	7.49 ¹⁴⁶	55.173 ³²⁷	37.16 ²¹¹
25.7	17.967 ⁴⁰⁰	28.53 ²¹⁹	46.552 ⁴⁸¹	6.03 ⁹³	55.500 ³²³	35.05 ²⁰¹
35.7	18.367	30.72	47.033	5.10	55.823	33.04
Mean Place	14.252	22.79	44.193	42.37	52.551	57.35
Sec δ, Tan δ	1.408	-0.991	1.707	+1.383	1.008	+0.124
L α, L δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω α, ω δ	-0.07	+0.1	+0.09	0.0	+0.01	0.0
AUTHORITY	A. N.		A. E.			

352 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	o Virginis. Mag. 4.2			δ Centauri. Mag. 2.9			ε Corvi. Mag. 3.2					
	R. A.		Dec. N.	R. A.		Dec. S.	R. A.		Dec. S.			
	h	m	°	'	h	m	°	'	h	m	°	'
	12	I	9	9	12	4	50	17	12	6	22	II
	s				s				s			
Jan. 0.7	14.584	316	51.49	187	19.826	432	4.56	223	7.357	330	5.03	228
10.7	14.900	298	49.62	166	20.258	399	6.79	258	7.687	311	7.31	234
20.7	15.198	272	47.96	137	20.657	359	9.37	288	7.998	278	9.65	241
30.6	15.470	232	46.59	106	21.016	307	12.25	308	8.276	242	12.06	236
Feb. 9.6	15.702	193	45.53	77	21.323	252	15.33	319	8.518	199	14.42	228
19.6	15.895	152	44.76	42	21.575	193	18.52	325	8.717	158	16.70	216
Mar. 1.6	16.047	106	44.34	13	21.768	138	21.77	320	8.875	113	18.86	193
11.5	16.153	66	44.21	13	21.906	79	24.97	310	8.988	72	20.79	175
21.5	16.219	27	44.34	39	21.985	28	28.07	292	9.060	34	22.54	153
31.5	16.246	5	44.73	57	22.013	22	30.99	271	9.094	2	24.07	127
Apr. 10.4	16.241	36	45.30	69	21.991	66	33.70	245	9.092	30	25.34	101
20.4	16.205	59	45.99	83	21.925	104	36.15	212	9.062	53	26.35	80
30.4	16.146	80	46.82	87	21.821	139	38.27	178	9.009	78	27.15	51
May 10.4	16.066	91	47.69	89	21.682	165	40.05	139	8.931	94	27.66	27
20.3	15.975	104	48.58	87	21.517	190	41.44	100	8.837	106	27.93	5
30.3	15.871	111	49.45	82	21.327	206	42.44	57	8.731	116	27.98	19
June 9.3	15.760	113	50.27	76	21.121	220	43.01	15	8.615	123	27.79	44
19.3	15.647	113	51.03	67	20.901	226	43.16	29	8.492	127	27.35	61
29.2	15.534	110	51.70	60	20.675	229	42.87	71	8.365	125	26.74	86
July 9.2	15.424	104	52.30	44	20.446	220	42.16	111	8.240	125	25.88	101
19.2	15.320	98	52.74	31	20.226	211	41.05	149	8.115	116	24.87	115
29.1	15.222	81	53.05	18	20.015	188	39.56	182	7.999	102	23.72	123
Aug. 8.1	15.141	67	53.23	0	19.827	161	37.74	211	7.897	87	22.49	133
18.1	15.074	47	53.23	18	19.666	125	35.63	229	7.810	63	21.16	134
28.1	15.027	20	53.05	40	19.541	77	33.34	243	7.747	36	19.82	133
Sept. 7.0	15.007	5	52.65	61	19.464	26	30.91	244	7.711	2	18.49	121
17.0	15.012	44	52.04	83	19.438	34	28.47	239	7.709	34	17.28	101
27.0	15.056	77	51.21	107	19.472	95	26.08	222	7.743	80	16.27	80
Oct. 7.0	15.133	120	50.14	132	19.567	162	23.86	196	7.823	124	15.47	53
16.9	15.253	159	48.82	152	19.729	227	21.90	162	7.947	168	14.94	19
26.9	15.412	202	47.30	177	19.956	289	20.28	118	8.115	215	14.75	18
Nov. 5.9	15.614	238	45.53	193	20.245	344	19.10	68	8.330	253	14.93	57
15.8	15.852	276	43.60	209	20.589	391	18.42	15	8.583	290	15.50	95
25.8	16.128	300	41.51	215	20.980	424	18.27	41	8.873	318	16.45	130
Dec. 5.8	16.428	318	39.36	217	21.404	445	18.68	95	9.191	336	17.75	165
15.8	16.746	327	37.19	212	21.849	450	19.63	148	9.527	342	19.40	197
25.7	17.073	322	35.07	196	22.299	443	21.11	196	9.869	337	21.37	216
35.7	17.395		33.11		22.742		23.07		10.206		23.53	
Mean Place	14.192		57.88		18.472		17.55		6.616		9.77	
Sec δ, Tan δ	1.013		+0.161		1.565		-1.204		1.080		-0.408	
L α, L δ	0.00		-0.4		0.00		-0.4		0.00		-0.4	
ω α, ω δ	+0.01		0.0		-0.08		0.0		-0.03		0.0	
AUTHORITY	A. E.			A. E.			A. E.					

APPARENT PLACES OF STARS, 1922. 353

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	δ Crucis. Mag. 3·1		δ Ursæ Majoris. Mag. 3·4				γ Corvi. Mag. 2·8	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.		
	h m 12 10	58 18	h m 12 11	57 27	h m 12 11	17 6		
Jan.	0·7 10·7 20·7 30·7	61·235 ⁵⁰⁸ 61·743 ⁴⁷² 62·215 ⁴²⁴ 62·639 ³⁶⁷	39·61 ²⁰⁶ 41·67 ²⁴⁸ 44·15 ²⁸⁵ 47·00 ³¹²	34·086 ⁵⁰⁹ 34·595 ⁴⁸⁶ 35·081 ⁴⁴⁸ 35·529 ³⁹³	38·20 ⁷³ 37·47 ¹⁴ 37·33 ⁴⁵ 37·78 ¹⁰⁴	48·166 ³²⁶ 48·492 ³⁰⁵ 48·797 ²⁷⁷ 49·074 ²⁴²	28·93 ²²¹ 31·14 ²²⁶ 33·40 ²²⁶ 35·66 ²¹⁸	
Feb.	9·6 19·6	63·006 ³⁰³ 63·309 ²³⁵	50·12 ³³⁰ 53·42 ³⁴⁰	35·922 ³³⁰ 36·252 ²⁵⁶	38·82 ¹⁵⁴ 40·36 ²⁰⁰	49·316 ²⁰² 49·518 ¹⁶¹	37·84 ²⁰⁴ 39·88 ¹⁸⁸	
Mar.	1·6 11·6 21·5 31·5	63·544 ¹⁶⁸ 63·712 ¹⁰⁰ 63·812 ³⁶ 63·848 ²³	56·82 ³⁴¹ 60·23 ³³⁶ 63·59 ³²³ 66·82 ³⁰³	36·508 ¹⁷⁹ 36·687 ¹⁰¹ 36·788 ²³ 36·811 ⁴⁵	42·36 ²³⁶ 44·72 ²⁵⁸ 47·30 ²⁷⁴ 50·04 ²⁷⁴	49·679 ¹¹⁷ 49·796 ⁷⁷ 49·873 ⁴⁰ 49·913 ⁶	41·76 ¹⁶⁷ 43·43 ¹⁴⁴ 44·87 ¹²² 46·09 ⁹⁷	
Apr.	10·5 20·4 30·4	63·825 ⁷⁷ 63·748 ¹²⁶ 63·622 ¹⁷⁰	69·85 ²⁷⁹ 72·64 ²⁴⁹ 75·13 ²¹³	36·766 ¹⁰⁹ 36·657 ¹⁶⁴ 36·493 ²⁰⁹	52·78 ²⁶⁶ 55·44 ²⁴⁹ 57·93 ²²⁰	49·919 ²³ 49·896 ⁴⁸ 49·848 ⁶⁸	47·06 ⁷⁵ 47·81 ⁵² 48·33 ³⁰	
May	10·4 20·4 30·3	63·452 ²⁰⁷ 63·245 ²³⁹ 63·006 ²⁶⁵	77·26 ¹⁷⁵ 79·01 ¹³³ 80·34 ⁸⁸	36·284 ²⁴⁴ 36·040 ²⁶⁹ 35·771 ²⁸⁴	60·13 ¹⁸⁷ 62·00 ¹⁴⁹ 63·49 ¹⁰⁴	49·780 ⁸⁶ 49·694 ⁹⁸ 49·596 ¹⁰⁸	48·63 ⁹ 48·72 ¹¹ 48·61 ³⁰	
June	9·3 19·3 29·2	62·741 ²⁸³ 62·458 ²⁹⁵ 62·163 ²⁹⁸	81·22 ⁴¹ 81·63 ⁶ 81·57 ⁵⁴	35·487 ²⁹³ 35·194 ²⁹¹ 34·903 ²⁸⁰	64·53 ⁵⁷ 65·10 ⁹ 65·19 ³⁷	49·488 ¹¹⁵ 49·373 ¹¹⁹ 49·254 ¹²⁰	48·31 ⁴⁸ 47·83 ⁶⁵ 47·18 ⁷⁹	
July	9·2 19·2 29·2	61·865 ²⁹⁴ 61·571 ²⁷⁹ 61·292 ²⁵⁴	81·03 ⁹⁹ 80·04 ¹⁴³ 78·61 ¹⁸¹	34·623 ²⁶⁶ 34·357 ²⁴³ 34·114 ²¹⁵	64·82 ⁸⁵ 63·97 ¹³⁰ 62·67 ¹⁷¹	49·134 ¹¹⁷ 49·017 ¹¹⁰ 48·907 ¹⁰⁰	46·39 ⁹³ 45·46 ¹⁰² 44·44 ¹⁰⁹	
Aug.	8·1 18·1 28·1	61·038 ²²⁰ 60·818 ¹⁷⁵ 60·643 ¹¹⁹	76·80 ²¹⁵ 74·65 ²⁴¹ 72·24 ²⁵⁹	33·809 ¹⁸¹ 33·718 ¹⁴² 33·576 ⁹³	60·96 ²¹² 58·84 ²⁴³ 56·41 ²⁷⁷	48·807 ⁸⁵ 48·722 ⁶⁴ 48·658 ³⁹	43·35 ¹¹² 42·23 ¹¹⁰ 41·13 ¹⁰⁴	
Sept.	7·1 17·0 27·0	60·524 ⁵⁵ 60·469 ¹⁷ 60·486 ⁹⁵	69·65 ²⁶⁸ 66·97 ²⁶⁷ 64·30 ²⁵⁴	33·483 ⁴¹ 33·442 ¹⁸ 33·460 ⁷⁹	53·64 ³⁰¹ 50·63 ³²³ 47·40 ³³⁶	48·619 ⁷ 48·612 ³⁰ 48·642 ⁶⁹	40·09 ⁹² 39·17 ⁷⁴ 38·43 ⁵²	
Oct.	7·0 16·9 26·9	60·581 ¹⁷⁵ 60·756 ²⁵⁴ 61·010 ³³⁰	61·76 ²³¹ 59·45 ¹⁹⁹ 57·46 ¹⁵⁶	33·539 ¹⁴⁴ 33·683 ²¹³ 33·896 ²⁷⁹	44·04 ³⁴⁵ 40·59 ³⁴² 37·17 ³³⁵	48·711 ¹¹⁴ 48·825 ¹⁵⁹ 48·984 ²⁰³	37·91 ²⁴ 37·67 ⁸ 37·75 ⁴²	
Nov.	5·9 15·9 25·8	61·340 ³⁹⁶ 61·736 ⁴⁵³ 62·189 ⁴⁹⁴	55·90 ¹⁰⁷ 54·83 ⁵² 54·31 ⁶	34·175 ³⁴⁵ 34·520 ⁴⁰² 34·922 ⁴⁵⁰	33·82 ³¹⁷ 30·65 ²⁹³ 27·72 ²⁵⁸	49·187 ²⁴⁴ 49·431 ²⁸⁰ 49·711 ³⁰⁸	38·17 ⁷⁷ 38·94 ¹¹³ 40·07 ¹⁴⁵	
Dec.	5·8 15·8 25·8 35·7	62·683 ⁵²⁰ 63·203 ⁵²⁸ 63·731 ⁵¹⁷ 64·248 ⁵¹⁷	54·37 ⁶⁵ 55·02 ¹²² 56·24 ¹⁷⁶ 58·00 ¹⁷⁶	35·372 ⁴⁸⁹ 35·861 ⁵¹¹ 36·372 ⁵¹⁷ 36·889 ⁵¹⁷	25·14 ²¹⁷ 22·97 ¹⁶⁷ 21·30 ¹¹⁰ 20·20 ¹¹⁰	50·019 ³²⁷ 50·346 ³³⁴ 50·680 ³³² 51·012 ³³²	41·52 ¹⁷⁴ 43·26 ¹⁹⁸ 45·24 ²¹⁴ 47·38 ²¹⁴	
Mean Place		59·618	54·72	34·532	57·43	47·529	32·18	
Sec δ, Tan δ		1·904	-1·620	1·859	+1·568	1·046	-0·308	
L α, L δ		0·00	-0·4	0·00	-0·4	0·00	-0·4	
ω α, ω δ		-0·11	0·0	+0·10	0·0	-0·02	0·0	
AUTHORITY		A. N.		A. E.		A. N.		

354 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Chamæleontis. Mag. 4.4		η Virginis. Mag. 4.0		α Crucis. Mag. 1.6	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 12 13	78° 52'	h m 12 15	0° 14'	h m 12 22	62° 39'
Jan. 0.7	48.38 ¹²¹	26.50 ¹⁶⁷	55.324 ³¹⁹	2.96 ²⁰⁴	16.48 ⁵⁸	44.84 ¹⁸⁷
10.7	49.59 ¹¹³	28.17 ²¹⁸	55.643 ²⁹⁹	5.00 ¹⁹²	17.06 ⁵³	46.71 ²³⁰
20.7	50.72 ¹⁰¹	30.35 ²⁶⁸	55.942 ²⁷³	6.92 ¹⁷⁴	17.59 ⁴⁹	49.01 ²⁷⁴
30.7	51.73 ⁸⁸	33.03 ³⁰⁸	56.215 ²⁴³	8.66 ¹⁵²	18.08 ⁴³	51.75 ³⁰²
Feb. 9.6	52.61 ⁷²	36.11 ³³⁹	56.458 ²⁰¹	10.18 ¹²⁶	18.51 ³⁶	54.77 ³²⁹
19.6	53.33 ⁵⁵	39.50 ³⁶²	56.659 ¹⁶³	11.44 ⁹⁸	18.87 ²⁹	58.06 ³⁴⁴
Mar. 1.6	53.88 ³⁸	43.12 ³⁷⁴	56.822 ¹²⁰	12.42 ⁷⁰	19.16 ²¹	61.50 ³⁴⁶
11.6	54.26 ²¹	46.86 ³⁷⁸	56.942 ⁸²	13.12 ⁴³	19.37 ¹³	64.96 ³⁴⁸
21.5	54.47 ⁴	50.64 ³⁷²	57.024 ⁴²	13.55 ¹⁸	19.50 ⁷	68.44 ³³⁶
31.5	54.51 ¹³	54.36 ³⁶¹	57.066 ¹⁰	13.73 ³	19.57 ¹	71.80 ³²¹
Apr. 10.5	54.38 ²⁹	57.97 ³⁴³	57.076 ¹⁷	13.70 ¹⁸	19.56 ⁷	75.01 ³⁰⁰
20.4	54.09 ⁴³	61.40 ³¹⁴	57.059 ⁴⁵	13.52 ³⁸	19.49 ¹³	78.01 ²⁷¹
30.4	53.66 ⁵⁷	64.54 ²⁸²	57.014 ⁶⁰	13.14 ⁵⁰	19.36 ¹⁸	80.72 ²³⁷
May 10.4	53.09 ⁶⁸	67.36 ²⁴⁰	56.954 ⁸¹	12.64 ⁵⁹	19.18 ²³	83.09 ²⁰⁰
20.4	52.41 ⁷⁹	69.76 ¹⁹⁸	56.873 ⁹³	12.05 ⁶⁴	18.95 ²⁷	85.09 ¹⁵⁹
30.3	51.62 ⁸⁷	71.74 ¹⁴⁹	56.780 ⁹⁹	11.41 ⁶⁸	18.68 ³¹	86.68 ¹¹⁰
June 9.3	50.75 ⁹⁴	73.23 ⁹⁸	56.681 ¹⁰⁸	10.73 ⁷⁰	18.37 ³³	87.78 ⁶⁵
19.3	49.81 ⁹⁶	74.21 ³⁹	56.573 ¹¹⁰	10.03 ⁷²	18.04 ³⁴	88.43 ¹⁵
29.2	48.85 ⁹⁸	74.60 ¹³	56.463 ¹¹¹	9.31 ⁷⁰	17.70 ³⁶	88.58 ³⁴
July 9.2	47.87 ⁹⁷	74.47 ⁷⁰	56.352 ¹⁰⁷	8.61 ⁶⁶	17.34 ³⁵	88.24 ⁸³
19.2	46.90 ⁹¹	73.77 ¹²²	56.245 ¹⁰³	7.95 ⁶³	16.99 ³⁴	87.41 ¹²⁷
29.2	45.99 ⁸⁴	72.55 ¹⁶⁹	56.142 ⁹¹	7.32 ⁵¹	16.65 ³²	86.14 ¹⁷¹
Aug. 8.1	45.15 ⁷³	70.86 ²¹⁹	56.051 ⁸⁰	6.81 ⁴³	16.33 ²⁷	84.43 ²⁰⁸
18.1	44.42 ⁶⁰	68.67 ²⁵²	55.971 ⁵⁷	6.38 ²⁹	16.06 ²³	82.35 ²⁴⁰
28.1	43.82 ⁴³	66.15 ²⁸⁴	55.914 ³⁷	6.09 ¹⁶	15.83 ¹⁶	79.95 ²⁶¹
Sept. 7.1	43.39 ²⁵	63.31 ³⁰¹	55.877 ⁵	5.93 ⁷	15.67 ⁹	77.34 ²⁷⁴
17.0	43.14 ⁴	60.30 ³¹¹	55.872 ²⁵	6.00 ²⁷	15.58 ¹	74.60 ²⁷⁹
27.0	43.10 ¹⁶	57.19 ³⁰⁶	55.897 ⁶⁶	6.27 ⁵²	15.57 ⁸	71.81 ²⁶⁸
Oct. 7.0	43.26 ³⁸	54.13 ²⁹³	55.963 ¹⁰⁴	6.79 ⁷⁵	15.65 ¹⁷	69.13 ²⁵²
16.9	43.64 ⁵⁹	51.20 ²⁶³	56.067 ¹⁴⁶	7.54 ¹⁰⁴	15.82 ²⁶	66.61 ²²⁰
26.9	44.23 ⁷⁷	48.57 ²²⁵	56.213 ¹⁹¹	8.58 ¹³¹	16.08 ³⁶	64.41 ¹⁸²
Nov. 5.9	45.00 ⁹⁵	46.32 ¹⁷⁸	56.404 ²²⁸	9.89 ¹⁵²	16.44 ⁴²	62.59 ¹³⁶
15.9	45.95 ¹⁰⁸	44.54 ¹²³	56.632 ²⁶⁶	11.41 ¹⁷⁸	16.86 ⁵⁰	61.23 ⁷⁹
25.8	47.03 ¹¹⁹	43.31 ⁶⁰	56.898 ²⁹⁴	13.19 ¹⁹⁴	17.36 ⁵⁴	60.44 ²³
Dec. 5.8	48.22 ¹²⁴	42.71 ¹	57.192 ³¹²	15.13 ²⁰⁷	17.90 ⁵⁸	60.21 ⁴⁰
15.8	49.46 ¹²⁶	42.72 ⁶⁹	57.504 ³²⁵	17.20 ²¹²	18.48 ⁵⁹	60.61 ⁹⁶
25.8	50.72 ¹²⁴	43.41 ¹²⁹	57.829 ³²³	19.32 ²⁰⁵	19.07 ⁵⁸	61.57 ¹⁵¹
35.7	51.96 ¹²⁴	44.70 ¹²⁹	58.152 ³²³	21.37 ²⁰⁵	19.65 ⁵⁸	63.08 ¹⁵¹
Mean Place	44.11	44.90	54.915	0.43	14.76	61.38
Sec δ , Tan δ	5.185	-5.087	1.000	-0.004	2.178	-1.935
L α , L δ	+0.01	-0.4	0.00	-0.4	0.00	-0.4
ω α , ω δ	-0.34	-0.1	0.00	-0.1	-0.13	-0.1
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 355

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	δ Corvi. Mag. 3·1		γ Crucis. Mag. 1·6		β Corvi. Mag. 2·8	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 12 25	° ′ 16 4	h m 12 26	° ′ 56 40	h m 12 30	° ′ 22 57
Jan.	0·7 50·111 ³²⁷	49·29 ²¹⁷	51·101 ⁵⁰⁰	20·48 ¹⁹⁰	17·737 ³³⁷	49·99 ²¹⁴
	10·7 50·438 ³¹²	51·46 ²¹⁷	51·601 ⁴⁷⁰	22·38 ²³³	18·074 ³²¹	52·13 ²²⁴
	20·7 50·750 ²⁸⁵	53·63 ²¹⁹	52·071 ⁴³⁰	24·71 ²⁶⁹	18·395 ²⁹⁹	54·37 ²³²
	30·7 51·035 ²⁵¹	55·82 ²¹¹	52·501 ³⁷⁸	27·40 ²⁹⁸	18·694 ²⁶¹	56·69 ²³¹
Feb.	9·6 51·286 ²¹⁵	57·93 ²⁰⁰	52·879 ³¹⁹	30·38 ³¹⁷	18·955 ²²⁶	59·00 ²²⁴
	19·6 51·501 ¹⁷³	59·93 ¹⁸¹	53·198 ²⁵⁷	33·55 ³²⁸	19·181 ¹⁸⁰	61·24 ²¹²
Mar.	1·6 51·674 ¹³³	61·74 ¹⁶⁰	53·455 ¹⁹³	36·83 ³³²	19·361 ¹⁴²	63·36 ¹⁹⁷
	11·6 51·807 ⁹⁰	63·34 ¹³⁸	53·648 ¹³⁰	40·15 ³²⁸	19·503 ¹⁰¹	65·33 ¹⁷⁶
	21·5 51·897 ⁵⁷	64·72 ¹¹⁸	53·778 ⁶⁸	43·43 ³¹⁷	19·604 ⁵⁹	67·09 ¹⁵⁶
	31·5 51·954 ²⁰	65·90 ⁹²	53·846 ¹²	46·60 ³⁰¹	19·663 ²⁸	68·65 ¹³²
Apr.	10·5 51·974 ⁸	66·82 ⁶⁹	53·858 ⁴²	49·61 ²⁷⁸	19·691 ⁶	69·97 ¹¹¹
	20·4 51·966 ³⁵	67·51 ⁴⁹	53·816 ⁹¹	52·39 ²⁵⁰	19·685 ³⁰	71·08 ⁸⁶
	30·4 51·931 ⁵⁵	68·00 ²⁷	53·725 ¹³⁴	54·89 ²¹⁸	19·655 ⁵⁷	71·94 ⁶²
May	10·4 51·876 ⁷⁶	68·27 ⁷	53·591 ¹⁷²	57·07 ¹⁸²	19·598 ⁷⁵	72·56 ³⁸
	20·4 51·800 ⁹¹	68·34 ⁹	53·419 ²⁰⁷	58·89 ¹⁴²	19·523 ⁹³	72·94 ¹⁶
	30·3 51·709 ¹⁰⁰	68·25 ²⁹	53·212 ²³⁴	60·31 ⁹⁹	19·430 ¹⁰⁸	73·10 ⁶
June	9·3 51·609 ¹¹²	67·96 ⁴⁷	52·978 ²⁵⁷	61·30 ⁵⁵	19·322 ¹¹⁶	73·04 ³⁰
	19·3 51·497 ¹¹⁶	67·49 ⁵⁹	52·721 ²⁷²	61·85 ⁹	19·206 ¹²⁶	72·74 ⁵¹
	29·2 51·381 ¹²⁰	66·90 ⁷⁴	52·449 ²⁸⁰	61·94 ³⁷	19·080 ¹²⁹	72·23 ⁶⁹
July	9·2 51·261 ¹²³	66·16 ⁸⁶	52·169 ²⁸⁰	61·57 ⁸³	18·951 ¹³⁰	71·54 ⁸⁹
	19·2 51·138 ¹¹⁵	65·30 ⁹⁵	51·889 ²⁷²	60·74 ¹²⁵	18·821 ¹²⁷	70·65 ¹⁰⁶
	29·2 51·023 ¹⁰⁶	64·35 ¹⁰⁰	51·617 ²⁵²	59·49 ¹⁶⁴	18·694 ¹¹⁸	69·59 ¹¹⁵
Aug.	8·1 50·917 ⁹³	63·35 ¹⁰⁴	51·365 ²²⁴	57·85 ¹⁹⁹	18·576 ¹⁰⁴	68·44 ¹²⁵
	18·1 50·824 ⁷⁶	62·31 ¹⁰⁰	51·141 ¹⁸⁵	55·86 ²²⁶	18·472 ⁸⁶	67·19 ¹²⁸
	28·1 50·748 ⁴⁸	61·31 ⁹⁶	50·956 ¹³⁵	53·60 ²⁴⁶	18·386 ⁵⁵	65·91 ¹²⁷
Sept.	7·1 50·700 ²¹	60·35 ⁸¹	50·821 ⁷⁶	51·14 ²⁵⁸	18·331 ²⁹	64·64 ¹²⁰
	17·0 50·679 ¹⁶	59·54 ⁷⁰	50·745 ⁸	48·56 ²⁵⁹	18·302 ⁹	63·44 ¹⁰⁶
	27·0 50·695 ⁵⁶	58·84 ⁴⁴	50·737 ⁶⁶	45·97 ²⁴⁹	18·311 ⁵³	62·38 ⁸⁶
Oct.	7·0 50·751 ¹⁰¹	58·40 ²¹	50·803 ¹⁴³	43·48 ²²⁹	18·364 ¹⁰⁰	61·52 ⁶¹
	16·9 50·852 ¹⁴³	58·19 ¹¹	50·946 ²²¹	41·19 ²⁰⁰	18·464 ¹⁴⁵	60·91 ³²
	26·9 50·995 ¹⁹²	58·30 ⁴⁵	51·167 ²⁹⁷	39·19 ¹⁶¹	18·609 ¹⁹⁴	60·59 ⁵
Nov.	5·9 51·187 ²³⁴	58·75 ⁷⁷	51·464 ³⁶⁴	37·58 ¹¹⁵	18·803 ²³⁹	60·64 ⁴¹
	15·9 51·421 ²⁶⁶	59·52 ¹¹²	51·828 ⁴²³	36·43 ⁶²	19·042 ²⁷⁷	61·05 ⁸¹
	25·8 51·687 ³⁰¹	60·64 ¹⁴³	52·251 ⁴⁶⁸	35·81 ⁵	19·319 ³⁰⁸	61·86 ¹¹⁴
Dec.	5·8 51·988 ³²²	62·07 ¹⁶⁹	52·719 ⁴⁹⁸	35·76 ⁵¹	19·627 ³³³	63·00 ¹⁵⁰
	15·8 52·310 ³³³	63·76 ¹⁹¹	53·217 ⁵¹⁰	36·27 ¹⁰⁷	19·960 ³⁴²	64·50 ¹⁷⁸
	25·8 52·643 ³³²	65·67 ²¹¹	53·727 ⁵⁰⁷	37·34 ¹⁶⁰	20·302 ³⁴⁵	66·28 ²⁰⁴
	35·7 52·975	67·78	54·234	38·94	20·647	68·32
Mean Place	49·574	52·82	49·722	36·01	17·136	56·07
Sec δ, Tan δ	1·041	-0·288	1·820	-1·521	1·086	-0·424
L α, L δ	0·00	-0·4	0·00	-0·4	0·00	-0·4
ω α, ω δ	-0·02	-0·1	-0·10	-0·1	-0·03	-0·1
AUTHORITY	A. E.		A. N.		A. E.	

356 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Muscæ. Mag. 2·9		γ Centauri. Mag. 2·4		γ Virginis (mean). Mag. 2·9	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 12 32	68 42	h m 12 37	48 31	h m 12 37	1 1
Jan.	0·7 32·82 71	3·51 161	13·448 437	40·00 191	42·704 320	20·06 205
	10·7 33·53 67	5·12 213	13·885 413	41·91 225	43·024 307	22·11 194
	20·7 34·20 62	7·25 257	14·298 381	44·16 257	43·331 284	24·05 177
	30·7 34·82 54	9·82 294	14·679 339	46·73 281	43·615 254	25·82 156
Feb.	9·6 35·36 46	12·76 323	15·018 290	49·54 294	43·869 218	27·38 130
	19·6 35·82 38	15·99 344	15·308 239	52·48 303	44·087 180	28·68 102
Mar.	1·6 36·20 28	19·43 354	15·547 185	55·51 302	44·267 141	29·70 75
	11·6 36·48 19	22·97 357	15·732 132	58·53 297	44·408 101	30·45 48
	21·5 36·67 10	26·54 354	15·864 81	61·50 283	44·509 64	30·93 22
	31·5 36·77 1	30·08 339	15·945 34	64·33 268	44·573 32	31·15 1
Apr.	10·5 36·78 8	33·47 322	15·979 11	67·01 244	44·605 1	31·16 19
	20·4 36·70 15	36·69 297	15·968 52	69·45 219	44·606 25	30·97 35
	30·4 36·55 22	39·66 266	15·916 89	71·64 187	44·581 47	30·62 48
May	10·4 36·33 29	42·32 228	15·827 120	73·51 157	44·534 65	30·14 57
	20·4 36·04 34	44·60 186	15·707 149	75·08 119	44·469 81	29·57 63
	30·3 35·70 39	46·46 143	15·558 172	76·27 81	44·388 93	28·94 69
June	9·3 35·31 43	47·89 93	15·386 192	77·08 42	44·295 102	28·25 71
	19·3 34·88 46	48·82 42	15·194 206	77·50 0	44·193 109	27·54 71
	29·3 34·42 47	49·24 10	14·988 216	77·50 40	44·084 113	26·83 69
July	9·2 33·95 47	49·14 62	14·772 218	77·10 79	43·971 114	26·14 66
	19·2 33·48 47	48·52 110	14·554 216	76·31 117	43·857 111	25·48 62
	29·2 33·01 43	47·42 158	14·338 202	75·14 149	43·746 105	24·86 54
Aug.	8·1 32·58 38	45·84 201	14·136 183	73·65 181	43·641 97	24·32 44
	18·1 32·20 32	43·83 236	13·953 152	71·84 203	43·547 74	23·88 32
	28·1 31·88 25	41·47 264	13·801 116	69·81 222	43·470 56	23·56 17
Sept.	7·1 31·63 15	38·83 282	13·685 68	67·59 229	43·414 29	23·39 0
	17·0 31·48 5	36·01 291	13·617 13	65·30 228	43·385 3	23·39 21
	27·0 31·43 6	33·10 287	13·604 46	63·02 217	43·388 41	23·60 45
Oct.	7·0 31·49 18	30·23 274	13·650 113	60·85 198	43·429 82	24·05 70
	17·0 31·67 29	27·49 248	13·763 177	58·87 171	43·511 125	24·75 96
	26·9 31·96 41	25·01 210	13·940 242	57·16 133	43·636 170	25·71 123
Nov.	5·9 32·37 50	22·91 167	14·182 301	55·83 87	43·806 213	26·94 149
	15·9 32·87 59	21·24 114	14·483 355	54·96 39	44·019 250	28·43 171
	25·8 33·46 66	20·10 54	14·838 394	54·57 12	44·269 283	30·14 189
Dec.	5·8 34·12 70	19·56 6	15·232 426	54·69 64	44·552 306	32·03 203
	15·8 34·82 72	19·62 69	15·658 440	55·33 116	44·858 320	34·06 209
	25·8 35·54 72	20·31 127	16·098 439	56·49 161	45·178 323	36·15 210
	35·7 36·26 72	21·58 127	16·537 439	58·10 161	45·501 323	38·25 210
Mean Place	30·80	21·55	12·435	54·10	42·413	18·74
Sec δ , Tan δ	2·753	-2·565	1·510	-1·131	1·000	-0·018
L α , L δ	+0·01	-0·4	0·00	-0·4	0·00	-0·4
ω α , ω δ	-0·17	-0·1	-0·07	-0·2	0·00	-0·2
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 357

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ρ Virginis. Mag. 5.0		β Muscae. Mag. 3.3		β Crucis. Mag. 1.5	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 12 37	° ' 10 39	h m 12 41	° ' 67 40	h m 12 43	° ' 59 15
Jan. 0.7	56.391 ³²³	49.07 ¹⁹⁵	30.62 ⁶⁹	34.85 ¹⁵¹	10.376 ⁵³⁹	28.97 ¹⁶⁴
10.7	56.714 ³¹²	47.12 ¹⁷¹	31.31 ⁶⁶	36.36 ²⁰³	10.915 ⁵¹³	30.61 ²¹²
20.7	57.026 ²⁹⁰	45.41 ¹⁴³	31.97 ⁶⁰	38.39 ²⁴⁷	11.428 ⁴⁷⁴	32.73 ²⁵⁰
30.7	57.316 ²⁶⁰	43.98 ¹¹¹	32.57 ⁵⁴	40.86 ²⁸⁵	11.902 ⁴²⁷	35.23 ²⁸⁴
Feb. 9.6	57.576 ²²⁴	42.87 ⁷⁵	33.11 ⁴⁷	43.71 ³¹⁵	12.329 ³⁶⁶	38.07 ³⁰⁶
19.6	57.800 ¹⁸⁵	42.12 ⁴²	33.58 ³⁸	46.86 ³³⁵	12.695 ³⁰¹	41.13 ³²³
Mar. 1.6	57.985 ¹⁴³	41.70 ⁸	33.96 ³⁰	50.21 ³⁴⁷	12.996 ²³⁸	44.36 ³³⁰
11.6	58.128 ¹⁰⁴	41.62 ²²	34.26 ²¹	53.68 ³⁵²	13.234 ¹⁷⁰	47.66 ³³¹
21.5	58.232 ⁶⁵	41.84 ⁴⁸	34.47 ¹²	57.20 ³⁴⁹	13.404 ¹⁰⁶	50.97 ³²³
31.5	58.297 ²⁹	42.32 ⁷⁰	34.59 ⁴	60.69 ³³⁸	13.510 ⁴³	54.20 ³¹²
Apr. 10.5	58.326 ¹	43.02 ⁸⁵	34.63 ⁵	64.07 ³²⁰	13.553 ¹⁵	57.32 ²⁹²
20.4	58.325 ²⁸	43.87 ⁹⁶	34.58 ¹¹	67.27 ²⁹⁷	13.538 ⁷¹	60.24 ²⁶⁷
30.4	58.297 ⁵²	44.83 ¹⁰²	34.47 ¹⁹	70.24 ²⁶⁷	13.467 ¹²⁰	62.91 ²³⁶
May 10.4	58.245 ⁷⁰	45.85 ¹⁰⁴	34.28 ²⁵	72.91 ²³²	13.347 ¹⁶⁵	65.27 ²⁰²
20.4	58.175 ⁸⁶	46.89 ¹⁰¹	34.03 ³¹	75.23 ¹⁹²	13.182 ²⁰⁷	67.29 ¹⁶⁵
30.3	58.089 ⁹⁷	47.90 ⁹⁶	33.72 ³⁶	77.15 ¹⁴⁷	12.975 ²⁴²	68.94 ¹²⁴
June 9.3	57.992 ¹⁰⁷	48.86 ⁸⁷	33.36 ³⁹	78.62 ¹⁰¹	12.733 ²⁶⁹	70.18 ⁷⁷
19.3	57.885 ¹¹³	49.73 ⁷⁶	32.97 ⁴³	79.63 ⁵⁰	12.464 ²⁹³	70.95 ³²
29.3	57.772 ¹¹⁶	50.49 ⁶³	32.54 ⁴⁴	80.13 ⁰	12.171 ³⁰⁴	71.27 ¹⁵
July 9.2	57.656 ¹¹⁶	51.12 ⁴⁹	32.10 ⁴⁵	80.13 ⁵¹	11.867 ³¹¹	71.12 ⁶²
19.2	57.540 ¹¹³	51.61 ³²	31.65 ⁴⁵	79.62 ¹⁰²	11.556 ³⁰⁸	70.50 ¹⁰⁶
29.2	57.427 ¹⁰⁵	51.93 ¹⁶	31.20 ⁴¹	78.60 ¹⁴⁸	11.248 ²⁹¹	69.44 ¹⁴⁸
Aug. 8.1	57.322 ⁹⁴	52.09 ⁴	30.79 ³⁸	77.12 ¹⁹¹	10.957 ²⁶⁴	67.96 ¹⁸⁷
18.1	57.228 ⁷⁹	52.05 ²³	30.41 ³²	75.21 ²²⁸	10.693 ²²³	66.09 ²¹⁹
28.1	57.149 ⁵⁵	51.82 ⁴⁵	30.09 ²⁵	72.93 ²⁵⁶	10.470 ¹⁷⁵	63.90 ²⁴²
Sept. 7.1	57.094 ³⁰	51.37 ⁶⁷	29.84 ¹⁷	70.37 ²⁷⁶	10.295 ¹¹¹	61.48 ²⁵⁷
17.0	57.064 ³	50.70 ⁹¹	29.67 ⁷	67.61 ²⁸⁷	10.184 ⁴³	58.91 ²⁶⁴
27.0	57.067 ⁴⁰	49.79 ¹¹⁶	29.60 ⁴	64.74 ²⁸⁵	10.141 ³⁸	56.27 ²⁶⁰
Oct. 7.0	57.107 ⁸²	48.63 ¹³⁹	29.64 ¹⁵	61.89 ²⁷²	10.179 ¹¹⁹	53.67 ²⁴⁴
17.0	57.189 ¹²⁵	47.24 ¹⁶³	29.79 ²⁷	59.17 ²⁴⁹	10.298 ²⁰⁸	51.23 ²¹⁸
26.9	57.314 ¹⁶⁹	45.61 ¹⁸⁵	30.06 ³⁷	56.68 ²¹⁵	10.506 ²⁸⁷	49.05 ¹⁸⁴
Nov. 5.9	57.483 ²¹¹	43.76 ²⁰²	30.43 ⁴⁷	54.53 ¹⁷⁰	10.793 ³⁶⁵	47.21 ¹⁴¹
15.9	57.694 ²⁵¹	41.74 ²¹⁷	30.90 ⁵⁵	52.83 ¹²⁰	11.158 ⁴³²	45.80 ⁹⁰
25.8	57.945 ²⁸⁴	39.57 ²²⁴	31.45 ⁶³	51.63 ⁶²	11.590 ⁴⁸⁴	44.90 ³⁴
Dec. 5.8	58.229 ³⁰⁸	37.33 ²²⁶	32.08 ⁶⁷	51.01 ³	12.074 ⁵²²	44.56 ²²
15.8	58.537 ³²⁴	35.07 ²²⁰	32.75 ⁶⁹	50.98 ⁵⁸	12.596 ⁵⁴⁰	44.78 ⁸¹
25.8	58.861 ³²⁸	32.87 ²⁰⁷	33.44 ⁷⁰	51.56 ¹¹⁷	13.136 ⁵⁴²	45.59 ¹³²
35.7	59.189	30.80	34.14	52.73	13.678	46.91
Mean Place	56.234	54.49	28.825	53.08	9.073	45.77
Sec δ , Tan δ	1.018	+0.188	2.633	-2.436	1.956	-1.682
L α , L δ	0.00	-0.4	+0.01	-0.4	+0.01	-0.4
ω α , ω δ	+0.01	-0.2	-0.16	-0.2	-0.11	-0.2

AUTHORITY

A. N.

A. E.

358 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	35 Virginis. Mag. 6.7		31 Comæ. Mag. 5.1		ψ Virginis. Mag. 4.9	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 12 43	° ' 3 59	h m 12 47	° ' 27 57	h m 12 50	° ' 9 6
Jan. 0.8	53.301 ³²²	51.44 ²⁰²	53.889 ³⁴⁹	42.70 ¹⁷⁶	17.961 ³²⁶	54.29 ²⁰⁶
10.7	53.623 ³¹⁰	49.42 ¹⁸⁶	54.238 ³⁴⁰	40.94 ¹³⁶	18.287 ³¹⁴	56.35 ²⁰⁵
20.7	53.933 ²⁸⁹	47.56 ¹⁶³	54.578 ³¹⁹	39.58 ⁹¹	18.601 ²⁹³	58.40 ¹⁹⁷
30.7	54.222 ²⁶⁰	45.93 ¹³⁸	54.897 ²⁸⁹	38.67 ⁴⁵	18.894 ²⁶⁵	60.37 ¹⁸³
Feb. 9.6	54.482 ²²⁵	44.55 ¹⁰⁷	55.186 ²⁵¹	38.22 ²	19.159 ²³⁰	62.20 ¹⁶⁴
19.6	54.707 ¹⁸⁷	43.48 ⁷⁷	55.437 ²¹⁰	38.24 ⁴⁶	19.389 ¹⁹³	63.84 ¹⁴²
Mar. 1.6	54.894 ¹⁴⁸	42.71 ⁴⁶	55.647 ¹⁶⁴	38.70 ⁸⁵	19.582 ¹⁵⁵	65.26 ¹¹⁹
11.6	55.042 ¹⁰⁸	42.25 ¹⁸	55.811 ¹¹⁹	39.55 ¹¹⁹	19.737 ¹¹⁶	66.45 ⁹⁶
21.5	55.150 ⁷²	42.07 ⁸	55.930 ⁷⁶	40.74 ¹⁴⁷	19.853 ⁸⁰	67.41 ⁷¹
31.5	55.222 ³⁶	42.15 ³¹	56.006 ³⁴	42.21 ¹⁶⁵	19.933 ⁴⁶	68.12 ⁴⁹
Apr. 10.5	55.258 ⁷	42.46 ⁴⁹	56.040 ²	43.86 ¹⁷⁷	19.979 ¹⁶	68.61 ²⁸
20.5	55.265 ²⁰	42.95 ⁶³	56.038 ³⁶	45.63 ¹⁸⁰	19.995 ¹¹	68.89 ⁹
30.4	55.245 ⁴³	43.58 ⁷²	56.002 ⁶²	47.43 ¹⁷⁷	19.984 ³⁴	68.98 ⁷
May 10.4	55.202 ⁶¹	44.30 ⁷⁹	55.940 ⁸⁶	49.20 ¹⁶⁶	19.950 ⁵⁴	68.91 ²²
20.4	55.141 ⁷⁸	45.09 ⁸²	55.854 ¹⁰⁵	50.86 ¹⁵¹	19.896 ⁷²	68.69 ³⁴
30.3	55.063 ⁹¹	45.91 ⁸²	55.749 ¹²⁰	52.37 ¹³¹	19.824 ⁸⁶	68.35 ⁴⁵
June 9.3	54.972 ¹⁰¹	46.73 ⁷⁹	55.629 ¹³¹	53.68 ¹⁰⁶	19.738 ⁹⁹	67.90 ⁵⁵
19.3	54.871 ¹⁰⁹	47.52 ⁷⁵	55.498 ¹³⁹	54.74 ⁸¹	19.639 ¹⁰⁸	67.35 ⁶²
29.3	54.762 ¹¹³	48.27 ⁶⁹	55.359 ¹⁴²	55.55 ⁵¹	19.531 ¹¹⁴	66.73 ⁶⁸
July 9.2	54.649 ¹¹⁵	48.96 ⁵⁹	55.217 ¹⁴²	56.06 ²¹	19.417 ¹¹⁸	66.05 ⁷²
19.2	54.534 ¹¹²	49.55 ⁵¹	55.075 ¹⁴⁰	56.27 ⁹	19.299 ¹¹⁸	65.33 ⁷⁵
29.2	54.422 ¹⁰⁷	50.06 ³⁷	54.935 ¹³⁰	56.18 ⁴⁰	19.181 ¹¹³	64.58 ⁷⁵
Aug. 8.2	54.315 ⁹⁶	50.43 ²⁵	54.805 ¹¹⁸	55.78 ⁷¹	19.068 ¹⁰³	63.83 ⁷²
18.1	54.219 ⁸²	50.68 ⁹	54.687 ¹⁰¹	55.07 ¹⁰¹	18.965 ⁸⁹	63.11 ⁶⁷
28.1	54.137 ⁶⁰	50.77 ⁹	54.586 ⁷⁸	54.06 ¹³¹	18.876 ⁶⁸	62.44 ⁵⁷
Sept. 7.1	54.077 ³⁴	50.68 ²⁹	54.508 ⁴⁹	52.75 ¹⁶⁰	18.808 ⁴¹	61.87 ⁴³
17.0	54.043 ³	50.39 ⁵¹	54.459 ¹⁵	51.15 ¹⁸⁷	18.767 ⁸	61.44 ²⁷
27.0	54.040 ³⁵	49.88 ⁷⁵	54.444 ²⁵	49.28 ²¹²	18.759 ³⁰	61.17 ⁵
Oct. 7.0	54.075 ⁷⁶	49.13 ¹⁰⁰	54.469 ⁶⁹	47.16 ²³³	18.789 ⁷²	61.12 ²⁰
17.0	54.151 ¹²⁰	48.13 ¹²⁵	54.538 ¹¹⁶	44.83 ²⁵¹	18.861 ¹¹⁸	61.32 ⁴⁶
26.9	54.271 ¹⁶³	46.88 ¹⁵⁰	54.654 ¹⁶³	42.32 ²⁶⁶	18.979 ¹⁶³	61.78 ⁷⁶
Nov. 5.9	54.434 ²⁰⁷	45.38 ¹⁷¹	54.817 ²¹¹	39.66 ²⁷³	19.142 ²⁰⁷	62.54 ¹⁰⁵
15.9	54.641 ²⁴⁶	43.67 ¹⁹¹	55.028 ²⁵⁵	36.93 ²⁷⁴	19.349 ²⁴⁸	63.59 ¹³⁴
25.9	54.887 ²⁸⁰	41.76 ²⁰⁵	55.283 ²⁹²	34.19 ²⁶⁷	19.597 ²⁸¹	64.93 ¹⁵⁸
Dec. 5.8	55.167 ³⁰⁴	39.71 ²¹⁴	55.575 ³²³	31.52 ²⁵²	19.878 ³⁰⁷	66.51 ¹⁸⁰
15.8	55.471 ³²⁰	37.57 ²¹⁴	55.898 ³⁴³	29.00 ²³⁰	20.185 ³²³	68.31 ¹⁹⁶
25.8	55.791 ³²⁴	35.43 ²¹⁰	56.241 ³⁵¹	26.70 ¹⁹⁹	20.508 ³²⁸	70.27 ²⁰⁴
35.7	56.115	33.33	56.592	24.71	20.836	72.31
Mean Place	53.104	54.27	54.024	53.34	17.654	56.40
Sec δ, Tan δ	1.002	+0.070	1.132	+0.531	1.013	-0.160
L α, L δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω α, ω δ	+0.01	-0.2	+0.03	-0.2	-0.01	-0.2

AUTHORITY

APPARENT PLACES OF STARS, 1922. 359

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Ursæ Majoris. Mag. 1·7		δ Virginis. Mag. 3·7		ι 2 Canum Venat. Mag. 2·9	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 12 50	56° 22'	h m 12 51	3 48'	h m 12 52	38° 43'
Jan. 0·8	35·333 ^s 497	41·14 ["] 125	40·565 ^s 321	73·37 ["] 204	22·551 ^s 382	68·11 ["] 161
10·7	35·830 487	39·89 62	40·886 312	71·33 186	22·933 371	66·50 111
20·7	36·317 462	39·27 3	41·198 291	69·47 166	23·304 351	65·39 58
30·7	36·779 423	39·24 62	41·489 264	67·81 138	23·655 321	64·81 6
Feb. 9·6	37·202 369	39·86 117	41·753 231	66·43 110	23·976 282	64·75 45
19·6	37·571 306	41·03 167	41·984 191	65·33 79	24·258 234	65·20 96
Mar. 1·6	37·877 238	42·70 213	42·175 154	64·54 47	24·492 183	66·16 138
11·6	38·115 163	44·83 245	42·329 117	64·07 20	24·675 135	67·54 173
21·5	38·278 92	47·28 269	42·446 78	63·87 8	24·810 82	69·27 200
31·5	38·370 22	49·97 279	42·524 43	63·95 29	24·892 36	71·27 213
Apr. 10·5	38·392 41	52·76 281	42·567 14	64·24 49	24·928 7	73·40 225
20·5	38·351 102	55·57 270	42·581 13	64·73 63	24·921 48	75·65 223
30·4	38·249 151	58·27 252	42·568 38	65·36 73	24·873 81	77·88 215
May 10·4	38·098 195	60·79 222	42·530 57	66·09 80	24·792 108	80·03 199
20·4	37·903 232	63·01 189	42·473 73	66·89 83	24·684 132	82·02 174
30·3	37·671 254	64·90 148	42·400 89	67·72 82	24·552 152	83·76 145
June 9·3	37·417 275	66·38 105	42·311 100	68·54 81	24·400 163	85·21 117
19·3	37·142 284	67·43 56	42·211 108	69·35 74	24·237 171	86·38 76
29·3	36·858 288	67·99 10	42·103 115	70·09 71	24·066 176	87·14 43
July 9·2	36·570 283	68·09 41	41·988 116	70·80 60	23·890 177	87·57 1
19·2	36·287 272	67·68 87	41·872 117	71·40 50	23·713 170	87·58 36
29·2	36·015 254	66·81 131	41·755 112	71·90 40	23·543 162	87·22 72
Aug. 8·2	35·761 228	65·50 175	41·643 102	72·30 25	23·381 149	86·50 112
18·1	35·533 197	63·75 216	41·541 87	72·55 10	23·232 126	85·38 145
28·1	35·336 159	61·59 251	41·454 68	72·65 8	23·106 100	83·93 181
Sept. 7·1	35·177 113	59·08 284	41·386 42	72·57 28	23·006 66	82·12 209
17·0	35·064 57	56·24 310	41·344 10	72·29 50	22·940 31	80·03 241
27·0	35·007 1	53·14 332	41·334 27	71·79 75	22·909 14	77·62 262
Oct. 7·0	35·006 68	49·82 346	41·361 68	71·04 98	22·923 63	75·00 284
17·0	35·074 133	46·36 352	41·429 110	70·06 123	22·986 115	72·16 299
26·9	35·207 206	42·84 354	41·539 156	68·83 149	23·101 167	69·17 306
Nov. 5·9	35·413 271	39·30 342	41·695 200	67·34 169	23·268 219	66·11 308
15·9	35·684 341	35·88 323	41·895 240	65·65 189	23·487 269	63·03 303
25·9	36·025 395	32·65 296	42·135 274	63·76 206	23·756 309	60·00 286
Dec. 5·8	36·420 443	29·69 259	42·409 299	61·70 212	24·065 347	57·14 263
15·8	36·863 478	27·10 213	42·708 316	59·58 215	24·412 369	54·51 229
25·8	37·341 494	24·97 161	43·024 323	57·43 212	24·781 381	52·22 191
35·7	37·835	23·36	43·347	55·31	25·162	50·31
Mean Place	36·171	58·60	40·413	75·79	22·906	81·60
Sec δ, Tan δ	1·806	+1·504	1·002	+0·067	1·282	+0·802
L α, L δ	-0·01	-0·4	0·00	-0·4	0·00	-0·4
ω α, ω δ	+0·10	-0·2	0·00	-0·2	+0·05	-0·2
AUTHORITY	A. E.		A. E.		A. E.	

360 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Virginis. Mag. 3.0		θ Virginis. Mag. 4.4		γ Hydræ. Mag. 3.3	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 12 58	[°] ['] 11 22	^h ^m 13 5	[°] ['] 5 7	^h ^m 13 14	[°] ['] 22 45
Jan. 0.8	17.669 ³²⁵	36.24 ¹⁹⁸	54.721 ³²³	21.26 ²⁰⁴	40.934 ³⁴⁵	29.65 ¹⁸⁷
10.7	17.994 ³¹⁶	34.26 ¹⁷⁶	55.044 ³¹⁵	23.30 ¹⁹⁷	41.279 ³³⁵	31.52 ²⁰⁴
20.7	18.310 ²⁹⁸	32.50 ¹⁴⁵	55.359 ³⁰⁰	25.27 ¹⁸⁵	41.614 ³¹⁸	33.56 ²⁰⁹
30.7	18.608 ²⁷⁴	31.05 ¹¹³	55.659 ²⁷²	27.12 ¹⁷⁰	41.932 ²⁹⁴	35.65 ²¹⁰
Feb. 9.6	18.882 ²³⁸	29.92 ⁷⁶	55.931 ²⁴⁰	28.82 ¹⁴⁵	42.226 ²⁶¹	37.75 ²⁰⁵
19.6	19.120 ²⁰⁰	29.16 ⁴²	56.171 ²⁰⁶	30.27 ¹²¹	42.487 ²²⁵	39.80 ¹⁹⁶
Mar. 1.6	19.320 ¹⁶⁴	28.74 ⁵	56.377 ¹⁶⁷	31.48 ⁹⁸	42.712 ¹⁸⁶	41.76 ¹⁸²
11.6	19.484 ¹²²	28.69 ²⁴	56.544 ¹³³	32.46 ⁷⁰	42.898 ¹⁴⁹	43.58 ¹⁶⁸
21.5	19.606 ⁸⁷	28.93 ⁵²	56.677 ⁹⁴	33.16 ⁴⁶	43.047 ¹¹²	45.26 ¹⁴⁷
31.5	19.693 ⁴⁷	29.45 ⁷⁶	56.771 ⁶²	33.62 ²²	43.159 ⁷⁶	46.73 ¹²⁹
Apr. 10.5	19.740 ²⁰	30.21 ⁹²	56.833 ³¹	33.84 ⁵	43.235 ⁴⁴	48.02 ¹¹⁰
20.5	19.760 ¹²	31.13 ¹⁰⁶	56.864 ⁴	33.89 ¹⁵	43.279 ¹⁴	49.12 ⁸⁷
30.4	19.748 ³⁴	32.19 ¹¹¹	56.868 ²²	33.74 ²⁸	43.293 ¹¹	49.99 ⁶⁸
May 10.4	19.714 ⁵⁹	33.30 ¹¹⁴	56.846 ⁴²	33.46 ⁴³	43.282 ³⁸	50.67 ⁴⁶
20.4	19.655 ⁷⁷	34.44 ¹⁰⁹	56.804 ⁶¹	33.03 ⁵¹	43.244 ⁶⁰	51.13 ²⁹
30.3	19.578 ⁸⁹	35.53 ¹⁰³	56.743 ⁷⁹	32.52 ⁵⁵	43.184 ⁸¹	51.42 ⁸
June 9.3	19.489 ¹⁰³	36.56 ⁹⁶	56.664 ⁹³	31.97 ⁶⁴	43.103 ⁹⁷	51.50 ¹³
19.3	19.386 ¹¹²	37.52 ⁸²	56.571 ¹⁰⁶	31.33 ⁶⁷	43.006 ¹¹²	51.37 ²⁹
29.3	19.274 ¹¹⁸	38.34 ⁷⁰	56.465 ¹¹³	30.66 ⁶⁹	42.894 ¹²⁶	51.08 ⁵⁰
July 9.2	19.156 ¹²²	39.04 ⁵³	56.352 ¹¹⁷	29.97 ⁶⁸	42.768 ¹³⁴	50.58 ⁶⁴
19.2	19.034 ¹²²	39.57 ³⁵	56.235 ¹²⁰	29.29 ⁶⁵	42.634 ¹³⁸	49.94 ⁸¹
29.2	18.912 ¹¹⁸	39.92 ²¹	56.115 ¹¹⁸	28.64 ⁶²	42.496 ¹³⁷	49.13 ⁹⁴
Aug. 8.2	18.794 ¹¹⁰	40.13 ³	55.997 ¹¹⁰	28.02 ⁵⁶	42.359 ¹³⁰	48.19 ¹⁰³
18.1	18.684 ⁹³	40.10 ²⁴	55.887 ¹⁰⁰	27.46 ⁴⁷	42.229 ¹¹⁸	47.16 ¹¹⁰
28.1	18.591 ⁷⁶	39.86 ⁴⁴	55.787 ⁷⁷	26.99 ³⁸	42.111 ⁹⁸	46.06 ¹¹³
Sept. 7.1	18.515 ⁴⁹	39.42 ⁷⁰	55.710 ⁵⁵	26.61 ²¹	42.013 ⁶⁹	44.93 ¹⁰⁸
17.0	18.466 ¹⁷	38.72 ⁹⁵	55.655 ²¹	26.40 ¹	41.944 ³⁵	43.85 ⁹⁹
27.0	18.449 ¹⁷	37.77 ¹¹⁷	55.634 ¹³	26.39 ²⁰	41.909 ⁶	42.86 ⁸⁴
Oct. 7.0	18.466 ⁶³	36.60 ¹⁴⁴	55.647 ⁵⁷	26.59 ⁴³	41.915 ⁵²	42.02 ⁶⁶
17.0	18.529 ¹⁰³	35.16 ¹⁶⁶	55.704 ¹⁰¹	27.02 ⁶⁹	41.967 ¹⁰¹	41.36 ⁴⁰
26.9	18.632 ¹⁴⁹	33.50 ¹⁸⁶	55.805 ¹⁴⁶	27.71 ⁹⁵	42.068 ¹⁵⁰	40.96 ¹⁰
Nov. 5.9	18.781 ¹⁹⁴	31.64 ²⁰⁸	55.951 ¹⁹⁴	28.66 ¹²⁴	42.218 ²⁰¹	40.86 ²²
15.9	18.975 ²³⁶	29.56 ²²⁰	56.145 ²³²	29.90 ¹⁴⁹	42.419 ²⁴⁶	41.08 ⁵⁷
25.9	19.211 ²⁶⁸	27.36 ²²⁸	56.377 ²⁶⁹	31.39 ¹⁶⁷	42.665 ²⁸⁴	41.65 ⁹³
Dec. 5.8	19.479 ²⁹⁸	25.08 ²²⁹	56.646 ²⁹⁸	33.06 ¹⁸⁷	42.949 ³¹⁴	42.58 ¹²¹
15.8	19.777 ³¹⁸	22.79 ²²⁵	56.944 ³¹⁶	34.93 ¹⁹⁹	43.263 ³³⁶	43.79 ¹⁵²
25.8	20.095 ³²⁶	20.54 ²¹¹	57.260 ³²³	36.92 ²⁰⁵	43.599 ³⁴⁴	45.31 ¹⁷⁶
35.7	20.421	18.43	57.583	38.97	43.943	47.07
Mean Place	17.646	41.02	54.553	22.59	40.620	37.44
Sec δ, Tan δ	1.020	+0.201	1.004	-0.090	1.084	-0.420
L α, L δ	0.00	-0.4	0.00	-0.4	0.00	-0.4
ω α, ω δ	+0.01	-0.2	-0.01	-0.3	-0.03	-0.3
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 361

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Centauri. Mag. 2.9		ζ ¹ Ursæ Majoris. Mag. 2.4		α Virginis. Mag. 1.2	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 13 16	^o ['] 36 17	^h ^m 13 20	^o ['] 55 19	^h ^m 13 21	^o ['] 10 45
Jan. 0.8	12.749 ³⁸²	52.51 ¹⁶⁷	46.258 ⁴⁷⁷	40.73 ¹⁶¹	5.021 ³²⁷	12.46 ¹⁹⁷
10.7	13.131 ³⁷²	54.18 ¹⁹⁸	46.735 ⁴⁷⁹	39.12 ¹⁰³	5.348 ³²¹	14.43 ¹⁹⁸
20.7	13.503 ³⁵³	56.16 ²¹⁶	47.214 ⁴⁶³	38.09 ³⁸	5.669 ³⁰⁵	16.41 ¹⁹¹
30.7	13.856 ³²³	58.32 ²³³	47.677 ⁴³⁵	37.71 ²⁴	5.974 ²⁸⁴	18.32 ¹⁸¹
Feb. 9.7	14.179 ²⁹⁰	60.65 ²⁴⁰	48.112 ³⁹¹	37.95 ⁸⁶	6.258 ²⁵³	20.13 ¹⁶⁶
19.6	14.469 ²⁵⁰	63.05 ²⁴³	48.503 ³³⁶	38.81 ¹³⁹	6.511 ²²⁰	21.79 ¹⁴⁵
Mar. 1.6	14.719 ²⁰⁷	65.48 ²⁴⁰	48.839 ²⁷⁶	40.20 ¹⁹⁰	6.731 ¹⁸²	23.24 ¹²³
11.6	14.926 ¹⁶⁶	67.88 ²³¹	49.115 ²⁰⁷	42.10 ²³⁰	6.913 ¹⁴⁸	24.47 ¹⁰⁰
21.6	15.092 ¹²⁵	70.19 ²²⁰	49.322 ¹⁴²	44.40 ²⁵⁹	7.061 ¹¹²	25.47 ⁷⁷
31.5	15.217 ⁸⁶	72.39 ²⁰³	49.464 ⁷²	46.99 ²⁷⁸	7.173 ⁸⁰	26.24 ⁵⁷
Apr. 10.5	15.303 ⁴⁷	74.42 ¹⁸⁶	49.536 ⁸	49.77 ²⁸⁶	7.253 ⁴⁶	26.81 ³⁶
20.5	15.350 ¹⁴	76.28 ¹⁶⁴	49.544 ⁴⁸	52.63 ²⁸²	7.299 ²⁰	27.17 ¹⁷
30.4	15.364 ¹⁸	77.92 ¹⁴³	49.496 ¹⁰⁶	55.45 ²⁶⁹	7.319 ⁷	27.34 ²
May 10.4	15.346 ⁴⁹	79.35 ¹¹⁷	49.390 ¹⁵²	58.14 ²⁴⁸	7.312 ²⁷	27.36 ¹⁴
20.4	15.297 ⁷⁵	80.52 ⁹⁰	49.238 ¹⁹³	60.62 ²¹⁶	7.285 ⁵³	27.22 ²⁷
30.4	15.222 ¹⁰¹	81.42 ⁶²	49.045 ²²⁶	62.78 ¹⁸⁰	7.232 ⁷⁰	26.95 ³⁷
June 9.3	15.121 ¹²⁰	82.04 ³⁴	48.819 ²⁵²	64.58 ¹³⁹	7.162 ⁸⁷	26.58 ⁴⁸
19.3	15.001 ¹⁴¹	82.38 ⁴	48.567 ²⁶⁹	65.97 ⁹²	7.075 ¹⁰¹	26.10 ⁵²
29.3	14.860 ¹⁵⁵	82.42 ²⁶	48.298 ²⁸³	66.89 ⁴⁷	6.974 ¹¹³	25.58 ⁶³
July 9.3	14.705 ¹⁶⁵	82.16 ⁵⁴	48.015 ²⁸⁶	67.36 ²	6.861 ¹²¹	24.95 ⁶⁷
19.2	14.540 ¹⁷¹	81.62 ⁸³	47.729 ²⁸⁴	67.34 ⁵¹	6.740 ¹²⁶	24.28 ⁷⁰
29.2	14.369 ¹⁷⁰	80.79 ¹⁰⁷	47.445 ²⁷³	66.83 ⁹⁸	6.614 ¹²⁸	23.58 ⁷¹
Aug. 8.2	14.199 ¹⁶²	79.72 ¹³¹	47.172 ²⁵⁸	65.85 ¹⁴⁴	6.486 ¹²²	22.87 ⁷¹
18.1	14.037 ¹⁴⁵	78.41 ¹⁴⁸	46.914 ²³¹	64.41 ¹⁸⁹	6.364 ¹⁰⁹	22.16 ⁶⁶
28.1	13.892 ¹²²	76.93 ¹⁵⁹	46.683 ²⁰⁰	62.52 ²²⁴	6.255 ⁹³	21.50 ⁶¹
Sept. 7.1	13.770 ⁸⁸	75.34 ¹⁶⁷	46.483 ¹⁵⁹	60.28 ²⁶³	6.162 ⁶⁸	20.89 ⁴⁷
17.1	13.682 ⁴⁸	73.67 ¹⁶⁷	46.324 ¹¹¹	57.65 ²⁹⁴	6.094 ³⁹	20.42 ³⁵
27.0	13.634 ²	72.00 ¹⁵⁸	46.213 ⁵⁵	54.71 ³²¹	6.055 ⁰	20.07 ¹⁵
Oct. 7.0	13.632 ⁵³	70.42 ¹⁴²	46.158 ⁹	51.50 ³⁴²	6.055 ⁴⁴	19.92 ⁸
17.0	13.685 ¹⁰⁹	69.00 ¹¹⁹	46.167 ⁷⁷	48.08 ³⁵³	6.099 ⁸⁹	20.00 ³⁰
27.0	13.794 ¹⁶⁵	67.81 ⁸⁷	46.244 ¹⁴⁶	44.55 ³⁵⁹	6.188 ¹³⁴	20.30 ⁶²
Nov. 5.9	13.959 ²²²	66.94 ⁵⁴	46.390 ²¹⁹	40.96 ³⁵⁶	6.322 ¹⁸³	20.92 ⁸⁷
15.9	14.181 ²⁷¹	66.40 ¹³	46.609 ²⁸⁵	37.40 ³⁴²	6.505 ²²⁷	21.79 ¹¹⁷
25.9	14.452 ³¹⁵	66.27 ²⁸	46.894 ³⁴⁸	33.98 ³²⁰	6.732 ²⁶²	22.96 ¹⁴⁰
Dec. 5.8	14.767 ³⁴⁹	66.55 ⁷²	47.242 ⁴⁰⁰	30.78 ²⁸⁷	6.994 ²⁹³	24.36 ¹⁶⁵
15.8	15.116 ³⁷¹	67.27 ¹¹⁰	47.642 ⁴⁴³	27.91 ²⁴⁶	7.287 ³¹⁶	26.01 ¹⁸²
25.8	15.487 ³⁸¹	68.37 ¹⁴⁷	48.085 ⁴⁷¹	25.45 ¹⁹⁵	7.603 ³²⁷	27.83 ¹⁹²
35.8	15.868	69.84	48.556	23.50	7.930	29.75
Mean Place	12.281	64.64	47.356	56.45	4.878	16.39
Sec δ, Tan δ	1.241	-0.735	1.758	+1.446	1.018	-0.190
L α, L δ	+0.01	-0.4	-0.01	-0.4	0.00	-0.4
ω α, ω δ	-0.05	-0.3	+0.09	-0.3	-0.01	-0.3
AUTHORITY	A. E.		A. E.		A. E.	

362 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ι Virginis. Mag. 5.6		ζ Virginis. Mag. 3.4		ε Centauri. Mag. 2.6	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 13 22	° ' " 12 18	h m 13 30	° ' " 0 11	h m 13 34	° ' " 53 3
Jan. 0.8	35.884 ^s	3.06	42.978 ^s	50.46	56.604 ^s	56.77
10.8	36.214 ³³⁰	5.01 ¹⁹⁵	43.298 ³²⁰	52.47 ²⁰¹	57.088 ⁴⁸⁴	57.89 ¹¹²
20.7	36.537 ³²³	6.98 ¹⁹⁷	43.615 ³¹⁷	54.39 ¹⁹²	57.566 ⁴⁷⁸	59.46 ¹⁵⁷
30.7	36.845 ³⁰⁸	8.92 ¹⁹⁴	43.921 ³⁰⁶	56.11 ¹⁷²	58.023 ⁴⁵⁷	61.41 ¹⁹⁵
Feb. 9.7	37.129 ²⁸⁴	10.76 ¹⁸⁴	44.205 ²⁸⁴	57.66 ¹⁵⁵	58.451 ⁴²⁸	63.67 ²²⁶
19.7	37.384 ²⁵⁵	12.46 ¹⁷⁰	44.460 ²⁵⁵	58.92 ¹²⁶	58.840 ³⁸⁹	66.17 ²⁵⁰
Mar. 1.6	37.605 ²²¹	13.97 ¹⁵¹	44.682 ²²²	59.93 ¹⁰¹	59.182 ³⁴²	68.88 ²⁷¹
11.6	37.791 ¹⁸⁶	15.28 ¹³¹	44.871 ¹⁸⁹	60.61 ⁶⁸	59.473 ²⁹¹	71.69 ²⁸¹
21.6	37.940 ¹⁴⁹	16.36 ¹⁰⁸	45.025 ¹⁵⁴	61.00 ³⁹	59.713 ²⁴⁰	74.55 ²⁸⁶
31.5	38.054 ¹¹⁴	17.23 ⁸⁷	45.145 ¹²⁰	61.15 ¹⁵	59.903 ¹⁹⁰	77.40 ²⁸⁵
Apr. 10.5	38.134 ⁸⁰	17.88 ⁶⁵	45.229 ⁸⁴	61.07 ⁸	60.039 ¹³⁶	80.19 ²⁷⁹
20.5	38.184 ⁵⁰	18.32 ⁴⁴	45.281 ⁵²	60.79 ²⁸	60.124 ⁸⁵	82.86 ²⁶⁷
30.5	38.205 ²¹	18.58 ²⁶	45.307 ²⁶	60.31 ⁴⁸	60.160 ³⁶	85.37 ²⁵¹
May 10.4	38.201 ⁴	18.67 ⁹	45.304 ³	59.73 ⁶⁸	60.149 ¹¹	87.65 ²²⁸
20.4	38.172 ²⁹	18.62 ⁵	45.281 ²³	59.05 ⁶⁸	60.095 ⁵⁴	89.68 ²⁰³
30.4	38.122 ⁵⁰	18.42 ²⁰	45.234 ⁴⁷	58.31 ⁷⁴	59.997 ⁹⁸	91.43 ¹⁷⁵
June 9.4	38.053 ⁶⁹	18.11 ³¹	45.171 ⁶³	57.56 ⁷⁵	59.861 ¹³⁶	92.84 ¹⁴¹
19.3	37.967 ⁸⁶	17.69 ⁴²	45.086 ⁸⁵	56.79 ⁷⁷	59.689 ¹⁷²	93.90 ¹⁰⁶
29.3	37.865 ¹⁰²	17.18 ⁵¹	44.988 ⁹⁸	56.03 ⁷⁶	59.488 ²⁰¹	94.57 ⁶⁷
July 9.3	37.752 ¹¹³	16.59 ⁵⁹	44.876 ¹¹²	55.28 ⁷⁵	59.258 ²³⁰	94.84 ²⁷
19.2	37.629 ¹²³	15.93 ⁶⁶	44.758 ¹¹⁸	54.62 ⁶⁶	59.012 ²⁴⁶	94.71 ¹³
29.2	37.502 ¹²⁷	15.22 ⁷¹	44.632 ¹²⁶	54.03 ⁵⁹	58.755 ²⁵⁷	94.16 ⁵⁵
Aug. 8.2	37.373 ¹²⁹	14.48 ⁷⁴	44.506 ¹²⁶	53.52 ⁵¹	58.495 ²⁶⁰	93.20 ⁹⁶
18.2	37.250 ¹²³	13.74 ⁷⁴	44.382 ¹²⁴	53.12 ²⁰	58.241 ²⁵⁴	91.89 ¹³¹
28.1	37.137 ¹¹³	13.02 ⁷²	44.266 ¹¹⁶	52.84 ⁴⁸	58.011 ²³⁰	90.25 ¹⁶⁴
Sept. 7.1	37.042 ⁹⁵	12.36 ⁶⁶	44.170 ⁹⁶	52.73 ¹¹	57.810 ²⁰¹	88.33 ¹⁹²
17.1	36.971 ⁷¹	11.80 ⁵⁶	44.095 ⁷⁵	52.79 ⁶	57.652 ¹⁵⁸	86.20 ²¹³
27.1	36.931 ⁴⁰	11.37 ⁴³	44.048 ⁴⁷	53.02 ²³	57.548 ¹⁰⁴	83.94 ²²⁶
Oct. 7.0	36.928 ³	11.12 ²⁵	44.037 ¹¹	53.50 ⁴⁸	57.505 ⁴³	81.65 ²²⁹
17.0	36.968 ⁴⁰	11.09 ³	44.065 ²⁸	54.20 ⁷⁰	57.534 ²⁹	79.41 ²²⁴
27.0	37.055 ⁸⁷	11.31 ²²	44.140 ⁷⁵	55.15 ⁹⁵	57.637 ¹⁰³	77.33 ²⁰⁸
Nov. 5.9	37.189 ¹³⁴	11.82 ⁵¹	44.262 ¹²²	56.36 ¹²¹	57.816 ¹⁷⁹	75.49 ¹⁸⁴
15.9	37.371 ¹⁸²	12.60 ⁷⁸	44.428 ¹⁶⁶	57.83 ¹⁴⁷	58.069 ²⁵³	73.99 ¹⁵⁰
25.9	37.597 ²²⁶	13.68 ¹⁰⁸	44.641 ²¹³	59.50 ¹⁶⁷	58.392 ³²³	72.88 ¹¹¹
Dec. 5.9	37.862 ²⁶⁵	15.03 ¹³⁵	44.888 ²⁴⁷	61.33 ¹⁸³	58.773 ³⁸¹	72.25 ⁶³
15.8	38.157 ²⁹⁵	16.61 ¹⁵⁸	45.171 ²⁸³	63.32 ¹⁹⁹	59.200 ⁴²⁷	72.10 ¹⁵
25.8	38.474 ³¹⁷	18.38 ¹⁷⁷	45.476 ³⁰⁵	65.36 ²⁰⁴	59.662 ⁴⁶²	72.45 ³⁵
35.8	38.802 ³²⁸	20.29 ¹⁹¹	45.790 ³¹⁴	67.42 ²⁰⁶	60.141 ⁴⁷⁹	73.30 ⁸⁵
Mean Place	35.736	7.58	43.009	51.07	56.043	73.88
Sec δ, Tan δ	1.023	-0.218	1.000	-0.003	1.664	-1.330
L α, L δ	0.00	-0.4	0.00	-0.4	+0.01	-0.4
ω α, ω δ	-0.01	-0.4	0.00	-0.4	-0.08	-0.4
AUTHORITY				A. E.		A. E.

APPARENT PLACES OF STARS, 1922. 363

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	<i>m</i> Virginis. Mag. 5.2		τ Boötis. Mag. 4.5		η Ursæ Majoris. Mag. 1.9	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 13 37	° 18'	h m 13 43	° 50'	h m 13 44	° 41'
Jan. 0.8	30.946 ³²⁵	32.00 ¹⁹⁴	32.997 ³²⁵	36.88 ²¹¹	27.114 ⁴²⁴	54.15 ¹⁹⁴
10.8	31.271 ³²²	33.94 ¹⁹²	33.322 ³²⁷	34.77 ¹⁸¹	27.538 ⁴²⁸	52.21 ¹³⁹
20.7	31.593 ³⁰⁹	35.86 ¹⁸⁵	33.649 ³¹⁵	32.96 ¹⁴⁷	27.966 ⁴²²	50.82 ⁷⁹
30.7	31.902 ²⁸⁹	37.71 ¹⁷¹	33.964 ²⁹⁸	31.49 ¹⁰⁸	28.388 ⁴⁰²	50.03 ¹⁸
Feb. 9.7	32.191 ²⁶¹	39.42 ¹⁵⁴	34.262 ²⁷¹	30.41 ⁶⁴	28.790 ³⁶⁹	49.85 ⁴²
19.7	32.452 ²³¹	40.96 ¹³¹	34.533 ²⁴⁰	29.77 ²³	29.159 ³²⁵	50.27 ¹⁰⁴
Mar. 1.6	32.683 ¹⁹⁶	42.27 ¹⁰⁹	34.773 ²⁰⁴	29.54 ¹⁸	29.484 ²⁷⁵	51.31 ¹⁵²
11.6	32.879 ¹⁶²	43.36 ⁸⁴	34.977 ¹⁶⁹	29.72 ⁵⁵	29.759 ²²¹	52.83 ¹⁹⁹
21.6	33.041 ¹²⁸	44.20 ⁶¹	35.146 ¹³⁰	30.27 ⁹²	29.980 ¹⁶²	54.82 ²³⁵
31.5	33.169 ⁹⁴	44.81 ³⁹	35.276 ⁹⁴	31.19 ¹¹²	30.142 ¹⁰⁴	57.17 ²⁵⁵
Apr. 10.5	33.263 ⁶³	45.20 ¹⁸	35.370 ⁶¹	32.31 ¹³⁴	30.246 ⁵²	59.72 ²⁷²
20.5	33.326 ³⁵	45.38 ¹	35.431 ²⁷	33.65 ¹⁴⁸	30.298 ¹	62.44 ²⁷⁷
30.5	33.361 ⁹	45.39 ¹⁵	35.458 ¹	35.13 ¹⁵⁶	30.297 ⁵³	65.21 ²⁷³
May 10.4	33.370 ¹⁶	45.24 ²⁷	35.457 ²⁷	36.69 ¹⁵⁵	30.244 ⁹⁷	67.94 ²⁵⁶
20.4	33.354 ³⁹	44.97 ³⁸	35.430 ⁵²	38.24 ¹⁵⁰	30.147 ¹³⁴	70.50 ²²⁹
30.4	33.315 ⁵⁹	44.59 ⁴⁷	35.378 ⁷³	39.74 ¹³⁹	30.013 ¹⁶⁸	72.79 ²⁰⁰
June 9.4	33.256 ⁷⁸	44.12 ⁵³	35.305 ⁹⁴	41.13 ¹²⁶	29.845 ¹⁹⁶	74.79 ¹⁶⁶
19.3	33.178 ⁹⁵	43.59 ⁵⁹	35.211 ¹⁰⁸	42.39 ¹¹⁰	29.649 ²²¹	76.45 ¹²⁴
29.3	33.083 ¹⁰⁹	43.00 ⁶¹	35.103 ¹²³	43.49 ⁸⁶	29.428 ²³³	77.69 ⁸²
July 9.3	32.974 ¹²⁰	42.39 ⁶⁵	34.980 ¹³⁴	44.35 ⁶⁶	29.195 ²⁴⁷	78.51 ³⁴
19.2	32.854 ¹²⁷	41.74 ⁶⁵	34.846 ¹⁴⁰	45.01 ⁴¹	28.948 ²⁵²	78.85 ¹²
29.2	32.727 ¹³¹	41.09 ⁶⁴	34.706 ¹⁴⁴	45.42 ¹⁷	28.696 ²⁴⁹	78.73 ⁵⁷
Aug. 8.2	32.596 ¹²⁷	40.45 ⁶¹	34.562 ¹⁴⁰	45.59 ¹¹	28.447 ²⁴⁰	78.16 ¹⁰⁴
18.2	32.469 ¹²⁰	39.84 ⁵⁵	34.422 ¹³²	45.48 ³⁸	28.207 ²²³	77.12 ¹⁴⁸
28.1	32.349 ¹⁰⁴	39.29 ⁴⁷	34.290 ¹¹⁸	45.10 ⁶⁴	27.984 ¹⁹⁸	75.64 ¹⁸⁹
Sept. 7.1	32.245 ⁸³	38.82 ³⁵	34.172 ⁹⁴	44.46 ⁹³	27.786 ¹⁶⁷	73.75 ²²⁸
17.1	32.162 ⁵³	38.47 ²⁰	34.078 ⁶⁷	43.53 ¹²⁰	27.619 ¹³⁰	71.47 ²⁶³
27.1	32.109 ¹⁷	38.27 ²	34.011 ³³	42.33 ¹⁴⁹	27.489 ⁷⁷	68.84 ²⁹²
Oct. 7.0	32.092 ²⁴	38.25 ²⁰	33.978 ⁸	40.84 ¹⁷²	27.412 ²⁶	65.92 ³¹⁹
17.0	32.116 ⁷¹	38.45 ⁴⁵	33.986 ⁵⁵	39.12 ²⁰⁰	27.386 ³⁸	62.73 ³³⁸
27.0	32.187 ¹¹⁷	38.90 ⁷¹	34.041 ¹⁰¹	37.12 ²¹⁸	27.424 ⁹⁹	59.35 ³⁴⁷
Nov. 5.9	32.304 ¹⁶⁶	39.61 ⁹⁷	34.142 ¹⁵⁰	34.94 ²³⁸	27.523 ¹⁶⁵	55.88 ³⁵⁴
15.9	32.470 ²¹¹	40.58 ¹²⁴	34.292 ¹⁹⁸	32.56 ²⁴⁹	27.688 ²³¹	52.34 ³⁴⁵
25.9	32.681 ²⁵⁰	41.82 ¹⁴⁷	34.490 ²³⁹	30.07 ²⁵⁶	27.919 ²⁸⁹	48.89 ³³⁰
Dec. 5.9	32.931 ²⁸⁴	43.29 ¹⁶⁸	34.729 ²⁷⁵	27.51 ²⁵³	28.208 ³⁴¹	45.59 ³⁰⁵
15.8	33.215 ³⁰⁸	44.97 ¹⁸³	35.004 ³⁰¹	24.98 ²⁴⁵	28.549 ³⁸³	42.54 ²⁷¹
25.8	33.523 ³²¹	46.80 ¹⁹²	35.305 ³²¹	22.53 ²²⁷	28.932 ⁴¹²	39.83 ²²⁷
35.8	33.844	48.72	35.626	20.26	29.344	37.56
Mean Place	30.929	35.71	33.325	41.73	28.179	67.45
Sec δ , Tan δ	1.011	-0.146	1.051	+0.322	1.546	+1.179
L α , L δ	0.00	-0.4	0.00	-0.4	-0.01	-0.4
ω α , ω δ	-0.01	-0.4	+0.02	-0.4	+0.07	-0.4
AUTHORITY			A. E.		A. E.	

364 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	μ Centauri. Mag. 3.3		ζ Centauri. Mag. 3.1		η Bootis. Mag. 2.8	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 13 44	[°] ['] 42 4	^h ^m 13 50	[°] ['] 46 54	^h ^m 13 50	[°] ['] 18 46
Jan. 0.8	54.894 ₄₀₉	53.56 ₁₂₈	40.180 ₄₃₉	2.54 ₁₀₉	57.867 ₃₂₆	72.63 ₂₁₄
10.8	55.303 ₄₀₅	54.84 ₁₆₁	40.619 ₄₃₄	3.63 ₁₄₇	58.193 ₃₂₇	70.49 ₁₈₄
20.8	55.708 ₃₉₁	56.45 ₁₉₀	41.053 ₄₂₁	5.10 ₁₈₂	58.520 ₃₁₈	68.65 ₁₅₀
30.7	56.099 ₃₆₇	58.35 ₂₁₃	41.474 ₃₉₆	6.92 ₂₀₈	58.838 ₃₀₃	67.15 ₁₀₉
Feb. 9.7	56.466 ₃₃₄	60.48 ₂₂₈	41.870 ₃₆₃	9.00 ₂₃₀	59.141 ₂₇₆	66.06 ₆₅
19.7	56.800 ₂₉₈	62.76 ₂₃₉	42.233 ₃₂₅	11.30 ₂₄₅	59.417 ₂₄₉	65.41 ₂₄
Mar. 1.6	57.098 ₂₅₇	65.15 ₂₄₂	42.558 ₂₈₂	13.75 ₂₅₃	59.666 ₂₁₁	65.17 ₂₁
11.6	57.355 ₂₁₄	67.57 ₂₄₁	42.840 ₂₃₉	16.28 ₂₅₆	59.877 ₁₇₆	65.38 ₅₇
21.6	57.569 ₁₇₃	69.98 ₂₃₆	43.079 ₁₉₂	18.84 ₂₅₃	60.053 ₁₃₉	65.95 ₉₂
31.6	57.742 ₁₃₀	72.34 ₂₂₆	43.271 ₁₄₉	21.37 ₂₄₆	60.192 ₁₀₂	66.87 ₁₁₈
Apr. 10.5	57.872 ₉₁	74.60 ₂₁₂	43.420 ₁₀₅	23.83 ₂₃₆	60.294 ₇₀	68.05 ₁₄₀
20.5	57.963 ₅₂	76.72 ₁₉₅	43.525 ₆₀	26.19 ₂₂₁	60.364 ₃₅	69.45 ₁₅₃
30.5	58.015 ₁₄	78.67 ₁₇₆	43.585 ₂₀	28.40 ₂₀₀	60.399 ₆	70.98 ₁₆₀
May 10.5	58.029 ₂₁	80.43 ₁₅₃	43.605 ₂₀	30.40 ₁₇₉	60.405 ₂₃	72.58 ₁₆₁
20.4	58.008 ₅₄	81.96 ₁₂₉	43.585 ₅₇	32.19 ₁₅₃	60.382 ₄₅	74.19 ₁₅₇
30.4	57.954 ₈₆	83.25 ₁₀₁	43.528 ₉₆	33.72 ₁₂₆	60.337 ₇₀	75.76 ₁₄₄
June 9.4	57.868 ₁₁₆	84.26 ₇₂	43.432 ₁₂₆	34.98 ₉₅	60.267 ₉₂	77.20 ₁₃₀
19.3	57.752 ₁₄₂	84.98 ₄₁	43.306 ₁₅₆	35.93 ₆₀	60.175 ₁₀₆	78.50 ₁₁₃
29.3	57.610 ₁₆₄	85.39 ₉	43.150 ₁₈₃	36.53 ₂₆	60.069 ₁₂₃	79.63 ₉₁
July 9.3	57.446 ₁₈₂	85.48 ₂₄	42.967 ₂₀₃	36.79 ₁₀	59.946 ₁₃₄	80.54 ₇₀
19.3	57.264 ₁₉₄	85.24 ₅₅	42.764 ₂₁₉	36.69 ₄₆	59.812 ₁₄₂	81.24 ₄₂
29.2	57.070 ₁₉₉	84.69 ₈₇	42.545 ₂₂₅	36.23 ₈₁	59.670 ₁₄₆	81.66 ₁₆
Aug. 8.2	56.871 ₁₉₅	83.82 ₁₁₅	42.320 ₂₁₉	35.42 ₁₁₂	59.524 ₁₄₄	81.82 ₁₀
18.2	56.676 ₁₈₄	82.67 ₁₃₉	42.101 ₂₀₉	34.30 ₁₄₃	59.380 ₁₃₉	81.72 ₃₈
28.2	56.492 ₁₆₃	81.28 ₁₆₀	41.892 ₁₈₅	32.87 ₁₆₆	59.241 ₁₂₂	81.34 ₇₀
Sept. 7.1	56.329 ₁₂₉	79.68 ₁₇₄	41.707 ₁₅₁	31.21 ₁₈₆	59.119 ₁₀₀	80.64 ₉₄
17.1	56.200 ₈₉	77.94 ₁₈₂	41.556 ₁₀₆	29.35 ₁₉₇	59.019 ₇₅	79.70 ₁₂₅
27.1	56.111 ₃₉	76.12 ₁₈₁	41.450 ₅₄	27.38 ₂₀₀	58.944 ₄₀	78.45 ₁₅₂
Oct. 7.0	56.072 ₁₇	74.31 ₁₇₃	41.396 ₇	25.38 ₁₉₅	58.904 ₀	76.93 ₁₇₈
17.0	56.089 ₇₈	72.58 ₁₅₅	41.403 ₇₆	23.43 ₁₈₁	58.904 ₄₈	75.15 ₂₀₃
27.0	56.167 ₁₄₃	71.03 ₁₃₁	41.479 ₁₄₂	21.62 ₁₅₉	58.952 ₉₅	73.12 ₂₂₇
Nov. 6.0	56.310 ₂₀₄	69.72 ₁₀₀	41.621 ₂₁₁	20.03 ₁₂₉	59.047 ₁₄₃	70.85 ₂₄₁
15.9	56.514 ₂₆₃	68.72 ₆₃	41.832 ₂₇₄	18.74 ₉₀	59.190 ₁₉₃	68.44 ₂₅₅
25.9	56.777 ₃₁₅	68.09 ₂₁	42.106 ₃₂₉	17.84 ₄₉	59.383 ₂₃₃	65.89 ₂₆₁
Dec. 5.9	57.092 ₃₅₅	67.88 ₂₁	42.435 ₃₇₆	17.35 ₅	59.616 ₂₇₁	63.28 ₂₅₉
15.8	57.447 ₃₈₆	68.09 ₆₄	42.811 ₄₀₈	17.30 ₄₀	59.887 ₂₉₈	60.69 ₂₄₉
25.8	57.833 ₄₀₃	68.73 ₁₀₅	43.219 ₄₂₉	17.70 ₈₃	60.185 ₃₂₀	58.20 ₂₃₁
35.8	58.236	69.78	43.648	18.53	60.505	55.89
Mean Place	54.578	68.15	39.862	18.51	58.252	77.43
Sec δ , Tan δ	1.347	-0.903	1.464	-1.069	1.056	+0.340
$L \alpha$, $L \delta$	+0.01	-0.4	+0.01	-0.4	0.00	-0.4
$\omega \alpha$, $\omega \delta$	-0.05	-0.4	-0.06	-0.5	+0.02	-0.5
AUTHORITY	A. N.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 365

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	τ Virginis. Mag. 4.3		β Centauri. Mag. 0.9		π Hydræ. Mag. 3.5	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 13 57	^o ['] 1 55	^h ^m 13 58	^o ['] 59 59	^h ^m 14 I	^o ['] 26 18
Jan. 0.8	40.319 ³¹⁷	18.09 ²⁰³	18.686 ⁵⁶³	31.89 ⁶⁷	55.511 ³⁴⁸	16.04 ¹⁴⁹
10.8	40.636 ³¹⁹	16.06 ¹⁸⁹	19.249 ⁵⁶⁵	32.56 ¹¹³	55.859 ³⁵²	17.53 ¹⁶⁸
20.8	40.955 ³¹⁰	14.17 ¹⁷³	19.814 ⁵⁵¹	33.69 ¹⁵⁸	56.211 ³⁴¹	19.21 ¹⁸¹
30.7	41.265 ²⁹³	12.44 ¹⁴⁷	20.365 ⁵²¹	35.27 ¹⁹⁵	56.552 ³²³	21.02 ¹⁸⁸
Feb. 9.7	41.558 ²⁷²	10.97 ¹²¹	20.886 ⁴⁸⁵	37.22 ²³⁰	56.875 ²⁹⁹	22.90 ¹⁸⁹
19.7	41.830 ²⁴¹	9.76 ⁹⁰	21.371 ⁴³⁵	39.52 ²⁵⁶	57.174 ²⁶⁹	24.79 ¹⁸⁶
Mar. 1.7	42.071 ²¹⁰	8.86 ⁵⁷	21.806 ³⁸⁴	42.08 ²⁷⁶	57.443 ²³⁵	26.65 ¹⁷⁷
11.6	42.281 ¹⁷⁸	8.29 ³⁰	22.190 ³²³	44.84 ²⁸⁹	57.678 ²⁰¹	28.42 ¹⁶⁷
21.6	42.459 ¹⁴⁴	7.99 ¹	22.513 ²⁶⁶	47.73 ²⁹⁶	57.879 ¹⁶⁶	30.09 ¹⁵³
31.6	42.603 ¹¹²	8.00 ²⁴	22.779 ²⁰⁴	50.69 ²⁹⁶	58.045 ¹³²	31.62 ¹³⁹
Apr. 10.5	42.715 ⁸⁰	8.24 ⁴⁶	22.983 ¹⁴⁵	53.65 ²⁹¹	58.177 ¹⁰⁰	33.01 ¹²²
20.5	42.795 ⁴⁹	8.70 ⁶²	23.128 ⁸¹	56.56 ²⁷⁹	58.277 ⁶⁷	34.23 ¹⁰⁶
30.5	42.844 ²⁴	9.32 ⁷⁵	23.209 ²³	59.35 ²⁶⁴	58.344 ³⁷	35.29 ⁸⁸
May 10.5	42.868 ³	10.07 ⁸⁴	23.232 ³⁴	61.99 ²⁴¹	58.381 ⁷	36.17 ⁷²
20.4	42.865 ²⁵	10.91 ⁸⁸	23.198 ⁹⁰	64.40 ²¹⁶	58.388 ²⁰	36.89 ⁵⁴
30.4	42.840 ⁴⁸	11.79 ⁸⁹	23.108 ¹⁴⁶	66.56 ¹⁸⁴	58.368 ⁴⁸	37.43 ³⁵
June 9.4	42.792 ⁶⁹	12.68 ⁸⁸	22.962 ¹⁹²	68.40 ¹⁴⁸	58.320 ⁷³	37.78 ¹⁸
19.3	42.723 ⁹⁰	13.56 ⁸³	22.770 ²³⁹	69.88 ¹¹¹	58.247 ⁹⁶	37.96 ⁰
29.3	42.633 ¹⁰⁶	14.39 ⁷⁶	22.531 ²⁷⁶	70.99 ⁷⁰	58.151 ¹¹⁷	37.96 ¹⁹
July 9.3	42.527 ¹¹⁸	15.15 ⁷⁰	22.255 ³⁰⁴	71.69 ²⁵	58.034 ¹³⁵	37.77 ³⁸
19.3	42.409 ¹²⁸	15.85 ⁶⁰	21.951 ³²³	71.94 ²⁰	57.899 ¹⁴⁸	37.39 ⁵⁵
29.2	42.281 ¹³⁴	16.45 ⁴⁷	21.628 ³³⁵	71.74 ⁶⁷	57.751 ¹⁵⁵	36.84 ⁷¹
Aug. 8.2	42.147 ¹³³	16.92 ³⁵	21.293 ³³⁰	71.07 ¹⁰⁸	57.596 ¹⁵⁷	36.13 ⁸⁵
18.2	42.014 ¹²⁹	17.27 ²²	20.963 ³¹¹	69.99 ¹⁴⁶	57.439 ¹⁵¹	35.28 ⁹⁶
28.2	41.885 ¹¹⁹	17.49 ³	20.652 ²⁷⁹	68.53 ¹⁸³	57.288 ¹³⁷	34.32 ¹⁰⁵
Sept. 7.1	41.766 ⁹⁷	17.52 ¹³	20.373 ²³⁴	66.70 ²¹¹	57.151 ¹¹⁵	33.27 ¹⁰⁸
17.1	41.669 ⁷¹	17.39 ³⁵	20.139 ¹⁷¹	64.59 ²³⁴	57.036 ⁸³	32.19 ¹⁰⁷
27.1	41.598 ³⁷	17.04 ⁵⁸	19.968 ⁹⁹	62.25 ²⁴⁷	56.953 ⁴⁵	31.12 ¹⁰⁰
Oct. 7.1	41.561 ²	16.46 ⁸⁰	19.869 ²⁰	59.78 ²⁴⁸	56.908 ¹	30.12 ⁸⁶
17.0	41.563 ⁴⁷	15.66 ¹⁰⁴	19.849 ⁷²	57.30 ²⁴¹	56.909 ⁵¹	29.26 ⁶⁸
27.0	41.610 ⁹³	14.62 ¹²⁹	19.921 ¹⁶⁴	54.89 ²²¹	56.960 ¹⁰⁶	28.58 ⁴⁵
Nov. 6.0	41.703 ¹⁴¹	13.33 ¹⁵¹	20.085 ²⁵²	52.68 ¹⁹⁷	57.066 ¹⁵⁸	28.13 ¹⁶
15.9	41.844 ¹⁹⁰	11.82 ¹⁷⁴	20.337 ³³⁸	50.71 ¹⁶²	57.224 ²¹²	27.97 ¹⁵
25.9	42.034 ²²⁹	10.08 ¹⁹⁰	20.675 ⁴¹¹	49.09 ¹¹⁷	57.436 ²⁵⁷	28.12 ⁴⁸
Dec. 5.9	42.263 ²⁶⁵	8.18 ²⁰³	21.086 ⁴⁷⁷	47.92 ⁶⁸	57.693 ²⁹⁵	28.60 ⁷⁹
15.9	42.528 ²⁹³	6.15 ²⁰⁹	21.563 ⁵¹⁷	47.24 ¹⁸	57.988 ³²⁵	29.39 ¹¹⁰
25.8	42.821 ³¹⁰	4.06 ²⁰⁸	22.080 ⁵⁵⁴	47.06 ³⁶	58.313 ³⁴³	30.49 ¹³⁷
35.8	43.131	1.98	22.634	47.42	58.656	31.86
Mean Place	40.526	17.08	18.281	50.89	55.472	26.44
Sec δ , Tan δ	1.001	+0.033	2.000	-1.732	1.116	-0.494
L α , L δ	0.00	-0.3	+0.02	-0.3	+0.01	-0.3
ω α , ω δ	0.00	-0.5	-0.10	-0.5	-0.03	-0.5
AUTHORITY	A. E.		A. E.		A. N.	

366 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	θ Centauri. Mag. 2.3		94 Virginis. Mag. 6.6		α Draconis. Mag. 3.6	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 14 2	° 35 58	h m 14 2	° 8 31	h m 14 2	° 64 44
Jan. 0.8	5.243 ³⁷⁸	59.54 ¹²⁶	9.641 ³²¹	7.60 ¹⁸⁶	14.51 ⁵⁷	39.21 ¹⁹³
10.8	5.621 ³⁷⁹	60.80 ¹⁵⁵	9.962 ³²³	9.46 ¹⁸⁵	15.08 ⁵⁹	37.28 ¹³¹
20.8	6.000 ³⁷⁰	62.35 ¹⁷⁶	10.285 ³¹⁵	11.31 ¹⁷⁸	15.67 ⁵⁹	35.97 ⁶⁵
30.7	6.370 ³⁴⁹	64.11 ¹⁹⁶	10.600 ²⁹⁸	13.09 ¹⁶⁷	16.26 ⁵⁸	35.32 ⁰
Feb. 9.7	6.719 ³²³	66.07 ²⁰⁷	10.898 ²⁷⁶	14.76 ¹⁴⁸	16.84 ⁵⁴	35.32 ⁶⁶
19.7	7.042 ²⁹¹	68.14 ²¹³	11.174 ²⁴⁷	16.24 ¹²⁸	17.38 ⁴⁹	35.98 ¹²⁹
Mar. 1.7	7.333 ²⁵⁶	70.27 ²¹³	11.421 ²¹⁷	17.52 ¹⁰⁵	17.87 ⁴²	37.27 ¹⁸³
11.6	7.589 ²²⁰	72.40 ²⁰⁹	11.638 ¹⁸⁴	18.57 ⁸¹	18.29 ³⁴	39.10 ²³⁴
21.6	7.809 ¹⁸⁰	74.49 ²⁰¹	11.822 ¹⁵¹	19.38 ⁵⁸	18.63 ²⁵	41.44 ²⁶⁸
31.6	7.989 ¹⁴³	76.50 ¹⁹¹	11.973 ¹²⁰	19.96 ³⁶	18.88 ¹⁷	44.12 ²⁹⁵
Apr. 10.5	8.132 ¹⁰⁷	78.41 ¹⁷⁷	12.093 ⁸⁸	20.32 ¹⁵	19.05 ⁸	47.07 ³⁰⁸
20.5	8.239 ⁷¹	80.18 ¹⁶⁴	12.181 ⁶⁰	20.47 ¹	19.13 ¹	50.15 ³¹¹
30.5	8.310 ³⁷	81.82 ¹⁴⁵	12.241 ³²	20.46 ¹⁷	19.12 ⁹	53.26 ³⁰⁴
May 10.5	8.347 ³	83.27 ¹²⁵	12.273 ⁷	20.29 ²⁸	19.03 ¹⁶	56.30 ²⁸³
20.4	8.350 ²⁸	84.52 ¹⁰⁶	12.280 ²⁰	20.01 ³⁸	18.87 ²³	59.13 ²⁵⁷
30.4	8.322 ⁵⁹	85.58 ⁸⁴	12.260 ⁴²	19.63 ⁴⁶	18.64 ²⁹	61.70 ²²³
June 9.4	8.263 ⁹⁰	86.42 ⁵⁶	12.218 ⁶⁴	19.17 ⁵²	18.35 ³⁴	63.93 ¹⁸¹
19.4	8.173 ¹¹⁴	86.98 ³⁴	12.154 ⁸⁵	18.65 ⁵⁷	18.01 ³⁸	65.74 ¹³³
29.3	8.059 ¹³⁹	87.32 ⁶	12.069 ¹⁰³	18.08 ⁵⁹	17.63 ⁴¹	67.07 ⁸⁵
July 9.3	7.920 ¹⁵⁷	87.38 ¹⁹	11.966 ¹¹⁷	17.49 ⁶¹	17.22 ⁴²	67.92 ³²
19.3	7.763 ¹⁷²	87.19 ⁴⁷	11.849 ¹²⁹	16.88 ⁶²	16.80 ⁴⁴	68.24 ¹⁷
29.2	7.591 ¹⁸¹	86.72 ⁷¹	11.720 ¹³⁶	16.26 ⁶⁰	16.36 ⁴³	68.07 ⁷⁴
Aug. 8.2	7.410 ¹⁸¹	86.01 ⁹⁵	11.584 ¹³⁷	15.66 ⁵⁷	15.93 ⁴³	67.33 ¹²²
18.2	7.229 ¹⁷⁵	85.06 ¹¹³	11.447 ¹³³	15.09 ⁵²	15.50 ³⁹	66.11 ¹⁷⁰
28.2	7.054 ¹⁵⁸	83.93 ¹³²	11.314 ¹²¹	14.57 ⁴⁴	15.11 ³⁷	64.41 ²¹⁷
Sept. 7.1	6.896 ¹³³	82.61 ¹⁴³	11.193 ¹⁰²	14.13 ³⁴	14.74 ³¹	62.24 ²⁵⁵
17.1	6.763 ⁹⁵	81.18 ¹⁴⁸	11.091 ⁷⁴	13.79 ²⁰	14.43 ²⁶	59.69 ²⁹⁴
27.1	6.668 ⁵⁵	79.70 ¹⁴⁷	11.017 ⁴¹	13.59 ²	14.17 ¹⁹	56.75 ³²⁷
Oct. 7.1	6.613 ³	78.23 ¹³⁸	10.976 ⁰	13.57 ¹⁷	13.98 ¹²	53.48 ³⁵⁰
17.0	6.610 ⁵⁴	76.85 ¹²⁴	10.976 ⁴⁵	13.74 ⁴⁰	13.86 ³	49.98 ³⁶⁷
27.0	6.664 ¹¹²	75.61 ¹⁰⁰	11.021 ⁹⁴	14.14 ⁶⁴	13.83 ⁷	46.31 ³⁷⁹
Nov. 6.0	6.776 ¹⁷³	74.61 ⁷¹	11.115 ¹⁴³	14.78 ⁹¹	13.90 ¹⁶	42.52 ³⁷⁸
15.9	6.949 ²²⁷	73.90 ⁴⁰	11.258 ¹⁹⁰	15.69 ¹¹⁵	14.06 ²⁶	38.74 ³⁶⁷
25.9	7.176 ²⁷⁸	73.50 ¹	11.448 ²³³	16.84 ¹³⁹	14.32 ³³	35.07 ³⁴⁸
Dec. 5.9	7.454 ³²⁰	73.49 ³⁵	11.681 ²⁶⁹	18.23 ¹⁶⁰	14.65 ⁴³	31.59 ³²¹
15.9	7.774 ³⁵⁰	73.84 ⁷²	11.950 ²⁹⁷	19.83 ¹⁷⁴	15.08 ⁵⁰	28.38 ²⁷⁸
25.8	8.124 ³⁷¹	74.56 ¹⁰⁸	12.247 ³¹⁵	21.57 ¹⁸⁴	15.58 ⁵⁴	25.60 ²³¹
35.8	8.495	75.64	12.562	23.41	16.12	23.29
Mean Place	5.124	72.83	9.765	12.28	16.68	53.76
Sec δ , Tan δ	1.236	-0.726	1.011	-0.150	2.344	+2.120
L α , L δ	+0.01	-0.3	0.00	-0.3	-0.03	-0.3
ω α , ω δ	-0.04	-0.5	-0.01	-0.5	+0.12	-0.5
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 367

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	κ Virginis. Mag. 4.3		α Boötis. Mag. 0.2		2 Libræ. Mag. 6.3	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 14 8	° 54	h m 14 12	° 34	h m 14 19	° 21
Jan.	0.8 43.792 ³²⁰	35.42 ¹⁸⁰	5.668 ³¹⁵	72.34 ²²⁷	13.404 ³²⁰	24.39 ¹⁷⁴
	10.8 44.112 ³²²	37.22 ¹⁸²	5.983 ³²⁴	70.07 ¹⁹⁷	13.724 ³²⁴	26.13 ¹⁷⁷
	20.8 44.434 ³¹⁹	39.04 ¹⁷⁶	6.307 ³¹⁹	68.10 ¹⁶¹	14.048 ³²⁰	27.90 ¹⁷⁴
	30.7 44.753 ³⁰²	40.80 ¹⁶⁷	6.626 ³⁰⁷	66.49 ¹²²	14.368 ³⁰⁶	29.64 ¹⁶⁴
Feb.	9.7 45.055 ²⁷⁸	42.47 ¹⁴⁹	6.933 ²⁸⁶	65.27 ⁷⁴	14.674 ²⁸⁵	31.28 ¹⁵¹
	19.7 45.333 ²⁵⁶	43.96 ¹³¹	7.219 ²⁶²	64.53 ³¹	14.959 ²⁶⁰	32.79 ¹³²
Mar.	1.7 45.589 ²²⁴	45.27 ¹¹⁰	7.481 ²²⁶	64.22 ⁹	15.219 ²³¹	34.11 ¹¹³
	11.6 45.813 ¹⁸⁹	46.37 ⁸⁶	7.707 ¹⁹⁰	64.31 ⁵³	15.450 ²⁰⁰	35.24 ⁹¹
	21.6 46.002 ¹⁶⁰	47.23 ⁶³	7.897 ¹⁵⁹	64.84 ⁹⁰	15.650 ¹⁶⁹	36.15 ⁷⁰
	31.6 46.162 ¹²⁷	47.86 ⁴²	8.056 ¹²²	65.74 ¹¹⁶	15.819 ¹³⁸	36.85 ⁴⁹
Apr.	10.5 46.289 ⁹⁷	48.28 ²⁴	8.178 ⁸⁹	66.90 ¹⁴¹	15.957 ¹⁰⁸	37.34 ³⁰
	20.5 46.386 ⁶⁸	48.52 ⁷	8.267 ⁵³	68.31 ¹⁵⁷	16.065 ⁷⁸	37.64 ¹³
	30.5 46.454 ³⁶	48.59 ⁹	8.320 ²⁴	69.88 ¹⁶⁵	16.143 ⁵⁰	37.77 ²
May	10.5 46.490 ¹⁵	48.50 ²²	8.344 ⁶	71.53 ¹⁶⁸	16.193 ²²	37.75 ¹⁴
	20.4 46.505 ¹⁴	48.28 ³²	8.338 ³⁴	73.21 ¹⁶²	16.215 ⁴	37.61 ²⁵
	30.4 46.491 ³⁷	47.96 ⁴²	8.304 ⁵⁷	74.83 ¹⁵⁴	16.211 ²⁹	37.36 ³³
June	9.4 46.454 ⁶¹	47.54 ⁴⁷	8.247 ⁸⁴	76.37 ¹³⁹	16.182 ⁵⁴	37.03 ⁴¹
	19.4 46.393 ⁸⁵	47.07 ⁵²	8.163 ¹⁰⁴	77.76 ¹²¹	16.128 ⁷⁶	36.62 ⁴⁶
	29.3 46.308 ⁹⁹	46.55 ⁵⁷	8.059 ¹¹⁹	78.97 ⁹⁸	16.052 ⁹⁸	36.16 ⁵²
July	9.3 46.209 ¹¹⁶	45.98 ⁶⁰	7.940 ¹³⁶	79.95 ⁷⁷	15.954 ¹¹⁶	35.64 ⁵⁵
	19.3 46.093 ¹³³	45.38 ⁶²	7.804 ¹⁴⁹	80.72 ⁴⁸	15.838 ¹³⁰	35.09 ⁵⁷
	29.2 45.960 ¹³⁸	44.76 ⁶⁰	7.655 ¹⁵⁴	81.20 ²¹	15.708 ¹³⁹	34.52 ⁵⁹
Aug.	8.2 45.822 ¹³⁹	44.16 ⁵⁹	7.501 ¹⁵⁶	81.41 ⁸	15.569 ¹⁴⁵	33.93 ⁵⁸
	18.2 45.683 ¹³⁷	43.57 ⁵⁵	7.345 ¹⁵¹	81.33 ³⁶	15.424 ¹⁴²	33.35 ⁵⁶
	28.2 45.546 ¹²⁶	43.02 ⁴⁸	7.194 ¹⁴²	80.97 ⁶⁶	15.282 ¹³²	32.79 ⁵¹
Sept.	7.1 45.420 ¹⁰⁸	42.54 ⁴⁰	7.052 ¹²⁵	80.31 ⁹⁷	15.150 ¹¹⁶	32.28 ⁴³
	17.1 45.312 ⁷⁷	42.14 ²⁶	6.927 ⁹⁶	79.34 ¹²⁶	15.034 ⁸⁹	31.85 ³³
	27.1 45.235 ⁴⁶	41.88 ¹⁰	6.831 ⁶³	78.08 ¹⁵⁵	14.945 ⁵⁶	31.52 ¹⁸
Oct.	7.1 45.189 ⁶	41.78 ⁸	6.768 ²⁴	76.53 ¹⁸²	14.889 ¹⁷	31.34 ⁰
	17.0 45.183 ⁴¹	41.86 ²⁹	6.744 ²²	74.71 ²¹⁰	14.872 ²⁹	31.34 ²⁰
	27.0 45.224 ⁸⁸	42.15 ⁵⁸	6.766 ⁶⁹	72.61 ²²⁹	14.901 ⁷⁸	31.54 ⁴⁵
Nov.	6.0 45.312 ¹³⁷	42.73 ⁷⁹	6.835 ¹¹⁹	70.32 ²⁵⁰	14.979 ¹²⁹	31.99 ⁶⁹
	15.9 45.449 ¹⁸⁶	43.52 ¹⁰⁶	6.954 ¹⁶⁷	67.82 ²⁶⁴	15.108 ¹⁷⁷	32.68 ⁹⁴
	25.9 45.635 ²²⁸	44.58 ¹²⁸	7.121 ²¹⁶	65.18 ²⁷¹	15.285 ²²²	33.62 ¹¹⁹
Dec.	5.9 45.863 ²⁶⁷	45.86 ¹⁵⁰	7.337 ²⁵³	62.47 ²⁶⁹	15.507 ²⁶⁰	34.81 ¹⁴¹
	15.9 46.130 ²⁹⁴	47.36 ¹⁶⁵	7.590 ²⁸⁸	59.78 ²⁶¹	15.767 ²⁹¹	36.22 ¹⁵⁸
	25.8 46.424 ³¹²	49.01 ¹⁸⁰	7.878 ³⁰⁸	57.17 ²⁴¹	16.058 ³¹²	37.80 ¹⁷⁰
	35.8 46.736	50.81	8.186	54.76	16.370	39.50
Mean Place	43.942	40.78	6.179	76.31	13.599	30.56
Sec δ , Tan δ	1.015	-0.175	1.061	+0.356	1.020	-0.201
L α , L δ	0.00	-0.3	-0.01	-0.3	0.00	-0.3
ω α , ω δ	-0.01	-0.5	+0.02	-0.5	-0.01	-0.6
AUTHORITY	A. E.		A. E.		A. E.	

368 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	f Boötis. Mag. 5.4		ρ Boötis. Mag. 3.8		γ Boötis. Mag. 3.0	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 14 22	° ' " 19 34	h m 14 28	° ' " 30 42	h m 14 28	° ' " 38 38
Jan. 0.8	49.086 ³¹⁵	33.38 ²²⁶	27.342 ³²⁹	41.17 ²³⁵	55.288 ³⁴⁸	47.73 ²⁴⁰
10.8	49.401 ³²⁵	31.12 ¹⁹⁷	27.671 ³³⁹	38.82 ¹⁹⁶	55.636 ³⁶⁴	45.33 ¹⁹³
20.8	49.726 ³²¹	29.15 ¹⁶⁰	28.010 ³⁴²	36.86 ¹⁵³	56.000 ³⁶⁵	43.40 ¹⁴⁴
30.7	50.047 ³¹¹	27.55 ¹¹⁹	28.352 ³³²	35.33 ¹⁰²	56.365 ³⁵⁸	41.96 ⁸⁶
Feb. 9.7	50.358 ²⁹²	26.36 ⁷⁶	28.684 ³¹³	34.31 ⁴⁹	56.723 ³³⁵	41.10 ²⁹
19.7	50.650 ²⁶⁶	25.60 ³¹	28.997 ²⁸⁷	33.82 ³	57.058 ³¹¹	40.81 ²⁹
Mar. 1.7	50.916 ²³⁶	25.29 ¹⁵	29.284 ²⁵⁹	33.85 ⁵⁶	57.369 ²⁷⁶	41.10 ⁸⁴
11.6	51.152 ²⁰³	25.44 ⁵⁵	29.543 ²²²	34.41 ¹⁰³	57.645 ²³⁷	41.94 ¹³³
21.6	51.355 ¹⁶⁹	25.99 ⁹²	29.765 ¹⁸²	35.44 ¹⁴²	57.882 ¹⁹⁴	43.27 ¹⁷⁵
31.6	51.524 ¹³⁴	26.91 ¹²³	29.947 ¹⁴⁴	36.86 ¹⁷⁶	58.076 ¹⁵²	45.02 ²¹⁰
Apr. 10.6	51.658 ¹⁰⁰	28.14 ¹⁴⁷	30.091 ¹⁰⁶	38.62 ²⁰²	58.228 ¹⁰⁹	47.12 ²³⁵
20.5	51.758 ⁶⁸	29.61 ¹⁶⁴	30.197 ⁷⁰	40.64 ²¹⁶	58.337 ⁶⁵	49.47 ²⁴⁹
30.5	51.826 ³⁶	31.25 ¹⁷⁴	30.267 ³²	42.80 ²²⁵	58.402 ²⁵	51.96 ²⁵⁶
May 10.5	51.862 ⁶	32.99 ¹⁷⁶	30.299 ²	45.05 ²²⁵	58.427 ¹⁴	54.52 ²⁵²
20.4	51.868 ²²	34.75 ¹⁷³	30.297 ³⁴	47.30 ²¹⁶	58.413 ⁵¹	57.04 ²³⁹
30.4	51.846 ⁴⁸	36.48 ¹⁶⁴	30.263 ⁶⁴	49.46 ²⁰¹	58.362 ⁸⁴	59.43 ²²¹
June 9.4	51.798 ⁷⁴	38.12 ¹⁵⁰	30.199 ⁹³	51.47 ¹⁸⁰	58.278 ¹¹⁴	61.64 ¹⁹⁵
19.4	51.724 ⁹⁵	39.62 ¹³²	30.106 ¹¹⁸	53.27 ¹⁵⁵	58.164 ¹⁴³	63.59 ¹⁶⁶
29.3	51.629 ¹¹⁵	40.94 ¹¹⁰	29.988 ¹³⁹	54.82 ¹²⁷	58.021 ¹⁶⁴	65.25 ¹²⁹
July 9.3	51.514 ¹³³	42.04 ⁸⁶	29.849 ¹⁵⁷	56.09 ⁹²	57.857 ¹⁸⁵	66.54 ⁹²
19.3	51.381 ¹⁴⁶	42.90 ⁵⁹	29.692 ¹⁶⁹	57.01 ⁵⁶	57.672 ¹⁹⁹	67.46 ⁵⁰
29.3	51.235 ¹⁵⁵	43.49 ³³	29.523 ¹⁸¹	57.57 ²³	57.473 ²⁰⁶	67.96 ¹¹
Aug. 8.2	51.080 ¹⁵⁸	43.82 ³	29.342 ¹⁸³	57.80 ¹⁶	57.267 ²¹¹	68.07 ³³
18.2	50.922 ¹⁵⁶	43.85 ²⁶	29.159 ¹⁸¹	57.64 ⁵⁵	57.056 ²⁰⁷	67.74 ⁷⁵
28.2	50.766 ¹⁴⁶	43.59 ⁵⁶	28.978 ¹⁷³	57.09 ⁸⁹	56.849 ¹⁹⁴	66.99 ¹¹⁵
Sept. 7.1	50.620 ¹³⁰	43.03 ⁸⁶	28.805 ¹⁵²	56.20 ¹²⁸	56.655 ¹⁷⁶	65.84 ¹⁵³
17.1	50.490 ¹⁰⁵	42.17 ¹¹⁶	28.653 ¹²⁷	54.92 ¹⁶⁰	56.479 ¹⁴⁷	64.31 ¹⁹⁴
27.1	50.385 ⁷²	41.01 ¹⁴⁶	28.526 ⁹²	53.32 ¹⁹⁷	56.332 ¹¹¹	62.37 ²²⁹
Oct. 7.1	50.313 ³⁵	39.55 ¹⁷³	28.434 ⁵²	51.35 ²²⁷	56.221 ⁶⁵	60.08 ²⁵⁸
17.0	50.278 ¹²	37.82 ²⁰¹	28.382 ⁷	49.08 ²⁵¹	56.156 ¹⁷	57.50 ²⁸⁷
27.0	50.290 ⁵⁹	35.81 ²²³	28.375 ⁴⁸	46.57 ²⁷⁷	56.139 ³⁹	54.63 ³⁰⁷
Nov. 6.0	50.349 ¹⁰⁹	33.58 ²⁴⁴	28.423 ⁹⁸	43.80 ²⁹⁵	56.178 ⁹⁸	51.56 ³²⁴
16.0	50.458 ¹⁶⁰	31.14 ²⁵⁷	28.521 ¹⁵³	40.85 ³⁰⁰	56.276 ¹⁵⁴	48.32 ³³⁰
25.9	50.618 ²⁰⁶	28.57 ²⁶⁵	28.674 ²⁰⁷	37.85 ³⁰⁸	56.430 ²¹²	45.02 ³²⁸
Dec. 5.9	50.824 ²⁴⁷	25.92 ²⁶⁵	28.881 ²⁴⁹	34.77 ²⁹⁸	56.642 ²⁵⁹	41.74 ³¹⁶
15.9	51.071 ²⁸²	23.27 ²⁵⁸	29.130 ²⁸⁹	31.79 ²⁸⁴	56.901 ³⁰³	38.58 ²⁹⁶
25.8	51.353 ³⁰⁶	20.69 ²⁴²	29.419 ³¹⁸	28.95 ²⁵⁹	57.204 ³³⁶	35.62 ²⁶⁶
35.8	51.659	18.27	29.737	26.36	57.540	32.96
Mean Place	49.654	36.77	28.140	47.35	56.285	55.81
Sec δ , Tan δ	1.061	+0.355	1.163	+0.594	1.280	+0.800
L α , L δ	-0.01	-0.3	-0.01	-0.3	-0.01	-0.3
ω α , ω δ	+0.02	-0.6	+0.03	-0.6	+0.04	-0.6
AUTHORITY			A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 369

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	η Centauri. Mag. 2·7		α Centauri. Mag. 0·3		α Circini. Mag. 3·4	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m	°	h m	°	h m	°
	14 30	41 48	14 34	60 30	14 36	64 37
Jan. 0·8	32·752 ³⁹⁸	42·19 ⁸¹	17·94 ⁵⁶	27·57 ²²	10·85 ⁶³	51·46 ⁰
10·8	33·150 ⁴⁰⁷	43·00 ¹¹³	18·50 ⁵⁶	27·79 ⁷³	11·48 ⁶⁴	51·46 ⁵⁰
20·8	33·557 ⁴⁰²	44·13 ¹⁴²	19·06 ⁵⁶	28·52 ¹¹⁷	12·12 ⁶⁵	51·96 ⁹⁸
30·8	33·959 ³⁸⁹	45·55 ¹⁶⁵	19·62 ⁵⁵	29·69 ¹⁵⁶	12·77 ⁶³	52·94 ¹⁴²
Feb. 9·7	34·348 ³⁶⁶	47·20 ¹⁸⁶	20·17 ⁵¹	31·25 ¹⁹³	13·40 ⁶⁰	54·36 ¹⁸¹
19·7	34·714 ³³⁷	49·06 ¹⁹⁹	20·68 ⁴⁷	33·18 ²¹⁹	14·00 ⁵⁶	56·17 ²¹⁵
Mar. 1·7	35·051 ³⁰⁶	51·05 ²⁰⁷	21·15 ⁴²	35·37 ²⁴⁵	14·56 ⁵⁰	58·32 ²⁴²
11·6	35·357 ²⁶⁹	53·12 ²⁰⁹	21·57 ³⁷	37·82 ²⁶¹	15·06 ⁴⁵	60·74 ²⁶⁴
21·6	35·626 ²³⁰	55·21 ²¹¹	21·94 ³¹	40·43 ²⁷²	15·51 ³⁸	63·38 ²⁸⁰
31·6	35·856 ¹⁹²	57·32 ²⁰⁴	22·25 ²⁵	43·15 ²⁷⁹	15·89 ³²	66·18 ²⁸⁹
Apr. 10·6	36·048 ¹⁵³	59·36 ¹⁹⁷	22·50 ¹⁹	45·94 ²⁷⁸	16·21 ²⁵	69·07 ²⁹²
20·5	36·201 ¹¹⁶	61·33 ¹⁸⁸	22·69 ¹³	48·72 ²⁷⁰	16·46 ¹⁸	71·99 ²⁹¹
30·5	36·317 ⁷⁶	63·21 ¹⁷³	22·82 ⁷	51·42 ²⁶²	16·64 ¹¹	74·90 ²⁸²
May 10·5	36·393 ³⁷	64·94 ¹⁶⁰	22·89 ⁰	54·04 ²⁴³	16·75 ³	77·72 ²⁶⁹
20·5	36·430 ¹	66·54 ¹³⁹	22·89 ⁵	56·47 ²²⁴	16·78 ³	80·41 ²⁴⁹
30·4	36·429 ³⁷	67·93 ¹¹⁸	22·84 ¹²	58·71 ¹⁹⁷	16·75 ¹¹	82·90 ²²⁴
June 9·4	36·392 ⁷⁵	69·11 ⁹⁶	22·72 ¹⁷	60·68 ¹⁶⁷	16·64 ¹⁷	85·14 ¹⁹⁵
19·4	36·317 ¹⁰⁶	70·07 ⁶⁸	22·55 ²²	62·35 ¹³³	16·47 ²⁴	87·09 ¹⁵⁹
29·3	36·211 ¹⁴⁰	70·75 ⁴³	22·33 ²⁷	63·68 ⁹⁴	16·23 ³⁰	88·68 ¹²¹
July 9·3	36·071 ¹⁶⁵	71·18 ¹³	22·06 ³⁰	64·62 ⁵⁵	15·93 ³⁴	89·89 ⁷⁸
19·3	35·906 ¹⁸⁸	71·31 ¹⁶	21·76 ³⁴	65·17 ¹⁰	15·59 ³⁸	90·67 ³³
29·3	35·718 ²⁰²	71·15 ⁴⁸	21·42 ³⁶	65·27 ³⁴	15·21 ⁴⁰	91·00 ¹⁴
Aug. 8·2	35·516 ²¹¹	70·67 ⁷⁶	21·06 ³⁶	64·93 ⁷⁷	14·81 ⁴¹	90·86 ⁶⁰
18·2	35·305 ²⁰⁶	69·91 ¹⁰³	20·70 ³⁵	64·16 ¹¹⁵	14·40 ⁴¹	90·26 ¹⁰⁶
28·2	35·099 ¹⁹⁴	68·88 ¹²⁵	20·35 ³³	63·01 ¹⁵⁵	13·99 ³⁸	89·20 ¹⁴⁸
Sept. 7·2	34·905 ¹⁷¹	67·63 ¹⁴⁵	20·02 ²⁸	61·46 ¹⁹¹	13·61 ³⁴	87·72 ¹⁸⁶
17·1	34·734 ¹³⁷	66·18 ¹⁵⁸	19·74 ²⁴	59·55 ²¹⁶	13·27 ²⁷	85·86 ²¹⁶
27·1	34·597 ⁹²	64·60 ¹⁶⁵	19·50 ¹⁶	57·39 ²³³	13·00 ²⁰	83·70 ²⁴⁰
Oct. 7·1	34·505 ⁴⁰	62·95 ¹⁶⁶	19·34 ⁹	55·06 ²⁴²	12·80 ¹¹	81·30 ²⁵⁴
17·0	34·465 ²⁰	61·29 ¹⁵⁶	19·25 ¹	52·64 ²⁴²	12·69 ¹	78·76 ²⁵⁷
27·0	34·485 ⁸²	59·73 ¹⁴⁰	19·26 ¹⁰	50·22 ²³⁴	12·68 ¹⁰	76·19 ²⁵¹
Nov. 6·0	34·567 ¹⁵⁰	58·33 ¹¹⁷	19·36 ²⁰	47·88 ²¹⁰	12·78 ²⁰	73·68 ²³²
16·0	34·717 ²¹³	57·16 ⁸⁷	19·56 ²⁸	45·78 ¹⁸³	12·98 ³¹	71·36 ²⁰⁶
25·9	34·930 ²⁶⁹	56·29 ⁵⁴	19·84 ³⁷	43·95 ¹⁴³	13·29 ⁴¹	69·30 ¹⁷⁰
Dec. 5·9	35·199 ³²⁰	55·75 ¹⁸	20·21 ⁴⁴	42·52 ¹⁰³	13·70 ⁴⁹	67·60 ¹²⁷
15·9	35·519 ³⁵⁸	55·57 ²⁰	20·65 ⁴⁹	41·49 ⁵⁵	14·19 ⁵⁵	66·33 ⁸¹
25·9	35·877 ³⁸⁷	55·77 ⁶⁰	21·14 ⁵³	40·94 ³	14·74 ⁶¹	65·52 ²⁹
35·8	36·264	56·37	21·67	40·91	15·35	65·23
Mean Place	32·817	57·49	17·34	51·50	10·93	71·44
Sec δ, Tan δ	1·342	-0·895	2·032	-1·769	2·334	-2·109
L α, L δ	+0·01	-0·3	+0·03	-0·3	+0·03	-0·3
ω α, ω δ	-0·05	-0·6	-0·09	-0·6	-0·11	-0·6

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370 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Lupi. Mag. 2.9		ϵ Boötis. Mag. 2.7		α Libræ. Mag. 2.9	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 14 36	° ' 47 2	h m 14 41	° ' 27 23	h m 14 46	° ' 15 42
Jan. 0.8	43.891 ⁴²⁶	59.32 ⁵⁶	34.036 ³¹⁶	63.73 ²⁴¹	33.264 ³¹⁶	58.26 ¹⁵¹
10.8	44.317 ⁴³⁷	59.88 ⁹³	34.352 ³³¹	61.32 ²⁰⁵	33.580 ³²⁵	59.77 ¹⁵⁶
20.8	44.754 ⁴³⁴	60.81 ¹²⁸	34.683 ³³³	59.27 ¹⁶⁴	33.905 ³²⁵	61.33 ¹⁶⁰
30.8	45.188 ⁴²²	62.09 ¹⁵⁷	35.016 ³²⁶	57.63 ¹¹⁷	34.230 ³¹⁵	62.93 ¹⁵⁶
Feb. 9.7	45.610 ³⁹⁸	63.66 ¹⁸¹	35.342 ³¹¹	56.46 ⁶⁶	34.545 ³⁰¹	64.49 ¹⁴⁷
19.7	46.008 ³⁷⁰	65.47 ¹⁹⁹	35.653 ²⁸⁷	55.80 ¹⁴	34.846 ²⁸²	65.96 ¹³¹
Mar. 1.7	46.378 ³³⁵	67.46 ²¹³	35.940 ²⁵⁹	55.66 ³⁶	35.128 ²⁵⁴	67.27 ¹²⁰
11.6	46.713 ²⁹⁸	69.59 ²²¹	36.199 ²²⁷	56.02 ⁸³	35.382 ²²⁷	68.47 ¹⁰²
21.6	47.011 ²⁵⁷	71.80 ²²⁵	36.426 ¹⁹²	56.85 ¹²⁴	35.609 ¹⁹⁵	69.49 ⁸³
31.6	47.268 ²¹⁵	74.05 ²²⁵	36.618 ¹⁵⁵	58.09 ¹⁵⁹	35.804 ¹⁷⁰	70.32 ⁶⁹
Apr. 10.6	47.483 ¹⁷⁴	76.30 ²²⁰	36.773 ¹²⁰	59.68 ¹⁸⁵	35.974 ¹³⁶	71.01 ⁴⁹
20.5	47.657 ¹³¹	78.50 ²¹²	36.893 ⁸⁴	61.53 ²⁰⁴	36.110 ¹¹⁰	71.50 ³²
30.5	47.788 ⁸⁸	80.62 ²⁰¹	36.977 ⁴⁹	63.57 ²¹⁴	36.220 ⁷⁸	71.82 ²¹
May 10.5	47.876 ⁴⁶	82.63 ¹⁸⁶	37.026 ¹⁶	65.71 ²¹⁷	36.298 ⁵⁰	72.03 ⁷
20.5	47.922 ³	84.49 ¹⁶⁷	37.042 ¹⁶	67.88 ²¹¹	36.348 ²⁰	72.10 ³
30.4	47.925 ³⁹	86.16 ¹⁴⁶	37.026 ⁴⁷	69.99 ¹⁹⁸	36.368 ⁶	72.07 ¹⁰
June 9.4	47.886 ⁸⁰	87.62 ¹²¹	36.979 ⁷⁵	71.97 ¹⁸¹	36.362 ³⁶	71.97 ²²
19.4	47.806 ¹¹⁹	88.83 ⁹⁴	36.904 ¹⁰¹	73.78 ¹⁵⁹	36.326 ⁶²	71.75 ²⁹
29.3	47.687 ¹⁵³	89.77 ⁶⁴	36.803 ¹²⁵	75.37 ¹³¹	36.264 ⁸⁸	71.46 ³⁷
July 9.3	47.534 ¹⁸⁶	90.41 ³¹	36.678 ¹⁴⁶	76.68 ¹⁰¹	36.176 ¹¹¹	71.09 ⁴²
19.3	47.348 ²¹⁰	90.72 ²	36.532 ¹⁶²	77.69 ⁶⁹	36.065 ¹³²	70.67 ⁴⁸
29.3	47.138 ²²⁷	90.70 ³⁶	36.370 ¹⁷³	78.38 ³⁵	35.933 ¹⁴³	70.19 ⁵⁰
Aug. 8.2	46.911 ²³⁶	90.34 ⁶⁹	36.197 ¹⁸⁰	78.73 ⁰	35.790 ¹⁵⁴	69.69 ⁵⁵
18.2	46.675 ²³⁴	89.65 ¹⁰¹	36.017 ¹⁷⁹	78.73 ³⁶	35.636 ¹⁵⁴	69.14 ⁵⁸
28.2	46.441 ²²¹	88.64 ¹³⁰	35.838 ¹⁷²	78.37 ⁷¹	35.482 ¹⁴⁹	68.56 ⁵⁷
Sept. 7.2	46.220 ¹⁹⁷	87.34 ¹⁵³	35.666 ¹⁵⁶	77.66 ¹⁰⁷	35.333 ¹³⁶	67.99 ⁵⁵
17.1	46.023 ¹⁶⁰	85.81 ¹⁷²	35.510 ¹³³	76.59 ¹⁴²	35.197 ¹¹²	67.44 ⁴⁸
27.1	45.863 ¹¹²	84.09 ¹⁸⁴	35.377 ¹⁰²	75.17 ¹⁷⁴	35.085 ⁸³	66.96 ³⁷
Oct. 7.1	45.751 ⁵⁵	82.25 ¹⁸⁷	35.275 ⁶²	73.43 ²⁰⁶	35.002 ⁴⁰	66.59 ²⁷
17.0	45.696 ¹⁰	80.38 ¹⁸²	35.213 ¹⁷	71.37 ²³⁴	34.962 ¹	66.32 ⁷
27.0	45.706 ⁸⁰	78.56 ¹⁷⁰	35.196 ³³	69.03 ²⁵⁸	34.963 ⁵⁴	66.25 ¹¹
Nov. 6.0	45.786 ¹⁵⁰	76.86 ¹⁴⁸	35.229 ⁸⁶	66.45 ²⁷⁸	35.017 ¹⁰³	66.36 ³⁶
16.0	45.936 ²¹⁹	75.38 ¹²¹	35.315 ¹³⁹	63.67 ²⁹⁰	35.120 ¹⁵⁵	66.72 ⁶³
25.9	46.155 ²⁸³	74.17 ⁸⁶	35.454 ¹⁸⁹	60.77 ²⁹⁶	35.275 ²⁰³	67.35 ⁸⁴
Dec. 5.9	46.438 ³³⁷	73.31 ⁴⁸	35.643 ²³⁵	57.81 ²⁹³	35.478 ²⁴⁶	68.19 ¹⁰⁷
15.9	46.775 ³⁸¹	72.83 ⁸	35.878 ²⁷⁵	54.88 ²⁸¹	35.724 ²⁸⁰	69.26 ¹²⁷
25.9	47.156 ⁴¹²	72.75 ³³	36.153 ³⁰⁴	52.07 ²⁶⁰	36.004 ³⁰³	70.53 ¹⁴⁵
35.8	47.568	73.08	36.457	49.47	36.307	71.98
Mean Place	43.984	75.90	34.836	68.26	33.580	66.53
Sec δ , Tan δ	1.468	-1.074	1.126	+0.518	1.039	-0.281
L α , L δ	+0.02	-0.3	-0.01	-0.3	0.00	-0.3
ω α , ω δ	-0.06	-0.6	+0.03	-0.6	-0.01	-0.7
AUTHORITY	A. N.				A. E.	

APPARENT PLACES OF STARS, 1922. 371

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Ursæ Minoris. Mag. 2.2		ξ^2 Libræ. Mag. 5.6		β Lupi. Mag. 2.8	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 14 50	° 74 28	h m 14 52	° 11 5	h m 14 53	° 42 48
Jan. 0.8	50.56 ⁷⁵	15.51 ²³²	31.556 ³⁰⁸	37.66 ¹⁶¹	24.506 ³⁹⁴	59.61 ⁵³
10.8	51.31 ⁸³	13.19 ¹⁷⁴	31.864 ³¹⁸	39.27 ¹⁶³	24.900 ⁴⁰⁹	60.14 ⁸⁶
20.8	52.14 ⁸⁸	11.45 ¹¹⁰	32.182 ³²⁰	40.90 ¹⁶¹	25.309 ⁴⁰⁹	61.00 ¹¹⁶
30.8	53.02 ⁸⁸	10.35 ⁴³	32.502 ³¹²	42.51 ¹⁵³	25.718 ⁴⁰¹	62.16 ¹⁴¹
Feb. 9.7	53.90 ⁸⁷	9.92 ²⁴	32.814 ²⁹⁷	44.04 ¹³⁸	26.119 ³⁸⁴	63.57 ¹⁶¹
19.7	54.77 ⁸¹	10.16 ⁹²	33.111 ²⁷⁷	45.42 ¹²²	26.503 ³⁵⁹	65.18 ¹⁷⁸
Mar. 1.7	55.58 ⁷⁴	11.08 ¹⁵²	33.388 ²⁵³	46.64 ¹⁰¹	26.862 ³²⁸	66.96 ¹⁸⁷
11.6	56.32 ⁶⁴	12.60 ²⁰⁹	33.641 ²²⁶	47.65 ⁸⁰	27.190 ²⁹⁷	68.83 ¹⁹⁵
21.6	56.96 ⁵²	14.69 ²⁵³	33.867 ¹⁹⁸	48.45 ⁶⁰	27.487 ²⁶³	70.78 ¹⁹⁷
31.6	57.48 ³⁹	17.22 ²⁸⁸	34.065 ¹⁶⁹	49.05 ³⁹	27.750 ²²⁴	72.75 ¹⁹⁶
Apr. 10.6	57.87 ²⁶	20.10 ³⁰⁹	34.234 ¹⁴¹	49.44 ²⁰	27.974 ¹⁸⁴	74.71 ¹⁹³
20.5	58.13 ¹¹	23.19 ³²³	34.375 ¹¹¹	49.64 ⁴	28.158 ¹⁴⁸	76.64 ¹⁸⁵
30.5	58.24 ⁴	26.42 ³²²	34.486 ⁸³	49.68 ⁹	28.306 ¹⁰⁸	78.49 ¹⁷⁶
May 10.5	58.20 ¹⁶	29.64 ³¹²	34.569 ⁵⁴	49.59 ²¹	28.414 ⁶⁷	80.25 ¹⁶⁴
20.5	58.04 ³⁰	32.76 ²⁹¹	34.623 ²⁶	49.38 ³⁰	28.481 ²⁸	81.89 ¹⁴⁷
30.4	57.74 ⁴⁰	35.67 ²⁶²	34.649 ³	49.08 ³⁷	28.509 ¹²	83.36 ¹²⁹
June 9.4	57.34 ⁵²	38.29 ²²⁴	34.646 ³¹	48.71 ⁴³	28.497 ⁵²	84.65 ¹¹⁰
19.4	56.82 ⁵⁹	40.53 ¹⁸²	34.615 ⁵⁷	48.28 ⁴⁶	28.445 ⁹³	85.75 ⁸⁶
29.3	56.23 ⁶⁷	42.35 ¹³⁵	34.558 ⁸³	47.82 ⁴⁹	28.352 ¹²⁵	86.61 ⁵⁹
July 9.3	55.56 ⁷³	43.70 ⁸³	34.475 ¹⁰⁶	47.33 ⁵¹	28.227 ¹⁵⁸	87.20 ³⁵
19.3	54.83 ⁷⁷	44.53 ³⁰	34.369 ¹²⁶	46.82 ⁵²	28.069 ¹⁸⁶	87.55 ³
29.3	54.06 ⁷⁸	44.83 ²²	34.243 ¹⁴¹	46.30 ⁵³	27.883 ²⁰⁴	87.58 ²⁴
Aug. 8.2	53.28 ⁷⁸	44.61 ⁷⁷	34.102 ¹⁵¹	45.77 ⁵¹	27.679 ²¹⁷	87.34 ⁵⁵
18.2	52.50 ⁷⁷	43.84 ¹²⁷	33.951 ¹⁵⁴	45.26 ⁴⁹	27.462 ²¹⁹	86.79 ⁸⁴
28.2	51.73 ⁷³	42.57 ¹⁷⁷	33.797 ¹⁴⁹	44.77 ⁴⁴	27.243 ²¹⁴	85.95 ¹⁰⁹
Sept. 7.2	51.00 ⁶⁸	40.80 ²²²	33.648 ¹³⁷	44.33 ³⁷	27.029 ¹⁹²	84.86 ¹³¹
17.1	50.32 ⁶⁰	38.58 ²⁶³	33.511 ¹¹⁵	43.96 ²⁸	26.837 ¹⁶¹	83.55 ¹⁴⁸
27.1	49.72 ⁵¹	35.95 ³⁰⁴	33.396 ⁸⁶	43.68 ¹⁵	26.676 ¹²⁰	82.07 ¹⁵⁹
Oct. 7.1	49.21 ⁴⁰	32.91 ³³⁴	33.310 ⁴⁸	43.53 ¹	26.556 ⁶⁷	80.48 ¹⁶²
17.0	48.81 ²⁸	29.57 ³⁵⁶	33.262 ³	43.54 ¹⁸	26.489 ¹²	78.86 ¹⁶⁰
27.0	48.53 ¹³	26.01 ³⁷⁶	33.259 ⁴⁴	43.72 ⁴¹	26.477 ⁵⁶	77.26 ¹⁴⁸
Nov. 6.0	48.40 ⁰	22.25 ³⁸³	33.303 ⁹⁵	44.13 ⁶²	26.533 ¹²¹	75.78 ¹²⁹
16.0	48.40 ¹⁶	18.42 ³⁷⁹	33.398 ¹⁴⁶	44.75 ⁸⁶	26.654 ¹⁸⁷	74.49 ¹⁰⁶
25.9	48.56 ³¹	14.63 ³⁶⁸	33.544 ¹⁹⁴	45.61 ¹⁰⁹	26.841 ²⁴⁸	73.43 ⁷³
Dec. 5.9	48.87 ⁴⁶	10.95 ³⁴⁴	33.738 ²³⁵	46.70 ¹²⁹	27.089 ³⁰¹	72.70 ⁴¹
15.9	49.33 ⁵⁹	7.51 ³¹¹	33.973 ²⁷¹	47.99 ¹⁴⁶	27.390 ³⁴⁷	72.29 ⁵
25.9	49.92 ⁷⁰	4.40 ²⁶⁸	34.244 ²⁹⁷	49.45 ¹⁵⁸	27.737 ³⁸⁰	72.24 ³³
35.8	50.62	1.72	34.541	51.03	28.117	72.57
Mean Place	55.06	27.21	31.936	44.71	24.753	75.29
Sec δ , Tan δ	3.735	+3.598	1.019	-0.196	1.363	-0.927
L α , L δ	-0.06	-0.3	0.00	-0.3	+0.02	-0.3
ω α , ω δ	+0.18	-0.7	-0.01	-0.7	-0.04	-0.7
AUTHORITY	A. E.		A. E.		A. E.	

372 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	κ Centauri. Mag. 3.4		β Boötis. Mag. 3.6		γ Scorpii. Mag. 3.4	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	$\begin{matrix} h & m \\ 14 & 54 \\ s \end{matrix}$	$\begin{matrix} ^\circ & ' \\ 41 & 47 \end{matrix}$	$\begin{matrix} h & m \\ 14 & 58 \\ s \end{matrix}$	$\begin{matrix} ^\circ & ' \\ 40 & 41 \end{matrix}$	$\begin{matrix} h & m \\ 14 & 59 \\ s \end{matrix}$	$\begin{matrix} ^\circ & ' \\ 24 & 58 \end{matrix}$
Jan. 0.8	4.517 ³⁹⁰	16.54 ⁵⁶	59.262 ³³⁸	44.50 ²⁶⁰	29.703 ³²⁹	23.36 ¹¹⁰
10.8	4.907 ⁴⁰²	17.10 ⁸⁷	59.600 ³⁵⁷	41.90 ²¹⁵	30.032 ³⁴⁰	24.46 ¹²⁸
20.8	5.309 ⁴⁰⁴	17.97 ¹¹⁷	59.957 ³⁶⁵	39.75 ¹⁶⁹	30.372 ³⁴²	25.74 ¹³⁸
30.8	5.713 ³⁹⁵	19.14 ¹⁴¹	60.322 ³⁶⁶	38.06 ¹⁰⁹	30.714 ³³⁴	27.12 ¹⁴⁸
Feb. 9.7	6.108 ³⁷⁸	20.55 ¹⁶¹	60.688 ³⁵⁶	36.97 ⁵¹	31.048 ³²²	28.60 ¹⁵⁰
19.7	6.486 ³⁵⁴	22.16 ¹⁷⁵	61.044 ³³²	36.46 ¹⁰	31.370 ³⁰¹	30.10 ¹⁴⁴
Mar. 1.7	6.840 ³²⁶	23.91 ¹⁸⁵	61.376 ³⁰⁴	36.56 ⁷⁰	31.671 ²⁷⁸	31.54 ¹³⁹
11.7	7.166 ²⁹²	25.76 ¹⁹¹	61.680 ²⁶⁹	37.26 ¹²⁰	31.949 ²⁵⁰	32.93 ¹³¹
21.6	7.458 ²⁵⁷	27.67 ¹⁹³	61.949 ²³³	38.46 ¹⁶⁹	32.199 ²²²	34.24 ¹²²
31.6	7.715 ²²²	29.60 ¹⁹¹	62.182 ¹⁸⁶	40.15 ²⁰⁹	32.421 ¹⁹¹	35.46 ¹⁰⁹
Apr. 10.6	7.937 ¹⁸⁴	31.51 ¹⁸⁶	62.368 ¹⁴⁶	42.24 ²³⁶	32.612 ¹⁶⁰	36.55 ⁹⁶
20.5	8.121 ¹⁴⁷	33.37 ¹⁸⁰	62.514 ¹⁰³	44.60 ²⁵⁶	32.772 ¹³²	37.51 ⁸⁵
30.5	8.268 ¹⁰⁷	35.17 ¹⁶⁹	62.617 ⁵⁷	47.16 ²⁶⁹	32.904 ⁹⁸	38.36 ⁷²
May 10.5	8.375 ⁶⁹	36.86 ¹⁵⁸	62.674 ¹⁷	49.85 ²⁷⁰	33.002 ⁶⁶	39.08 ⁵⁹
20.5	8.444 ²⁹	38.44 ¹⁴²	62.691 ²³	52.55 ²⁶²	33.068 ³⁷	39.67 ⁴⁹
30.4	8.473 ¹⁰	39.86 ¹²⁴	62.668 ⁶²	55.17 ²⁴⁵	33.105 ¹	40.16 ³⁵
June 9.4	8.463 ⁵⁰	41.10 ¹⁰⁵	62.606 ¹⁰⁰	57.62 ²²⁰	33.106 ²⁶	40.51 ²⁸
19.4	8.413 ⁸⁶	42.15 ⁸²	62.506 ¹³¹	59.82 ¹⁹³	33.080 ⁵⁹	40.79 ¹⁰
29.4	8.327 ¹²³	42.97 ⁵⁷	62.375 ¹⁶¹	61.75 ¹⁵⁹	33.021 ⁸⁷	40.89 ³
July 9.3	8.204 ¹⁵⁴	43.54 ³¹	62.214 ¹⁸⁷	63.34 ¹¹⁹	32.934 ¹¹⁵	40.86 ¹³
19.3	8.050 ¹⁸⁰	43.85 ²	62.027 ²⁰⁸	64.53 ⁷⁸	32.819 ¹³⁷	40.73 ²⁸
29.3	7.870 ²⁰¹	43.87 ²⁶	61.819 ²²⁰	65.31 ³⁸	32.682 ¹⁵⁶	40.45 ⁴¹
Aug. 8.2	7.669 ²¹³	43.61 ⁵⁵	61.599 ²³¹	65.69 ⁸	32.526 ¹⁶⁶	40.04 ⁵³
18.2	7.456 ²¹⁶	43.06 ⁸²	61.368 ²³¹	65.61 ⁵²	32.360 ¹⁷⁰	39.51 ⁶⁴
28.2	7.240 ²⁰⁸	42.24 ¹⁰⁷	61.137 ²²⁵	65.09 ⁹⁵	32.190 ¹⁷⁰	38.87 ⁷⁵
Sept. 7.2	7.032 ¹⁸⁹	41.17 ¹²⁸	60.912 ²⁰⁸	64.14 ¹⁴⁰	32.020 ¹⁵⁰	38.12 ⁸⁰
17.1	6.843 ¹⁶⁰	39.89 ¹⁴⁵	60.704 ¹⁸⁶	62.74 ¹⁷⁷	31.870 ¹³¹	37.32 ⁸¹
27.1	6.683 ¹¹⁸	38.44 ¹⁵⁴	60.518 ¹⁵⁰	60.97 ²¹⁸	31.739 ⁹⁵	36.51 ⁸⁰
Oct. 7.1	6.565 ⁶⁸	36.90 ¹⁵⁸	60.368 ¹⁰⁹	58.79 ²⁵¹	31.644 ⁵⁹	35.71 ⁷⁴
17.1	6.497 ¹⁰	35.32 ¹⁵⁵	60.259 ⁶⁰	56.28 ²⁸³	31.585 ⁹	34.97 ⁶²
27.0	6.487 ⁵⁴	33.77 ¹⁴³	60.199 ⁴	53.45 ³⁰⁹	31.576 ⁴²	34.35 ⁴⁶
Nov. 6.0	6.541 ¹¹⁹	32.34 ¹²⁴	60.195 ⁵⁶	50.36 ³²⁷	31.618 ⁹⁶	33.89 ²⁴
16.0	6.660 ¹⁸⁴	31.10 ⁹⁹	60.251 ¹¹⁷	47.09 ³³⁶	31.714 ¹⁵³	33.65 ¹
25.9	6.844 ²⁴⁶	30.11 ⁷⁰	60.368 ¹⁷⁷	43.73 ³³⁹	31.867 ²⁰⁵	33.64 ²⁶
Dec. 5.9	7.090 ²⁹⁸	29.41 ³⁵	60.545 ²³¹	40.34 ³³²	32.072 ²⁴⁸	33.90 ⁵⁰
15.9	7.388 ³⁴¹	29.06 ⁰	60.776 ²⁷⁹	37.02 ³¹⁴	32.320 ²⁸⁷	34.40 ⁷⁹
25.9	7.729	29.06 ³⁵	61.055	33.88	32.607	35.19
35.8	8.103 ³⁷⁴	29.41 ³⁵	61.371 ³¹⁶	31.02 ²⁸⁶	32.922 ³¹⁵	36.18 ⁹⁹
Mean Place	4.767	31.96	60.482	51.04	30.041	34.50
Sec δ , Tan δ	1.341	-0.894	1.319	+0.860	1.103	-0.466
L α , L δ	+0.02	-0.3	-0.02	-0.3	+0.01	-0.3
ω α , ω δ	-0.04	-0.7	+0.04	-0.7	-0.02	-0.7
AUTHORITY	A. N.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 373

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ψ Boötis. Mag. 4·7		ζ Lupi. Mag. 3·5		ι Libræ. Mag. 4·7	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 15 ^m I	[°] 27 ['] 14	^h 15 ^m 6	[°] 51 ['] 47	^h 15 ^m 7	[°] 19 ['] 29
Jan. 0·8	5·296 ^s 304	60·24 ^s 249	39·909 ^s 445	54·24 ^s 4	45·860 ^s 313	41·40 ^s 125
10·8	5·600 322	57·75 216	40·354 466	54·28 46	46·173 326	42·65 136
20·8	5·922 329	55·59 175	40·820 473	54·74 82	46·499 330	44·01 142
30·8	6·251 326	53·84 128	41·293 466	55·56 116	46·829 326	45·43 144
Feb. 9·7	6·577 315	52·56 78	41·759 453	56·72 144	47·155 312	46·87 139
19·7	6·892 296	51·78 26	42·212 426	58·16 170	47·467 295	48·26 132
Mar. 1·7	7·188 270	51·52 26	42·638 397	59·86 191	47·762 271	49·58 120
11·7	7·458 241	51·78 75	43·035 362	61·77 206	48·033 246	50·78 107
21·6	7·699 209	52·53 116	43·397 320	63·83 217	48·279 220	51·85 94
31·6	7·908 174	53·69 154	43·717 278	66·00 222	48·499 191	52·77 77
Apr. 10·6	8·082 139	55·23 184	43·995 235	68·22 226	48·690 163	53·54 64
20·6	8·221 105	57·07 203	44·230 189	70·48 224	48·853 133	54·18 49
30·5	8·326 69	59·10 218	44·419 141	72·72 219	48·986 103	54·67 38
May 10·5	8·395 36	61·29 221	44·560 93	74·91 208	49·089 74	55·05 26
20·5	8·431 1	63·50 218	44·653 41	76·99 194	49·163 43	55·31 16
30·4	8·432 29	65·68 209	44·694 7	78·93 178	49·206 12	55·47 7
June 9·4	8·403 61	67·77 192	44·687 56	80·71 156	49·218 19	55·54 2
19·4	8·342 91	69·69 172	44·631 107	82·27 132	49·199 49	55·52 10
29·4	8·251 117	71·41 145	44·524 150	83·59 101	49·150 78	55·42 18
July 9·3	8·134 140	72·86 116	44·374 191	84·60 69	49·072 105	55·24 27
19·3	7·994 157	74·02 83	44·183 227	85·29 36	48·967 128	54·97 35
29·3	7·837 176	74·85 48	43·956 252	85·65 1	48·839 146	54·62 42
Aug. 8·3	7·661 184	75·33 15	43·704 270	85·66 37	48·693 160	54·20 50
18·2	7·477 188	75·48 22	43·434 274	85·29 73	48·533 165	53·70 55
28·2	7·289 183	75·26 58	43·160 267	84·56 108	48·368 163	53·15 59
Sept. 7·2	7·106 171	74·68 95	42·893 246	83·48 138	48·205 151	52·56 60
17·1	6·935 150	73·73 130	42·647 213	82·10 163	48·054 131	51·96 59
27·1	6·785 120	72·43 162	42·434 165	80·47 184	47·923 101	51·37 53
Oct. 7·1	6·665 82	70·81 198	42·269 105	78·63 196	47·822 63	50·84 44
17·1	6·583 39	68·83 226	42·164 38	76·67 199	47·759 19	50·40 31
27·0	6·544 11	66·57 252	42·126 37	74·68 195	47·740 33	50·09 13
Nov. 6·0	6·555 64	64·05 274	42·163 114	72·73 181	47·773 85	49·96 7
16·0	6·619 117	61·31 289	42·277 192	70·92 160	47·858 138	50·03 30
25·9	6·736 168	58·42 296	42·469 265	69·32 132	47·996 189	50·33 54
Dec. 5·9	6·904 217	55·46 297	42·734 330	68·00 96	48·185 234	50·87 78
15·9	7·121 257	52·49 286	43·064 384	67·04 58	48·419 271	51·65 99
25·9	7·378 290	49·63 267	43·448 427	66·46 20	48·690 300	52·64 118
35·8	7·668	46·96	43·875	66·26	48·990	53·82
Mean Place	6·186	63·60	40·289	71·80	46·268	51·16
Sec δ, Tan δ	1·125	+0·515	1·617	-1·271	1·061	-0·354
L α, L δ	-0·01	-0·3	+0·02	-0·3	+0·01	-0·3
ω α, ω δ	+0·02	-0·7	-0·06	-0·7	-0·02	-0·7
AUTHORITY	A. E.		A. E.		A. N.	

374 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Triang. Aust. Mag. 3.1		δ Boötis. Mag. 3.5		β Libræ. Mag. 2.7	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 15 II	68 23	h m 15 I2	33 36	h m 15 I2	9 5
Jan. 0.9	35.45 ⁶⁸	14.48 ⁶⁰	20.420 ³¹⁰	13.84 ²⁶³	47.920 ²⁹⁶	38.70 ¹⁶⁰
10.8	36.13 ⁷³	13.88 ¹²	20.730 ³³¹	11.21 ²²⁴	48.216 ³¹¹	40.30 ¹⁶¹
20.8	36.86 ⁷⁴	13.76 ³⁷	21.061 ³⁴¹	8.97 ¹⁸¹	48.527 ³¹⁴	41.91 ¹⁵³
30.8	37.60 ⁷⁴	14.13 ⁸⁶	21.402 ³³⁹	7.16 ¹³⁰	48.841 ³¹⁰	43.44 ¹⁴⁵
Feb. 9.8	38.34 ⁷³	14.99 ¹²⁶	21.741 ³³²	5.86 ⁷³	49.151 ³⁰¹	44.89 ¹²⁹
19.7	39.07 ⁶⁹	16.25 ¹⁶⁶	22.073 ³¹⁵	5.13 ¹⁹	49.452 ²⁸⁶	46.18 ¹¹²
Mar. 1.7	39.76 ⁶⁴	17.91 ²⁰²	22.388 ²⁹¹	4.94 ³⁹	49.738 ²⁶³	47.30 ⁸⁸
11.7	40.40 ⁵⁹	19.93 ²²⁹	22.679 ²⁶³	5.33 ⁹⁰	50.001 ²³⁷	48.18 ⁶⁷
21.6	40.99 ⁵³	22.22 ²⁵¹	22.942 ²²⁹	6.23 ¹³⁶	50.238 ²¹⁵	48.85 ⁴⁴
31.6	41.52 ⁴⁵	24.73 ²⁷⁰	23.171 ¹⁹⁰	7.59 ¹⁷⁶	50.453 ¹⁸⁴	49.29 ²⁴
Apr. 10.6	41.97 ³⁸	27.43 ²⁸²	23.361 ¹⁵⁷	9.35 ²⁰⁹	50.637 ¹⁵⁹	49.53 ⁴
20.6	42.35 ³⁰	30.25 ²⁸⁹	23.518 ¹¹⁷	11.44 ²³¹	50.796 ¹²⁹	49.57 ¹²
30.5	42.65 ²¹	33.14 ²⁸⁹	23.635 ⁷⁹	13.75 ²⁴⁴	50.925 ¹⁰²	49.45 ²⁵
May 10.5	42.86 ¹³	36.03 ²⁸²	23.714 ⁴¹	16.19 ²⁵⁰	51.027 ⁷²	49.20 ³⁶
20.5	42.99 ³	38.85 ²⁷⁰	23.755 ¹	18.69 ²⁴⁵	51.099 ⁴²	48.84 ⁴⁵
30.5	43.02 ⁵	41.55 ²⁵⁴	23.756 ³⁰	21.14 ²³⁴	51.141 ¹³	48.39 ⁵⁰
June 9.4	42.97 ¹³	44.09 ²²⁸	23.726 ⁶⁷	23.48 ²¹⁵	51.154 ¹⁴	47.89 ⁵³
19.4	42.84 ²²	46.37 ¹⁹⁹	23.659 ⁹⁸	25.63 ¹⁸⁹	51.140 ⁴⁵	47.36 ⁵³
29.4	42.62 ³⁰	48.36 ¹⁶⁵	23.561 ¹²⁸	27.52 ¹⁶⁵	51.095 ⁷⁵	46.83 ⁵⁶
July 9.3	42.32 ³⁷	50.01 ¹²⁵	23.433 ¹⁵²	29.17 ¹³⁰	51.020 ⁹⁷	46.27 ⁵⁶
19.3	41.95 ⁴²	51.26 ⁷⁹	23.281 ¹⁷⁷	30.47 ⁹²	50.923 ¹²¹	45.71 ⁵²
29.3	41.53 ⁴⁷	52.05 ³⁵	23.104 ¹⁹²	31.39 ⁵⁶	50.802 ¹⁴⁰	45.19 ⁵¹
Aug. 8.3	41.06 ⁴⁹	52.40 ¹³	22.912 ²⁰⁶	31.95 ¹⁵	50.662 ¹⁵²	44.68 ⁴⁷
18.2	40.57 ⁵⁰	52.27 ⁶³	22.706 ²⁰⁹	32.10 ²⁷	50.510 ¹⁵⁸	44.21 ⁴³
28.2	40.07 ⁴⁹	51.64 ¹¹⁰	22.497 ²⁰⁴	31.83 ⁶⁵	50.352 ¹⁵⁷	43.78 ³⁶
Sept. 7.2	39.58 ⁴⁵	50.54 ¹⁵³	22.293 ¹⁹⁷	31.18 ¹⁰⁷	50.195 ¹⁴⁶	43.42 ²⁸
17.2	39.13 ³⁹	49.01 ¹⁹³	22.096 ¹⁷⁴	30.11 ¹⁴²	50.049 ¹²⁹	43.14 ¹⁸
27.1	38.74 ³¹	47.08 ²²⁴	21.922 ¹⁴²	28.69 ¹⁸⁵	49.920 ¹⁰²	42.96 ³
Oct. 7.1	38.43 ²²	44.84 ²⁴⁸	21.780 ¹⁰⁴	26.84 ²²⁰	49.818 ⁶⁴	42.93 ¹²
17.1	38.21 ¹⁰	42.36 ²⁶¹	21.676 ⁶²	24.64 ²⁴⁵	49.754 ²⁵	43.05 ²⁷
27.0	38.11 ¹	39.75 ²⁶⁵	21.614 ¹⁰	22.19 ²⁷⁸	49.729 ²⁵	43.32 ⁵¹
Nov. 6.0	38.12 ¹⁴	37.10 ²⁵⁸	21.604 ⁴⁶	19.41 ²⁹⁹	49.754 ⁷³	43.83 ⁷²
16.0	38.26 ²⁶	34.52 ²⁴¹	21.650 ¹⁰²	16.42 ³¹²	49.827 ¹²⁶	44.55 ⁹¹
26.0	38.52 ³⁹	32.11 ²¹³	21.752 ¹⁵⁸	13.30 ³²⁰	49.953 ¹⁷³	45.46 ¹¹⁵
Dec. 5.9	38.91 ⁴⁹	29.98 ¹⁷⁷	21.910 ²⁰⁸	10.10 ³¹⁷	50.126 ²¹⁶	46.61 ¹³¹
15.9	39.40 ⁵⁸	28.21 ¹³⁷	22.118 ²⁵⁵	6.93 ³⁰⁵	50.342 ²⁵³	47.92 ¹⁴⁸
25.9	39.98 ⁶⁵	26.84 ⁸⁹	22.373 ²⁸⁹	3.88 ²⁸⁵	50.595 ²⁸²	49.40 ¹⁵⁶
35.9	40.63	25.95	22.662	1.03	50.877	50.96
Mean Place	36.16	34.65	21.503	17.98	48.420	45.69
Sec δ , Tan δ	2.715	-2.524	1.201	+0.664	1.013	-0.160
L α , L δ	+0.05	-0.3	-0.01	-0.3	0.00	-0.3
ω α , ω δ	-0.11	-0.7	+0.03	-0.7	-0.01	-0.7
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 375

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α^2 Libræ. Mag. 6·7		γ^2 Ursæ Minoris. Mag. 3·1		ι Draconis. Mag. 3·5	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 15 18	° ' " 0 14 51	h m 15 20	° ' " 0 72 6	h m 15 23	° ' " 0 59 13
Jan. 0·9	40·061 ³⁰¹	15·33 ¹³⁶	46·32 ⁶²	32·43 ²⁶⁸	9·348 ⁴⁰⁹	72·01 ²⁸³
10·8	40·362 ³¹⁶	16·69 ¹⁴³	46·94 ⁶⁹	29·75 ²¹³	9·757 ⁴⁵⁶	69·18 ²²⁹
20·8	40·678 ³²¹	18·12 ¹⁴⁴	47·63 ⁷⁵	27·62 ¹⁵³	10·213 ⁴⁸³	66·89 ¹⁷⁴
30·8	40·999 ³¹⁸	19·56 ¹⁴⁰	48·38 ⁷⁷	26·09 ⁸⁶	10·696 ⁴⁹⁵	65·15 ¹⁰⁹
Feb. 9·8	41·317 ³⁰⁸	20·96 ¹³¹	49·15 ⁷⁷	25·23 ²⁰	11·191 ⁴⁹³	64·06 ⁴³
19·7	41·625 ²⁹¹	22·27 ¹¹⁸	49·92 ⁷⁴	25·03 ⁴⁹	11·684 ⁴⁷³	63·63 ²⁴
Mar. 1·7	41·916 ²⁷²	23·45 ¹⁰²	50·66 ⁷⁰	25·52 ¹¹⁵	12·157 ⁴⁴²	63·87 ⁹¹
11·7	42·188 ²⁴⁸	24·47 ⁸⁵	51·36 ⁶²	26·67 ¹⁷³	12·599 ³⁹⁹	64·78 ¹⁴⁹
21·6	42·436 ²²³	25·32 ⁶⁸	51·98 ⁵³	28·40 ²²⁶	12·998 ³⁴³	66·27 ²⁰⁵
31·6	42·659 ¹⁹⁵	26·00 ⁵⁰	52·51 ⁴³	30·66 ²⁶⁵	13·341 ²⁸⁶	68·32 ²⁴⁶
Apr. 10·6	42·854 ¹⁶⁹	26·50 ³³	52·94 ³¹	33·31 ²⁹⁷	13·627 ²¹⁹	70·78 ²⁸¹
20·6	43·023 ¹⁴⁰	26·83 ¹⁹	53·25 ²⁰	36·28 ³¹⁷	13·846 ¹⁵²	73·59 ³⁰²
30·5	43·163 ¹¹¹	27·02 ⁷	53·45 ⁷	39·45 ³²⁶	13·998 ⁸³	76·61 ³¹⁵
May 10·5	43·274 ⁸²	27·09 ⁴	53·52 ⁵	42·71 ³²²	14·081 ¹⁴	79·76 ³¹⁶
20·5	43·356 ⁵²	27·05 ¹²	53·47 ¹⁷	45·93 ³⁰⁹	14·095 ⁵³	82·92 ³⁰⁸
30·5	43·408 ²¹	26·93 ²⁰	53·30 ²⁷	49·02 ²⁸⁷	14·042 ¹¹⁶	86·00 ²⁸⁸
June 9·4	43·429 ¹⁰	26·73 ²⁴	53·03 ³⁷	51·89 ²⁵⁷	13·926 ¹⁷⁵	88·88 ²⁶²
19·4	43·419 ⁴¹	26·49 ³⁰	52·66 ⁴⁶	54·46 ²²⁰	13·751 ²²⁸	91·50 ²²⁶
29·4	43·378 ⁷⁰	26·19 ³⁵	52·20 ⁵⁴	56·66 ¹⁷⁶	13·523 ²⁷⁶	93·76 ¹⁸⁶
July 9·3	43·308 ⁹⁶	25·84 ³⁸	51·66 ⁶⁰	58·42 ¹²⁷	13·247 ³¹⁷	95·62 ¹⁴³
19·3	43·212 ¹²¹	25·46 ⁴¹	51·06 ⁶⁴	59·69 ⁷⁵	12·930 ³⁵⁰	97·05 ⁹⁵
29·3	43·091 ¹⁴¹	25·05 ⁴⁴	50·42 ⁶⁸	60·44 ²⁵	12·580 ³⁷³	98·00 ⁴⁵
Aug. 8·3	42·950 ¹⁵⁶	24·61 ⁴⁶	49·74 ⁷⁰	60·69 ²⁷	12·207 ³⁸⁸	98·45 ⁵
18·2	42·794 ¹⁶³	24·15 ⁴⁷	49·04 ⁶⁹	60·42 ⁸²	11·819 ³⁹³	98·40 ⁵⁹
28·2	42·631 ¹⁶²	23·68 ⁴⁷	48·35 ⁶⁸	59·60 ¹³²	11·426 ³⁸⁶	97·81 ¹⁰⁸
Sept. 7·2	42·469 ¹⁵⁴	23·21 ⁴⁴	47·67 ⁶⁴	58·28 ¹⁸⁰	11·040 ³⁶⁵	96·73 ¹⁵⁷
17·2	42·315 ¹³⁴	22·77 ³⁸	47·03 ⁵⁹	56·48 ²²⁸	10·675 ³³⁷	95·16 ²⁰³
27·1	42·181 ¹⁰⁷	22·39 ³¹	46·44 ⁵²	54·20 ²⁶⁸	10·338 ²⁹³	93·13 ²⁴⁵
Oct. 7·1	42·074 ⁷²	22·08 ¹⁹	45·92 ⁴³	51·52 ³⁹⁵	10·045 ²³⁹	90·68 ²⁸⁶
17·1	42·002 ²⁸	21·89 ⁴	45·49 ³³	48·47 ³³⁷	9·806 ¹⁷³	87·82 ³¹⁹
27·0	41·974 ¹⁹	21·85 ¹³	45·16 ²²	45·10 ³⁵⁹	9·633 ⁹⁹	84·63 ³⁴⁶
Nov. 6·0	41·993 ⁷²	21·98 ³⁴	44·94 ⁸	41·51 ³⁷⁷	9·534 ¹⁸	81·17 ³⁶⁵
16·0	42·065 ¹²³	22·32 ⁵⁶	44·86 ⁵	37·74 ³⁸¹	9·516 ⁶⁹	77·52 ³⁷⁵
26·0	42·188 ¹⁷³	22·88 ⁷⁸	44·91 ¹⁹	33·93 ³⁷⁷	9·585 ¹⁵¹	73·77 ³⁷⁴
Dec. 5·9	42·361 ²¹⁹	23·66 ⁹⁸	45·10 ³²	30·16 ³⁶⁰	9·736 ²³⁴	70·03 ³⁶⁴
15·9	42·580 ²⁵⁶	24·64 ¹¹⁶	45·42 ⁴⁴	26·56 ³³⁵	9·970 ³¹²	66·39 ³⁴²
25·9	42·836 ²⁸⁷	25·80 ¹³²	45·86 ⁵⁶	23·21 ²⁹⁸	10·282 ³⁷⁵	62·97 ³⁰⁸
35·9	43·123	27·12	46·42	20·23	10·657	59·89
Mean Place	40·554	24·03	50·50	41·42	11·662	79·65
Sec δ , Tan δ	1·035	-0·265	3·256	+3·098	1·955	+1·680
L α , L δ	+0·01	-0·3	-0·06	-0·3	-0·03	-0·3
ω α , ω δ	-0·01	-0·8	+0·13	-0·8	+0·07	-0·8
AUTHORITY	A. E.			A. E.		

376 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	32 Libræ. Mag. 5·9		113 G. Lupi. Mag. 3·0		α Coronæ Bor. Mag. 2·3		
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.	
	^h 15	^m 23	^h 16	^m 26	^h 15	^m 31	
	^s	^o	^s	^o	^s	^o	
Jan.	0·9	50·738 ³⁰¹	34·87 ¹²⁷	55·645 ³⁶⁶	6·24 ²³	22·077 ²⁸⁶	33·23 ²⁶²
	10·8	51·039 ³¹⁶	36·14 ¹³⁶	56·011 ³⁸⁷	6·47 ⁵³	22·363 ³⁰⁸	30·61 ²²⁹
	20·8	51·355 ³²³	37·50 ¹³⁸	56·398 ³⁹⁶	7·00 ⁸⁰	22·671 ³¹⁷	28·32 ¹⁸⁸
	30·8	51·678 ³²⁰	38·88 ¹³⁶	56·794 ³⁹⁵	7·80 ¹⁰³	22·988 ³²⁴	26·44 ¹⁴⁸
Feb.	9·8	51·998 ³¹¹	40·24 ¹³⁰	57·189 ³⁸⁵	8·83 ¹²⁰	23·312 ³¹⁸	24·96 ⁹⁷
	19·7	52·309 ²⁹⁶	41·54 ¹¹⁸	57·574 ³⁶⁹	10·03 ¹³⁸	23·630 ³⁰⁵	23·99 ⁴³
Mar.	1·7	52·605 ²⁷⁷	42·72 ¹⁰⁴	57·943 ³⁴⁸	11·41 ¹⁴⁸	23·935 ²⁸⁶	23·56 ⁶
	11·7	52·882 ²⁵²	43·76 ⁸⁹	58·291 ³²²	12·89 ¹⁵⁷	24·221 ²⁶³	23·62 ⁶¹
	21·7	53·134 ²²⁹	44·65 ⁷¹	58·613 ²⁹³	14·46 ¹⁶⁰	24·484 ²³⁴	24·23 ¹⁰⁶
	31·6	53·363 ²⁰²	45·36 ⁵⁶	58·906 ²⁶¹	16·06 ¹⁶³	24·718 ²⁰⁰	25·29 ¹⁴⁵
Apr.	10·6	53·565 ¹⁷⁵	45·92 ⁴¹	59·167 ²²⁶	17·69 ¹⁶²	24·918 ¹⁷²	26·74 ¹⁷⁶
	20·6	53·740 ¹⁴⁶	46·33 ²⁷	59·393 ¹⁹⁰	19·31 ¹⁶⁰	25·090 ¹³⁵	28·50 ²⁰²
	30·5	53·886 ¹¹⁸	46·60 ¹⁵	59·583 ¹⁵³	20·91 ¹⁵⁴	25·225 ¹⁰⁴	30·52 ²²¹
May	10·5	54·004 ⁸⁸	46·75 ⁴	59·736 ¹¹⁶	22·45 ¹⁴⁷	25·329 ⁶⁵	32·73 ²²⁸
	20·5	54·092 ⁵⁸	46·79 ³	59·852 ⁷³	23·92 ¹³⁷	25·394 ³²	35·01 ²²⁹
	30·5	54·150 ²⁶	46·76 ¹¹	59·925 ³³	25·29 ¹²⁴	25·426 ¹	37·30 ²²¹
June	9·4	54·176 ⁶	46·65 ¹⁸	59·958 ⁹	26·53 ¹¹²	25·425 ³⁷	39·51 ²¹⁰
	19·4	54·170 ³⁶	46·47 ²²	59·949 ⁵¹	27·65 ⁹²	25·388 ⁶⁷	41·61 ¹⁸⁹
	29·4	54·134 ⁶⁷	46·25 ²⁸	59·898 ⁹²	28·57 ⁷³	25·321 ¹⁰²	43·50 ¹⁶⁵
July	9·4	54·067 ⁹⁵	45·97 ³²	59·806 ¹²⁸	29·30 ⁵¹	25·219 ¹²⁷	45·15 ¹³⁷
	19·3	53·972 ¹²¹	45·65 ³⁷	59·678 ¹⁶²	29·81 ²⁸	25·092 ¹⁵⁰	46·52 ¹⁰⁶
	29·3	53·851 ¹⁴¹	45·28 ⁴⁰	59·516 ¹⁹⁰	30·09 ²	24·942 ¹⁷²	47·58 ⁷³
Aug.	8·3	53·710 ¹⁵⁷	44·88 ⁴⁴	59·326 ²⁰⁸	30·11 ²⁴	24·770 ¹⁸⁹	48·31 ³⁷
	18·2	53·553 ¹⁶⁵	44·44 ⁴⁷	59·118 ²²⁰	29·87 ⁵²	24·581 ¹⁹⁵	48·68 ¹
	28·2	53·488 ¹⁶⁵	43·97 ⁴⁸	58·898 ²¹⁹	29·35 ⁷⁶	24·386 ¹⁹⁵	48·67 ³⁶
Sept.	7·2	53·223 ¹⁵⁷	43·49 ⁴⁷	58·679 ²⁰⁹	28·59 ⁹⁹	24·191 ¹⁸⁵	48·31 ⁷⁴
	17·2	53·066 ¹⁴⁰	43·02 ⁴³	58·470 ¹⁸⁶	27·60 ¹¹⁸	24·006 ¹⁷⁵	47·57 ¹⁰⁸
	27·1	52·926 ¹¹²	42·59 ³⁶	58·284 ¹⁵²	26·42 ¹³²	23·831 ¹⁴⁵	46·49 ¹⁴⁶
Oct.	7·1	52·814 ⁷⁶	42·23 ²⁷	58·132 ¹⁰⁵	25·10 ¹⁴¹	23·686 ¹¹¹	45·03 ¹⁸²
	17·1	52·738 ³³	41·96 ¹³	58·027 ⁵³	23·69 ¹⁴³	23·575 ⁷⁰	43·21 ²¹¹
	27·1	52·705 ¹⁵	41·83 ⁴	57·974 ⁷	22·26 ¹³⁷	23·505 ²²	41·10 ²⁴³
Nov.	6·0	52·720 ⁶⁷	41·87 ⁷³	57·981 ⁷⁴	20·89 ¹²⁷	23·483 ²⁹	38·67 ²⁶⁴
	16·0	52·787 ¹¹⁹	42·10 ⁴⁴	58·055 ¹³⁸	19·62 ¹⁰⁶	23·512 ⁸⁵	36·03 ²⁸²
	26·0	52·906 ¹⁷⁰	42·54 ⁶⁶	58·193 ²⁰²	18·56 ⁸⁴	23·597 ¹³⁶	33·21 ²⁹⁵
Dec.	5·9	53·076 ²¹⁶	43·20 ⁸⁸	58·395 ²⁵⁸	17·72 ⁵⁵	23·733 ¹⁸⁶	30·26 ²⁹⁷
	15·9	53·292 ²⁵⁵	44·08 ¹⁰⁶	58·653 ³⁰⁷	17·17 ²⁶	23·919 ²³²	27·29 ²⁹³
	25·9	53·547 ²⁸⁶	45·14 ¹²²	58·960 ³⁴⁷	16·91 ⁴	24·151 ²⁶⁶	24·36 ²⁷⁶
	35·9	53·833	46·36	59·307	16·95	24·417	21·60
Mean Place	51·250	44·08	56·171	21·37	23·089	34·74	
Sec δ, Tan δ	1·043	−0·295	1·323	−0·866	1·122	+0·509	
L α, L δ	+0·01	−0·3	+0·02	−0·2	−0·01	−0·2	
ω α, ω δ	−0·01	−0·8	−0·04	−0·8	+0·02	−0·8	
AUTHORITY			A. E.		A. E.		

APPARENT PLACES OF STARS, 1922. 377

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Serpentis. Mag. 2.8		μ Serpentis. Mag. 3.6		ζ Ursæ Minoris. Mag. 4.3	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	$h \quad m$ 15 40	$^{\circ} \quad ' \quad ''$ 6 40	$h \quad m$ 15 45	$^{\circ} \quad ' \quad ''$ 3 11	$h \quad m$ 15 46	$^{\circ} \quad ' \quad ''$ 78 1
Jan. 0.9	24.716 ²⁷²	15.99 ²⁰⁵	32.163 ²⁷³	26.76 ¹⁷¹	42.04 ⁷⁶	59.50 ²⁸²
10.8	24.988 ²⁸⁹	13.94 ¹⁹¹	32.436 ²⁹¹	28.47 ¹⁶⁶	42.80 ⁹¹	56.68 ²³⁶
20.8	25.277 ³⁰⁰	12.03 ¹⁷⁴	32.727 ³⁰²	30.13 ¹⁵⁶	43.71 ¹⁰¹	54.32 ¹⁷⁴
30.8	25.577 ³⁰⁴	10.29 ¹⁴⁶	33.029 ³⁰⁵	31.69 ¹³⁹	44.72 ¹⁰⁸	52.58 ¹¹³
Feb. 9.8	25.881 ²⁹⁸	8.83 ¹¹⁷	33.334 ²⁹⁹	33.08 ¹¹⁹	45.80 ¹¹⁰	51.45 ⁴⁷
19.7	26.179 ²⁹⁰	7.66 ⁸⁰	33.633 ²⁸⁹	34.27 ⁹³	46.90 ¹¹⁰	50.98 ²³
Mar. 1.7	26.469 ²⁶⁹	6.86 ⁴⁴	33.922 ²⁷⁴	35.20 ⁶⁶	48.00 ¹⁰⁵	51.21 ⁸⁷
11.7	26.738 ²⁵¹	6.42 ⁸	34.196 ²⁵⁴	35.86 ³⁸	49.05 ⁹⁶	52.08 ¹⁵¹
21.7	26.989 ²²⁵	6.34 ²⁶	34.450 ²³²	36.24 ¹²	50.01 ⁸⁴	53.59 ²⁰⁵
31.6	27.214 ²⁰³	6.60 ⁵⁸	34.682 ²⁰⁷	36.36 ¹³	50.85 ⁷⁰	55.64 ²⁴⁹
Apr. 10.6	27.417 ¹⁷⁵	7.18 ⁸⁴	34.889 ¹⁸³	36.23 ³⁵	51.55 ⁵³	58.13 ²⁸⁶
20.6	27.592 ¹⁴⁸	8.02 ¹⁰⁷	35.072 ¹⁵⁷	35.88 ⁵⁵	52.08 ³⁷	60.99 ³⁰⁹
30.6	27.740 ¹¹⁷	9.09 ¹²¹	35.229 ¹²⁹	35.33 ⁶⁷	52.45 ¹⁸	64.08 ³²⁴
May 10.5	27.857 ⁸⁹	10.30 ¹³²	35.358 ⁹⁹	34.66 ⁷⁹	52.63 ¹	67.32 ³²⁵
20.5	27.946 ⁵⁸	11.62 ¹³⁷	35.457 ⁷⁰	33.87 ⁸⁶	52.62 ¹⁸	70.57 ³¹⁷
30.5	28.004 ²⁹	12.99 ¹³⁸	35.527 ³⁸	33.01 ⁸⁷	52.44 ³⁵	73.74 ³⁰⁰
June 9.4	28.033 ³	14.37 ¹³⁴	35.565 ⁹	32.14 ⁸⁷	52.09 ⁵²	76.74 ²⁷¹
19.4	28.030 ³⁴	15.71 ¹²⁵	35.574 ²³	31.27 ⁸⁵	51.57 ⁶⁵	79.45 ²³⁹
29.4	27.996 ⁶⁴	16.96 ¹¹⁶	35.551 ⁵³	30.42 ⁸⁰	50.92 ⁷⁹	81.84 ¹⁹⁹
July 9.4	27.932 ⁹¹	18.12 ¹⁰¹	35.498 ⁸⁶	29.62 ⁷³	50.13 ⁸⁹	83.83 ¹⁵⁴
19.3	27.841 ¹¹⁸	19.13 ⁸⁴	35.412 ¹⁰⁹	28.89 ⁶⁵	49.24 ⁹⁸	85.37 ¹⁰⁶
29.3	27.723 ¹³⁹	19.97 ⁶⁶	35.303 ¹³⁴	28.24 ⁵⁵	48.26 ¹⁰⁴	86.43 ⁵²
Aug. 8.3	27.584 ¹⁵⁵	20.63 ⁴⁸	35.169 ¹⁵¹	27.69 ⁴⁷	47.22 ¹⁰⁸	86.95 ⁵
18.3	27.429 ¹⁶⁴	21.11 ²⁹	35.018 ¹⁶¹	27.22 ³⁴	46.14 ¹⁰⁹	87.00 ⁵²
28.2	27.265 ¹⁶⁸	21.40 ⁸	34.857 ¹⁶⁷	26.88 ²⁵	45.05 ¹⁰⁸	86.48 ¹⁰²
Sept. 7.2	27.097 ¹⁶³	21.48 ¹⁴	34.690 ¹⁶²	26.63 ¹⁰	43.97 ¹⁰⁴	85.46 ¹⁵²
17.2	26.934 ¹⁴⁹	21.34 ³⁹	34.528 ¹⁴⁸	26.53 ⁵	42.93 ⁹⁹	83.94 ¹⁹⁸
27.1	26.785 ¹²⁵	20.95 ⁶³	34.380 ¹²⁶	26.58 ²⁰	41.94 ⁸⁹	81.96 ²⁴³
Oct. 7.1	26.660 ⁹²	20.32 ⁸⁴	34.254 ⁹²	26.78 ⁴⁰	41.05 ⁷⁷	79.53 ²⁸²
17.1	26.568 ⁵⁸	19.48 ¹¹¹	34.162 ⁵⁶	27.18 ⁵⁹	40.28 ⁶³	76.71 ³¹⁶
27.0	26.510 ⁹	18.37 ¹³⁷	34.106 ¹⁰	27.77 ⁷⁹	39.65 ⁴⁸	73.55 ³⁴³
Nov. 6.0	26.501 ³⁵	17.00 ¹⁵⁷	34.096 ³⁹	28.56 ¹⁰⁰	39.17 ²⁹	70.12 ³⁶³
16.0	26.536 ⁸⁹	15.43 ¹⁸⁰	34.135 ⁸⁷	29.56 ¹²⁰	38.88 ¹¹	66.49 ³⁷⁵
26.0	26.625 ¹³⁶	13.63 ¹⁹⁸	34.222 ¹³⁸	30.76 ¹³⁹	38.77 ¹⁰	62.74 ³⁷³
Dec. 5.9	26.761 ¹⁸²	11.65 ²⁰⁸	34.360 ¹⁸⁴	32.15 ¹⁵⁵	38.87 ³⁰	59.01 ³⁶⁴
15.9	26.943 ²²³	9.57 ²¹²	34.544 ²²⁴	33.70 ¹⁶⁵	39.17 ⁵⁰	55.37 ³⁴³
25.9	27.166 ²⁵³	7.45 ²¹³	34.768 ²⁵⁵	35.35 ¹⁷²	39.67 ⁶⁷	51.94 ³¹⁰
35.9	27.419	5.32	35.023	37.07	40.34	48.84
Mean Place	25.468	12.33	32.850	33.05	48.72	66.36
Sec δ , Tan δ	1.007	+0.117	1.002	-0.056	4.824	+4.719
L α , L δ	0.00	-0.2	0.00	-0.2	-0.10	-0.2
ω α , ω δ	0.00	-0.8	0.00	-0.8	+0.17	-0.8
AUTHORITY	A. E.		A. E.		A. E.	

378 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Serpentinis. Mag. 3·8		β Triang. Aust. Mag. 3·0		γ Serpentinis. Mag. 3·9	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 15 46	° ′ 4 42	h m 15 48	° ′ 63 11	h m 15 52	° ′ 15 54
Jan. 0·9	54·81 ²⁶⁶	46·57 ¹⁹⁸	14·25 ⁵⁴	10·89 ⁸⁷	50·043 ²⁶⁴	56·64 ²³⁷
10·9	55·078 ²⁸⁷	44·59 ¹⁸⁸	14·79 ⁵⁹	10·02 ⁴⁵	50·307 ²⁸⁶	54·27 ²²⁰
20·8	55·365 ²⁹⁸	42·71 ¹⁷¹	15·38 ⁶¹	9·57 ³	50·593 ³⁰⁰	52·07 ¹⁹³
30·8	55·663 ³⁰³	41·00 ¹⁴⁴	15·99 ⁶²	9·54 ⁴⁰	50·893 ³⁰⁵	50·14 ¹⁵⁷
Feb. 9·8	55·966 ²⁹⁸	39·56 ¹¹⁸	16·61 ⁶²	9·94 ⁸²	51·198 ³⁰³	48·57 ¹¹⁸
19·7	56·264 ²⁹⁰	38·38 ⁸⁴	17·23 ⁵⁹	10·76 ¹¹⁴	51·501 ²⁹⁴	47·39 ⁷⁴
Mar. 1·7	56·554 ²⁷²	37·54 ⁴⁶	17·82 ⁵⁸	11·90 ¹⁴⁹	51·795 ²⁷⁹	46·65 ³⁰
11·7	56·826 ²⁵³	37·08 ¹⁵	18·40 ⁵⁴	13·39 ¹⁷⁸	52·074 ²⁶⁰	46·35 ¹⁴
21·7	57·079 ²³¹	36·93 ¹⁸	18·94 ⁴⁹	15·17 ²⁰¹	52·334 ²³⁷	46·49 ⁵⁶
31·6	57·310 ²⁰⁷	37·11 ⁵¹	19·43 ⁴⁵	17·18 ²²¹	52·571 ²¹²	47·05 ⁹³
Apr. 10·6	57·517 ¹⁷⁹	37·62 ⁷⁵	19·88 ³⁹	19·39 ²³⁷	52·783 ¹⁸⁶	47·98 ¹²⁴
20·6	57·696 ¹⁵⁷	38·37 ⁹⁶	20·27 ³²	21·76 ²⁴⁷	52·969 ¹⁵⁷	49·22 ¹⁵⁰
30·6	57·853 ¹²⁵	39·33 ¹¹²	20·59 ²⁷	24·23 ²⁵⁴	53·126 ¹²⁷	50·72 ¹⁶⁸
May 10·5	57·978 ⁹⁶	40·45 ¹²⁴	20·86 ²⁰	26·77 ²⁵³	53·253 ⁹⁶	52·40 ¹⁷⁹
20·5	58·074 ⁶⁶	41·69 ¹²⁹	21·06 ¹²	29·30 ²⁴⁸	53·349 ⁶⁴	54·19 ¹⁸³
30·5	58·140 ³⁴	42·98 ¹²⁹	21·18 ⁵	31·78 ²³⁸	53·413 ³¹	56·02 ¹⁸²
June 9·4	58·174 ⁴	44·27 ¹²⁷	21·23 ³	34·16 ²²³	53·444 ¹	57·84 ¹⁷⁵
19·4	58·178 ²⁸	45·54 ¹²¹	21·20 ¹⁰	36·39 ²⁰⁰	53·443 ³⁴	59·59 ¹⁶²
29·4	58·150 ⁵⁸	46·75 ¹¹⁰	21·10 ¹⁷	38·39 ¹⁷⁷	53·409 ⁶⁶	61·21 ¹⁴⁵
July 9·4	58·092 ⁸⁶	47·85 ⁹⁷	20·93 ²⁴	40·16 ¹⁴²	53·343 ⁹⁶	62·66 ¹²⁵
19·3	58·006 ¹¹⁴	48·82 ⁸²	20·69 ³⁰	41·58 ¹⁰⁷	53·247 ¹²³	63·91 ¹⁰³
29·3	57·892 ¹³⁶	49·64 ⁶⁶	20·39 ³⁵	42·65 ⁶⁷	53·124 ¹⁴⁶	64·94 ⁷⁷
Aug. 8·3	57·756 ¹⁵⁴	50·30 ⁵⁰	20·04 ³⁸	43·32 ²³	52·978 ¹⁶⁵	65·71 ⁵⁰
18·3	57·602 ¹⁶³	50·80 ³⁴	19·66 ⁴¹	43·55 ²⁰	52·813 ¹⁷⁶	66·21 ²³
28·2	57·439 ¹⁶⁸	51·14 ¹¹	19·25 ⁴⁰	43·35 ⁶⁴	52·637 ¹⁸¹	66·44 ⁷
Sept. 7·2	57·271 ¹⁶⁵	51·25 ⁹	18·85 ³⁹	42·71 ¹⁰⁸	52·456 ¹⁷⁷	66·37 ³⁷
17·2	57·106 ¹⁴⁹	51·16 ²⁹	18·46 ³⁶	41·63 ¹⁴⁷	52·279 ¹⁶⁵	66·00 ⁶⁶
27·2	56·957 ¹³¹	50·87 ⁵²	18·10 ³¹	40·16 ¹⁸²	52·114 ¹⁴³	65·34 ⁹⁷
Oct. 7·1	56·826 ⁹⁶	50·35 ⁷⁵	17·79 ²³	38·34 ²⁰⁹	51·971 ¹¹³	64·37 ¹²⁷
17·1	56·730 ⁶²	49·60 ¹⁰⁰	17·56 ¹⁵	36·25 ²²⁸	51·858 ⁷⁵	63·10 ¹⁵⁶
27·1	56·668 ¹⁵	48·60 ¹²⁴	17·41 ⁵	33·97 ²³⁸	51·783 ³¹	61·54 ¹⁸³
Nov. 6·0	56·653 ³³	47·36 ¹⁴⁷	17·36 ⁵	31·59 ²³⁸	51·752 ¹⁸	59·71 ²⁰⁸
16·0	56·686 ⁸²	45·89 ¹⁶⁵	17·41 ¹⁵	29·21 ²²⁸	51·770 ⁶⁹	57·63 ²²⁹
26·0	56·768 ¹³³	44·24 ¹⁸⁴	17·56 ²⁶	26·93 ²¹⁰	51·839 ¹¹⁹	55·34 ²⁴⁵
Dec. 6·0	56·901 ¹⁷⁴	42·40 ¹⁹⁸	17·82 ³⁵	24·83 ¹⁸³	51·958 ¹⁶⁷	52·89 ²⁵⁴
15·9	57·075 ²¹⁹	40·42 ²⁰²	18·17 ⁴³	23·00 ¹⁵¹	52·125 ²¹⁰	50·35 ²⁵⁶
25·9	57·294 ²⁵⁰	38·40 ²⁰⁴	18·60 ⁵¹	21·49 ¹¹²	52·335 ²⁴⁶	47·79 ²⁵⁰
35·9	57·544	36·36	19·11	20·37	52·581	45·29
Mean Place	55·568	42·18	15·31	29·53	50·947	54·56
Sec δ, Tan δ	1·003	+0·082	2·217	-1·979	1·040	+0·285
L α, L δ	0·00	-0·2	+0·04	-0·2	-0·01	-0·2
ω α, ω δ	0·00	-0·8	-0·07	-0·8	+0·01	-0·8
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 379

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	π Scorpii. Mag. 3.0		δ Scorpii. Mag. 2.5		β^1 Scorpii. Mag. 2.9	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 15 54	° ' " 25 53	h m 15 55	° ' " 22 23	h m 16 0	° ' " 19 35
Jan. 0.9	7.078 ³⁰¹	15.28 ⁶⁹	42.388 ²⁹²	52.20 ⁸⁴	53.175 ²⁸⁴	24.63 ⁹⁴
10.9	7.379 ³²¹	15.97 ⁸⁴	42.680 ³¹³	53.04 ⁹⁷	53.459 ³⁰⁴	25.57 ¹⁰⁴
20.8	7.700 ³³⁵	16.81 ⁹⁶	42.993 ³²⁶	54.01 ¹⁰³	53.763 ³¹⁷	26.61 ¹⁰⁸
30.8	8.035 ³³⁷	17.77 ¹⁰³	43.319 ³²⁹	55.04 ¹⁰⁹	54.080 ³²³	27.69 ¹¹¹
Feb. 9.8	8.372 ³³³	18.80 ¹⁰⁸	43.648 ³²⁴	56.13 ¹⁰⁸	54.403 ³²⁰	28.80 ¹⁰⁶
19.8	8.705 ³²³	19.88 ¹⁰⁷	43.972 ³¹⁵	57.21 ¹⁰⁵	54.723 ³¹⁰	29.86 ⁹⁹
Mar. 1.7	9.028 ³⁰⁷	20.95 ¹⁰⁴	44.287 ³⁰²	58.26 ⁹⁷	55.033 ²⁹⁶	30.85 ⁹²
11.7	9.335 ²⁸⁸	21.99 ⁹⁸	44.589 ²⁸²	59.23 ⁸⁷	55.329 ²⁸²	31.77 ⁷⁵
21.7	9.623 ²⁶⁶	22.97 ⁹²	44.871 ²⁶¹	60.10 ⁷⁹	55.611 ²⁵⁹	32.52 ⁶⁷
31.6	9.889 ²⁴²	23.89 ⁸³	45.132 ²³⁸	60.89 ⁶⁸	55.870 ²³⁸	33.19 ⁵²
Apr. 10.6	10.131 ²¹⁶	24.72 ⁷⁵	45.370 ²¹¹	61.57 ⁵⁸	56.108 ²¹¹	33.71 ⁴²
20.6	10.347 ¹⁸⁷	25.47 ⁶⁸	45.581 ¹⁸⁵	62.15 ⁴⁷	56.319 ¹⁸⁵	34.13 ³¹
30.6	10.534 ¹⁵⁸	26.15 ⁶⁰	45.766 ¹⁵⁴	62.62 ⁴⁰	56.504 ¹⁵⁷	34.44 ²⁴
May 10.5	10.692 ¹²⁷	26.75 ⁵³	45.920 ¹²⁵	63.02 ³²	56.661 ¹²⁹	34.68 ¹³
20.5	10.819 ⁹⁵	27.28 ⁴⁷	46.045 ⁹³	63.34 ²⁵	56.790 ⁹⁴	34.81 ⁸
30.5	10.913 ⁵⁸	27.75 ³⁹	46.138 ⁵⁷	63.59 ²⁰	56.884 ⁶¹	34.89 ²
June 9.5	10.971 ²²	28.14 ³³	46.195 ²⁴	63.79 ¹⁵	56.945 ²⁷	34.91 ³
19.4	10.993 ¹⁴	28.47 ²⁵	46.219 ¹³	63.94 ⁷	56.972 ⁶	34.88 ⁷
29.4	10.979 ⁵¹	28.72 ¹⁷	46.206 ⁴⁷	64.01 ⁰	56.966 ⁴⁴	34.81 ¹¹
July 9.4	10.928 ⁸⁵	28.89 ⁸	46.159 ⁸⁴	64.01 ⁶	56.922 ⁷⁶	34.70 ¹⁷
19.3	10.843 ¹¹⁷	28.97 ³	46.075 ¹¹¹	63.95 ¹³	56.846 ¹⁰⁷	34.53 ¹⁷
29.3	10.726 ¹⁴⁵	28.94 ¹³	45.964 ¹⁴¹	63.82 ¹⁸	56.739 ¹³⁶	34.36 ²⁴
Aug. 8.3	10.581 ¹⁶⁵	28.81 ²⁵	45.823 ¹⁶⁰	63.64 ²⁸	56.603 ¹⁵⁷	34.12 ³⁰
18.3	10.416 ¹⁸¹	28.56 ³⁶	45.663 ¹⁷⁵	63.36 ³⁷	56.446 ¹⁷¹	33.82 ³⁶
28.2	10.235 ¹⁸⁵	28.20 ⁴⁷	45.488 ¹⁷⁹	62.99 ⁴³	56.275 ¹⁷⁷	33.46 ³⁹
Sept. 7.2	10.050 ¹⁸²	27.73 ⁵⁶	45.309 ¹⁷⁶	62.56 ⁴⁹	56.098 ¹⁷³	33.07 ³⁹
17.2	9.868 ¹⁶⁷	27.17 ⁶²	45.133 ¹⁶²	62.07 ⁵¹	55.925 ¹⁶²	32.68 ⁴³
27.2	9.701 ¹⁴³	26.55 ⁶⁶	44.971 ¹⁴¹	61.56 ⁵³	55.763 ¹⁴¹	32.25 ⁴²
Oct. 7.1	9.558 ¹⁰⁷	25.89 ⁶⁶	44.830 ¹⁰³	61.03 ⁵⁰	55.622 ¹⁰⁷	31.83 ³⁶
17.1	9.451 ⁶⁵	25.23 ⁶²	44.727 ⁶⁶	60.53 ⁴²	55.515 ⁶⁹	31.47 ²⁸
27.1	9.386 ¹⁴	24.61 ⁵³	44.661 ¹⁴	60.11 ³²	55.446 ¹⁹	31.19 ¹⁸
Nov. 6.0	9.372 ⁴⁰	24.08 ³⁹	44.647 ³⁶	59.79 ²¹	55.427 ²⁹	31.01 ⁰
16.0	9.412 ⁹⁶	23.69 ²³	44.683 ⁹¹	59.58 ¹	55.456 ⁸⁷	31.01 ¹⁵
26.0	9.508 ¹⁵⁰	23.46 ²	44.774 ¹⁴⁴	59.59 ¹⁸	55.543 ¹³⁴	31.16 ³³
Dec. 6.0	9.658 ²⁰¹	23.44 ¹⁸	44.918 ¹⁹⁵	59.77 ³⁷	55.677 ¹⁸⁸	31.49 ⁵⁵
15.9	9.859 ²⁴⁶	23.62 ³⁹	45.113 ²³⁷	60.14 ⁶⁰	55.865 ²²⁸	32.04 ⁷¹
25.9	10.105 ²⁸²	24.01 ⁶⁰	45.350 ²⁷⁵	60.74 ⁷⁶	56.093 ²⁶⁴	32.75 ⁸⁵
35.9	10.387	24.61	45.625	61.50	56.357	33.60
Mean Place	7.723	27.00	43.046	63.14	53.861	34.97
Sec δ , Tan δ	1.112	-0.485	1.082	-0.412	1.061	-0.356
L α , L δ	+0.01	-0.2	+0.01	-0.2	+0.01	-0.2
ω α , ω δ	-0.02	-0.9	-0.01	-0.9	-0.01	-0.9
AUTHORITY	A. N.		A. E.		A. E.	

380 APPARENT PLACES OF STARS, 1922

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	δ Ophiuchi. Mag. 3.0		γ ² Normæ. Mag. 4.1		ε Ophiuchi. Mag. 3.3	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 16 10	° ′ 3 29	h m 16 13	° ′ 49 57	h m 16 14	° ′ 4 30
Jan. 0.9	14.583 ²⁵⁷	33.24 ¹⁶¹	58.605 ³⁷⁸	40.43 ⁶⁰	10.740 ²⁵⁶	5.10 ¹⁵⁷
10.9	14.840 ²⁷⁷	34.85 ¹⁵⁷	58.983 ⁴¹⁴	39.83 ³¹	10.996 ²⁷⁷	6.67 ¹⁵³
20.8	15.117 ²⁹⁵	36.42 ¹⁵⁰	59.397 ⁴³⁷	39.52 ³	11.273 ²⁹⁴	8.20 ¹⁴⁴
30.8	15.412 ²⁹⁹	37.92 ¹³³	59.834 ⁴⁴⁸	39.55 ³²	11.567 ³⁰⁰	9.64 ¹³¹
Feb. 9.8	15.711 ³⁰⁰	39.25 ¹¹⁴	60.282 ⁴⁴⁹	39.87 ⁶¹	11.867 ²⁹⁹	10.95 ¹¹²
19.8	16.011 ²⁹²	40.39 ⁸⁷	60.731 ⁴⁴³	40.48 ⁸⁵	12.166 ²⁹³	12.07 ⁸⁸
Mar. 1.7	16.303 ²⁸¹	41.26 ⁶¹	61.174 ⁴²⁹	41.33 ¹⁰⁶	12.459 ²⁸³	12.95 ⁶²
11.7	16.584 ²⁶⁸	41.87 ³⁷	61.603 ⁴⁰⁹	42.39 ¹²⁷	12.742 ²⁶⁸	13.57 ³⁶
21.7	16.852 ²⁴⁷	42.24 ⁷	62.012 ³⁸¹	43.66 ¹⁴²	13.010 ²⁵²	13.93 ⁹
31.7	17.099 ²²⁶	42.31 ¹⁶	62.393 ³⁵⁰	45.08 ¹⁵⁶	13.262 ²²⁹	14.02 ¹³
Apr. 10.6	17.325 ²⁰⁴	42.15 ⁴⁰	62.743 ³¹⁸	46.64 ¹⁶⁵	13.491 ²⁰⁷	13.89 ³⁶
20.6	17.529 ¹⁷⁶	41.75 ⁵⁷	63.061 ²⁷⁸	48.29 ¹⁷⁴	13.698 ¹⁸²	13.53 ⁵⁴
30.6	17.705 ¹⁵⁴	41.18 ⁷²	63.339 ²³⁸	50.03 ¹⁷⁸	13.880 ¹⁵⁵	12.99 ⁶⁷
May 10.6	17.859 ¹²³	40.46 ⁸³	63.577 ¹⁹¹	51.81 ¹⁸⁰	14.035 ¹²⁹	12.32 ⁸⁰
20.5	17.982 ⁹³	39.63 ⁸⁸	63.768 ¹⁴⁴	53.61 ¹⁷⁹	14.164 ⁹⁷	11.52 ⁸⁴
30.5	18.075 ⁶⁰	38.75 ⁹²	63.912 ⁹³	55.40 ¹⁷²	14.261 ⁶⁶	10.68 ⁸⁸
June 9.5	18.135 ²⁹	37.83 ⁹¹	64.005 ³⁸	57.12 ¹⁶⁴	14.327 ³⁴	9.80 ⁸⁷
19.4	18.164 ⁶	36.92 ⁸⁸	64.043 ¹⁶	58.76 ¹⁵⁰	14.361 ²	8.93 ⁸⁵
29.4	18.158 ³⁸	36.04 ⁸²	64.027 ⁷⁰	60.26 ¹³³	14.359 ³⁴	8.08 ⁷⁸
July 9.4	18.120 ⁷⁰	35.22 ⁷⁵	63.957 ¹²⁰	61.59 ¹¹³	14.325 ⁶⁷	7.30 ⁷³
19.4	18.050 ¹⁰¹	34.47 ⁶⁷	63.837 ¹⁶⁸	62.72 ⁸⁶	14.258 ⁹⁸	6.57 ⁶⁴
29.3	17.949 ¹²⁶	33.80 ⁵⁸	63.669 ²¹¹	63.58 ⁵⁹	14.160 ¹²⁴	5.93 ⁵⁵
Aug. 8.3	17.823 ¹⁴⁹	33.22 ⁴⁶	63.458 ²⁴³	64.17 ²⁸	14.036 ¹⁴⁸	5.38 ⁴⁷
18.3	17.674 ¹⁶²	32.76 ³⁶	63.215 ²⁶⁶	64.45 ⁴	13.888 ¹⁶¹	4.91 ³⁶
28.2	17.512 ¹⁷⁰	32.40 ²⁴	62.949 ²⁷⁶	64.41 ³⁹	13.727 ¹⁷¹	4.55 ²⁵
Sept. 7.2	17.342 ¹⁶⁹	32.16 ¹¹	62.673 ²⁷⁵	64.02 ⁷¹	13.556 ¹⁷¹	4.30 ¹³
17.2	17.173 ¹⁶⁰	32.05 ⁴	62.398 ²⁵⁸	63.31 ¹⁰³	13.385 ¹⁶²	4.17 ⁰
27.2	17.013 ¹⁴⁰	32.09 ¹⁸	62.140 ²²⁶	62.28 ¹²⁸	13.223 ¹⁴³	4.17 ¹⁴
Oct. 7.1	16.873 ¹¹⁵	32.27 ³⁶	61.914 ¹⁸²	61.00 ¹⁵¹	13.080 ¹¹⁵	4.31 ²⁹
17.1	16.758 ⁷³	32.63 ⁵⁶	61.732 ¹²⁵	59.49 ¹⁶⁶	12.965 ⁷⁸	4.60 ⁴⁸
27.1	16.685 ³²	33.19 ⁷³	61.607 ⁶⁰	57.83 ¹⁷³	12.887 ³⁶	5.08 ⁶⁸
Nov. 6.1	16.653 ¹³	33.92 ⁹⁴	61.547 ¹⁵	56.10 ¹⁷⁶	12.851 ¹²	5.76 ⁸⁶
16.0	16.666 ⁶⁷	34.86 ¹¹³	61.562 ⁸⁸	54.34 ¹⁶⁸	12.863 ⁶²	6.62 ¹⁰⁶
26.0	16.733 ¹¹²	35.99 ¹³⁰	61.650 ¹⁶⁴	52.66 ¹⁵³	12.925 ¹¹²	7.68 ¹²³
Dec. 6.0	16.845 ¹⁶²	37.29 ¹⁴⁶	61.814 ²³³	51.13 ¹³⁴	13.037 ¹⁵⁷	8.91 ¹³⁷
15.9	17.007 ²⁰²	38.75 ¹⁵⁸	62.047 ²⁹⁷	49.79 ¹⁰⁷	13.194 ²⁰²	10.28 ¹⁵¹
25.9	17.209 ²⁴⁰	40.33 ¹⁶²	62.344 ³⁵¹	48.72 ⁷⁹	13.396 ²³⁸	11.79 ¹⁵⁷
35.9	17.449	41.95	62.695	47.93	13.634	13.36
Mean Place	15.365	40.16	59.563	56.39	11.532	12.34
Sec δ, Tan δ	1.002	-0.061	1.555	-1.190	1.003	-0.079
L α, L δ	0.00	-0.2	+0.03	-0.2	0.00	-0.2
ω α, ω δ	0.00	-0.9	-0.04	-0.9	0.00	-0.9
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 381

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	σ Scorpii. Mag. 3·1		γ Herculis. Mag. 3·8		η Draconis. Mag. 2·9										
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.									
	^h 16	^m 16	^o 25	['] 24	^h 16	^m 18	^o 19	['] 19	^h 16	^m 22	^o 61	['] 41			
Jan.	0·9	25·864 ²⁸⁴	13·45 ⁵⁶	27·670 ²⁴⁴	69·68 ²⁴⁹	53·13 ³⁴	22·85 ³²⁴	10·9	26·148 ³⁰⁸	14·01 ⁶⁹	27·914 ²⁷³	67·19 ²²⁹	53·47 ⁴¹	19·61 ²⁸²	
	10·9	26·456 ³²⁴	14·70 ⁸⁰	28·187 ²⁹⁰	64·90 ¹⁹⁹	53·88 ⁴⁵	16·79 ²³³	20·9	26·780 ³³²	15·50 ⁸⁸	28·477 ²⁹⁹	62·91 ¹⁶⁴	54·33 ⁵⁰	14·46 ¹⁷⁶	
Feb.	9·8	27·112 ³³²	16·38 ⁹⁰	28·776 ³⁰⁴	61·27 ¹²³	54·83 ⁵¹	12·70 ¹¹²	19·8	27·444 ³²⁵	17·28 ⁹⁰	29·080 ²⁹⁹	60·04 ⁷⁶	55·34 ⁵²	11·58 ⁴⁵	
Mar.	1·7	27·769 ³¹³	18·18 ⁸⁶	29·379 ²⁸⁹	59·28 ²⁹	55·86 ⁵⁰	11·13 ²⁵	11·7	28·082 ²⁹⁸	19·04 ⁸¹	29·668 ²⁷⁴	58·99 ²⁰	56·36 ⁴⁸	11·38 ⁹¹	
	21·7	28·380 ²⁸⁰	19·85 ⁷⁵	29·942 ²⁵⁶	59·19 ⁶⁴	56·84 ⁴⁴	12·29 ¹⁵¹	31·7	28·660 ²⁵⁸	20·60 ⁶⁷	30·198 ²³¹	59·83 ¹⁰⁴	57·28 ³⁹	13·80 ²⁰⁶	
Apr.	10·6	28·918 ²³⁴	21·27 ⁶⁰	30·429 ²⁰⁶	60·87 ¹⁴¹	57·67 ³⁴	15·86 ²⁴⁹	20·6	29·152 ²⁰⁹	21·87 ⁵⁴	30·635 ¹⁸⁰	62·28 ¹⁶⁷	58·01 ²⁶	18·35 ²⁸⁶	
	30·6	29·361 ¹⁸⁰	22·41 ⁴⁸	30·815 ¹⁵⁰	63·95 ¹⁹⁰	58·27 ²⁰	21·21 ³¹⁰	May	10·6	29·541 ¹⁴⁹	22·89 ⁴³	30·965 ¹¹⁹	65·85 ²⁰³	24·31 ³²⁵	
	20·5	29·690 ¹¹⁷	23·32 ³⁸	31·084 ⁸⁶	67·88 ²⁰⁹	58·59 ⁴	27·56 ³²⁹	20·5	29·807 ⁸⁰	23·70 ³³	31·170 ⁴⁸	69·97 ²¹¹	58·63 ³	30·85 ³²⁰	
June	9·5	29·887 ⁴⁴	24·03 ²⁹	31·218 ¹⁷	72·08 ²⁰²	58·60 ¹⁰	34·05 ³⁰⁷	19·4	29·931 ⁶	24·32 ²⁴	31·235 ¹⁹	74·10 ¹⁹⁰	58·50 ¹⁸	37·12 ²⁸³	
	29·4	29·937 ³²	24·56 ¹⁹	31·216 ⁵⁴	76·00 ¹⁷³	58·32 ²⁴	39·95 ²⁵¹	29·4	29·905 ⁷⁰	24·75 ¹²	31·162 ⁹⁰	77·73 ¹⁵²	58·08 ²⁹	42·46 ²¹¹	
July	9·4	29·835 ¹⁰⁴	24·87 ³	31·072 ¹¹⁸	79·25 ¹²⁷	57·79 ³⁵	44·57 ¹⁶⁹	19·4	29·731 ¹³⁶	24·90 ⁵	30·954 ¹⁴⁵	80·52 ⁹⁸	57·44 ³⁹	46·26 ¹²¹	
	29·3	29·595 ¹⁶⁰	24·85 ¹⁴	30·809 ¹⁶⁷	81·50 ⁶⁹	57·05 ⁴³	47·47 ⁷³	Aug.	8·3	29·435 ¹⁷⁹	24·71 ²⁵	30·642 ¹⁸³	82·19 ³⁹	56·62 ⁴⁴	48·20 ²⁵
	18·3	29·256 ¹⁸⁸	24·46 ³⁵	30·459 ¹⁹⁴	82·58 ⁸	56·18 ⁴⁶	48·45 ³²	28·2	29·068 ¹⁸⁸	24·11 ⁴⁴	30·265 ¹⁹³	82·66 ²⁶	55·72 ⁴⁶	48·13 ⁸³	
Sept.	7·2	28·880 ¹⁷⁷	23·67 ⁵¹	30·072 ¹⁸²	82·40 ⁵⁹	55·26 ⁴³	47·30 ¹³³	17·2	28·703 ¹⁵⁷	23·16 ⁵⁶	29·890 ¹⁶⁶	81·81 ⁹²	54·83 ⁴¹	45·97 ¹⁸¹	
	27·2	28·546 ¹²⁵	22·60 ⁵⁷	29·724 ¹³⁷	80·89 ¹²⁵	54·42 ³⁶	44·16 ²²⁸	Oct.	7·1	28·421 ⁸⁴	22·03 ⁵⁴	29·587 ¹⁰³	79·64 ¹⁵⁵	54·06 ³⁰	41·88 ²⁷⁰
	17·1	28·337 ³⁷	21·49 ⁴⁹	29·484 ⁵⁹	78·09 ¹⁸⁶	53·76 ²⁴	39·18 ³⁰⁸	27·1	28·300 ¹⁷	21·00 ³⁸	29·425 ¹³	76·23 ²¹³	53·52 ¹⁵	36·10 ³³⁹	
Nov.	6·1	28·317 ⁷¹	20·62 ²⁴	29·412 ⁴⁰	74·10 ²³⁵	53·37 ⁶	32·71 ³⁵⁹	16·0	28·388 ¹²⁷	20·38 ⁷	29·452 ⁸⁹	71·75 ²⁵¹	53·31 ²	29·12 ³⁷³	
	26·0	28·515 ¹⁷⁹	20·31 ¹¹	29·541 ¹³⁹	69·24 ²⁶³	53·33 ¹²	25·39 ³⁷⁵	Dec.	6·0	28·694 ²²⁴	20·42 ³⁰	29·680 ¹⁸⁷	66·61 ²⁶⁵	53·45 ²¹	21·64 ³⁶⁵
	15·9	28·918 ²⁶⁴	20·72 ⁴⁸	29·867 ²²³	63·96 ²⁶¹	53·66 ³⁰	17·99 ³⁴³	25·9	29·182	21·20	30·090	61·35	53·96	14·56	
	35·9							Mean Place	26·622	25·00	28·704	67·06	55·93	25·54	
								Sec δ , Tan δ	1·107	-0·475	1·060	+0·351	2·109	+1·856	
								L α , L δ	+0·01	-0·2	-0·01	-0·2	-0·04	-0·2	
								ω α , ω δ	-0·01	-0·9	+0·01	-0·9	+0·05	-0·9	
								AUTHORITY	A. N.		A. E.		A. E.		

382 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Scorpii. Mag. 1·2		β Herculis. Mag. 2·8		λ Ophiuchi. Mag. 3·9							
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.						
	^h 16	^m 24	^o 26	['] 15	^h 16	^m 26	^h 16	^m 26	^o 2	['] 9		
Jan. 0·9	36·493 ^s	282	24·81	47	50·826 ^s	238	33·36	257	57·796 ^s	241	18·47	182
10·9	36·775	304	25·28	60	51·064	267	30·79	237	58·037	266	16·65	174
20·9	37·079	321	25·88	72	51·331	288	28·42	206	58·303	284	14·91	161
30·8	37·400	332	26·60	79	51·619	301	26·36	171	58·587	292	13·30	140
Feb. 9·8	37·732	334	27·39	83	51·920	303	24·65	128	58·879	295	11·90	114
19·8	38·066	330	28·22	83	52·223	304	23·37	77	59·174	291	10·76	85
Mar. 1·8	38·396	319	29·05	82	52·527	292	22·60	29	59·465	282	9·91	52
11·7	38·715	304	29·87	74	52·819	280	22·31	21	59·747	269	9·39	20
21·7	39·019	289	30·61	73	53·099	261	22·52	69	60·016	253	9·19	12
31·7	39·308	266	31·34	64	53·360	239	23·21	108	60·269	234	9·31	12
Apr. 10·6	39·574	243	31·98	59	53·599	215	24·29	147	60·503	213	9·73	68
20·6	39·817	217	32·57	54	53·814	187	25·76	177	60·716	189	10·41	90
30·6	40·034	189	33·11	48	54·001	158	27·53	199	60·905	163	11·31	106
May 10·6	40·223	159	33·59	47	54·159	126	29·52	215	61·068	135	12·37	119
20·5	40·382	125	34·06	41	54·285	91	31·67	222	61·203	105	13·56	125
30·5	40·507	89	34·47	37	54·376	58	33·89	221	61·308	73	14·81	127
June 9·5	40·596	53	34·84	32	54·434	19	36·10	216	61·381	40	16·08	124
19·5	40·649	12	35·16	29	54·453	17	38·26	201	61·421	5	17·32	119
29·4	40·661	27	35·45	23	54·436	51	40·27	185	61·426	29	18·51	110
July 9·4	40·634	65	35·68	16	54·385	88	42·12	164	61·397	63	19·61	99
19·4	40·569	102	35·84	11	54·297	120	43·76	138	61·334	95	20·60	86
29·3	40·467	131	35·95	0	54·177	145	45·14	107	61·239	123	21·46	72
Aug. 8·3	40·336	160	35·95	10	54·032	170	46·21	75	61·116	146	22·18	56
18·3	40·176	179	35·85	18	53·862	190	46·96	46	60·970	164	22·74	39
28·3	39·997	189	35·67	31	53·672	196	47·42	11	60·806	174	23·13	22
Sept. 7·2	39·808	192	35·36	42	53·476	199	47·53	26	60·632	176	23·35	3
17·2	39·616	181	34·94	49	53·277	192	47·27	57	60·456	169	23·38	15
27·2	39·435	162	34·45	56	53·085	176	46·70	94	60·287	152	23·23	35
Oct. 7·1	39·273	133	33·89	55	52·909	148	45·76	129	60·135	126	22·88	57
17·1	39·140	90	33·34	57	52·761	113	44·47	159	60·009	92	22·31	78
27·1	39·050	47	32·77	54	52·648	71	42·88	194	59·917	51	21·53	99
Nov. 6·1	39·003	8	32·23	41	52·577	23	40·94	221	59·866	4	20·54	122
16·0	39·011	64	31·82	30	52·554	28	38·73	245	59·862	45	19·32	141
26·0	39·075	118	31·52	14	52·582	79	36·28	258	59·907	94	17·91	159
Dec. 6·0	39·193	172	31·38	0	52·661	130	33·70	272	60·001	141	16·32	174
16·0	39·365	217	31·38	21	52·791	174	30·98	275	60·142	185	14·58	182
25·9	39·582	259	31·59	38	52·965	219	28·23	269	60·327	222	12·76	186
35·9	39·841		31·97		53·184		25·54		60·549		10·90	
Mean Place	37·297		36·48		51·919		30·72		58·670		12·27	
Sec δ , $\tan \delta$	1·115		-0·493		1·076		+0·397		1·001		+0·038	
$L \alpha$, $L \delta$	+0·01		-0·2		-0·01		-0·2		0·00		-0·2	
$\omega \alpha$, $\omega \delta$	-0·01		-0·9		+0·01		-0·9		0·00		-0·9	
AUTHORITY	A. E.		A. E.		A. E.		A. N.		A. N.		A. N.	

APPARENT PLACES OF STARS, 1922. 383

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	τ Scorp.ii. Mag. 2·9		ζ Ophiuchi. Mag. 2·7		24 Scorp.ii. Mag. 5·0	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 16 31	28 3	h m 16 32	10 24	h m 16 37	17 35
Jan. 0·9	0·550 ²⁷⁸	8·00 ³²	50·866 ²⁴⁶	28·13 ¹²¹	2·714 ²⁵⁴	22·62 ⁸³
10·9	0·828 ³⁰⁶	8·32 ⁴⁷	51·112 ²⁷⁴	29·34 ¹²⁴	2·968 ²⁷⁹	23·45 ⁹⁰
20·9	1·134 ³²⁴	8·79 ⁶⁰	51·386 ²⁸⁸	30·58 ¹²⁰	3·247 ²⁹⁹	24·35 ⁹³
30·8	1·458 ³³⁵	9·39 ⁶⁹	51·674 ³⁰⁰	31·78 ¹¹²	3·546 ³⁰⁹	25·28 ⁹¹
Feb. 9·8	1·793 ³³⁷	10·08 ⁷⁵	51·974 ³⁰³	32·90 ¹⁰⁰	3·855 ³¹¹	26·19 ⁸⁷
19·8	2·130 ³³³	10·83 ⁷⁷	52·277 ³⁰⁰	33·90 ⁸⁰	4·166 ³¹⁰	27·06 ⁷⁸
Mar. 1·8	2·463 ³²⁵	11·60 ⁷⁷	52·577 ²⁹¹	34·70 ⁶³	4·476 ³⁰²	27·84 ⁶⁶
11·7	2·788 ³¹¹	12·37 ⁷⁵	52·868 ²⁷⁹	35·33 ⁴²	4·778 ²⁹⁰	28·50 ⁵³
21·7	3·099 ²⁹⁴	13·12 ⁷¹	53·147 ²⁶⁸	35·75 ²³	5·068 ²⁷⁵	29·03 ⁴⁰
31·7	3·393 ²⁷⁴	13·83 ⁶⁷	53·415 ²⁴⁵	35·98 ³	5·343 ²⁵⁸	29·43 ²⁶
Apr. 10·6	3·667 ²⁵²	14·50 ⁶³	53·660 ²²⁷	36·01 ¹⁴	5·601 ²³⁷	29·69 ¹⁴
20·6	3·919 ²²⁷	15·13 ⁵⁸	53·887 ²⁰¹	35·87 ²⁹	5·838 ²¹⁴	29·83 ⁴
30·6	4·146 ¹⁹⁹	15·71 ⁵⁶	54·088 ¹⁷⁸	35·58 ⁴²	6·052 ¹⁸⁹	29·87 ⁴
May 10·6	4·345 ¹⁶⁸	16·27 ⁵²	54·266 ¹⁴⁹	35·16 ⁴⁹	6·241 ¹⁶¹	29·83 ¹¹
20·5	4·513 ¹³⁴	16·79 ⁴⁹	54·415 ¹²¹	34·67 ⁵⁶	6·402 ¹³⁰	29·72 ¹⁴
30·5	4·647 ⁹⁸	17·28 ⁴⁶	54·536 ⁸⁶	34·11 ⁵⁸	6·532 ⁹⁶	29·58 ¹⁷
June 9·5	4·745 ⁵⁹	17·74 ⁴³	54·622 ⁵²	33·53 ⁵⁹	6·628 ⁶⁰	29·41 ¹⁹
19·5	4·804 ²⁰	18·17 ³⁸	54·674 ¹⁶	32·94 ⁵⁷	6·688 ²⁴	29·22 ¹⁹
29·4	4·824 ²²	18·55 ³⁴	54·690 ¹⁷	32·37 ⁵⁶	6·712 ¹⁴	29·03 ¹⁹
July 9·4	4·802 ⁶¹	18·89 ²⁷	54·673 ⁵⁴	31·81 ⁵¹	6·698 ⁵²	28·84 ¹⁹
19·4	4·741 ⁹⁸	19·16 ¹⁹	54·619 ⁹⁰	31·30 ⁴⁵	6·646 ⁸⁶	28·65 ¹⁹
29·3	4·643 ¹³²	19·35 ⁸	54·529 ¹¹⁸	30·85 ⁴²	6·560 ¹¹⁹	28·46 ²¹
Aug. 8·3	4·511 ¹⁶¹	19·43 ³	54·411 ¹⁴⁴	30·43 ³⁶	6·441 ¹⁴⁶	28·25 ²²
18·3	4·350 ¹⁸¹	19·40 ¹⁵	54·267 ¹⁵⁹	30·07 ³³	6·295 ¹⁶⁶	28·03 ²³
28·3	4·169 ¹⁹⁴	19·25 ²⁷	54·108 ¹⁷⁴	29·74 ²⁶	6·129 ¹⁷⁹	27·80 ²⁵
Sept. 7·2	3·975 ¹⁹⁷	18·98 ³⁹	53·934 ¹⁷⁸	29·48 ²⁰	5·950 ¹⁸³	27·55 ²⁷
17·2	3·778 ¹⁸⁸	18·59 ⁴⁹	53·756 ¹⁶⁹	29·28 ¹⁴	5·767 ¹⁷⁶	27·28 ²⁶
27·2	3·590 ¹⁶⁹	18·10 ⁵⁷	53·587 ¹⁵³	29·14 ³	5·591 ¹⁵⁹	27·02 ²⁵
Oct. 7·1	3·421 ¹³⁸	17·53 ⁶³	53·434 ¹²⁵	29·11 ⁶	5·432 ¹³³	26·77 ²¹
17·1	3·283 ¹⁰⁰	16·90 ⁶³	53·309 ⁹³	29·17 ¹⁶	5·299 ⁹⁸	26·56 ¹⁴
27·1	3·183 ⁵²	16·27 ⁶¹	53·216 ⁵⁰	29·33 ³⁴	5·201 ⁵⁴	26·42 ⁵
Nov. 6·1	3·131 ²	15·66 ⁵³	53·166 ⁶	29·67 ⁵¹	5·147 ⁵	26·37 ⁷
16·0	3·133 ⁵⁷	15·13 ⁴²	53·160 ⁴⁹	30·18 ⁶⁶	5·142 ⁴⁷	26·44 ²¹
26·0	3·190 ¹¹⁴	14·71 ²⁸	53·209 ⁹⁶	30·84 ⁸³	5·189 ⁹⁹	26·65 ³⁶
Dec. 6·0	3·304 ¹⁶⁷	14·43 ¹¹	53·305 ¹⁴⁷	31·67 ⁹⁸	5·288 ¹⁴⁸	27·01 ⁵²
16·0	3·471 ²¹⁵	14·32 ⁶	53·452 ¹⁸⁹	32·65 ¹⁰⁹	5·436 ¹⁹⁴	27·53 ⁶⁶
25·9	3·686 ²⁵⁶	14·38 ²⁵	53·641 ²²⁸	33·74 ¹¹⁹	5·630 ²³³	28·19 ⁸⁰
35·9	3·942	14·63	53·869	34·93	5·863	28·99
Mean Place	1·386	19·91	51·700	36·81	3·553	32·63
Sec δ, Tan δ	1·133	-0·533	1·017	-0·184	1·049	-0·317
L α, L δ	+0·01	-0·2	0·00	-0·1	+0·01	-0·1
ω α, ω δ	-0·01	-0·9	0·00	-0·9	-0·01	-0·9
AUTHORITY	A. N.		A. E.		A. N.	

384 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Herculis. Mag. 3.0		η Herculis. Mag. 3.6		α Triang. Aust. Mag. 1.9			
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.		
	^h 16	^m 38	[°] 31	['] 44	^h 16	^m 40	[°] 68	['] 52
Jan. 0.9	19.412 ₂₃₂	37.59 ₂₈₈	11.751 ₂₄₀	71.99 ₃₀₈	21.24 ₅₇	54.78 ₁₇₁		
10.9	19.644 ₂₆₈	34.71 ₂₆₃	11.991 ₂₇₆	68.91 ₂₇₈	21.81 ₆₅	53.07 ₁₃₃		
20.9	19.912 ₂₉₃	32.08 ₂₂₈	12.267 ₃₀₈	66.13 ₂₄₀	22.46 ₇₀	51.74 ₉₁		
30.8	20.205 ₃₁₀	29.80 ₁₈₅	12.575 ₃₃₀	63.73 ₁₉₃	23.16 ₇₄	50.83 ₅₃		
Feb. 9.8	20.515 ₃₁₉	27.95 ₁₃₄	12.905 ₃₄₁	61.80 ₁₃₉	23.90 ₇₅	50.30 ₈		
19.8	20.834 ₃₂₀	26.61 ₈₀	13.246 ₃₄₄	60.41 ₇₈	24.65 ₇₇	50.22 ₃₃		
Mar. 1.8	21.154 ₃₁₃	25.81 ₂₃	13.590 ₃₃₇	59.63 ₁₈	25.42 ₇₅	50.55 ₆₇		
11.7	21.467 ₃₀₁	25.58 ₃₃	13.927 ₃₂₄	59.45 ₃₉	26.17 ₇₃	51.22 ₁₀₉		
21.7	21.768 ₂₈₂	25.91 ₈₇	14.251 ₃₀₄	59.84 ₁₀₂	26.90 ₆₉	52.31 ₁₄₀		
31.7	22.050 ₂₆₀	26.78 ₁₃₆	14.555 ₂₇₈	60.86 ₁₅₁	27.59 ₆₄	53.71 ₁₆₉		
Apr. 10.6	22.310 ₂₃₃	28.14 ₁₇₉	14.833 ₂₄₉	62.37 ₁₉₇	28.23 ₅₉	55.40 ₁₉₉		
20.6	22.543 ₂₀₃	29.93 ₂₁₃	15.082 ₂₁₈	64.34 ₂₃₃	28.82 ₅₂	57.39 ₂₁₇		
30.6	22.746 ₁₇₀	32.06 ₂₄₀	15.300 ₁₇₇	66.67 ₂₅₉	29.34 ₄₅	59.56 ₂₃₈		
May 10.6	22.916 ₁₃₄	34.46 ₂₅₇	15.477 ₁₃₆	69.26 ₂₈₀	29.79 ₃₆	61.94 ₂₄₉		
20.5	23.050 ₉₆	37.03 ₂₆₅	15.613 ₉₆	72.06 ₂₈₈	30.15 ₂₈	64.43 ₂₅₇		
30.5	23.146 ₅₇	39.68 ₂₆₆	15.709 ₄₉	74.94 ₂₈₆	30.43 ₁₈	67.00 ₂₅₉		
June 9.5	23.203 ₁₇	42.34 ₂₅₈	15.758 ₆	77.80 ₂₈₁	30.61 ₈	69.59 ₂₅₂		
19.5	23.220 ₂₄	44.92 ₂₄₃	15.764 ₃₇	80.61 ₂₆₄	30.69 ₂	72.11 ₂₄₁		
29.4	23.196 ₆₄	47.35 ₂₂₃	15.727 ₈₂	83.25 ₂₄₁	30.67 ₁₃	74.52 ₂₂₅		
July 9.4	23.132 ₁₀₂	49.58 ₁₉₆	15.645 ₁₂₁	85.66 ₂₁₀	30.54 ₂₁	76.77 ₁₉₉		
19.4	23.030 ₁₃₈	51.54 ₁₆₄	15.524 ₁₆₁	87.76 ₁₇₅	30.33 ₃₁	78.76 ₁₇₀		
29.3	22.892 ₁₆₉	53.18 ₁₃₁	15.363 ₁₉₅	89.51 ₁₄₁	30.02 ₃₉	80.46 ₁₃₃		
Aug. 8.3	22.723 ₁₉₅	54.49 ₉₄	15.168 ₂₂₄	90.92 ₉₇	29.63 ₄₆	81.79 ₉₆		
18.3	22.528 ₂₁₅	55.43 ₅₄	14.944 ₂₃₉	91.89 ₅₄	29.17 ₅₀	82.75 ₄₈		
28.3	22.313 ₂₂₆	55.97 ₁₄	14.705 ₂₅₃	92.43 ₁₂	28.67 ₅₂	83.23 ₁		
Sept. 7.2	22.087 ₂₃₀	56.11 ₂₇	14.452 ₂₆₀	92.55 ₃₆	28.15 ₅₄	83.22 ₄₅		
17.2	21.857 ₂₂₃	55.84 ₆₉	14.192 ₂₅₀	92.19 ₈₃	27.61 ₅₁	82.77 ₉₅		
27.2	21.634 ₂₀₇	55.15 ₁₁₀	13.942 ₂₃₃	91.36 ₁₂₂	27.10 ₄₇	81.82 ₁₄₁		
Oct. 7.1	21.427 ₁₈₁	54.05 ₁₅₀	13.709 ₂₀₈	90.14 ₁₆₈	26.63 ₄₀	80.41 ₁₇₉		
17.1	21.246 ₁₄₅	52.55 ₁₈₈	13.501 ₁₇₀	88.46 ₂₁₁	26.23 ₃₁	78.62 ₂₁₄		
27.1	21.101 ₁₀₃	50.67 ₂₂₄	13.331 ₁₂₄	86.35 ₂₄₆	25.92 ₂₁	76.48 ₂₃₆		
Nov. 6.1	20.998 ₅₃	48.43 ₂₅₄	13.207 ₆₉	83.89 ₂₈₁	25.71 ₈	74.12 ₂₅₂		
16.0	20.945 ₁	45.89 ₂₇₉	13.138 ₁₄	81.08 ₃₀₅	25.63 ₄	71.60 ₂₅₈		
26.0	20.946 ₅₆	43.10 ₂₉₉	13.124 ₄₆	78.03 ₃₂₃	25.67 ₁₆	69.02 ₂₅₅		
Dec. 6.0	21.002 ₁₁₀	40.11 ₃₀₉	13.170 ₁₀₃	74.80 ₃₃₄	25.83 ₃₀	66.47 ₂₄₂		
16.0	21.112 ₁₆₂	37.02 ₃₁₀	13.273 ₁₅₉	71.46 ₃₃₄	26.13 ₄₀	64.05 ₂₁₈		
25.9	21.274 ₂₀₈	33.92 ₃₀₂	13.432 ₂₁₃	68.12 ₃₂₂	26.53 ₅₁	61.87 ₁₉₀		
35.9	21.482	30.90	13.645	64.90	27.04	59.97		
Mean Place	20.725	35.84	13.264	71.08	23.39	71.94		
Sec δ, Tan δ	1.176	+0.619	1.288	+0.812	2.776	-2.590		
L α, L δ	-0.02	-0.1	-0.02	-0.1	+0.06	-0.1		
ω α, ω δ	+0.01	-0.9	+0.02	-0.9	-0.06	-0.9		

AUTHORITY

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APPARENT PLACES OF STARS, 1922. 385

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Scorp.ii. Mag. 2·4		ζ Aræ. Mag. 3·1		κ Ophiuchi. Mag. 3·4	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	h m	°	h m	°	h m	°
	16 45	34 8	16 52	55 51	16 53	9 29
Jan. 0·9	5·481 ⁸ 281	58·60 9	7·791 ⁸ 379	52·13 125	57·501 ⁸ 216	48·56 211
10·9	5·762 312	58·51 11	8·170 427	50·88 97	57·717 246	46·45 197
20·9	6·074 336	58·62 24	8·597 463	49·91 65	57·963 265	44·48 181
30·8	6·410 348	58·86 42	9·060 490	49·26 32	58·228 282	42·67 155
Feb. 9·8	6·758 353	59·28 51	9·550 502	48·94 1	58·510 290	41·12 122
19·8	7·111 354	59·79 60	10·052 505	48·93 29	58·800 287	39·90 86
Mar. 1·8	7·465 347	60·39 69	10·557 500	49·22 57	59·087 286	39·04 47
11·7	7·812 335	61·08 69	11·057 485	49·79 82	59·373 279	38·57 8
21·7	8·147 320	61·77 75	11·542 467	50·61 107	59·652 265	38·49 33
31·7	8·467 301	62·52 77	12·009 439	51·68 128	59·917 250	38·82 68
Apr. 10·7	8·768 280	63·29 78	12·448 406	52·96 147	60·167 229	39·50 99
20·6	9·048 253	64·07 79	12·854 368	54·43 163	60·396 208	40·49 124
30·6	9·301 225	64·86 81	13·222 324	56·06 177	60·604 181	41·73 147
May 10·6	9·526 189	65·67 80	13·546 275	57·83 187	60·785 157	43·20 162
20·5	9·715 157	66·47 82	13·821 219	59·70 192	60·942 122	44·82 168
30·5	9·872 117	67·29 79	14·040 162	61·62 195	61·064 91	46·50 173
June 9·5	9·989 74	68·08 77	14·202 98	63·57 194	61·155 58	48·23 171
19·5	10·063 33	68·85 74	14·300 32	65·51 186	61·213 20	49·94 164
29·4	10·096 12	69·59 65	14·332 34	67·37 175	61·233 16	51·58 150
July 9·4	10·084 57	70·24 58	14·298 97	69·12 158	61·217 52	53·08 136
19·4	10·027 100	70·82 48	14·201 162	70·70 134	61·165 89	54·44 118
29·4	9·927 136	71·30 34	14·039 216	72·04 109	61·076 115	55·62 99
Aug. 8·3	9·791 169	71·64 19	13·823 261	73·13 76	60·961 147	56·61 75
18·3	9·622 194	71·83 2	13·562 301	73·89 42	60·814 165	57·36 52
28·3	9·428 208	71·85 15	13·261 322	74·31 4	60·649 180	57·88 27
Sept. 7·2	9·220 214	71·70 32	12·939 331	74·35 33	60·469 186	58·15 4
17·2	9·006 210	71·38 51	12·608 322	74·02 70	60·283 183	58·19 19
27·2	8·796 189	70·87 66	12·286 297	73·32 106	60·100 171	58·00 50
Oct. 7·2	8·607 161	70·21 77	11·989 256	72·26 138	59·929 151	57·50 75
17·1	8·446 120	69·44 86	11·733 199	70·88 165	59·778 117	56·75 102
27·1	8·326 72	68·58 86	11·534 132	69·23 183	59·661 78	55·73 126
Nov. 6·1	8·254 18	67·72 87	11·402 53	67·40 195	59·583 36	54·47 152
16·1	8·236 43	66·85 78	11·349 30	65·45 199	59·547 12	52·95 174
26·0	8·279 101	66·07 68	11·379 115	63·46 196	59·559 61	51·21 193
Dec. 6·0	8·380 159	65·39 54	11·494 198	61·50 183	59·620 110	49·28 205
16·0	8·539 211	64·85 37	11·692 273	59·67 163	59·730 153	47·23 215
25·9	8·750 256	64·48 18	11·965 340	58·04 140	59·883 196	45·08 216
35·9	9·006	64·30	12·305	56·64	60·079	42·92
Mean Place	6·430	71·27	9·230	67·44	58·507	42·82
Sec δ, Tan δ	1·208	-0·678	1·782	-1·475	1·014	+0·167
L α, L δ	+0·02	-0·1	+0·04	-0·1	0·00	-0·1
ω α, ω δ	-0·01	-0·9	-0·03	-1·0	0·00	-1·0
AUTHORITY	A. E.		A. E.		A. E.	

386 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	30 Ophiuchi. Mag. 5.0		ε Herculis. Mag. 3.9		η Ophiuchi. Mag. 2.6							
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.						
	^h 16	^m 56	[°] 4	['] 6	^h 16	^m 57	^h 17	^m 5	[°] 15	['] 37		
Jan. 0.9	55.886 ^s	222	16.35	144	16.950 ^s	215	28.32	291	53.199 ^s	227	36.67	78
10.9	56.108	251	17.79	142	17.165	251	25.41	269	53.426	257	37.45	85
20.9	56.359	271	19.21	134	17.416	279	22.72	235	53.683	279	38.30	85
30.9	56.630	285	20.55	119	17.695	299	20.37	195	53.962	291	39.15	79
Feb. 9.8	56.915	291	21.74	101	17.994	312	18.42	146	54.253	302	39.94	73
19.8	57.206	293	22.75	78	18.306	317	16.96	94	54.555	305	40.67	62
Mar. 1.8	57.499	288	23.53	53	18.623	313	16.02	37	54.860	302	41.29	48
11.7	57.787	280	24.06	25	18.936	307	15.65	19	55.162	295	41.77	35
21.7	58.067	269	24.31	1	19.243	290	15.84	75	55.457	285	42.12	20
31.7	58.336	254	24.30	27	19.533	272	16.59	123	55.742	272	42.32	6
Apr. 10.7	58.590	236	24.03	48	19.805	248	17.82	167	56.014	254	42.38	7
20.6	58.826	217	23.55	67	20.053	221	19.49	204	56.268	235	42.31	22
30.6	59.043	192	22.88	82	20.274	187	21.53	234	56.503	211	42.09	26
May 10.6	59.235	166	22.06	92	20.461	155	23.87	252	56.714	185	41.83	32
20.6	59.401	137	21.14	99	20.616	118	26.39	265	56.899	156	41.51	36
30.5	59.538	105	20.15	100	20.734	78	29.04	267	57.055	122	41.15	36
June 9.5	59.643	70	19.15	100	20.812	38	31.71	263	57.177	85	40.79	36
19.5	59.713	35	18.15	95	20.850	3	34.34	250	57.262	47	40.43	34
29.4	59.748	3	17.20	88	20.847	47	36.84	231	57.309	9	40.09	33
July 9.4	59.745	39	16.32	80	20.800	85	39.15	206	57.318	27	39.76	28
19.4	59.706	75	15.52	70	20.715	122	41.21	178	57.291	69	39.48	25
29.4	59.631	106	14.82	60	20.593	157	42.99	143	57.222	103	39.23	23
Aug. 8.3	59.525	136	14.22	48	20.436	186	44.42	109	57.119	135	39.00	21
18.3	59.389	158	13.74	38	20.250	209	45.51	70	56.984	157	38.79	19
28.3	59.231	173	13.36	25	20.041	224	46.21	31	56.827	177	38.60	19
Sept. 7.3	59.058	179	13.11	12	19.817	230	46.52	11	56.650	181	38.41	17
17.2	58.879	177	12.99	0	19.587	227	46.41	53	56.469	184	38.24	15
27.2	58.702	164	12.99	14	19.360	213	45.88	93	56.285	170	38.09	14
Oct. 7.2	58.538	142	13.13	29	19.147	191	44.95	133	56.115	147	37.95	8
17.1	58.396	111	13.42	46	18.956	157	43.62	172	55.968	117	37.87	2
27.1	58.285	72	13.88	63	18.799	118	41.90	211	55.851	79	37.85	7
Nov. 6.1	58.213	28	14.51	80	18.681	70	39.79	242	55.772	31	37.92	17
16.1	58.185	21	15.31	98	18.611	18	37.37	269	55.741	16	38.09	29
26.0	58.206	69	16.29	114	18.593	36	34.68	291	55.757	71	38.38	42
Dec. 6.0	58.275	118	17.43	129	18.629	89	31.77	302	55.828	115	38.80	54
16.0	58.393	162	18.72	139	18.718	141	28.75	307	55.943	164	39.34	65
26.0	58.555	201	20.11	146	18.859	189	25.68	303	56.107	207	39.99	78
35.9	58.756		21.57		19.048		22.65		56.314		40.77	
Mean Place	56.815		24.23		18.279		25.31		54.139		46.28	
Sec δ, Tan δ	1.003		-0.072		1.167		+0.602		1.038		-0.280	
L α, L δ	0.00		-0.1		-0.02		-0.1		+0.01		-0.1	
ω α, ω δ	0.00		-1.0		+0.01		-1.0		0.00		-1.0	
AUTHORITY					A. E.						A. E.	

APPARENT PLACES OF STARS, 1922. 387

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Draconis. Mag. 3.2		α Herculis. Mag. 3.1-3.9				δ Herculis. Mag. 3.2	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.		
	h m 17 8	° 65 48	h m 17 11	° 14 28	h m 17 11	° 24 55		
Jan. 0.9	30.12 ²⁸	39.29 ³⁴⁵	4.315 ²⁰¹	46.98 ²³⁰	48.382 ¹⁹⁹	53.36 ²⁷²		
10.9	30.40 ³⁶	35.84 ³¹⁶	4.516 ²³⁰	44.68 ²¹⁸	48.581 ²³⁴	50.64 ²⁵⁵		
20.9	30.76 ⁴⁴	32.68 ²⁷⁴	4.746 ²⁵⁶	42.50 ¹⁹⁵	48.815 ²⁶¹	48.09 ²²⁸		
30.9	31.20 ⁵¹	29.94 ²²¹	5.002 ²⁷⁶	40.55 ¹⁶⁷	49.076 ²⁸²	45.81 ¹⁹⁰		
Feb. 9.8	31.71 ⁵⁴	27.73 ¹⁶²	5.278 ²⁸⁸	38.88 ¹³²	49.358 ²⁹³	43.91 ¹⁴⁹		
19.8	32.25 ⁵⁸	26.11 ⁹⁷	5.566 ²⁹⁰	37.56 ⁹²	49.651 ³⁰²	42.42 ¹⁰¹		
Mar. 1.8	32.83 ⁵⁸	25.14 ³⁰	5.856 ²⁸⁹	36.64 ⁴⁹	49.953 ³⁰²	41.41 ⁴⁸		
11.7	33.41 ⁵⁷	24.84 ³⁸	6.145 ²⁸⁴	36.15 ⁴	50.255 ²⁹⁶	40.93 ⁴		
21.7	33.98 ⁵⁵	25.22 ¹⁰⁵	6.429 ²⁷⁴	36.11 ³⁹	50.551 ²⁸⁵	40.97 ⁵⁶		
31.7	34.53 ⁵⁰	26.27 ¹⁶⁴	6.703 ²⁶⁰	36.50 ⁸¹	50.836 ²⁷⁰	41.53 ¹⁰²		
Apr. 10.7	35.03 ⁴⁵	27.91 ²¹⁷	6.963 ²⁴¹	37.31 ¹¹⁴	51.106 ²⁵⁰	42.55 ¹⁴⁵		
20.6	35.48 ³⁸	30.08 ²⁶⁰	7.204 ²²²	38.45 ¹⁴⁵	51.356 ²²⁶	44.00 ¹⁸¹		
30.6	35.86 ³⁰	32.68 ²⁹⁵	7.426 ¹⁹⁵	39.90 ¹⁶⁹	51.582 ¹⁹⁹	45.81 ²¹⁰		
May 10.6	36.16 ²²	35.63 ³²⁰	7.621 ¹⁶⁹	41.59 ¹⁸⁷	51.781 ¹⁶⁹	47.91 ²³⁰		
20.6	36.38 ¹⁴	38.83 ³³³	7.790 ¹³⁹	43.46 ¹⁹⁸	51.950 ¹³⁶	50.21 ²⁴²		
30.5	36.52 ⁵	42.16 ³³⁶	7.929 ¹⁰³	45.44 ²⁰¹	52.086 ⁹⁷	52.63 ²⁴⁷		
June 9.5	36.57 ⁵	45.52 ³²⁹	8.032 ⁶⁷	47.45 ¹⁹⁸	52.183 ⁵⁹	55.10 ²⁴⁴		
19.5	36.52 ¹³	48.81 ³¹⁵	8.099 ³⁴	49.43 ¹⁹³	52.242 ²⁰	57.54 ²³⁵		
29.4	36.39 ²¹	51.96 ²⁸⁹	8.133 ⁸	51.36 ¹⁷⁹	52.262 ²⁰	59.89 ²¹⁹		
July 9.4	36.18 ³⁰	54.85 ²⁶⁰	8.125 ⁴⁵	53.15 ¹⁶²	52.242 ⁶²	62.08 ¹⁹⁸		
19.4	35.88 ³⁶	57.45 ²²¹	8.080 ⁸³	54.77 ¹³⁹	52.180 ⁹⁸	64.06 ¹⁷²		
29.4	35.52 ⁴³	59.66 ¹⁷⁹	7.997 ¹¹⁶	56.16 ¹²¹	52.082 ¹³⁴	65.78 ¹⁴³		
Aug. 8.3	35.09 ⁴⁸	61.45 ¹³⁴	7.881 ¹⁴⁴	57.37 ⁹²	51.948 ¹⁶³	67.21 ¹¹¹		
18.3	34.61 ⁵²	62.79 ⁸³	7.737 ¹⁶⁵	58.29 ⁶⁶	51.785 ¹⁸⁹	68.32 ⁷⁸		
28.3	34.09 ⁵⁵	63.62 ³⁴	7.572 ¹⁸⁶	58.95 ³⁷	51.596 ²⁰⁵	69.10 ⁴¹		
Sept. 7.3	33.54 ⁵⁵	63.96 ¹⁸	7.386 ¹⁹⁴	59.32 ⁶	51.391 ²¹³	69.51 ³		
17.2	32.99 ⁵⁶	63.78 ⁷³	7.192 ¹⁹²	59.38 ¹⁷	51.178 ²¹⁴	69.54 ³¹		
27.2	32.43 ⁵³	63.05 ¹²³	7.000 ¹⁸¹	59.21 ⁵³	50.964 ²⁰³	69.23 ⁷²		
Oct. 7.2	31.90 ⁴⁹	61.82 ¹⁷⁴	6.819 ¹⁶⁶	58.68 ⁸³	50.761 ¹⁸³	68.51 ¹⁰⁸		
17.1	31.41 ⁴⁴	60.08 ²²²	6.653 ¹³⁵	57.85 ¹¹²	50.578 ¹⁵⁴	67.43 ¹⁴⁵		
27.1	30.97 ³⁷	57.86 ²⁶⁴	6.518 ⁹⁶	56.73 ¹⁴⁰	50.424 ¹¹⁶	65.98 ¹⁸⁰		
Nov. 6.1	30.60 ²⁹	55.22 ³⁰⁴	6.422 ⁵⁷	55.33 ¹⁷⁰	50.308 ⁷¹	64.18 ²¹³		
16.1	30.31 ²⁰	52.18 ³³⁶	6.365 ⁸	53.63 ¹⁹⁴	50.237 ²²	62.05 ²³⁹		
26.0	30.11 ¹⁰	48.82 ³⁵⁶	6.357 ⁴²	51.69 ²¹²	50.215 ²⁷	59.66 ²⁵⁹		
Dec. 6.0	30.01 ¹	45.26 ³⁷⁰	6.399 ⁸⁹	49.57 ²²⁶	50.242 ⁸⁰	57.07 ²⁷⁷		
16.0	30.02 ¹²	41.56 ³⁷⁰	6.488 ¹³⁵	47.31 ²³⁶	50.322 ¹²⁹	54.30 ²⁸²		
26.0	30.14 ²²	37.86 ³⁶¹	6.623 ¹⁷⁵	44.95 ²³⁵	50.451 ¹⁷²	51.48 ²⁸¹		
35.9	30.36	34.25	6.798	42.60	50.623	48.67		
Mean Place	33.49	38.05	5.403	41.34	49.612	48.86		
Sec δ, Tan δ	2.440	+2.226	1.033	+0.258	1.103	+0.465		
L α, L δ.	-0.06	-0.1	0.01	-0.1	-0.01	-0.1		
ω α, ω δ	+0.03	-1.0	0.00	-1.0	+0.01	-1.0		
AUTHORITY	A. E.		A. E.				A. E.	

388 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	π Herculis. Mag. 3.4		θ Ophiuchi. Mag. 3.4		β Aræ. Mag. 2.8	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 17 12	° ′ 36 53	h m 17 17	° ′ 24 55	h m 17 18	° ′ 55 27
Jan. 0.9	18.267 ²⁰⁴	49.75 ³¹⁰	12.019 ²³²	12.30 ¹⁹	47.102 ³³⁹	14.00 ¹⁴⁷
10.9	18.471 ²⁴¹	46.65 ²⁸⁵	12.251 ²⁶⁴	12.49 ³¹	47.441 ³⁹²	12.53 ¹²³
20.9	18.712 ²⁷⁸	43.80 ²⁵⁴	12.515 ²⁸⁷	12.80 ³⁷	47.833 ⁴³³	11.30 ⁹³
30.9	18.990 ³⁰³	41.26 ²¹³	12.802 ³⁰⁷	13.17 ⁴³	48.266 ⁴⁶⁷	10.37 ⁶⁶
Feb. 9.8	19.293 ³²¹	39.13 ¹⁶¹	13.109 ³¹⁸	13.60 ⁴⁶	48.733 ⁴⁸⁵	9.71 ³⁷
19.8	19.614 ³³⁰	37.52 ¹⁰⁴	13.427 ³²¹	14.06 ⁴¹	49.218 ⁴⁹⁴	9.34 ⁸
Mar. 1.8	19.944 ³³¹	36.48 ⁴⁵	13.748 ³²⁰	14.47 ³⁹	49.712 ⁴⁹⁸	9.26 ¹⁹
11.7	20.275 ³²⁵	36.03 ¹³	14.068 ³¹⁶	14.86 ³³	50.210 ⁴⁹¹	9.45 ⁴⁵
21.7	20.600 ³¹²	36.16 ⁷³	14.384 ³⁰⁷	15.19 ²⁹	50.701 ⁴⁷⁶	9.90 ⁷¹
31.7	20.912 ²⁹⁴	36.89 ¹²⁶	14.691 ²⁹³	15.48 ²³	51.177 ⁴⁵⁸	10.61 ⁹³
Apr. 10.7	21.206 ²⁶⁹	38.15 ¹⁷⁴	14.984 ²⁸⁰	15.71 ²⁰	51.635 ⁴²⁹	11.54 ¹¹⁵
20.6	21.475 ²⁴²	39.89 ²¹⁶	15.264 ²⁵⁹	15.91 ¹⁵	52.064 ³⁹⁸	12.69 ¹³⁵
30.6	21.717 ²⁰⁹	42.05 ²⁴⁸	15.523 ²³⁵	16.06 ¹⁵	52.462 ³⁵⁹	14.04 ¹⁵¹
May 10.6	21.926 ¹⁷²	44.53 ²⁶⁸	15.758 ²⁰⁶	16.21 ¹⁴	52.821 ³¹²	15.55 ¹⁶⁴
20.6	22.098 ¹³³	47.21 ²⁸⁵	15.964 ¹⁷⁹	16.35 ¹³	53.133 ²⁶⁰	17.19 ¹⁷⁷
30.5	22.231 ⁸⁹	50.06 ²⁹²	16.143 ¹³⁹	16.48 ¹⁵	53.393 ²⁰²	18.96 ¹⁸⁴
June 9.5	22.320 ⁴⁵	52.98 ²⁸⁶	16.282 ¹⁰⁴	16.63 ¹⁷	53.595 ¹⁴³	20.80 ¹⁸⁷
19.5	22.365 ²	55.84 ²⁷⁵	16.386 ⁶²	16.80 ¹⁶	53.738 ⁷⁵	22.67 ¹⁸⁶
29.4	22.367 ⁴⁷	58.59 ²⁵⁶	16.448 ²²	16.96 ¹⁹	53.813 ⁹	24.53 ¹⁷⁹
July 9.4	22.320 ⁸⁹	61.15 ²³⁰	16.470 ¹⁹	17.15 ¹⁸	53.822 ⁶¹	26.32 ¹⁶⁷
19.4	22.231 ¹³¹	63.45 ²⁰⁰	16.451 ⁶⁵	17.33 ¹⁹	53.761 ¹²⁶	27.99 ¹⁵¹
29.4	22.100 ¹⁶⁸	65.45 ¹⁶⁹	16.386 ¹⁰¹	17.52 ¹³	53.635 ¹⁸³	29.50 ¹²⁸
Aug. 8.3	21.932 ¹⁹⁹	67.14 ¹²⁸	16.285 ¹³⁸	17.65 ¹⁰	53.452 ²³⁹	30.78 ¹⁰⁰
18.3	21.733 ²²⁸	68.42 ⁸⁷	16.147 ¹⁶⁴	17.75 ²	53.213 ²⁸²	31.78 ⁶⁷
28.3	21.505 ²⁴⁶	69.29 ⁴⁵	15.983 ¹⁸⁴	17.77 ⁵	52.931 ³¹²	32.45 ³⁴
Sept. 7.3	21.259 ²⁵⁴	69.74 ¹	15.799 ¹⁹⁵	17.72 ¹³	52.619 ³²⁸	32.79 ³
17.2	21.005 ²⁵³	69.73 ⁴⁴	15.604 ¹⁹⁵	17.59 ²¹	52.291 ³²⁷	32.76 ⁴³
27.2	20.752 ²⁴⁰	69.29 ⁸⁸	15.409 ¹⁸⁴	17.38 ²⁶	51.964 ³¹¹	32.33 ⁷⁹
Oct. 7.2	20.512 ²¹⁹	68.41 ¹³⁴	15.225 ¹⁶⁴	17.12 ³⁵	51.653 ²⁷⁸	31.54 ¹¹¹
17.1	20.293 ¹⁸⁸	67.07 ¹⁷⁵	15.061 ¹³¹	16.77 ³³	51.375 ²²⁸	30.43 ¹⁴²
27.1	20.105 ¹⁴⁸	65.32 ²¹⁶	14.930 ⁸⁸	16.44 ³⁶	51.147 ¹⁶⁶	29.01 ¹⁶⁵
Nov. 6.1	19.957 ¹⁰¹	63.16 ²⁵²	14.842 ⁴⁶	16.08 ³²	50.981 ⁹²	27.36 ¹⁸³
16.1	19.856 ⁴⁸	60.64 ²⁸³	14.796 ⁷	15.76 ²⁶	50.889 ¹⁵	25.53 ¹⁹³
26.0	19.808 ⁸	57.81 ³⁰²	14.803 ⁶⁴	15.50 ¹⁹	50.874 ⁷⁰	23.60 ¹⁹⁴
Dec. 6.0	19.816 ⁶⁸	54.79 ³²¹	14.867 ¹¹⁴	15.31 ⁷	50.944 ¹⁵⁰	21.66 ¹⁹⁰
16.0	19.884 ¹²¹	51.58 ³²⁵	14.981 ¹⁶⁵	15.24 ⁶	51.094 ²²⁹	19.76 ¹⁷⁶
26.0	20.005 ¹⁷¹	48.33 ³²⁰	15.146 ²⁰⁵	15.30 ¹⁶	51.323 ²⁹⁹	18.00 ¹⁵⁹
35.9	20.176	45.13	15.351	15.46	51.622	16.41
Mean Place	19.758	46.41	13.031	22.98	48.734	27.93
Sec δ , Tan δ	1.250	+0.751	1.103	-0.465	1.764	-1.453
L α , L δ	-0.02	-0.1	+0.01	-0.1	+0.04	-0.1
ω α , ω δ	+0.01	-1.0	-0.01	-1.0	-0.02	-1.0
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 389

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	σ Ophiuchi. Mag. 4.4		ν Scorpii. Mag. 2.8		α Arae. Mag. 3.0	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m	° ' "	h m	° ' "	h m	° ' "
	17 22	4 12	17 25	37 13	17 25	49 48
Jan. 0.9	37.608 ¹⁹⁵	32.83 ¹⁷⁹	26.218 ²⁵¹	54.30 ⁵⁴	47.076 ²⁹⁶	44.56 ¹²⁵
10.9	37.803 ²²⁶	31.04 ¹⁷³	26.469 ²⁸⁹	53.76 ³⁹	47.372 ³⁴⁵	43.31 ¹⁰¹
20.9	38.029 ²⁵⁰	29.31 ¹⁶⁰	26.758 ³¹⁹	53.37 ²⁴	47.717 ³⁸²	42.30 ⁷⁹
30.9	38.279 ²⁶⁸	27.71 ¹³⁹	27.077 ³⁴⁰	53.13 ¹⁰	48.099 ⁴¹⁰	41.51 ⁵⁶
Feb. 9.8	38.547 ²⁷⁹	26.32 ¹¹³	27.417 ³⁵⁴	53.03 ³	48.509 ⁴²⁸	40.95 ³¹
19.8	38.826 ²⁸⁵	25.19 ⁸²	27.771 ³⁶¹	53.06 ¹⁴	48.937 ⁴³⁸	40.64 ⁸
Mar. 1.8	39.111 ²⁸⁵	24.37 ⁴⁹	28.132 ³⁶²	53.20 ²⁴	49.375 ⁴⁴¹	40.56 ¹³
11.8	39.396 ²⁸¹	23.88 ¹⁴	28.494 ³⁵⁸	53.44 ³³	49.816 ⁴³⁶	40.69 ³⁵
21.7	39.677 ²⁷⁴	23.74 ²⁰	28.852 ³⁵⁰	53.77 ³⁹	50.252 ⁴²⁷	41.04 ⁵⁵
31.7	39.951 ²⁶³	23.94 ⁵³	29.202 ³³⁶	54.16 ⁴⁷	50.679 ⁴¹⁰	41.59 ⁷³
Apr. 10.7	40.214 ²⁴⁸	24.47 ⁸³	29.538 ³²⁰	54.63 ⁵³	51.089 ³⁸⁷	42.32 ⁹²
20.6	40.462 ²²⁹	25.30 ¹⁰⁷	29.858 ²⁹⁸	55.16 ⁶⁰	51.476 ³⁶³	43.24 ¹⁰⁸
30.6	40.691 ²⁰⁸	26.37 ¹²⁷	30.156 ²⁷³	55.76 ⁶⁶	51.839 ³²⁶	44.32 ¹²²
May 10.6	40.899 ¹⁸³	27.64 ¹⁴¹	30.429 ²⁴²	56.42 ⁷³	52.165 ²⁹⁰	45.54 ¹³⁴
20.6	41.082 ¹⁵⁴	29.05 ¹⁵⁰	30.671 ²⁰⁸	57.15 ⁷⁸	52.455 ²⁴⁶	46.88 ¹⁴⁵
30.5	41.236 ¹²²	30.55 ¹⁵³	30.879 ¹⁶⁸	57.93 ⁸³	52.701 ¹⁹⁵	48.33 ¹⁵²
June 9.5	41.358 ⁸⁷	32.08 ¹⁵²	31.047 ¹²⁵	58.76 ⁸⁷	52.896 ¹⁴³	49.85 ¹⁵⁶
19.5	41.445 ⁵²	33.60 ¹⁴⁵	31.172 ⁷⁸	59.63 ⁸⁸	53.039 ⁸³	51.41 ¹⁵⁷
29.5	41.497 ¹²	35.05 ¹³⁶	31.250 ²⁹	60.51 ⁸⁷	53.122 ²⁵	52.98 ¹⁵³
July 9.4	41.509 ²⁵	36.41 ¹²⁴	31.279 ²⁰	61.38 ⁸²	53.147 ³⁷	54.51 ¹⁴³
19.4	41.484 ⁶³	37.65 ¹⁰⁸	31.259 ⁶⁷	62.20 ⁷⁶	53.110 ⁹⁵	55.94 ¹³²
29.4	41.421 ⁹⁸	38.73 ⁹¹	31.192 ¹¹⁴	62.96 ⁶⁴	53.015 ¹⁵⁰	57.26 ¹¹³
Aug. 8.3	41.323 ¹²⁸	39.64 ⁷⁴	31.078 ¹⁵⁴	63.60 ⁵²	52.865 ¹⁹⁸	58.39 ⁹⁰
18.3	41.195 ¹⁵⁵	40.38 ⁵⁴	30.924 ¹⁸⁷	64.12 ³⁴	52.667 ²⁴⁰	59.29 ⁶²
28.3	41.040 ¹⁷³	40.92 ³⁵	30.737 ²¹¹	64.46 ¹⁶	52.427 ²⁶⁶	59.91 ³⁴
Sept. 7.3	40.867 ¹⁸³	41.27 ¹⁴	30.526 ²²⁴	64.62 ⁴	52.161 ²⁸⁴	60.25 ¹
17.2	40.684 ¹⁸⁵	41.41 ⁷	30.302 ²²⁷	64.58 ²⁴	51.877 ²⁸⁵	60.26 ³¹
27.2	40.499 ¹⁷⁷	41.34 ²⁸	30.075 ²¹⁶	64.34 ⁴⁵	51.592 ²⁷²	59.95 ⁶⁴
Oct. 7.2	40.322 ¹⁵⁷	41.06 ⁵¹	29.859 ¹⁹³	63.89 ⁶²	51.320 ²⁴⁵	59.31 ⁹²
17.2	40.165 ¹³²	40.55 ⁷²	29.666 ¹⁵⁸	63.27 ⁷⁷	51.075 ²⁰²	58.39 ¹¹⁸
27.1	40.033 ⁹⁶	39.83 ⁹⁴	29.508 ¹¹⁴	62.50 ⁸⁹	50.873 ¹⁴⁹	57.21 ¹⁴⁰
Nov. 6.1	39.937 ⁵⁵	38.89 ¹¹⁷	29.394 ⁶¹	61.61 ⁹⁴	50.724 ⁸⁴	55.81 ¹⁵⁶
16.1	39.882 ⁸	37.72 ¹³⁶	29.333 ²	60.67 ⁹⁷	50.640 ¹⁵	54.25 ¹⁶²
26.0	39.874 ³⁸	36.36 ¹⁵⁵	29.331 ⁵⁷	59.70 ⁹³	50.625 ⁵⁷	52.63 ¹⁶⁵
Dec. 6.0	39.912 ⁸⁷	34.81 ¹⁶⁹	29.388 ¹¹⁷	58.77 ⁸⁵	50.682 ¹²⁹	50.98 ¹⁶⁰
16.0	39.999 ¹²⁹	33.12 ¹⁷⁹	29.505 ¹⁷³	57.92 ⁷⁵	50.811 ²⁰⁰	49.38 ¹⁴⁸
26.0	40.128 ¹⁷⁴	31.33 ¹⁸³	29.678 ²²³	57.17 ⁶¹	51.011 ²⁶²	47.90 ¹³²
35.9	40.302	29.50	29.901	56.56	51.273	46.58
Mean Place	38.632	25.62	27.389	66.15	48.541	57.61
Sec δ , Tan δ	1.003	+0.074	1.256	-0.760	1.550	-1.184
L α , L δ	0.00	-0.1	+0.02	-0.1	+0.03	-0.1
ω α , ω δ	0.00	-1.0	-0.01	-1.0	-0.01	-1.0
AUTHORITY			A. N.		A. E.	

390 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	λ Scorpii. Mag. 1·7		β Draconis. Mag. 3·0		α Ophiuchi. Mag. 2·1	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 17 28	° ' 2	h m 17 28	° ' 21	h m 17 31	° ' 36
Jan. 0·9	17·406 ²⁴⁷	41° 92' 56	38·049 ¹⁹⁷	34° 35' 343	17·678 ¹⁸⁴	62° 94' 219
10·9	17·653 ²⁸⁵	41° 36' 40	38·246 ²⁵⁶	30° 92' 322	17·862 ²¹⁵	60° 75' 210
20·9	17·938 ³¹⁵	40° 96' 26	38·502 ³⁰⁸	27° 70' 282	18·077 ²⁴⁴	58° 65' 190
30·9	18·253 ³³⁹	40° 70' 11	38·810 ³⁴⁹	24° 88' 239	18·321 ²⁶²	56° 75' 166
Feb. 9·8	18·592 ³⁵³	40° 59' 0	39·159 ³⁷⁹	22° 49' 184	18·583 ²⁷⁸	55° 09' 132
19·8	18·945 ³⁵⁹	40° 59' 11	39·538 ³⁹⁸	20° 65' 123	18·861 ²⁸⁵	53° 77' 94
Mar. 1·8	19·304 ³⁶²	40° 70' 21	39·936 ⁴¹⁰	19° 42' 57	19·146 ²⁸⁷	52° 83' 52
11·8	19·666 ³⁵⁸	40° 91' 29	40° 346 ⁴⁰⁷	18° 85' 7	19·433 ²⁸⁵	52° 31' 13
21·7	20° 024 ³⁵⁰	41° 20' 37	40° 753 ³⁹⁶	18° 92' 74	19·718 ²⁷⁹	52° 18' 32
31·7	20° 374 ³³⁷	41° 57' 42	41° 149 ³⁷²	19° 66' 134	19·997 ²⁶⁷	52° 50' 72
Apr. 10·7	20° 711 ³²¹	41° 99' 50	41° 521 ³⁴²	21° 00' 187	20° 264 ²⁵²	53° 22' 105
20·7	21° 032 ³⁰¹	42° 49' 58	41° 863 ³⁰⁸	22° 87' 234	20° 516 ²³⁴	54° 27' 136
30·6	21° 333 ²⁷⁵	43° 07' 64	42° 171 ²⁶⁰	25° 21' 272	20° 750 ²¹⁴	55° 63' 161
May 10·6	21° 608 ²⁴⁵	43° 71' 70	42° 431 ²¹¹	27° 93' 299	20° 964 ¹⁸⁵	57° 24' 180
20·6	21° 853 ²⁰⁹	44° 41' 77	42° 642 ¹⁵⁸	30° 92' 320	21° 149 ¹⁶⁰	59° 04' 191
30·5	22° 062 ¹⁷¹	45° 18' 80	42° 800 ⁹⁹	34° 12' 328	21° 309 ¹²⁴	60° 95' 197
June 9·5	22° 233 ¹²⁸	45° 98' 85	42° 899 ³⁹	37° 40' 325	21° 433 ⁸⁸	62° 92' 195
19·5	22° 361 ⁷⁹	46° 83' 86	42° 938 ²⁰	40° 65' 315	21° 521 ⁵¹	64° 87' 190
29·5	22° 440 ³³	47° 69' 86	42° 918 ⁷⁹	43° 80' 298	21° 572 ¹²	66° 77' 177
July 9·4	22° 473 ¹⁵	48° 55' 81	42° 839 ¹³⁷	46° 78' 271	21° 584 ²⁵	68° 54' 162
19·4	22° 458 ⁶⁶	49° 36' 76	42° 702 ¹⁹²	49° 49' 238	21° 559 ⁶⁷	70° 16' 144
29·4	22° 392 ¹¹¹	50° 12' 65	42° 510 ²³⁹	51° 87' 200	21° 492 ¹⁰¹	71° 60' 123
Aug. 8·4	22° 281 ¹⁵¹	50° 77' 52	42° 271 ²⁸²	53° 87' 159	21° 391 ¹³⁴	72° 83' 97
18·3	22° 130 ¹⁸⁵	51° 29' 36	41° 989 ³¹³	55° 46' 114	21° 257 ¹⁵⁷	73° 80' 71
28·3	21° 945 ²⁰⁹	51° 65' 18	41° 676 ³⁴⁴	56° 60' 62	21° 100 ¹⁸⁰	74° 51' 45
Sept. 7·3	21° 736 ²²⁵	51° 83' 3	41° 332 ³⁵⁴	57° 22' 15	20° 920 ¹⁹¹	74° 96' 21
17·2	21° 511 ²²⁵	51° 80' 22	40° 978 ³⁵⁷	57° 37' 35	20° 729 ¹⁹³	75° 17' 11
27·2	21° 286 ²¹⁶	51° 58' 42	40° 621 ³⁴⁵	57° 02' 88	20° 536 ¹⁸⁶	75° 06' 40
Oct. 7·2	21° 070 ¹⁹³	51° 16' 59	40° 276 ³²⁴	56° 14' 138	20° 350 ¹⁷⁰	74° 66' 70
17·2	20° 877 ¹⁶⁰	50° 57' 76	39° 952 ²⁸⁹	54° 76' 183	20° 180 ¹⁴⁶	73° 96' 98
27·1	20° 717 ¹¹⁶	49° 81' 86	39° 663 ²⁴³	52° 93' 232	20° 034 ¹¹⁰	72° 98' 125
Nov. 6·1	20° 601 ⁶¹	48° 95' 92	39° 420 ¹⁸⁹	50° 61' 273	19° 924 ⁶⁸	71° 73' 153
16·1	20° 540 ⁹	48° 03' 96	39° 231 ¹²⁷	47° 88' 307	19° 856 ²⁷	70° 20' 177
26·1	20° 531 ⁵⁵	47° 07' 91	39° 104 ⁵⁵	44° 81' 334	19° 829 ²⁴	68° 43' 197
Dec. 6·0	20° 586 ¹¹²	46° 16' 85	39° 049 ¹⁵	41° 47' 351	19° 853 ⁷²	66° 46' 211
16·0	20° 698 ¹⁶⁹	45° 31' 74	39° 064 ⁸⁶	37° 96' 357	19° 925 ¹¹⁶	64° 35' 223
26·0	20° 867 ²²⁰	44° 57' 61	39° 150 ¹⁵⁸	34° 39' 355	20° 041 ¹⁵⁹	62° 12' 225
35·9	21° 087	43° 96'	39° 308	30° 84'	20° 200	59° 87'
Mean Place	18·589	53·63	40·165	30·82	18·777	56·40
Sec δ , Tan δ	1·253	-0·755	1·637	+1·297	1·025	+0·224
L α , L δ	+0·02	-0·1	-0·03	-0·1	-0·01	-0·1
ω α , ω δ	-0·01	-1·0	+0·01	-1·0	0·00	-1·0
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 391

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	θ Scorpii. Mag. 2.0		κ Scorpii. Mag. 2.5		η Pavonis. Mag. 3.6	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 17 31	° ′ 42 56	h m 17 37	° ′ 38 59	h m 17 38	° ′ 64 40
Jan. 0.9	41.312 ₂₆₂	46.68 ₉₂	4.112 ₂₄₃	16.65 ₇₂	1.93 ₃₈	65.69 ₂₀₇
10.9	41.574 ₃₀₅	45.76 ₇₂	4.355 ₂₈₄	15.93 ₅₈	2.31 ₄₇	63.62 ₁₈₁
20.9	41.879 ₃₃₈	45.04 ₅₆	4.639 ₃₁₆	15.35 ₄₂	2.78 ₅₂	61.81 ₁₅₂
30.9	42.217 ₃₆₂	44.48 ₃₈	4.955 ₃₃₉	14.93 ₂₇	3.30 ₅₈	60.29 ₁₂₁
Feb. 9.8	42.579 ₃₇₉	44.10 ₁₉	5.294 ₃₅₆	14.66 ₁₄	3.88 ₆₁	59.08 ₈₆
19.8	42.958 ₃₈₉	43.91 ₃	5.650 ₃₆₆	14.52 ₂	4.49 ₆₃	58.22 ₄₉
Mar. 1.8	43.347 ₃₉₂	43.88 ₁₂	6.016 ₃₆₉	14.50 ₁₀	5.12 ₆₅	57.73 ₁₈
11.8	43.739 ₃₈₉	44.00 ₂₆	6.385 ₃₆₇	14.60 ₂₀	5.77 ₆₄	57.55 ₁₈
21.7	44.128 ₃₈₀	44.26 ₄₀	6.752 ₃₆₁	14.80 ₃₀	6.41 ₆₃	57.73 ₅₁
31.7	44.508 ₃₆₈	44.66 ₅₂	7.113 ₃₅₀	15.10 ₃₈	7.04 ₆₁	58.24 ₈₄
Apr. 10.7	44.876 ₃₅₀	45.18 ₆₄	7.463 ₃₃₄	15.48 ₄₇	7.65 ₅₈	59.08 ₁₁₃
20.7	45.226 ₃₂₆	45.82 ₇₆	7.797 ₃₁₄	15.95 ₅₆	8.23 ₅₄	60.21 ₁₄₀
30.6	45.552 ₂₉₉	46.58 ₈₇	8.111 ₂₈₉	16.51 ₆₅	8.77 ₄₉	61.61 ₁₆₆
May 10.6	45.851 ₂₆₈	47.45 ₉₆	8.400 ₂₆₀	17.16 ₇₃	9.26 ₄₃	63.27 ₁₈₈
20.6	46.119 ₂₂₉	48.41 ₁₀₆	8.660 ₂₂₄	17.89 ₈₂	9.69 ₃₆	65.15 ₂₀₅
30.5	46.348 ₁₈₇	49.47 ₁₁₃	8.884 ₁₈₄	18.71 ₈₈	10.05 ₂₉	67.20 ₂₁₉
June 9.5	46.535 ₁₄₀	50.60 ₁₁₆	9.068 ₁₄₀	19.59 ₉₃	10.34 ₂₀	69.39 ₂₂₆
19.5	46.675 ₈₈	51.76 ₁₂₀	9.208 ₉₃	20.52 ₉₇	10.54 ₁₂	71.65 ₂₂₈
29.5	46.763 ₃₅	52.96 ₁₁₈	9.301 ₄₂	21.49 ₉₆	10.66 ₃	73.93 ₂₂₃
July 9.4	46.798 ₁₈	54.14 ₁₁₂	9.343 ₉	22.45 ₉₃	10.69 ₇	76.16 ₂₁₄
19.4	46.780 ₇₃	55.26 ₁₀₄	9.334 ₆₀	23.38 ₈₈	10.62 ₁₅	78.30 ₁₉₆
29.4	46.707 ₁₂₀	56.30 ₉₁	9.274 ₁₀₇	24.26 ₇₇	10.47 ₂₄	80.26 ₁₇₃
Aug. 8.4	46.587 ₁₆₅	57.21 ₇₂	9.167 ₁₅₀	25.03 ₆₃	10.23 ₃₁	81.99 ₁₄₂
18.3	46.422 ₂₀₃	57.93 ₅₃	9.017 ₁₈₆	25.66 ₄₇	9.92 ₃₇	83.41 ₁₀₇
28.3	46.219 ₂₃₀	58.46 ₂₉	8.831 ₂₁₄	26.13 ₂₈	9.55 ₄₁	84.48 ₆₇
Sept. 7.3	45.989 ₂₄₇	58.75 ₄	8.617 ₂₂₉	26.41 ₆	9.14 ₄₅	85.15 ₂₃
17.2	45.742 ₂₄₉	58.79 ₂₂	8.388 ₂₃₄	26.47 ₁₆	8.69 ₄₅	85.38 ₂₂
27.2	45.493 ₂₄₁	58.57 ₄₉	8.154 ₂₂₆	26.31 ₃₉	8.24 ₄₃	85.16 ₆₈
Oct. 7.2	45.252 ₂₁₅	58.08 ₇₂	7.928 ₂₀₅	25.92 ₅₈	7.81 ₄₁	84.48 ₁₀₉
17.2	45.037 ₁₇₈	57.36 ₉₃	7.723 ₁₇₁	25.34 ₇₆	7.40 ₃₄	83.39 ₁₅₀
27.1	44.859 ₁₃₄	56.43 ₁₀₈	7.552 ₁₂₈	24.58 ₉₁	7.06 ₂₇	81.89 ₁₈₃
Nov. 6.1	44.725 ₇₆	55.35 ₁₂₁	7.424 ₇₅	23.67 ₉₉	6.79 ₁₈	80.06 ₂₁₀
16.1	44.649 ₁₄	54.14 ₁₂₇	7.349 ₁₇	22.68 ₁₀₄	6.61 ₈	77.96 ₂₂₈
26.1	44.635 ₅₁	52.87 ₁₂₆	7.332 ₄₄	21.64 ₁₀₄	6.53 ₃	75.68 ₂₃₉
Dec. 6.0	44.686 ₁₁₄	51.61 ₁₂₂	7.376 ₁₀₄	20.60 ₉₉	6.56 ₁₃	73.29 ₂₃₇
16.0	44.800 ₁₇₆	50.39 ₁₁₂	7.480 ₁₆₁	19.61 ₈₉	6.69 ₂₄	70.92 ₂₃₂
26.0	44.976 ₂₃₀	49.27 ₉₇	7.641 ₂₁₅	18.72 ₇₈	6.93 ₃₃	68.60 ₂₁₇
35.9	45.206	48.30	7.856	17.94	7.26	66.43
Mean Place	42.623	58.83	5.362	28.21	4.33	79.14
Sec δ , Tan δ	1.366	-0.931	1.287	-0.809	2.339	-2.114
L α , L δ	+0.02	-0.1	+0.02	0.0	+0.05	0.0
ω α , ω δ	-0.01	-1.0	-0.01	-1.0	-0.01	-1.0
AUTHORITY	A. E.		A. N.		A. E.	

392 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Ophiuchi. Mag. 2.9		ζ Scorpii. Mag. 3.1		μ Herculis. Mag. 3.5	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m	° ' "	h m	° ' "	h m	° ' "
	17 39	4 35	17 42	40 5	17 43	27 45
Jan. 1.0	36.078 ¹⁷⁸	63.13 ¹⁷⁷	6.318 ²⁴⁰	41.86 ⁸²	23.009 ¹⁶⁶	61.25 ²⁸⁵
10.9	36.256 ²¹²	61.36 ¹⁷¹	6.558 ²⁸²	41.04 ⁶⁷	23.175 ²⁰⁶	58.40 ²⁶⁹
20.9	36.468 ²³⁸	59.65 ¹⁵⁹	6.840 ³¹⁶	40.37 ⁵²	23.381 ²³⁷	55.71 ²⁴⁴
30.9	36.706 ²⁵⁷	58.06 ¹³⁸	7.156 ³⁴¹	39.85 ³⁶	23.618 ²⁶⁵	53.27 ²¹²
Feb. 9.8	36.963 ²⁷¹	56.68 ¹¹²	7.497 ³⁵⁸	39.49 ²³	23.883 ²⁸⁴	51.15 ¹⁶⁸
19.8	37.234 ²⁸⁰	55.56 ⁸²	7.855 ³⁷⁰	39.26 ⁹	24.167 ²⁹⁷	49.47 ¹¹⁹
Mar. 1.8	37.514 ²⁸⁴	54.74 ⁴⁸	8.225 ³⁷³	39.17 ²	24.464 ³⁰²	48.28 ⁶⁷
11.8	37.798 ²⁸²	54.26 ¹³	8.598 ³⁷³	39.19 ¹⁵	24.766 ³⁰⁴	47.61 ¹²
21.7	38.080 ²⁷⁹	54.13 ²³	8.971 ³⁶⁸	39.34 ²⁵	25.070 ²⁹⁸	47.49 ⁴¹
31.7	38.359 ²⁶⁸	54.36 ⁵⁴	9.339 ³⁵⁷	39.59 ³⁵	25.368 ²⁸⁷	47.90 ⁸⁹
Apr. 10.7	38.627 ²⁵⁷	54.90 ⁸⁶	9.696 ³⁴²	39.94 ⁴⁵	25.655 ²⁷¹	48.79 ¹³⁷
20.7	38.884 ²⁴¹	55.76 ¹¹⁰	10.038 ³²²	40.39 ⁵⁶	25.926 ²⁵³	50.16 ¹⁷⁸
30.6	39.125 ²²⁰	56.86 ¹³¹	10.360 ²⁹⁸	40.95 ⁶⁵	26.179 ²²⁶	51.94 ²¹²
May 10.6	39.345 ¹⁹⁵	58.17 ¹⁴⁷	10.658 ²⁶⁸	41.60 ⁷⁵	26.405 ¹⁹⁶	54.06 ²³⁶
20.6	39.540 ¹⁶⁸	59.64 ¹⁵⁶	10.926 ²³³	42.35 ⁸⁴	26.601 ¹⁶⁴	56.42 ²⁵²
30.5	39.708 ¹³⁷	61.20 ¹⁵⁹	11.159 ¹⁹²	43.19 ⁹²	26.765 ¹²⁹	58.94 ²⁶¹
June 9.5	39.845 ¹⁰³	62.79 ¹⁵⁹	11.351 ¹⁴⁸	44.11 ⁹⁸	26.894 ⁸⁷	61.55 ²⁶²
19.5	39.948 ⁶⁵	64.38 ¹⁵³	11.499 ⁹⁹	45.09 ¹⁰²	26.981 ⁴⁶	64.17 ²⁵⁷
29.5	40.013 ²⁷	65.91 ¹⁴⁴	11.598 ⁴⁸	46.11 ¹⁰²	27.027 ³	66.74 ²⁴²
July 9.4	40.040 ¹³	67.35 ¹³¹	11.646 ⁴	47.13 ¹⁰⁰	27.030 ⁴¹	69.16 ²²³
19.4	40.027 ⁵¹	68.66 ¹¹⁶	11.642 ⁵⁷	48.13 ⁹⁴	26.989 ⁸²	71.39 ²⁰⁰
29.4	39.976 ⁸⁹	69.82 ⁹⁸	11.585 ¹⁰⁵	49.07 ⁸⁴	26.907 ¹²⁰	73.39 ¹⁶⁹
Aug. 8.4	39.887 ¹²¹	70.80 ⁸⁰	11.480 ¹⁴⁹	49.91 ⁷⁰	26.787 ¹⁵⁷	75.08 ¹³⁷
18.3	39.766 ¹⁴⁸	71.60 ⁶⁰	11.331 ¹⁸⁷	50.61 ⁵³	26.630 ¹⁸¹	76.45 ¹⁰⁵
28.3	39.618 ¹⁶⁹	72.20 ³⁹	11.144 ²¹⁶	51.14 ³³	26.449 ²⁰⁸	77.50 ⁶⁷
Sept. 7.3	39.449 ¹⁸³	72.59 ²⁰	10.928 ²³³	51.47 ¹¹	26.241 ²²³	78.17 ²⁸
17.2	39.266 ¹⁸⁷	72.79 ³	10.695 ²³⁸	51.58 ¹²	26.018 ²²⁵	78.45 ⁹
27.2	39.079 ¹⁸⁰	72.76 ²³	10.457 ²³²	51.46 ³⁶	25.793 ²²⁰	78.36 ⁵³
Oct. 7.2	38.899 ¹⁶⁷	72.53 ⁴⁷	10.225 ²¹⁰	51.10 ⁵⁷	25.573 ²⁰⁸	77.83 ⁹³
17.2	38.732 ¹³⁸	72.06 ⁶⁹	10.015 ¹⁷⁹	50.53 ⁷⁷	25.365 ¹⁸⁰	76.90 ¹³⁰
27.1	38.594 ¹¹¹	71.37 ⁹¹	9.836 ¹³⁴	49.76 ⁹²	25.185 ¹⁴⁷	75.60 ¹⁶⁹
Nov. 6.1	38.483 ⁶⁷	70.46 ¹¹³	9.702 ⁸³	48.84 ¹⁰³	25.038 ¹⁰⁴	73.91 ²⁰⁴
16.1	38.416 ²⁵	69.33 ¹³⁴	9.619 ²⁴	47.81 ¹⁰⁹	24.934 ⁶¹	71.87 ²³⁶
26.1	38.391 ²³	67.99 ¹⁵²	9.595 ³⁸	46.72 ¹¹⁰	24.873 ⁹	69.51 ²⁵⁷
Dec. 6.0	38.414 ⁶⁹	66.47 ¹⁶⁴	9.633 ⁹⁹	45.62 ¹⁰⁶	24.864 ⁴²	66.94 ²⁸⁰
16.0	38.483 ¹¹⁵	64.83 ¹⁷⁶	9.732 ¹⁵⁷	44.56 ⁹⁹	24.906 ⁹⁰	64.14 ²⁸⁹
26.0	38.598 ¹⁵⁵	63.07 ¹⁸⁰	9.889 ²¹¹	43.57 ⁸⁶	24.996 ¹³⁹	61.25 ²⁹¹
35.9	38.753	61.27	10.100	42.71	25.135	58.34
Mean Place	37.128	55.64	7.610	53.30	24.309	55.38
Sec δ , Tan δ	1.003	+0.080	1.307	-0.842	1.130	+0.526
L α , L δ	0.00	0.0	+0.02	0.0	-0.01	0.0
ω α , ω δ	0.00	-1.0	0.00	-1.0	0.00	-1.0
AUTHORITY	A. E.		A. N.		A. E.	

APPARENT PLACES OF STARS, 1922. 393

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	89 Herculis. Mag. 5.5		ν Ophiuchi. Mag. 3.5		γ Draconis. Mag. 2.4	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 17 52	26 3	h m 17 54	9 45	h m 17 54	51 29
Jan. 1.0	15.143 ¹⁵⁸	47.78 ²⁷⁴	42.858 ¹⁷⁶	46.16 ⁹³	45.644 ¹⁵⁶	56.55 ³⁴⁵
10.9	15.301 ¹⁹⁷	45.04 ²⁶²	43.034 ²¹¹	47.09 ⁹⁴	45.800 ²¹⁶	53.10 ³²⁷
20.9	15.498 ²³⁰	42.42 ²³⁹	43.245 ²³⁷	48.03 ⁸⁹	46.016 ²⁷¹	49.83 ²⁹⁸
30.9	15.728 ²⁵⁶	40.03 ²⁰⁷	43.482 ²⁵⁷	48.92 ⁷⁹	46.287 ³¹⁶	46.85 ²⁵⁹
Feb. 9.9	15.984 ²⁷⁶	37.96 ¹⁶⁷	43.739 ²⁷⁴	49.71 ⁶⁷	46.603 ³⁵³	44.26 ²⁰⁶
19.8	16.260 ²⁹⁰	36.29 ¹²¹	44.013 ²⁸³	50.38 ⁵⁰	46.956 ³⁷⁸	42.20 ¹⁴⁹
Mar. 1.8	16.550 ²⁹⁹	35.08 ⁶⁹	44.296 ²⁹⁰	50.88 ³¹	47.334 ³⁹⁵	40.71 ⁸⁴
11.8	16.849 ³⁰⁰	34.39 ¹⁷	44.586 ²⁹⁰	51.19 ⁹	47.729 ⁴⁰⁰	39.87 ²²
21.7	17.149 ²⁹⁷	34.22 ³⁷	44.876 ²⁸⁹	51.28 ¹²	48.129 ³⁹⁷	39.65 ⁴⁵
31.7	17.446 ²⁸⁷	34.59 ⁸⁶	45.165 ²⁸¹	51.16 ³¹	48.526 ³⁸²	40.10 ¹⁰⁸
Apr. 10.7	17.733 ²⁷⁵	35.45 ¹³³	45.446 ²⁷²	50.85 ⁴⁸	48.908 ³⁵⁹	41.18 ¹⁶⁴
20.7	18.008 ²⁵⁶	36.78 ¹⁷³	45.718 ²⁶⁰	50.37 ⁶³	49.267 ³²⁷	42.82 ²¹⁶
30.6	18.264 ²³³	38.51 ²⁰⁶	45.978 ²⁴⁰	49.74 ⁷⁵	49.594 ²⁸⁹	44.98 ²⁵⁴
May 10.6	18.497 ²⁰⁶	40.57 ²³²	46.218 ²¹⁹	48.99 ⁸³	49.883 ²⁴⁴	47.52 ²⁹¹
20.6	18.703 ¹⁷⁴	42.89 ²⁴⁹	46.437 ¹⁹¹	48.16 ⁸⁵	50.127 ¹⁹²	50.43 ³¹²
30.6	18.877 ¹³⁸	45.38 ²⁵⁸	46.628 ¹⁶²	47.31 ⁸⁶	50.319 ¹⁴¹	53.55 ³²⁶
June 9.5	19.015 ⁹⁹	47.96 ²⁶¹	46.790 ¹²⁸	46.45 ⁸³	50.460 ⁷⁷	56.81 ³³⁰
19.5	19.114 ⁵⁸	50.57 ²⁵⁴	46.918 ⁹⁰	45.62 ⁷⁷	50.537 ²⁰	60.11 ³²⁵
29.5	19.172 ¹⁵	53.11 ²⁴²	47.008 ⁴⁸	44.85 ⁷¹	50.557 ³⁸	63.36 ³¹²
July 9.4	19.187 ²⁸	55.53 ²²⁵	47.056 ⁹	44.14 ⁶²	50.519 ¹⁰²	66.48 ²⁸⁹
19.4	19.159 ⁷¹	57.78 ²⁰¹	47.065 ³²	43.52 ⁵¹	50.417 ¹⁵⁷	69.37 ²⁶¹
29.4	19.088 ¹¹⁰	59.79 ¹⁷³	47.033 ⁷²	43.01 ⁴²	50.260 ²⁰⁷	71.98 ²²⁶
Aug. 8.4	18.978 ¹⁴⁶	61.52 ¹⁴³	46.961 ¹⁰⁷	42.59 ³⁵	50.053 ²⁵⁵	74.24 ¹⁸⁷
18.3	18.832 ¹⁷⁶	62.95 ¹¹⁰	46.854 ¹³⁸	42.24 ²⁵	49.798 ²⁹⁵	76.11 ¹⁴⁶
28.3	18.656 ²⁰⁰	64.05 ⁷⁴	46.716 ¹⁶²	41.99 ¹⁶	49.503 ³²⁵	77.57 ⁹⁷
Sept. 7.3	18.456 ²¹⁶	64.79 ³⁶	46.554 ¹⁷⁹	41.83 ⁹	49.178 ³⁴³	78.54 ⁴⁹
17.3	18.240 ²²¹	65.15 ³	46.375 ¹⁸³	41.74 ¹	48.835 ³⁵¹	79.03 ¹
27.2	18.019 ²¹⁸	65.12 ⁴⁰	46.192 ¹⁸²	41.73 ⁶	48.484 ³⁴⁶	79.02 ⁵²
Oct. 7.2	17.801 ²⁰³	64.72 ⁸⁰	46.010 ¹⁶⁷	41.79 ¹⁵	48.138 ³³¹	78.50 ¹⁰⁴
17.2	17.598 ¹⁸¹	63.92 ¹¹⁹	45.843 ¹⁴⁴	41.94 ²³	47.807 ³⁰³	77.46 ¹⁵⁵
27.1	17.417 ¹⁴⁸	62.73 ¹⁵⁵	45.699 ¹¹⁴	42.17 ³⁵	47.504 ²⁶³	75.91 ²⁰¹
Nov. 6.1	17.269 ¹⁰⁹	61.18 ¹⁹⁰	45.585 ⁷¹	42.52 ⁴⁵	47.241 ²¹⁴	73.90 ²⁴⁵
16.1	17.160 ⁶³	59.28 ²²⁰	45.514 ³⁰	42.97 ⁵⁸	47.027 ¹⁵⁵	71.45 ²⁸⁵
26.1	17.097 ¹⁵	57.08 ²⁴⁷	45.484 ¹⁸	43.55 ⁶⁷	46.872 ⁹⁰	68.60 ³¹⁴
Dec. 6.0	17.082 ³⁵	54.61 ²⁶⁶	45.502 ⁶⁷	44.22 ⁷⁹	46.782 ²²	65.46 ³⁴¹
16.0	17.117 ⁸⁴	51.95 ²⁷⁷	45.569 ¹¹¹	45.01 ⁸⁸	46.760 ⁴⁵	62.05 ³⁵⁰
26.0	17.201 ¹³¹	49.18 ²⁸¹	45.680 ¹⁵²	45.89 ⁹⁴	46.805 ¹¹⁶	58.55 ³⁵³
36.0	17.332	46.37	45.832	46.83	46.921	55.02
Mean Place	16.414	41.36	43.904	54.89	47.680	50.93
Sec δ, Tan δ	1.113	+0.489	1.015	-0.172	1.606	+1.257
L α, L δ	-0.01	0.0	0.00	0.0	-0.03	0.0
ω α, ω δ	0.00	-1.0	0.00	-1.0	0.00	-1.0
AUTHORITY	A. E.				A. E.	

394 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Sagittarii. Mag. 3.1		72 Ophiuchi. Mag. 3.7		μ Sagittarii. Mag. 4.0	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m	° ' "	h m	° ' "	h m	° ' "
	18 0	30 25	18 3	9 33	18 9	21 4
Jan. 1.0	46.539 ²⁰¹	25.31 ³⁷	37.965 ¹⁵³	14.06 ¹⁹⁸	4.756 ¹⁷⁴	40.76 ²⁰
10.9	46.740 ²³⁶	24.94 ²⁵	38.118 ¹⁹⁰	12.08 ¹⁹¹	4.930 ²¹¹	40.96 ²¹
20.9	46.976 ²⁶⁵	24.69 ¹⁷	38.308 ²¹⁷	10.17 ¹⁷⁶	5.141 ²⁴³	41.17 ²⁵
30.9	47.241 ²⁹⁵	24.52 ¹⁴	38.525 ²⁴²	8.41 ¹⁵⁶	5.384 ²⁶³	41.42 ²¹
Feb. 9.9	47.536 ³¹⁰	24.38 ¹⁰	38.767 ²⁵⁷	6.85 ¹²⁷	5.647 ²⁸³	41.63 ¹⁹
19.8	47.846 ³²³	24.28 ⁴	39.024 ²⁷¹	5.58 ⁹¹	5.930 ²⁹⁶	41.82 ¹⁴
Mar. 1.8	48.169 ³³²	24.24 ³	39.295 ²⁸⁰	4.67 ⁵⁵	6.226 ³⁰⁴	41.96 ³
11.8	48.501 ³³⁴	24.21 ¹	39.575 ²⁸³	4.12 ¹⁵	6.530 ³⁰⁷	41.99 ³
21.8	48.835 ³³⁰	24.20 ¹	39.858 ²⁸²	3.97 ²⁴	6.837 ³⁰⁸	41.96 ¹⁴
31.7	49.165 ³²⁴	24.19 ¹	40.140 ²⁷⁷	4.21 ⁶⁴	7.145 ³⁰³	41.82 ²⁰
Apr. 10.7	49.489 ³¹⁷	24.20 ¹	40.417 ²⁶⁷	4.85 ⁹⁷	7.448 ²⁹⁵	41.62 ²⁷
20.7	49.806 ³⁰¹	24.21 ⁴	40.684 ²⁵⁴	5.82 ¹²⁷	7.743 ²⁸²	41.35 ³³
30.6	50.107 ²⁸⁰	24.25 ¹²	40.938 ²³⁵	7.09 ¹⁵¹	8.025 ²⁶⁹	41.02 ³⁴
May 10.6	50.387 ²⁵⁸	24.37 ¹⁷	41.173 ²¹³	8.60 ¹⁷⁰	8.294 ²⁴³	40.68 ³⁶
20.6	50.645 ²²⁹	24.54 ²¹	41.386 ¹⁸⁵	10.30 ¹⁸⁴	8.537 ²¹⁹	40.32 ³²
30.6	50.874 ¹⁹¹	24.75 ²⁹	41.571 ¹⁵⁶	12.14 ¹⁹⁰	8.756 ¹⁸⁵	40.00 ²⁷
June 9.5	51.065 ¹⁵⁴	25.04 ³⁷	41.727 ¹²¹	14.04 ¹⁹⁰	8.941 ¹⁵²	39.73 ²³
19.5	51.219 ¹¹⁰	25.41 ⁴¹	41.848 ⁸⁴	15.94 ¹⁸⁴	9.093 ¹¹¹	39.50 ¹⁵
29.5	51.329 ⁶⁵	25.82 ⁴⁷	41.932 ⁴³	17.78 ¹⁷⁶	9.204 ⁶⁸	39.35 ¹¹
July 9.5	51.394 ¹⁹	26.29 ⁵⁰	41.975 ³	19.54 ¹⁶³	9.272 ²⁴	39.24 ²
19.4	51.413 ³⁰	26.79 ⁵²	41.978 ³⁷	21.17 ¹⁴⁴	9.296 ¹⁷	39.22 ⁴
29.4	51.383 ⁷⁵	27.31 ⁵⁰	41.941 ⁷⁹	22.61 ¹²⁵	9.279 ⁶⁴	39.26 ⁹
Aug. 8.4	51.308 ¹¹⁷	27.81 ⁴⁵	41.862 ¹¹²	23.86 ¹⁰²	9.215 ¹⁰⁰	39.35 ¹³
18.3	51.191 ¹⁵²	28.26 ³⁷	41.750 ¹⁴³	24.88 ⁷⁹	9.115 ¹³⁸	39.48 ¹⁰
28.3	51.039 ¹⁸²	28.63 ²⁹	41.607 ¹⁶⁸	25.67 ⁵⁴	8.977 ¹⁶⁴	39.58 ¹⁰
Sept. 7.3	50.857 ²⁰¹	28.92 ¹⁶	41.439 ¹⁸³	26.21 ³²	8.813 ¹⁸⁴	39.68 ⁷
17.3	50.656 ²¹⁰	29.08 ²	41.256 ¹⁹¹	26.53 ⁴	8.629 ¹⁹³	39.75 ³
27.2	50.446 ²⁰⁶	29.10 ¹¹	41.065 ¹⁸⁹	26.57 ²¹	8.436 ¹⁹¹	39.78 ¹
Oct. 7.2	50.240 ¹⁹²	28.99 ²³	40.876 ¹⁸⁰	26.36 ⁴⁸	8.245 ¹⁷⁹	39.79 ³
17.2	50.048 ¹⁶⁵	28.76 ³⁷	40.696 ¹⁵⁷	25.88 ⁷⁵	8.066 ¹⁵⁸	39.76 ⁷
27.2	49.883 ¹³¹	28.39 ⁴⁴	40.539 ¹²⁸	25.13 ¹⁰¹	7.908 ¹²⁴	39.69 ⁶
Nov. 6.1	49.752 ⁸⁵	27.95 ⁴⁹	40.411 ⁹⁰	24.12 ¹²⁵	7.784 ⁸⁷	39.63 ⁶
16.1	49.667 ³⁸	27.46 ⁵³	40.321 ⁴⁸	22.87 ¹⁴⁸	7.697 ⁴⁰	39.57 ³
26.1	49.629 ¹⁴	26.93 ⁵²	40.273 ⁴	21.39 ¹⁶⁸	7.657 ⁸	39.54 ¹
Dec. 6.0	49.643 ⁷¹	26.41 ⁵⁰	40.269 ⁴²	19.71 ¹⁸⁶	7.665 ⁵⁹	39.55 ⁷
16.0	49.714 ¹²⁴	25.91 ⁴⁵	40.311 ⁸⁷	17.85 ¹⁹⁶	7.724 ¹⁰⁶	39.62 ¹²
26.0	49.838 ¹⁷⁰	25.46 ³⁶	40.398 ¹²⁹	15.89 ²⁰¹	7.830 ¹⁵⁰	39.74 ¹⁹
36.0	50.008	25.10	40.527	13.88	7.980	39.93
Mean Place	47.742	35.27	39.064	6.40	5.878	49.94
Sec. δ , Tan δ	1.160	-0.587	1.014	+0.168	1.072	-0.385
L α , L δ	+0.02	0.0	0.00	0.0	+0.01	0.0
ω α , ω δ	0.00	-1.0	0.00	-1.0	0.00	-1.0
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 395

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	η Sagittarii. Mag. 3.2		δ Sagittarii. Mag. 2.8		η Serpentis. Mag. 3.4	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 18 12	$^{\circ}$ $'$ 30 46	h m 18 15	$^{\circ}$ $'$ 29 51	h m 18 17	$^{\circ}$ $'$ 2 54
Jan. 1.0	19.571 ¹⁹⁸	61.44 ⁷⁹	58.796 ¹⁸¹	36.00 ³⁸	15.294 ¹⁴⁶	64.13 ¹²⁸
10.9	19.769 ²³⁹	60.65 ⁶⁹	58.977 ²²⁰	35.62 ³²	15.440 ¹⁸³	65.41 ¹²⁴
20.9	20.008 ²⁷⁵	59.96 ⁶⁰	59.197 ²⁵³	35.30 ²⁷	15.623 ²¹²	66.65 ¹¹⁷
30.9	20.283 ³⁰³	59.36 ⁵⁰	59.450 ²⁷⁹	35.03 ²²	15.835 ²³⁷	67.82 ¹⁰⁴
Feb. 9.9	20.586 ³²⁵	58.86 ⁴¹	59.729 ³⁰⁰	34.81 ¹⁹	16.072 ²⁵⁴	68.86 ⁸²
19.8	20.911 ³⁴⁰	58.45 ³³	60.029 ³¹⁴	34.62 ¹⁷	16.326 ²⁶⁶	69.68 ⁶²
Mar. 1.8	21.251 ³⁵⁰	58.12 ²⁵	60.343 ³²⁴	34.45 ¹⁶	16.592 ²⁷⁶	70.30 ³⁶
11.8	21.601 ³⁵⁵	57.87 ¹⁷	60.667 ³²⁸	34.29 ¹⁶	16.868 ²⁸³	70.66 ⁸
21.8	21.956 ³⁵⁵	57.70 ⁹	60.995 ³³⁰	34.13 ¹⁵	17.151 ²⁸³	70.74 ¹⁹
31.7	22.311 ³⁵¹	57.61 ²	61.325 ³²⁷	33.98 ¹⁵	17.434 ²⁸⁰	70.55 ⁴⁷
Apr. 10.7	22.662 ³⁴²	57.59 ⁷	61.652 ³¹⁹	33.83 ¹³	17.714 ²⁷⁶	70.08 ⁶⁹
20.7	23.004 ³²⁸	57.66 ¹⁶	61.971 ³⁰⁷	33.70 ⁹	17.990 ²⁶⁴	69.39 ⁹¹
30.6	23.332 ³⁰⁹	57.82 ²⁶	62.278 ²⁹⁰	33.61 ⁵	18.254 ²⁴⁷	68.48 ¹⁰⁸
May 10.6	23.641 ²⁸⁴	58.08 ³⁷	62.568 ²⁶⁸	33.56 ²	18.501 ²²⁸	67.40 ¹¹⁹
20.6	23.925 ²⁵⁴	58.45 ⁴⁸	62.836 ²⁴⁰	33.58 ¹⁰	18.729 ²⁰⁰	66.21 ¹²⁵
30.6	24.179 ²¹⁸	58.93 ⁵⁸	63.076 ²⁰⁸	33.68 ¹⁸	18.929 ¹⁷⁴	64.96 ¹²⁷
June 9.5	24.397 ¹⁷⁶	59.51 ⁶⁹	63.284 ¹⁶⁹	33.86 ²⁶	19.103 ¹⁴²	63.69 ¹²⁷
19.5	24.573 ¹³¹	60.20 ⁷⁶	63.453 ¹²⁷	34.12 ³⁵	19.245 ¹⁰³	62.42 ¹²⁰
29.5	24.704 ⁸¹	60.96 ⁸²	63.580 ⁸¹	34.47 ⁴²	19.348 ⁶⁴	61.22 ¹¹⁷
July 9.5	24.785 ²⁹	61.78 ⁸⁶	63.661 ³⁴	34.89 ⁴⁷	19.412 ²³	60.05 ¹⁰⁰
19.4	24.814 ²²	62.64 ⁸⁵	63.695 ¹⁴	35.36 ⁵⁰	19.435 ¹⁷	59.05 ⁸⁷
29.4	24.792 ⁷²	63.49 ⁸²	63.681 ⁶¹	35.86 ⁵⁰	19.418 ⁵⁹	58.18 ⁷⁴
Aug. 8.4	24.720 ¹¹⁹	64.31 ⁷⁵	63.620 ¹⁰⁶	36.36 ⁴⁸	19.359 ¹⁰⁰	57.44 ⁵⁸
18.3	24.601 ¹⁶⁰	65.06 ⁶³	63.514 ¹⁴³	36.84 ⁴³	19.259 ¹²⁸	56.86 ⁴⁶
28.3	24.441 ¹⁹²	65.69 ⁴⁹	63.371 ¹⁷⁴	37.27 ³⁴	19.131 ¹⁵¹	56.40 ³⁰
Sept. 7.3	24.249 ²¹⁵	66.18 ³¹	63.197 ¹⁹⁷	37.61 ²⁴	18.980 ¹⁷⁴	56.10 ¹⁶
17.3	24.034 ²²⁷	66.49 ¹³	63.000 ²⁰⁷	37.85 ¹¹	18.806 ¹⁸³	55.94 ¹
27.2	23.807 ²²⁷	66.62 ⁸	62.793 ²⁰⁸	37.96 ²	18.623 ¹⁸⁵	55.95 ¹⁴
Oct. 7.2	23.580 ²¹³	66.54 ²⁸	62.585 ¹⁹⁶	37.94 ¹⁴	18.438 ¹⁷⁴	56.09 ²⁸
17.2	23.367 ¹⁸⁷	66.26 ⁴⁶	62.389 ¹⁷³	37.80 ²⁶	18.264 ¹⁵⁶	56.37 ⁴³
27.2	23.180 ¹⁵²	65.80 ⁶³	62.216 ¹⁴⁰	37.54 ³⁷	18.108 ¹²⁹	56.80 ⁵⁸
Nov. 6.1	23.028 ¹⁰⁵	65.17 ⁷⁵	62.076 ⁹⁸	37.17 ⁴³	17.979 ⁹⁰	57.38 ⁷⁵
16.1	22.923 ⁵⁴	64.42 ⁸⁴	61.978 ⁵⁰	36.74 ⁴⁹	17.889 ⁴⁹	58.13 ⁹⁰
26.1	22.869 ³	63.58 ⁸⁹	61.928 ²	36.25 ⁴⁹	17.840 ⁸	59.03 ¹⁰⁴
Dec. 6.0	22.872 ⁶⁰	62.69 ⁸⁹	61.930 ⁵⁴	35.76 ⁴⁸	17.832 ³⁹	60.07 ¹¹⁴
16.0	22.932 ¹¹⁶	61.80 ⁸⁶	61.984 ¹⁰⁶	35.28 ⁴⁵	17.871 ⁸¹	61.21 ¹²⁶
26.0	23.048 ¹⁶⁷	60.94 ⁸⁰	62.090 ¹⁵⁴	34.83 ³⁹	17.952 ¹²⁶	62.47 ¹²⁸
36.0	23.215	60.14	62.244	34.44	18.078	63.75
Mean Place	20.904	71.28	60.023	45.38	16.362	72.42
Sec δ , Tan δ	1.249	-0.748	1.153	-0.574	1.001	-0.051
L α , L δ	+0.02	0.0	+0.02	0.0	0.00	0.0
ω α , ω δ	0.00	-1.0	0.00	-1.0	0.00	-1.0
AUTHORITY	A. N.		A. N.		A. E.	

396 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Sagittarii. Mag. 2.0		α Telescopii. Mag. 3.8		λ Sagittarii. Mag. 2.9							
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.						
	^h 18	^m 18	[°] 34	['] 25	^h 18	^m 21	[°] 46	['] 0	^h 18	^m 23	[°] 25	['] 27
Jan. 1.0	58.352	187	12.51	66	9.811	210	37.10	137	8.214	167	49.12	14
11.0	58.539	226	11.85	60	10.021	257	35.73	126	8.381	205	48.98	10
20.9	58.765	261	11.25	53	10.278	299	34.47	115	8.586	237	48.88	7
30.9	59.026	289	10.72	45	10.577	337	33.32	99	8.823	263	48.81	6
Feb. 9.9	59.315	312	10.27	40	10.914	363	32.33	84	9.086	283	48.75	7
19.8	59.627	327	9.87	32	11.277	384	31.49	67	9.369	298	48.68	9
Mar. 1.8	59.954	341	9.55	27	11.661	396	30.82	51	9.667	309	48.59	13
11.8	60.295	345	9.28	23	12.057	406	30.31	34	9.976	314	48.46	17
21.8	60.640	346	9.05	17	12.463	406	29.97	19	10.290	317	48.29	22
31.7	60.986	343	8.88	12	12.869	404	29.78	1	10.607	315	48.07	26
Apr. 10.7	61.329	334	8.76	5	13.273	395	29.77	17	10.922	310	47.81	27
20.7	61.663	323	8.71	3	13.668	379	29.94	35	11.232	298	47.54	28
30.7	61.986	307	8.74	12	14.047	359	30.29	54	11.530	284	47.26	27
May 10.6	62.293	283	8.86	20	14.406	329	30.83	70	11.814	263	46.99	22
20.6	62.576	254	9.06	32	14.735	295	31.53	87	12.077	237	46.77	17
30.6	62.830	219	9.38	42	15.030	256	32.40	103	12.314	206	46.60	10
June 9.5	63.049	179	9.80	51	15.286	206	33.43	113	12.520	171	46.50	1
19.5	63.228	136	10.31	61	15.492	155	34.56	125	12.691	129	46.49	7
29.5	63.364	87	10.92	66	15.647	98	35.81	131	12.820	86	46.56	15
July 9.5	63.451	36	11.58	74	15.745	37	37.12	135	12.906	40	46.71	22
19.4	63.487	13	12.32	75	15.782	21	38.47	134	12.946	7	46.93	28
29.4	63.474	64	13.07	71	15.761	80	39.81	126	12.939	53	47.21	31
Aug. 8.4	63.410	109	13.78	70	15.681	134	41.07	116	12.886	95	47.52	32
18.4	63.301	149	14.48	58	15.547	180	42.23	98	12.791	133	47.84	31
28.3	63.152	183	15.06	48	15.367	222	43.21	76	12.658	165	48.15	27
Sept. 7.3	62.969	205	15.54	31	15.145	247	43.97	51	12.493	186	48.42	21
17.3	62.764	219	15.85	17	14.898	265	44.48	24	12.307	198	48.63	14
27.2	62.545	219	16.02	2	14.633	264	44.72	6	12.109	200	48.77	5
Oct. 7.2	62.326	209	16.00	18	14.369	254	44.66	35	11.909	190	48.82	4
17.2	62.117	184	15.82	38	14.115	225	44.31	63	11.719	169	48.78	11
27.2	61.933	151	15.44	50	13.890	187	43.68	88	11.550	139	48.67	18
Nov. 6.1	61.782	106	14.94	61	13.703	137	42.80	108	11.411	99	48.49	22
16.1	61.676	58	14.33	70	13.566	78	41.72	126	11.312	54	48.27	24
26.1	61.618	5	13.63	75	13.488	16	40.46	138	11.258	4	48.03	24
Dec. 6.1	61.613	54	12.88	76	13.472	49	39.08	144	11.254	45	47.79	22
16.0	61.667	105	12.12	73	13.521	114	37.64	144	11.299	94	47.57	18
26.0	61.772	156	11.39	70	13.635	175	36.20	139	11.393	141	47.39	13
36.0	61.928		10.69		13.810		34.81		11.534		47.26	
Mean Place	59.662		21.94		11.414		46.85		9.401		58.07	
Sec δ, Tan δ	1.212		-0.685		1.440		-1.036		1.108		-0.476	
L α, L δ	+0.02		0.0		+0.03		0.0		+0.01		0.0	
ω α, ω δ	0.00		-1.0		+0.01		-1.0		0.00		-1.0	
AUTHORITY	A. E.		A. E.		A. N.		A. N.		A. N.		A. N.	

APPARENT PLACES OF STARS, 1922. 397

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Lyræ. Mag. 0.1		4 H. Scuti. Mag. 4.7		φ Sagittarii. Mag. 3.3	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m	° ′	h m	° ′	h m	° ′
	18 34	38 42	18 37	9 7	18 40	27 4
Jan. 1.0	16.371 ¹⁰³	45.31 ³¹³	59.160 ¹³⁵	33.90 ⁸²	45.768 ¹⁵⁰	11.82 ³¹
11.0	16.474 ¹⁵⁷	42.18 ³⁰⁷	59.295 ¹⁷¹	34.72 ⁸¹	45.918 ¹⁹⁰	11.51 ²⁸
20.9	16.631 ¹⁹⁹	39.11 ²⁸⁴	59.466 ²⁰¹	35.53 ⁷⁵	46.108 ²²⁴	11.23 ²⁷
30.9	16.830 ²³⁶	36.27 ²⁵⁴	59.667 ²²⁶	36.28 ⁶⁵	46.332 ²⁵²	10.96 ²⁶
Feb. 9.9	17.066 ²⁷⁰	33.73 ²¹⁶	59.893 ²⁴⁷	36.93 ⁵³	46.584 ²⁷⁴	10.70 ²⁶
19.9	17.336 ²⁹⁶	31.57 ¹⁶³	60.140 ²⁶³	37.46 ³⁴	46.858 ²⁹⁴	10.44 ²⁹
Mar. 1.8	17.632 ³¹⁵	29.94 ¹⁰⁹	60.403 ²⁷⁶	37.80 ¹⁵	47.152 ³⁰⁶	10.15 ³¹
11.8	17.947 ³²⁸	28.85 ⁵⁰	60.679 ²⁸³	37.95 ⁷	47.458 ³¹⁵	9.84 ³⁴
21.8	18.275 ³³²	28.35 ⁷	60.962 ²⁸⁸	37.88 ²⁸	47.773 ³²¹	9.50 ³⁷
31.7	18.607 ³³¹	28.42 ⁷⁰	61.250 ²⁸⁹	37.60 ⁴⁹	48.094 ³²¹	9.13 ³⁸
Apr. 10.7	18.938 ³²³	29.12 ¹²³	61.539 ²⁸⁶	37.11 ⁶⁸	48.415 ³¹⁸	8.75 ⁴⁰
20.7	19.261 ³⁰⁶	30.35 ¹⁷²	61.825 ²⁷⁷	36.43 ⁸²	48.733 ³¹¹	8.35 ³⁷
30.7	19.567 ²⁸⁴	32.07 ²¹⁹	62.102 ²⁶⁵	35.61 ⁹⁵	49.044 ²⁹⁸	7.98 ³⁴
May 10.6	19.851 ²⁵⁸	34.26 ²⁵⁰	62.367 ²⁴⁹	34.66 ¹⁰¹	49.342 ²⁷⁹	7.64 ²⁸
20.6	20.109 ²²¹	36.76 ²⁸¹	62.616 ²²⁶	33.65 ¹⁰⁶	49.621 ²⁵⁵	7.36 ²⁰
30.6	20.330 ¹⁸¹	39.57 ²⁹⁸	62.842 ¹⁹⁸	32.59 ¹⁰⁴	49.876 ²²⁵	7.16 ¹⁰
June 9.6	20.511 ¹⁴⁰	42.55 ³¹⁰	63.040 ¹⁶⁵	31.55 ¹⁰¹	50.101 ¹⁹⁰	7.06 ¹
19.5	20.651 ⁹⁰	45.65 ³⁰⁷	63.205 ¹²⁹	30.54 ⁹⁴	50.291 ¹⁴⁹	7.05 ¹⁰
29.5	20.741 ³⁹	48.72 ³⁰¹	63.334 ⁸⁹	29.60 ⁸⁴	50.440 ¹⁰⁴	7.15 ²⁰
July 9.5	20.780 ⁹	51.73 ²⁸⁷	63.423 ⁴⁶	28.76 ⁷³	50.544 ⁵⁹	7.35 ³⁰
19.4	20.771 ⁶¹	54.60 ²⁶⁵	63.469 ³	28.03 ⁶²	50.603 ⁹	7.65 ³⁶
29.4	20.710 ¹⁰⁸	57.25 ²³⁹	63.472 ³⁹	27.41 ⁴⁹	50.612 ³⁸	8.01 ⁴¹
Aug. 8.4	20.602 ¹⁵¹	59.64 ²⁰⁶	63.433 ⁷⁹	26.92 ³⁸	50.574 ⁸³	8.42 ⁴³
18.4	20.451 ¹⁹⁵	61.70 ¹⁷⁰	63.354 ¹¹⁵	26.54 ²⁶	50.491 ¹²³	8.85 ⁴²
28.3	20.256 ²²³	63.40 ¹²⁹	63.239 ¹⁴⁶	26.28 ¹⁵	50.368 ¹⁵⁷	9.27 ³⁹
Sept. 7.3	20.033 ²⁴⁹	64.69 ⁸⁸	63.093 ¹⁶⁷	26.13 ⁶	50.211 ¹⁸³	9.66 ³³
17.3	19.784 ²⁶⁰	65.57 ⁴²	62.926 ¹⁸¹	26.07 ⁴	50.028 ¹⁹⁸	9.99 ²³
27.3	19.524 ²⁶⁶	65.99 ⁰	62.745 ¹⁸⁴	26.11 ¹¹	49.830 ²⁰⁴	10.22 ¹⁴
Oct. 7.2	19.258 ²⁶⁰	65.99 ⁵¹	62.561 ¹⁷⁹	26.22 ²⁰	49.626 ¹⁹⁶	10.36 ³
17.2	18.998 ²⁴²	65.48 ⁹⁸	62.382 ¹⁶⁰	26.42 ²⁸	49.430 ¹⁷⁸	10.39 ⁷
27.2	18.756 ²¹⁵	64.50 ¹⁴²	62.222 ¹³⁶	26.70 ³⁷	49.252 ¹⁵⁰	10.32 ¹⁶
Nov. 6.1	18.541 ¹⁷⁷	63.08 ¹⁸⁸	62.086 ¹⁰³	27.07 ⁴⁶	49.102 ¹¹³	10.16 ²⁴
16.1	18.364 ¹³⁶	61.20 ²²⁷	61.983 ⁶²	27.53 ⁵⁵	48.989 ⁷⁰	9.92 ²⁹
26.1	18.228 ⁸⁵	58.93 ²⁵⁸	61.921 ²⁰	28.08 ⁶⁴	48.919 ²²	9.63 ³²
Dec. 6.1	18.143 ³³	56.35 ²⁸⁸	61.901 ²⁴	28.72 ⁷³	48.897 ²⁸	9.31 ³³
16.0	18.110 ¹⁷	53.47 ³⁰⁶	61.925 ⁶⁹	29.45 ⁷⁹	48.925 ⁷⁷	8.98 ³²
26.0	18.127 ⁷⁵	50.41 ³¹⁷	61.994 ¹¹¹	30.24 ⁸⁴	49.002 ¹²³	8.66 ³⁰
36.0	18.202	47.24	62.105	31.08	49.125	8.36
Mean Place	17.852	36.92	60.250	42.20	47.006	20.15
Sec δ, Tan δ	1.281	+0.801	1.013	-0.161	1.123	-0.511
L α, L δ	-0.02	+0.1	0.00	+0.1	+0.01	+0.1
ω α, ω δ	-0.01	-1.0	0.00	-1.0	+0.01	-1.0

AUTHORITY

A. E.

398 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	λ Pavonis. Mag. 4.4		30 Sagittarii. Mag. 6.2		β Lyræ. Mag. 3.4-4.1	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 18 44	[°] ['] 62 16	^h ^m 18 46	[°] ['] 22 14	^h ^m 18 47	[°] ['] 33 16
Jan. 1.0	56.97 ^s 23	35.20 ^s 235	7.916 ^s 139	60.85 2	10.657 ^s 93	25.50 ^s 296
11.0	57.20 30	32.85 226	8.055 177	60.83 2	10.750 139	22.54 286
20.9	57.50 38	30.59 209	8.232 210	60.81 2	10.889 181	19.68 271
30.9	57.88 44	28.50 190	8.442 238	60.79 5	11.070 215	16.97 245
Feb. 9.9	58.32 49	26.60 167	8.680 260	60.74 9	11.285 248	14.52 205
19.9	58.81 52	24.93 140	8.940 278	60.65 15	11.533 274	12.47 164
Mar. 1.8	59.33 56	23.53 112	9.218 293	60.50 22	11.807 293	10.83 110
11.8	59.89 58	22.41 80	9.511 301	60.28 31	12.100 306	9.73 55
21.8	60.47 58	21.61 50	9.812 307	59.97 39	12.406 315	9.18 2
31.7	61.05 59	21.11 19	10.119 310	59.58 46	12.721 315	9.20 58
Apr. 10.7	61.64 58	20.92 14	10.429 308	59.12 51	13.036 309	9.78 111
20.7	62.22 56	21.06 48	10.737 301	58.61 54	13.345 300	10.89 159
30.7	62.78 54	21.54 79	11.038 289	58.07 54	13.645 281	12.48 202
May 10.6	63.32 49	22.33 106	11.327 272	57.53 51	13.926 260	14.50 236
20.6	63.81 45	23.39 137	11.599 250	57.02 47	14.186 226	16.86 264
30.6	64.26 39	24.76 160	11.849 221	56.55 39	14.412 190	19.50 283
June 9.6	64.65 31	26.36 182	12.070 187	56.16 30	14.602 154	22.33 290
19.5	64.96 25	28.18 199	12.257 149	55.86 20	14.756 109	25.23 294
29.5	65.21 16	30.17 210	12.406 106	55.66 10	14.865 60	28.17 288
July 9.5	65.37 7	32.27 213	12.512 61	55.56 1	14.925 14	31.05 275
19.4	65.44 2	34.40 213	12.573 14	55.57 9	14.939 34	33.80 256
29.4	65.42 10	36.53 204	12.587 32	55.66 17	14.905 81	36.36 232
Aug. 8.4	65.32 19	38.57 188	12.555 76	55.83 23	14.824 125	38.68 200
18.4	65.13 26	40.45 164	12.479 115	56.06 25	14.699 163	40.68 168
28.3	64.87 32	42.09 135	12.364 149	56.31 26	14.536 198	42.36 131
Sept. 7.3	64.55 37	43.44 98	12.215 174	56.57 25	14.338 222	43.67 93
17.3	64.18 40	44.42 59	12.041 189	56.82 20	14.116 236	44.60 49
27.3	63.78 42	45.01 16	11.852 195	57.02 16	13.880 243	45.09 8
Oct. 7.2	63.36 40	45.17 29	11.657 190	57.18 11	13.637 238	45.17 37
17.2	62.96 38	44.88 74	11.467 173	57.29 5	13.399 222	44.80 83
27.2	62.58 33	44.14 114	11.294 147	57.34 0	13.177 199	43.97 123
Nov. 6.1	62.25 26	43.00 150	11.147 112	57.34 3	12.978 168	42.74 167
16.1	61.99 19	41.50 183	11.035 71	57.31 6	12.810 130	41.07 204
26.1	61.80 10	39.67 207	10.964 26	57.25 5	12.680 82	39.03 237
Dec. 6.1	61.70 1	37.60 224	10.938 21	57.20 5	12.598 34	36.66 264
16.0	61.69 8	35.36 234	10.959 69	57.15 3	12.564 13	34.02 284
26.0	61.77 18	33.02 235	11.028 113	57.12 0	12.577 66	31.18 296
36.0	61.95	30.67	11.141	57.12	12.643	28.22
Mean Place	59.61	43.70	9.102	68.97	11.993	16.54
Sec δ , Tan δ	2.149	-1.903	1.080	-0.409	1.196	+0.656
L α , L δ	+0.05	+0.1	+0.01	+0.1	-0.02	+0.1
ω α , ω δ	+0.02	-1.0	+0.01	-1.0	-0.01	-1.0
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 399

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	σ Sagittarii. Mag. 2·1		ξ Sagittarii. Mag. 3·6		γ Lyrae. Mag. 3·3							
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.						
	^h 18	^m 50	^o 26	['] 23	^h 18	^m 53	^o 21	['] 12	^h 18	^m 56	^o 32	['] 34
Jan. 1·0	24·472 ₁₄₀	34·28 ₂₈	3·454 ₁₃₁	29·82 ₂	0·213 ₈₅	63·28 ₂₉₁						
11·0	24·612 ₁₇₇	34·00 ₂₈	3·585 ₁₆₈	29·84 ₂	0·298 ₁₂₇	60·37 ₂₈₄						
20·9	24·789 ₂₁₃	33·72 ₂₈	3·753 ₂₀₂	29·86 ₀	0·425 ₁₇₁	57·53 ₂₇₁						
30·9	25·002 ₂₄₄	33·44 ₃₀	3·955 ₂₃₀	29·86 ₃	0·596 ₂₀₆	54·82 ₂₄₃						
Feb. 9·9	25·246 ₂₆₃	33·14 ₂₉	4·185 ₂₅₃	29·83 ₈	0·802 ₂₃₉	52·39 ₂₀₈						
19·9	25·509 ₂₈₇	32·85 ₃₄	4·438 ₂₇₂	29·75 ₁₆	1·041 ₂₆₆	50·31 ₁₆₆						
Mar. 1·8	25·796 ₃₀₀	32·51 ₃₆	4·710 ₂₈₇	29·59 ₂₅	1·307 ₂₈₇	48·65 ₁₁₄						
11·8	26·096 ₃₁₀	32·15 ₄₁	4·997 ₂₉₇	29·34 ₃₄	1·594 ₃₀₀	47·51 ₅₉						
21·8	26·406 ₃₁₇	31·74 ₄₅	5·294 ₃₀₄	29·00 ₄₃	1·894 ₃₁₁	46·92 ₅						
31·7	26·723 ₃₂₁	31·29 ₄₅	5·598 ₃₀₈	28·57 ₅₁	2·205 ₃₁₄	46·87 ₅₃						
Apr. 10·7	27·044 ₃₁₉	30·84 ₄₉	5·906 ₃₀₆	28·06 ₅₇	2·519 ₃₁₁	47·40 ₁₀₄						
20·7	27·363 ₃₁₂	30·35 ₄₄	6·212 ₃₀₁	27·49 ₆₁	2·830 ₃₀₂	48·44 ₁₅₄						
30·7	27·675 ₃₀₃	29·91 ₄₅	6·513 ₂₉₁	26·88 ₆₂	3·132 ₂₈₅	49·98 ₁₉₇						
May 10·6	27·978 ₂₈₂	29·46 ₃₄	6·804 ₂₇₄	26·26 ₆₀	3·417 ₂₆₅	51·95 ₂₃₃						
20·6	28·260 ₂₆₂	29·12 ₃₁	7·078 ₂₅₃	25·66 ₅₅	3·682 ₂₃₃	54·28 ₂₅₈						
30·6	28·522 ₂₃₀	28·81 ₁₉	7·331 ₂₂₅	25·11 ₄₈	3·915 ₂₀₀	56·86 ₂₈₀						
June 9·6	28·752 ₁₉₇	28·62 ₁₀	7·556 ₁₉₂	24·63 ₃₉	4·115 ₁₆₃	59·66 ₂₈₉						
19·5	28·949 ₁₅₆	28·52 ₄	7·748 ₁₅₅	24·24 ₂₉	4·278 ₁₁₈	62·55 ₂₉₃						
29·5	29·105 ₁₁₄	28·56 ₁₄	7·903 ₁₁₂	23·95 ₁₇	4·396 ₇₀	65·48 ₂₈₉						
July 9·5	29·219 ₆₅	28·70 ₂₃	8·015 ₆₇	23·78 ₇	4·466 ₂₇	68·37 ₂₇₆						
19·4	29·284 ₂₀	28·93 ₃₂	8·082 ₂₀	23·71 ₃	4·493 ₂₅	71·13 ₂₅₈						
29·4	29·304 ₃₁	29·25 ₄₀	8·102 ₂₅	23·74 ₁₂	4·468 ₇₁	73·71 ₂₃₅						
Aug. 8·4	29·273 ₇₄	29·65 ₄₂	8·077 ₇₀	23·86 ₁₉	4·397 ₁₁₆	76·06 ₂₀₆						
18·4	29·199 ₁₁₆	30·07 ₄₃	8·007 ₁₀₉	24·05 ₂₃	4·281 ₁₅₅	78·12 ₁₇₂						
28·3	29·083 ₁₄₈	30·50 ₃₉	7·898 ₁₄₄	24·28 ₂₅	4·126 ₁₉₀	79·84 ₁₃₈						
Sept. 7·3	28·935 ₁₇₈	30·89 ₃₄	7·754 ₁₆₉	24·53 ₂₄	3·936 ₂₁₅	81·22 ₉₈						
17·3	28·757 ₁₉₅	31·23 ₂₉	7·585 ₁₈₇	24·77 ₂₂	3·721 ₂₂₈	82·20 ₅₇						
27·3	28·562 ₂₀₁	31·52 ₂₀	7·398 ₁₉₃	24·99 ₁₉	3·493 ₂₃₉	82·77 ₁₆						
Oct. 7·2	28·361 ₁₉₅	31·72 ₁₀	7·205 ₁₈₈	25·18 ₁₄	3·254 ₂₄₁	82·93 ₂₈						
17·2	28·166 ₁₇₉	31·82 ₃	7·017 ₁₇₄	25·32 ₁₀	3·013 ₂₂₁	82·65 ₇₄						
27·2	27·987 ₁₅₄	31·79 ₇	6·843 ₁₄₉	25·42 ₅	2·792 ₂₀₁	81·91 ₁₁₄						
Nov. 6·1	27·833 ₁₂₂	31·72 ₁₈	6·694 ₁₁₅	25·47 ₂	2·591 ₁₆₉	80·77 ₁₅₈						
16·1	27·711 ₇₅	31·54 ₂₃	6·579 ₇₆	25·49 ₁	2·422 ₁₃₃	79·19 ₁₉₇						
26·1	27·636 ₃₂	31·31 ₂₆	6·503 ₃₂	25·50 ₀	2·289 ₈₈	77·22 ₂₂₉						
Dec. 6·1	27·604 ₁₈	31·05 ₂₈	6·471 ₁₅	25·50 ₁	2·201 ₄₃	74·93 ₂₅₇						
16·0	27·622 ₆₆	30·77 ₂₉	6·486 ₆₁	25·51 ₃	2·158 ₆	72·36 ₂₇₈						
26·0	27·688 ₁₁₂	30·48 ₂₉	6·547 ₁₀₅	25·54 ₄	2·164 ₅₆	69·58 ₂₈₉						
36·0	27·800	30·19	6·652	25·58	2·220	66·69						
Mean Place	25·713	42·22	4·632	37·72	1·515	53·93						
Sec δ, Tan δ	1·116	-0·496	1·073	-0·388	1·187	+0·639						
L α, L δ	+0·01	+0·1	+0·01	+0·1	-0·02	+0·1						
ω α, ω δ	+0·01	-1·0	+0·01	-1·0	-0·01	-1·0						
AUTHORITY	A. E.		A. N.		A. E.							

400 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Aquilæ. Mag. 4.2		ζ Sagittarii. Mag. 2.7		ζ Aquilæ. Mag. 3.0	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 18 56	[°] ['] 14 57	^h ^m 18 57	[°] ['] 29 59	^h ^m 19 I	[°] ['] 13 44
Jan. 1.0	3.800 ¹⁰⁰	49.34 ²¹³	37.686 ¹³⁴	26.77 ⁵⁵	48.386 ⁹⁵	56.07 ²⁰⁵
11.0	3.900 ¹³⁶	47.21 ²⁰⁸	37.820 ¹⁷⁶	26.22 ⁵⁴	48.481 ¹³⁰	54.02 ²⁰²
21.0	4.036 ¹⁷⁰	45.13 ¹⁹⁷	37.996 ²¹²	25.68 ⁵³	48.611 ¹⁶⁵	52.00 ¹⁹⁰
30.9	4.206 ²⁰⁰	43.16 ¹⁷⁶	38.208 ²⁴³	25.15 ⁵²	48.776 ¹⁹⁷	50.10 ¹⁷¹
Feb. 9.9	4.406 ²²⁴	41.40 ¹⁴⁸	38.451 ²⁶⁹	24.63 ⁵¹	48.973 ²²⁰	48.39 ¹⁴⁵
19.9	4.630 ²⁴⁶	39.92 ¹¹⁴	38.720 ²⁸⁹	24.12 ⁵²	49.193 ²⁴²	46.94 ¹¹⁰
Mar. 1.9	4.876 ²⁶²	38.78 ⁷⁴	39.009 ³⁰⁵	23.60 ⁵²	49.435 ²⁵⁹	45.84 ⁷¹
11.8	5.138 ²⁷⁴	38.04 ³²	39.314 ³¹⁸	23.08 ⁵³	49.694 ²⁷⁴	45.13 ³⁰
21.8	5.412 ²⁸³	37.72 ¹³	39.632 ³²⁶	22.55 ⁵³	49.968 ²⁸¹	44.83 ¹²
31.8	5.695 ²⁸⁵	37.85 ⁵⁵	39.958 ³³⁰	22.02 ⁵¹	50.249 ²⁸⁵	44.95 ⁵⁴
Apr. 10.7	5.980 ²⁸⁴	38.40 ⁹⁶	40.288 ³³⁰	21.51 ⁴⁹	50.534 ²⁸⁵	45.49 ⁹⁴
20.7	6.264 ²⁷⁹	39.36 ¹³³	40.618 ³²⁴	21.02 ⁴⁴	50.819 ²⁸⁰	46.43 ¹²⁹
30.7	6.543 ²⁶⁶	40.69 ¹⁶⁴	40.942 ³¹⁴	20.58 ³⁷	51.099 ²⁶⁸	47.72 ¹⁵⁹
May 10.7	6.809 ²⁴⁹	42.33 ¹⁹⁰	41.256 ²⁹⁷	20.21 ²⁸	51.367 ²⁵²	49.31 ¹⁸⁶
20.6	7.058 ²²⁶	44.23 ²⁰⁷	41.553 ²⁷⁴	19.93 ¹⁸	51.619 ²³²	51.17 ²⁰⁴
30.6	7.284 ¹⁹⁹	46.30 ²²⁰	41.827 ²⁴⁵	19.75 ⁵	51.851 ²⁰¹	53.21 ²¹⁷
June 9.6	7.483 ¹⁶⁵	48.50 ²²⁵	42.072 ²¹⁰	19.70 ⁸	52.052 ¹⁷⁰	55.38 ²²⁰
19.6	7.648 ¹²⁸	50.75 ²²³	42.282 ¹⁷⁰	19.78 ²¹	52.222 ¹³⁵	57.58 ²¹⁹
29.5	7.776 ⁸⁷	52.98 ²¹⁶	42.452 ¹²⁴	19.99 ³³	52.357 ⁹³	59.77 ²¹²
July 9.5	7.863 ⁴⁵	55.14 ²⁰⁵	42.576 ⁷⁷	20.32 ⁴³	52.450 ⁵¹	61.89 ¹⁹⁹
19.5	7.908 ^I	57.19 ¹⁸⁷	42.653 ²⁶	20.75 ⁵³	52.501 ⁶	63.88 ¹⁸⁵
29.4	7.909 ⁴²	59.06 ¹⁶⁷	42.679 ²³	21.28 ⁵⁸	52.507 ³⁶	65.73 ¹⁶⁵
Aug. 8.4	7.867 ⁸³	60.73 ¹⁴⁴	42.656 ⁷²	21.86 ⁶⁰	52.471 ⁷⁸	67.38 ¹⁴¹
18.4	7.784 ¹²⁰	62.17 ¹¹⁸	42.584 ¹¹⁴	22.46 ⁶⁰	52.393 ¹¹³	68.79 ¹¹⁷
28.4	7.664 ¹⁵⁰	63.35 ⁹¹	42.470 ¹⁵²	23.06 ⁵⁵	52.280 ¹⁴⁵	69.96 ⁹¹
Sept. 7.3	7.514 ¹⁷⁵	64.26 ⁶²	42.318 ¹⁸¹	23.61 ⁴⁸	52.135 ¹⁷⁰	70.87 ⁶¹
17.3	7.339 ¹⁹¹	64.88 ³²	42.137 ²⁰⁰	24.09 ³⁷	51.965 ¹⁸⁸	71.48 ³⁴
27.3	7.148 ¹⁹⁷	65.20 ²	41.937 ²⁰⁸	24.46 ²⁴	51.777 ¹⁹⁴	71.82 ³
Oct. 7.3	6.951 ¹⁹³	65.22 ²⁹	41.729 ²⁰⁴	24.70 ¹¹	51.583 ¹⁹¹	71.85 ²⁶
17.2	6.758 ¹⁸¹	64.93 ⁶⁰	41.525 ¹⁸⁹	24.81 ³	51.392 ¹⁸⁰	71.59 ⁵³
27.2	6.577 ¹⁵⁹	64.33 ⁹⁰	41.336 ¹⁶³	24.78 ¹⁷	51.212 ¹⁶⁰	71.06 ⁸⁷
Nov. 6.2	6.418 ¹³⁰	63.43 ¹¹⁹	41.173 ¹²⁹	24.61 ²⁸	51.052 ¹³¹	70.19 ¹¹⁵
16.1	6.288 ⁹⁵	62.24 ¹⁴⁷	41.044 ⁸⁷	24.33 ³⁸	50.921 ⁹⁴	69.04 ¹⁴⁰
26.1	6.193 ⁵⁴	60.77 ¹⁷⁰	40.957 ³⁹	23.95 ⁴⁶	50.827 ⁵⁹	67.64 ¹⁶²
Dec. 6.1	6.139 ¹¹	59.07 ¹⁹²	40.918 ¹⁰	23.49 ⁴⁹	50.768 ¹⁴	66.02 ¹⁸⁴
16.1	6.128 ³¹	57.15 ²⁰⁶	40.928 ⁵⁹	23.00 ⁵²	50.754 ²⁶	64.18 ¹⁹⁹
26.0	6.159 ⁷³	55.09 ²¹⁴	40.987 ¹⁰⁷	22.48 ⁵²	50.780 ⁶⁹	62.19 ²⁰⁷
36.0	6.232	52.95	41.094	21.96	50.849	60.12
Mean Place	4.907	40.60	38.984	34.36	49.482	47.29
Sec δ, Tan δ	1.035	+0.267	1.155	-0.577	1.030	+0.245
L α, L δ	-0.01	+0.1	+0.01	+0.1	-0.01	+0.1
ω α, ω δ	0.00	-1.0	+0.01	-1.0	0.00	-1.0
AUTHORITY	A. N.		A. N.		A. E.	

APPARENT PLACES OF STARS, 1922. 401

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	τ Sagittarii. Mag. 3·4		λ Aquilæ. Mag. 3·6		α Coronæ Aust. Mag. 4·1	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 19 2	° ′ 27 46	h m 19 2	° ′ 4 59	h m 19 4	° ′ 38 1
Jan. 1·0	3·035 ¹²⁸	61·25 ⁴²	5·490 ¹⁰⁷	53·78 ¹⁰⁰	8·495 ¹³⁷	32·19 ¹⁰⁶
11·0	3·163 ¹⁶⁸	60·83 ⁴²	5·597 ¹⁴⁵	54·78 ⁹⁸	8·632 ¹⁸³	31·13 ¹⁰⁵
21·0	3·331 ²⁰³	60·41 ⁴²	5·742 ¹⁷⁴	55·76 ⁹¹	8·815 ²²³	30·08 ¹⁰²
30·9	3·534 ²³⁴	59·99 ⁴²	5·916 ²⁰⁴	56·67 ⁷⁹	9·038 ²⁵⁷	29·06 ⁹⁸
Feb. 9·9	3·768 ²⁵⁹	59·57 ⁴⁴	6·120 ²²⁶	57·46 ⁶⁰	9·295 ²⁸⁷	28·08 ⁹³
19·9	4·027 ²⁸¹	59·13 ⁴⁶	6·346 ²⁴⁵	58·06 ⁴³	9·582 ³¹¹	27·15 ⁸⁷
Mar. 1·9	4·308 ²⁹⁷	58·67 ⁴⁹	6·591 ²⁶¹	58·49 ¹⁹	9·893 ³³³	26·28 ⁸⁰
11·8	4·605 ³⁰⁹	58·18 ⁵²	6·852 ²⁷³	58·68 ⁸	10·226 ³⁴⁵	25·48 ⁷³
21·8	4·914 ³¹⁹	57·66 ⁵⁴	7·125 ²⁸¹	58·60 ³²	10·571 ³⁵⁵	24·75 ⁶⁵
31·8	5·233 ³²⁴	57·12 ⁵⁵	7·406 ²⁸⁶	58·28 ⁵⁸	10·926 ³⁶¹	24·10 ⁵⁶
Apr. 10·7	5·557 ³²⁴	56·57 ⁵⁵	7·692 ²⁸⁷	57·70 ⁸⁰	11·287 ³⁶²	23·54 ⁴³
20·7	5·881 ³¹⁹	56·02 ⁵²	7·979 ²⁸²	56·90 ¹⁰⁰	11·649 ³⁵⁶	23·11 ³²
30·7	6·200 ³¹⁰	55·50 ⁴⁸	8·261 ²⁷³	55·90 ¹¹³	12·005 ³⁴⁶	22·79 ¹⁸
May 10·7	6·510 ²⁹⁴	55·02 ³⁹	8·534 ²⁵⁹	54·77 ¹²⁵	12·351 ³²⁶	22·61 ¹
20·6	6·804 ²⁷²	54·63 ³⁰	8·793 ²³⁹	53·52 ¹³³	12·677 ³⁰⁴	22·60 ¹⁴
30·6	7·076 ²⁴⁴	54·33 ¹⁸	9·032 ²¹³	52·19 ¹³²	12·981 ²⁷²	22·74 ³³
June 9·6	7·320 ²¹⁰	54·15 ⁶	9·245 ¹⁸²	50·87 ¹³¹	13·253 ²³⁵	23·07 ⁴⁹
19·6	7·530 ¹⁷¹	54·09 ⁷	9·427 ¹⁴⁶	49·56 ¹²³	13·488 ¹⁸⁸	23·56 ⁶³
29·5	7·701 ¹²⁷	54·16 ¹⁹	9·573 ¹⁰⁸	48·33 ¹¹⁶	13·676 ¹⁴²	24·19 ⁷⁹
July 9·5	7·828 ⁸⁰	54·35 ³¹	9·681 ⁶⁵	47·17 ¹⁰²	13·818 ⁸⁹	24·98 ⁸⁹
19·5	7·908 ³⁰	54·66 ⁴¹	9·746 ²³	46·15 ⁸⁸	13·907 ³³	25·87 ⁹⁷
29·4	7·938 ¹⁹	55·07 ⁴⁷	9·769 ²¹	45·27 ⁷³	13·940 ²¹	26·84 ¹⁰⁰
Aug. 8·4	7·919 ⁶⁵	55·54 ⁵²	9·748 ⁶⁴	44·54 ⁵⁸	13·919 ⁷⁶	27·84 ¹⁰¹
18·4	7·854 ¹⁰⁹	56·06 ⁵³	9·684 ¹⁰⁰	43·96 ⁴³	13·843 ¹²⁰	28·85 ⁹⁴
28·4	7·745 ¹⁴⁶	56·59 ⁵⁰	9·584 ¹³⁴	43·53 ²⁹	13·723 ¹⁶⁴	29·79 ⁸⁴
Sept. 7·3	7·599 ¹⁷⁵	57·09 ⁴⁵	9·450 ¹⁵⁶	43·24 ¹⁴	13·559 ¹⁹⁷	30·63 ⁷¹
17·3	7·424 ¹⁹⁴	57·54 ³⁸	9·294 ¹⁷⁵	43·10 ²	13·362 ²¹⁹	31·34 ⁵³
27·3	7·230 ²⁰³	57·92 ²⁶	9·119 ¹⁸²	43·08 ¹²	13·143 ²³⁰	31·87 ³³
Oct. 7·3	7·027 ²⁰⁰	58·18 ¹⁶	8·937 ¹⁷⁸	43·20 ²¹	12·913 ²²⁵	32·20 ¹⁰
17·2	6·827 ¹⁸⁷	58·34 ³	8·759 ¹⁶⁸	43·41 ³⁷	12·688 ²¹³	32·30 ¹²
27·2	6·640 ¹⁶¹	58·37 ⁸	8·591 ¹⁴⁵	43·78 ⁴⁷	12·475 ¹⁸⁶	32·18 ³³
Nov. 6·2	6·479 ¹²⁹	58·29 ¹⁷	8·446 ¹¹⁷	44·25 ⁶¹	12·289 ¹⁵⁰	31·85 ⁵²
16·1	6·350 ⁸⁸	58·12 ²⁶	8·329 ⁸¹	44·86 ⁷¹	12·139 ¹⁰⁴	31·33 ⁷¹
26·1	6·262 ⁴¹	57·86 ³²	8·248 ⁴²	45·57 ⁸²	12·035 ⁵⁴	30·62 ⁸⁴
Dec. 6·1	6·221 ⁵	57·54 ³⁷	8·206 ¹	46·39 ⁹¹	11·981 ²	29·78 ⁹³
16·1	6·226 ⁵⁵	57·17 ³⁸	8·207 ⁴⁵	47·30 ⁹⁸	11·979 ⁵⁵	28·85 ¹⁰¹
26·0	6·281 ¹⁰⁰	56·79 ³⁹	8·252 ⁸³	48·28 ¹⁰²	12·034 ¹⁰⁶	27·84 ¹⁰³
36·0	6·381	56·40	8·335	49·30	12·140	26·81
Mean Place	4·306	68·67	6·568	61·84	9·970	39·30
Sec δ, Tan δ	1·130	-0·527	1·004	-0·087	1·269	-0·782
L α, L δ	+0·01	+0·1	0·00	+0·1	+0·02	+0·1
ω α, ω δ	+0·01	-1·0	0·00	-1·0	+0·01	-1·0
AUTHORITY			. A. E.		A. E.	

402 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	π Sagittarii. Mag. 3.0		ψ Sagittarii. Mag. 4.9		δ Draconis. Mag. 3.2	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h ^m 19 5	^o ['] 21 8	^h ^m 19 10	^o ['] 25 23	^h ^m 19 12	^o ['] 67 31
Jan. 1.0	6.370 ¹¹⁷	48.29 ¹	44.287 ¹¹⁶	25.63 ³⁰	29.48 ²	39.39 ³⁴⁹
11.0	6.487 ¹⁵⁷	48.28 ²	44.403 ¹⁵⁶	25.33 ³¹	29.46 ⁹	35.90 ³⁵³
21.0	6.644 ¹⁹¹	48.26 ⁵	44.559 ¹⁹⁰	25.02 ³²	29.55 ²⁰	32.37 ³⁴¹
30.9	6.835 ²¹⁹	48.21 ⁹	44.749 ²²²	24.70 ³⁶	29.75 ³⁰	28.96 ³¹⁶
Feb. 9.9	7.054 ²⁴³	48.12 ¹⁴	44.971 ²⁴⁶	24.34 ³⁸	30.05 ³⁸	25.80 ²⁸¹
19.9	7.297 ²⁶²	47.98 ²³	45.217 ²⁶⁹	23.96 ⁴⁴	30.43 ⁴⁶	22.99 ²³²
Mar. 1.9	7.559 ²⁸²	47.75 ³³	45.486 ²⁸⁷	23.52 ⁴⁹	30.89 ⁵³	20.67 ¹⁷⁸
11.8	7.841 ²⁹³	47.42 ⁴²	45.773 ³⁰⁰	23.03 ⁵⁴	31.42 ⁵⁷	18.89 ¹¹⁶
21.8	8.134 ³⁰²	47.00 ⁵¹	46.073 ³¹⁰	22.49 ⁶⁰	31.99 ⁶⁰	17.73 ⁵²
31.8	8.436 ³⁰⁷	46.49 ⁶⁰	46.383 ³¹⁶	21.89 ⁶³	32.59 ⁶²	17.21 ¹⁵
Apr. 10.7	8.743 ³⁰⁸	45.89 ⁶⁵	46.699 ³¹⁹	21.26 ⁶⁵	33.21 ⁶⁰	17.36 ⁸⁰
20.7	9.051 ³⁰⁶	45.24 ⁶⁸	47.018 ³¹⁸	20.61 ⁶⁵	33.81 ⁵⁷	18.16 ¹³⁸
30.7	9.357 ²⁹⁵	44.56 ⁷⁰	47.336 ³⁰⁵	19.96 ⁶¹	34.38 ⁵⁴	19.54 ¹⁹⁸
May 10.7	9.652 ²⁸²	43.86 ⁶⁹	47.641 ²⁹³	19.35 ⁵⁵	34.92 ⁴⁸	21.52 ²⁴⁴
20.6	9.934 ²⁶²	43.17 ⁶⁰	47.934 ²⁷³	18.80 ⁴⁷	35.40 ⁴¹	23.96 ²⁸³
30.6	10.196 ²³⁴	42.57 ⁵⁴	48.207 ²⁴⁸	18.33 ³⁶	35.81 ³³	26.79 ³¹⁴
June 9.6	10.430 ²⁰²	42.03 ⁴⁴	48.455 ²¹³	17.97 ²⁵	36.14 ²³	29.93 ³³⁷
19.6	10.632 ¹⁶⁶	41.59 ³⁴	48.668 ¹⁷⁶	17.72 ¹⁰	36.37 ¹⁵	33.30 ³⁴⁸
29.5	10.798 ¹²³	41.25 ²²	48.844 ¹³⁴	17.62 ²	36.52 ⁴	36.78 ³⁵²
July 9.5	10.921 ⁷⁸	41.03 ¹⁰	48.978 ⁸⁷	17.64 ¹⁴	36.56 ⁶	40.30 ³⁴⁶
19.5	10.999 ³²	40.93 ³	49.065 ³⁸	17.78 ²⁶	36.50 ¹⁵	43.76 ³³¹
29.5	11.031 ¹⁴	40.96 ¹²	49.103 ¹⁰	18.04 ³⁵	36.35 ²⁵	47.07 ³¹⁰
Aug. 8.4	11.017 ⁶⁰	41.08 ¹⁹	49.093 ⁵⁶	18.39 ⁴¹	36.10 ³⁴	50.17 ²⁸³
18.4	10.957 ¹⁰¹	41.27 ²⁴	49.037 ¹⁰⁰	18.80 ⁴⁴	35.76 ⁴¹	53.00 ²⁴⁸
28.4	10.856 ¹³⁷	41.51 ²⁸	48.937 ¹³⁷	19.24 ⁴⁵	35.35 ⁴⁸	55.48 ²⁰⁸
Sept. 7.3	10.719 ¹⁶²	41.79 ²⁹	48.800 ¹⁶⁷	19.69 ⁴²	34.87 ⁵³	57.56 ¹⁶⁴
17.3	10.557 ¹⁸⁴	42.08 ²⁶	48.633 ¹⁸⁶	20.11 ³⁷	34.34 ⁵⁸	59.20 ¹¹⁵
27.3	10.373 ¹⁹¹	42.34 ²⁴	48.447 ¹⁹⁷	20.48 ³⁰	33.76 ⁵⁹	60.35 ⁶⁴
Oct. 7.3	10.182 ¹⁸⁹	42.58 ¹⁹	48.250 ¹⁹⁶	20.78 ²⁰	33.17 ⁶¹	60.99 ¹¹
17.2	9.993 ¹⁷⁶	42.77 ¹⁴	48.054 ¹⁸⁴	20.98 ¹¹	32.56 ⁵⁹	61.10 ⁴⁵
27.2	9.817 ¹⁵⁴	42.91 ¹⁰	47.870 ¹⁶¹	21.09 ²	31.97 ⁵⁶	60.65 ¹⁰²
Nov. 6.2	9.663 ¹²⁵	43.01 ⁶	47.709 ¹³¹	21.11 ⁷	31.41 ⁵²	59.63 ¹⁵³
16.2	9.538 ⁸³	43.07 ³	47.578 ⁹¹	21.04 ¹⁴	30.89 ⁴⁵	58.10 ²⁰⁷
26.1	9.455 ⁴³	43.10 ³	47.487 ⁴⁹	20.90 ¹⁹	30.44 ³⁸	56.03 ²⁵³
Dec. 6.1	9.412 ³	43.13 ⁰	47.438 ²	20.71 ²²	30.06 ²⁹	53.50 ²⁹²
16.1	9.415 ⁵⁰	43.13 ¹	47.436 ⁴⁵	20.49 ²⁶	29.77 ¹⁹	50.58 ³²⁴
26.0	9.465 ⁹²	43.14 ²	47.481 ⁹⁰	20.23 ²⁹	29.58 ⁹	47.34 ³⁴⁶
36.0	9.557	43.16	47.571	19.94	29.49	43.88
Mean Place Sec δ , Tan δ	7.556 1.072	55.76 -0.387	45.528 1.107	32.74 -0.475	32.52 2.615	27.48 +2.417
L α , L δ ω α , ω δ	+0.01 +0.01	+0.1 -1.0	+0.01 +0.01	+0.1 -1.0	-0.06 -0.05	+0.1 -1.0
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 403

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ω Aquilæ. Mag. 5.1		59 G. Telescopii. Mag. 5.6		δ Aquilæ. Mag. 3.4			
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.		
	^h 19	^m 14	[°] 11	['] 27	^h 19	^m 21	[°] 2	['] 57
Jan. 1.0	8.247	83	22.23	190	30.474	135	53.53	205
11.0	8.330	120	20.33	188	30.609	199	51.48	207
21.0	8.450	155	18.45	176	30.808	257	49.41	200
30.9	8.605	185	16.69	159	31.065	310	47.41	191
Feb. 9.9	8.790	211	15.10	135	31.375	353	45.50	178
19.9	9.001	233	13.75	103	31.728	391	43.72	161
Mar. 1.9	9.234	252	12.72	66	32.119	422	42.11	143
11.8	9.486	266	12.06	27	32.541	445	40.68	121
21.8	9.752	277	11.79	12	32.986	464	39.47	99
31.8	10.029	284	11.91	55	33.450	474	38.48	73
Apr. 10.7	10.313	286	12.46	91	33.924	478	37.75	47
20.7	10.599	283	13.37	124	34.402	473	37.28	19
30.7	10.882	273	14.61	155	34.875	460	37.09	10
May 10.7	11.155	260	16.16	178	35.335	439	37.19	39
20.6	11.415	238	17.94	196	35.774	408	37.58	67
30.6	11.653	213	19.90	209	36.182	367	38.25	95
June 9.6	11.866	182	21.99	212	36.549	319	39.20	120
19.6	12.048	147	24.11	212	36.868	262	40.40	142
29.5	12.195	107	26.23	203	37.130	197	41.82	160
July 9.5	12.302	64	28.26	193	37.327	128	43.42	175
19.5	12.366	22	30.19	177	37.455	54	45.17	181
29.5	12.388	23	31.96	159	37.509	18	46.98	183
Aug. 8.4	12.365	65	33.55	137	37.491	90	48.81	179
18.4	12.300	103	34.92	113	37.401	157	50.60	165
28.4	12.197	137	36.05	89	37.244	215	52.25	148
Sept. 7.3	12.060	161	36.94	61	37.029	263	53.73	122
17.3	11.899	180	37.55	36	36.766	298	54.95	92
27.3	11.719	188	37.91	6	36.468	318	55.87	57
Oct. 7.3	11.531	189	37.97	19	36.150	321	56.44	19
17.2	11.342	178	37.78	48	35.829	308	56.63	19
27.2	11.164	162	37.30	77	35.521	280	56.44	58
Nov. 6.2	11.002	133	36.53	102	35.241	237	55.86	94
16.2	10.869	102	35.51	126	35.004	183	54.92	126
26.1	10.767	62	34.25	149	34.821	118	53.66	154
Dec. 6.1	10.705	24	32.76	167	34.703	49	52.12	176
16.1	10.681	18	31.09	182	34.654	22	50.36	191
26.0	10.699	59	29.27	191	34.676	92	48.45	201
36.0	10.758		27.36		34.768		46.44	
Mean Place	9.315		13.38		32.637		59.16	
Sec δ , Tan δ	1.020		+0.203		1.721		-1.401	
L α , L δ	-0.01		+0.1		+0.03		+0.1	
ω α , ω δ	0.00		-0.9		+0.03		-0.9	
AUTHORITY	A. E.				A. E.			

404 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	6 Vulpeculæ. Mag. 4·6		β Cygni. Mag. 3·2		μ Aquilæ. Mag. 4·7	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 19 25	° ′ 24 30	h m 19 27	° ′ 27 47	h m 19 30	° ′ 7 12
Jan. 1·0	26·430 ^s ₅₉	31·67 ^s ₂₄₉	33·366 ^s ₅₇	52·00 ^s ₂₆₃	15·735 ^s ₇₂	53·46 ^s ₁₆₂
11·0	26·489 ₁₀₃	29·18 ₂₄₈	33·423 ₉₅	49·37 ₂₆₂	15·807 ₁₀₈	51·84 ₁₆₁
21·0	26·592 ₁₃₉	26·70 ₂₃₉	33·518 ₁₃₇	46·75 ₂₅₃	15·915 ₁₄₂	50·23 ₁₅₂
30·9	26·731 ₁₇₃	24·31 ₂₁₈	33·655 ₁₇₃	44·22 ₂₃₀	16·057 ₁₇₂	48·71 ₁₃₇
Feb. 9·9	26·904 ₂₀₄	22·13 ₁₉₀	33·828 ₂₀₄	41·92 ₂₀₁	16·229 ₁₉₈	47·34 ₁₁₅
19·9	27·108 ₂₃₂	20·23 ₁₅₂	34·032 ₂₃₅	39·91 ₁₆₆	16·427 ₂₂₂	46·19 ₈₇
Mar. 1·9	27·340 ₂₅₅	18·71 ₁₀₉	34·267 ₂₅₉	38·25 ₁₁₈	16·649 ₂₄₂	45·32 ₅₄
11·8	27·595 ₂₇₃	17·62 ₆₂	34·526 ₂₇₈	37·07 ₆₉	16·891 ₂₅₈	44·78 ₂₀
21·8	27·868 ₂₈₇	17·00 ₁₁	34·804 ₂₉₄	36·38 ₁₇	17·149 ₂₇₂	44·58 ₁₈
31·8	28·155 ₂₉₆	16·89 ₃₉	35·098 ₃₀₁	36·21 ₃₄	17·421 ₂₈₁	44·76 ₅₄
Apr. 10·8	28·451 ₂₉₉	17·28 ₈₈	35·399 ₃₀₄	36·55 ₈₆	17·702 ₂₈₅	45·30 ₈₉
20·7	28·750 ₂₉₇	18·16 ₁₃₃	35·703 ₃₀₄	37·41 ₁₃₂	17·987 ₂₈₆	46·19 ₁₁₉
30·7	29·047 ₂₈₇	19·49 ₁₇₂	36·007 ₂₉₂	38·73 ₁₇₆	18·273 ₂₇₉	47·38 ₁₄₆
May 10·7	29·334 ₂₇₃	21·21 ₂₀₆	36·299 ₂₇₈	40·49 ₂₁₁	18·552 ₂₆₈	48·84 ₁₆₇
20·6	29·607 ₂₅₁	23·27 ₂₃₃	36·577 ₂₅₈	42·60 ₂₄₁	18·820 ₂₅₁	50·51 ₁₈₃
30·6	29·858 ₂₂₃	25·60 ₂₅₂	36·835 ₂₂₅	45·01 ₂₅₉	19·071 ₂₂₇	52·34 ₁₉₂
June 9·6	30·081 ₁₉₀	28·12 ₂₆₃	37·060 ₁₉₀	47·60 ₂₇₅	19·298 ₁₉₈	54·26 ₁₉₆
19·6	30·271 ₁₅₂	30·75 ₂₆₈	37·250 ₁₅₄	50·35 ₂₇₉	19·496 ₁₆₄	56·22 ₁₉₄
29·5	30·423 ₁₀₉	33·43 ₂₆₄	37·404 ₁₁₀	53·14 ₂₇₈	19·660 ₁₂₅	58·16 ₁₈₇
July 9·5	30·532 ₆₅	36·07 ₂₅₅	37·514 ₆₄	55·92 ₂₆₉	19·785 ₈₃	60·03 ₁₇₆
19·5	30·597 ₁₇	38·62 ₂₄₀	37·578 ₁₅	58·61 ₂₅₅	19·868 ₃₉	61·79 ₁₆₀
29·5	30·614 ₂₈	41·02 ₂₂₀	37·593 ₃₀	61·16 ₂₃₅	19·907 ₄	63·39 ₁₄₃
Aug. 8·4	30·586 ₇₃	43·22 ₁₉₆	37·563 ₇₆	63·51 ₂₀₉	19·903 ₄₇	64·82 ₁₂₂
18·4	30·513 ₁₁₄	45·18 ₁₆₇	37·487 ₁₁₈	65·60 ₁₈₀	19·856 ₈₇	66·04 ₁₀₀
28·4	30·399 ₁₄₈	46·85 ₁₃₆	37·369 ₁₅₄	67·40 ₁₄₆	19·769 ₁₂₁	67·04 ₈₀
Sept. 7·3	30·251 ₁₇₈	48·21 ₁₀₃	37·215 ₁₈₅	68·86 ₁₁₆	19·648 ₁₄₉	67·84 ₅₃
17·3	30·073 ₁₉₈	49·24 ₆₇	37·030 ₂₀₄	70·02 ₇₅	19·499 ₁₇₀	68·37 ₃₀
27·3	29·875 ₂₁₀	49·91 ₃₁	36·826 ₂₁₅	70·77 ₄₀	19·329 ₁₈₁	68·67 ₇
Oct. 7·3	29·665 ₂₁₁	50·22 ₇	36·611 ₂₁₈	71·17 ₄	19·148 ₁₈₃	68·74 ₁₇
17·2	29·454 ₂₀₄	50·15 ₄₆	36·393 ₂₁₅	71·13 ₄₅	18·965 ₁₇₆	68·57 ₄₀
27·2	29·250 ₁₈₇	49·69 ₈₄	36·178 ₁₉₅	70·68 ₈₄	18·789 ₁₅₉	68·17 ₆₄
Nov. 6·2	29·063 ₁₆₂	48·85 ₁₁₉	35·983 ₁₇₂	69·84 ₁₂₃	18·630 ₁₃₆	67·53 ₈₇
16·2	28·901 ₁₃₀	47·66 ₁₅₆	35·811 ₁₃₈	68·61 ₁₆₀	18·494 ₁₀₅	66·66 ₁₀₇
26·1	28·771 ₉₂	46·10 ₁₈₆	35·673 ₁₀₃	67·01 ₁₉₄	18·389 ₆₉	65·59 ₁₂₇
Dec. 6·1	28·679 ₅₃	44·24 ₂₁₄	35·570 ₅₉	65·07 ₂₂₄	18·320 ₃₁	64·32 ₁₄₂
16·1	28·626 ₉	42·10 ₂₃₄	35·511 ₁₇	62·83 ₂₄₆	18·289 ₈	62·90 ₁₅₆
26·0	28·617 ₃₄	39·76 ₂₄₈	35·494 ₂₅	60·37 ₂₅₉	18·297 ₄₈	61·34 ₁₆₄
36·0	28·651	37·28	35·519	57·78	18·345	59·70
Mean Place	27·555	21·68	34·521	41·69	16·769	44·79
Sec δ, Tan δ	1·099	+0·456	1·130	+0·527	1·008	+0·126
L α, L δ	-0·01	+0·1	-0·01	+0·1	0·00	+0·2
ω α, ω δ	-0·01	-0·9	-0·01	-0·9	0·00	-0·9

AUTHORITY

A. E.

APPARENT PLACES OF STARS, 1922. 405

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	h Sagittarii. Mag. 4.7		54 Sagittarii. Mag. 5.5		f Sagittarii. Mag. 5.1	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h 19	^m 31	^h 19	^m 36	^h 19	^m 41
	[°] 25	['] 3	[°] 16	['] 28	[°] 19	['] 56
Jan. 1.0	56.484 ^s	19.05 ^s	14.227 ^s	17.10 ^s	47.636 ^s	52.83 ^s
11.0	56.577 ⁹³	18.72 ³³	14.310 ⁸³	17.31 ²¹	47.715 ⁷⁹	52.81 ²
21.0	56.709 ¹³²	18.36 ³⁶	14.429 ¹¹⁹	17.47 ¹⁶	47.831 ¹¹⁶	52.74 ⁷
31.0	56.876 ¹⁶⁷	17.96 ⁴⁰	14.583 ¹⁵⁴	17.58 ¹¹	47.982 ¹⁵¹	52.62 ¹²
Feb. 9.9	57.076 ²⁰⁰	17.52 ⁴⁴	14.766 ¹⁸³	17.61 ³	48.165 ¹⁸³	52.42 ²⁰
19.9	57.304 ²²⁸	17.02 ⁵⁰	14.977 ²¹¹	17.54 ⁷	48.374 ²⁰⁹	52.14 ²⁸
Mar. 1.9	57.554 ²⁵⁰	16.46 ⁵⁶	15.211 ²³⁴	17.34 ²⁰	48.608 ²³⁴	51.76 ³⁸
11.8	57.827 ²⁷³	15.83 ⁶³	15.465 ²⁵⁴	17.00 ³⁴	48.864 ²⁵⁶	51.26 ⁵⁰
21.8	58.117 ²⁹⁰	15.14 ⁶⁹	15.735 ²⁷⁰	16.52 ⁴⁸	49.137 ²⁷³	50.65 ⁶¹
31.8	58.419 ³⁰²	14.38 ⁷⁶	16.021 ²⁸⁶	15.89 ⁶³	49.425 ²⁸⁸	49.92 ⁷³
Apr. 10.8	58.732 ³¹³	13.59 ⁷⁹	16.315 ²⁹⁴	15.12 ⁷⁷	49.724 ²⁹⁹	49.10 ⁸⁰
20.7	59.051 ³¹⁹	12.78 ⁸¹	16.617 ³⁰²	14.25 ⁸⁷	50.031 ³⁰⁷	48.20 ⁹²
30.7	59.371 ³²⁰	11.97 ⁸¹	16.919 ³⁰²	13.29 ⁹⁶	50.340 ³⁰⁹	47.25 ⁹⁵
May 10.7	59.685 ³¹⁴	11.20 ⁷⁷	17.217 ²⁹⁸	12.28 ¹⁰¹	50.645 ³⁰⁵	46.29 ⁹⁶
20.7	59.988 ³⁰³	10.48 ⁷²	17.506 ²⁸⁹	11.27 ¹⁰¹	50.942 ²⁹⁷	45.35 ⁹⁴
30.6	60.275 ²⁸⁷	9.86 ⁶²	17.779 ²⁷³	10.28 ⁹⁹	51.223 ²⁸¹	44.47 ⁸⁸
June 9.6	60.537 ²⁶²	9.36 ⁵⁰	18.030 ²⁵¹	9.35 ⁹³	51.482 ²⁵⁹	43.67 ⁸⁰
19.6	60.767 ²³⁰	9.00 ³⁶	18.252 ²²²	8.51 ⁸⁴	51.713 ²³¹	42.98 ⁶⁹
29.5	60.963 ¹⁹⁶	8.78 ²²	18.440 ¹⁸⁸	7.79 ⁷²	51.910 ¹⁹⁷	42.43 ⁵⁵
July 9.5	61.117 ¹⁵⁴	8.69 ⁹	18.588 ¹⁴⁸	7.20 ⁵⁹	52.066 ¹⁵⁶	42.03 ⁴⁰
19.5	61.225 ¹⁰⁸	8.77 ⁸	18.694 ¹⁰⁶	6.76 ⁴⁴	52.179 ¹¹³	41.78 ²⁵
29.5	61.283 ⁵⁸	8.97 ²⁰	18.752 ⁵⁸	6.47 ²⁹	52.245 ⁶⁶	41.68 ¹⁰
Aug. 8.4	61.294 ³⁷	9.31 ³⁴	18.766 ¹⁴	6.31 ¹⁶	52.264 ¹⁹	41.72 ⁴
18.4	61.257 ¹¹	9.73 ⁴²	18.733 ³³	6.28 ³	52.236 ²⁸	41.88 ¹⁶
28.4	61.174 ⁸³	10.21 ⁴⁸	18.658 ⁷⁵	6.36 ⁸	52.164 ⁷²	42.13 ²⁵
Sept. 7.4	61.052 ¹²²	10.71 ⁵⁰	18.545 ¹¹³	6.53 ¹⁷	52.053 ¹¹¹	42.45 ³²
17.3	60.899 ¹⁵³	11.21 ⁵⁰	18.401 ¹⁴⁴	6.77 ²⁴	51.910 ¹⁴³	42.82 ³⁷
27.3	60.721 ¹⁷⁸	11.67 ⁴⁶	18.234 ¹⁶⁷	7.04 ²⁷	51.742 ¹⁶⁸	43.20 ³⁸
Oct. 7.3	60.530 ¹⁹¹	12.07 ⁴⁰	18.054 ¹⁸⁰	7.34 ³⁰	51.559 ¹⁸³	43.58 ³⁸
17.2	60.336 ¹⁹⁴	12.38 ³¹	17.871 ¹⁸³	7.65 ³¹	51.373 ¹⁸⁶	43.92 ³⁴
27.2	60.149 ¹⁸⁷	12.61 ²³	17.695 ¹⁷⁶	7.95 ³⁰	51.192 ¹⁸¹	44.22 ³⁰
Nov. 6.2	59.980 ¹⁶⁹	12.73 ¹²	17.536 ¹⁵⁹	8.24 ²⁹	51.028 ¹⁶⁴	44.47 ²⁵
16.2	59.840 ¹⁴⁰	12.76 ³	17.401 ¹³⁵	8.52 ²⁸	50.888 ¹⁴⁰	44.68 ²¹
26.2	59.733 ¹⁰⁷	12.70 ⁶	17.299 ¹⁰²	8.79 ²⁷	50.780 ¹⁰⁸	44.84 ¹⁶
Dec. 6.1	59.669 ⁶⁴	12.56 ¹⁴	17.234 ⁶⁵	9.06 ²⁶	50.710 ⁷⁰	44.96 ¹²
16.1	59.646 ²³	12.38 ¹⁸	17.210 ²⁴	9.32 ²⁷	50.680 ³⁰	45.04 ⁸
26.1	59.668 ²³	12.15 ²³	17.227 ¹⁷	9.57 ²⁵	50.690 ¹⁰	45.10 ⁶
36.0	59.735 ⁶⁷	11.86 ²⁹	17.284 ⁵⁷	9.82 ²⁵	50.746 ⁵⁶	45.12 ²
Mean Place	57.722	25.24	15.358	23.74	48.801	58.98
Sec δ, Tan δ	1.104	-0.468	1.043	-0.296	1.064	-0.363
L α, L δ	+0.01	+0.2	+0.01	+0.2	+0.01	+0.2
ω α, ω δ	+0.01	-0.9	+0.01	-0.9	+0.01	-0.9

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A. E.

406 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	δ Cygni. Mag. 3.0		γ Aquilæ. Mag. 2.8		α Aquilæ. Mag. 0.9	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	^h ^m 19 42	[°] ['] 44 56	^h ^m 19 42	[°] ['] 10 25	^h ^m 19 46	[°] ['] 8 39
Jan. 1.0	30.879 ₁₀	35.17 ₃₁₁	32.063 ₅₇	28.80 ₁₇₆	57.654 ₅₇	49.25 ₁₆₄
11.0	30.889 ₆₃	32.06 ₃₁₇	32.120 ₉₄	27.04 ₁₇₅	57.711 ₉₅	47.61 ₁₆₄
21.0	30.952 ₁₁₆	28.89 ₃₁₂	32.214 ₁₂₅	25.29 ₁₆₉	57.806 ₁₂₆	45.97 ₁₅₄
31.0	31.068 ₁₆₆	25.77 ₂₉₀	32.339 ₁₆₀	23.60 ₁₅₀	57.932 ₁₅₈	44.43 ₁₃₈
Feb. 9.9	31.234 ₂₁₄	22.87 ₂₆₁	32.499 ₁₈₈	22.10 ₁₂₈	58.090 ₁₈₇	43.05 ₁₁₇
19.9	31.448 ₂₅₄	20.26 ₂₁₉	32.687 ₂₁₃	20.82 ₉₉	58.277 ₂₁₃	41.88 ₈₈
Mar. 1.9	31.702 ₂₈₇	18.07 ₁₇₅	32.900 ₂₃₅	19.83 ₆₅	58.490 ₂₃₆	41.00 ₅₆
11.9	31.989 ₃₂₀	16.32 ₁₁₇	33.135 ₂₅₄	19.18 ₃₂	58.726 ₂₅₁	40.44 ₂₀
21.8	32.309 ₃₄₃	15.15 ₅₅	33.389 ₂₆₇	18.86 ₁₀	58.977 ₂₆₈	40.24 ₁₄
31.8	32.652 ₃₅₅	14.60 ₂	33.656 ₂₈₀	18.96 ₅₂	59.245 ₂₇₉	40.38 ₅₅
Apr. 10.8	33.007 ₃₆₅	14.62 ₆₅	33.936 ₂₈₆	19.48 ₈₇	59.524 ₂₈₇	40.93 ₉₁
20.7	33.372 ₃₅₉	15.27 ₁₂₁	34.222 ₂₈₈	20.35 ₁₁₉	59.811 ₂₈₉	41.84 ₁₂₀
30.7	33.731 ₃₄₆	16.48 ₁₇₄	34.510 ₂₈₆	21.54 ₁₅₀	60.100 ₂₈₅	43.04 ₁₅₀
May 10.7	34.077 ₃₂₉	18.22 ₂₂₀	34.796 ₂₇₂	23.04 ₁₇₅	60.385 ₂₇₅	44.54 ₁₇₃
20.7	34.406 ₃₀₂	20.42 ₂₅₉	35.068 ₂₅₇	24.79 ₁₉₃	60.660 ₂₅₉	46.27 ₁₉₀
30.6	34.708 ₂₆₃	23.01 ₂₉₀	35.325 ₂₃₄	26.72 ₂₀₅	60.919 ₂₃₆	48.17 ₂₀₃
June 9.6	34.971 ₂₂₁	25.91 ₃₁₁	35.559 ₂₀₆	28.77 ₂₁₂	61.155 ₂₁₀	50.20 ₂₀₇
19.6	35.192 ₁₇₃	29.02 ₃₂₅	35.765 ₁₇₀	30.89 ₂₁₂	61.365 ₁₇₅	52.27 ₂₀₃
29.6	35.365 ₁₁₈	32.27 ₃₃₀	35.935 ₁₃₅	33.01 ₂₀₅	61.540 ₁₃₈	54.30 ₁₉₉
July 9.5	35.483 ₆₃	35.57 ₃₂₇	36.070 ₉₁	35.06 ₁₉₅	61.678 ₉₄	56.29 ₁₉₁
19.5	35.546 ₆	38.84 ₃₁₇	36.161 ₄₆	37.01 ₁₈₂	61.772 ₅₀	58.20 ₁₇₂
29.5	35.552 ₅₀	42.01 ₂₉₇	36.207 ₅	38.83 ₁₆₂	61.822 ₇	59.92 ₁₅₅
Aug. 8.4	35.502 ₁₀₆	44.98 ₂₇₃	36.212 ₄₀	40.45 ₁₄₂	61.829 ₃₅	61.47 ₁₃₄
18.4	35.396 ₁₅₅	47.71 ₂₄₂	36.172 ₇₉	41.87 ₁₂₀	61.794 ₇₆	62.81 ₁₁₅
28.4	35.241 ₂₀₁	50.13 ₂₀₈	36.093 ₁₁₇	43.07 ₉₃	61.718 ₁₁₁	63.96 ₈₇
Sept. 7.4	35.040 ₂₃₈	52.21 ₁₆₇	35.976 ₁₄₅	44.00 ₇₂	61.607 ₁₄₂	64.83 ₆₃
17.3	34.802 ₂₆₃	53.88 ₁₂₄	35.831 ₁₆₈	44.72 ₄₁	61.465 ₁₆₃	65.46 ₃₈
27.3	34.539 ₂₈₃	55.12 ₇₉	35.663 ₁₈₀	45.13 ₁₉	61.302 ₁₇₄	65.84 ₁₈
Oct. 7.3	34.256 ₂₉₀	55.91 ₃₀	35.483 ₁₈₅	45.32 ₈	61.128 ₁₈₂	66.02 ₁₁
17.2	33.966 ₂₈₆	56.21 ₂₀	35.298 ₁₇₉	45.24 ₃₇	60.946 ₁₇₆	65.91 ₃₇
27.2	33.680 ₂₇₁	56.01 ₇₀	35.119 ₁₆₆	44.87 ₆₃	60.770 ₁₆₃	65.54 ₆₁
Nov. 6.2	33.409 ₂₅₀	55.31 ₁₂₁	34.953 ₁₄₃	44.24 ₈₉	60.607 ₁₄₄	64.93 ₈₃
16.2	33.159 ₂₁₅	54.10 ₁₆₈	34.810 ₁₁₅	43.35 ₁₁₂	60.463 ₁₁₃	64.10 ₁₀₆
26.1	32.944 ₁₇₆	52.42 ₂₁₄	34.695 ₇₉	42.23 ₁₃₄	60.350 ₇₉	63.04 ₁₂₆
Dec. 6.1	32.768 ₁₂₉	50.28 ₂₅₁	34.616 ₄₇	40.89 ₁₅₁	60.271 ₄₃	61.78 ₁₄₃
16.1	32.639 ₇₉	47.77 ₂₈₃	34.569 ₅	39.38 ₁₆₆	60.228 ₃	60.35 ₁₅₆
26.1	32.560 ₂₄	44.94 ₃₀₄	34.564 ₃₁	37.72 ₁₇₆	60.225 ₃₂	58.79 ₁₆₃
36.0	32.536	41.90	34.595	35.96	60.257	57.16
Mean Place	32.277	22.79	33.077	19.79	58.659	40.54
Sec δ, Tan δ	1.413	+0.998	1.017	+0.184	1.012	+0.152
L α, L δ	-0.02	+0.2	0.00	+0.2	0.00	+0.2
ω α, ω δ	-0.03	-0.9	-0.01	-0.9	0.00	-0.9
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 407

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ι Sagittarii. Mag. 4.2		β Aquilæ. Mag. 3.9		γ Sagittarii. Mag. 5.1	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m	° '	h m	° '	h m	° '
	19 49	42 4	19 51	6 12	19 53	15 41
Jan. 1.0	51.298 ⁸¹	24.26 ¹⁴⁰	27.916 ⁵³	48.03 ¹⁵¹	30.583 ⁶⁴	51.24 ²¹
11.0	51.379 ¹²⁹	22.86 ¹⁴⁷	27.969 ⁸⁷	46.52 ¹⁵²	30.647 ¹⁰¹	51.45 ¹⁷
21.0	51.508 ¹⁷⁶	21.39 ¹⁴⁹	28.056 ¹²⁰	45.00 ¹⁴¹	30.748 ¹³⁵	51.62 ¹⁰
31.0	51.684 ²¹⁶	19.90 ¹⁴⁹	28.176 ¹⁵¹	43.59 ¹³⁰	30.883 ¹⁶⁶	51.72 ¹
Feb. 9.9	51.900 ²⁵³	18.41 ¹⁴⁷	28.327 ¹⁸³	42.29 ¹⁰⁸	31.049 ¹⁹⁴	51.73 ¹⁰
19.9	52.153 ²⁸⁵	16.94 ¹⁴³	28.510 ²⁰⁴	41.21 ⁸³	31.243 ²¹⁹	51.63 ²⁴
Mar. 1.9	52.438 ³¹²	15.51 ¹³⁷	28.714 ²³⁰	40.38 ⁵²	31.462 ²⁴¹	51.39 ³⁹
11.9	52.750 ³³⁶	14.14 ¹²⁹	28.944 ²⁴⁹	39.86 ¹⁸	31.703 ²⁶⁰	51.00 ⁵⁵
21.8	53.086 ³⁵⁶	12.85 ¹¹⁸	29.193 ²⁶¹	39.68 ¹⁸	31.963 ²⁷⁶	50.45 ⁷⁰
31.8	53.442 ³⁷¹	11.67 ¹⁰⁶	29.454 ²⁷⁷	39.86 ⁵³	32.239 ²⁹¹	49.75 ⁸⁴
Apr. 10.8	53.813 ³⁷⁹	10.61 ⁹¹	29.731 ²⁸⁶	40.39 ⁸⁷	32.530 ²⁹⁸	48.91 ⁹⁷
20.7	54.192 ³⁸³	9.70 ⁷⁴	30.017 ²⁸⁷	41.26 ¹¹⁶	32.828 ³⁰³	47.94 ¹⁰⁶
30.7	54.575 ³⁸¹	8.96 ⁵⁵	30.304 ²⁸⁵	42.42 ¹⁴³	33.131 ³⁰²	46.88 ¹¹¹
May 10.7	54.956 ³⁶⁹	8.41 ³³	30.589 ²⁸⁰	43.85 ¹⁶³	33.433 ²⁹⁴	45.77 ¹¹³
20.7	55.325 ³⁵²	8.08 ⁹	30.869 ²⁶²	45.48 ¹⁸³	33.727 ²⁸¹	44.64 ¹¹⁰
30.6	55.677 ³²⁵	7.99 ¹⁴	31.131 ²⁴⁰	47.31 ¹⁸⁹	34.008 ²⁶¹	43.54 ¹⁰⁵
June 9.6	56.002 ²⁹⁰	8.13 ³⁸	31.371 ²¹⁶	49.20 ¹⁹⁴	34.269 ²³⁴	42.49 ⁹⁵
19.6	56.292 ²⁴⁸	8.51 ⁶¹	31.587 ¹⁸²	51.14 ¹⁹¹	34.503 ²⁰¹	41.54 ⁸³
29.6	56.540 ²⁰⁰	9.12 ⁸²	31.769 ¹⁴¹	53.05 ¹⁸⁶	34.704 ¹⁶³	40.71 ⁶⁹
July 9.5	56.740 ¹⁴⁶	9.94 ¹⁰¹	31.910 ¹⁰⁵	54.91 ¹⁷⁷	34.867 ¹²¹	40.02 ⁵⁴
19.5	56.886 ⁸⁸	10.95 ¹¹⁵	32.015 ⁵⁸	56.68 ¹⁵⁹	34.988 ⁷⁵	39.48 ³⁷
29.5	56.974 ²⁹	12.10 ¹²⁶	32.073 ¹⁶	58.27 ¹⁴¹	35.063 ²⁹	39.11 ²²
Aug. 8.4	57.003 ³⁰	13.36 ¹³²	32.089 ²⁹	59.68 ¹²³	35.092 ¹⁸	38.89 ⁷
18.4	56.973 ⁸⁶	14.68 ¹³⁰	32.060 ⁶⁹	60.91 ¹⁰⁴	35.074 ⁶¹	38.82 ⁵
28.4	56.887 ¹³⁶	15.98 ¹²⁴	31.991 ¹⁰⁵	61.95 ⁸⁰	35.013 ¹⁰⁰	38.87 ¹⁶
Sept. 7.4	56.751 ¹⁷⁹	17.22 ¹¹³	31.886 ¹³⁸	62.75 ⁵⁵	34.913 ¹³³	39.03 ²⁴
17.3	56.572 ²¹¹	18.35 ⁹⁵	31.748 ¹⁵⁸	63.30 ³³	34.780 ¹⁵⁸	39.27 ³⁰
27.3	56.361 ²³³	19.30 ⁷⁴	31.590 ¹⁷²	63.63 ¹⁰	34.622 ¹⁷⁴	39.57 ³⁴
Oct. 7.3	56.128 ²⁴¹	20.04 ⁴⁹	31.418 ¹⁷⁸	63.73 ¹¹	34.448 ¹⁸⁰	39.91 ³⁵
17.2	55.887 ²³⁷	20.53 ²²	31.240 ¹⁷⁵	63.62 ³⁶	34.268 ¹⁷⁶	40.26 ³⁶
27.2	55.650 ²¹⁹	20.75 ⁷	31.065 ¹⁶⁷	63.26 ⁵⁸	34.092 ¹⁶³	40.62 ³⁵
Nov. 6.2	55.431 ¹⁹¹	20.68 ³⁴	30.898 ¹⁴¹	62.68 ⁸⁰	33.929 ¹⁴¹	40.97 ³⁴
16.2	55.240 ¹⁵³	20.34 ⁶¹	30.757 ¹¹⁶	61.88 ⁹⁹	33.788 ¹¹¹	41.31 ³²
26.1	55.087 ¹⁰⁶	19.73 ⁸³	30.641 ⁸⁰	60.89 ¹¹⁷	33.677 ⁷⁷	41.63 ³²
Dec. 6.1	54.981 ⁵⁷	18.90 ¹⁰⁴	30.561 ⁴⁸	59.72 ¹³³	33.600 ³⁸	41.95 ³⁰
16.1	54.924 ⁴	17.86 ¹²⁰	30.513 ¹⁰	58.39 ¹⁴⁴	33.562 ¹	42.25 ²⁹
26.1	54.920 ⁴⁹	16.66 ¹³¹	30.503 ²⁹	56.95 ¹⁵²	33.563 ⁴⁰	42.54 ²⁷
36.0	54.969	15.35	30.532	55.43	33.603	42.81
Mean Place	52.922	28.30	28.909	39.48	31.689	57.34
Sec δ , Tan δ	1.347	-0.903	1.006	+0.109	1.039	-0.281
L α , L δ	+0.02	+0.2	0.00	+0.2	+0.01	+0.2
ω α , ω δ	+0.03	-0.9	0.00	-0.9	+0.01	-0.9

AUTHORITY

A. E.

408 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Sagittarii. Mag. 4.6		δ Pavonis. Mag. 3.6		θ Aquilæ. Mag. 3.4	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 19 57	° ' " 27 55	h m 20 I	° ' " 66 22	h m 20 7	° ' " I 2
Jan. 1.0	50.593 ⁶⁵	35.52 ⁵⁵	1.69 ⁷	54.39 ²⁶³	15.872 ⁴³	66.17 ¹⁰⁵
11.0	50.658 ¹⁰⁶	34.97 ⁶¹	1.76 ¹⁶	51.76 ²⁷⁴	15.915 ⁷⁷	67.22 ¹⁰³
21.0	50.764 ¹⁴³	34.36 ⁶⁸	1.92 ²⁵	49.02 ²⁷⁴	15.992 ¹¹⁰	68.25 ⁹⁷
31.0	50.907 ¹⁷⁷	33.68 ⁷³	2.17 ³⁴	46.28 ²⁶⁸	16.102 ¹⁴¹	69.22 ⁸³
Feb. 9.9	51.084 ²⁰⁸	32.95 ⁸⁰	2.51 ⁴¹	43.60 ²⁵⁴	16.243 ¹⁷⁰	70.05 ⁶⁴
19.9	51.292 ²³⁵	32.15 ⁸⁵	2.92 ⁴⁸	41.06 ²³⁹	16.413 ¹⁹⁶	70.69 ⁴⁴
Mar. 1.9	51.527 ²⁶⁰	31.30 ⁹¹	3.40 ⁵⁴	38.67 ²¹⁵	16.609 ²¹⁹	71.13 ¹⁹
11.9	51.787 ²⁸¹	30.39 ⁹⁶	3.94 ⁵⁸	36.52 ¹⁸⁸	16.828 ²⁴²	71.32 ⁹
21.8	52.068 ²⁹⁸	29.43 ¹⁰⁰	4.52 ⁶²	34.64 ¹⁵⁹	17.070 ²⁵⁵	71.23 ³⁹
31.8	52.366 ³¹²	28.43 ¹⁰²	5.14 ⁶⁵	33.05 ¹²⁵	17.325 ²⁷³	70.84 ⁶⁸
Apr. 10.8	52.678 ³²⁴	27.41 ¹⁰¹	5.79 ⁶⁷	31.80 ⁹⁰	17.598 ²⁸⁵	70.16 ⁹³
20.8	53.002 ³²⁸	26.40 ⁹⁸	6.46 ⁶⁷	30.90 ⁵²	17.883 ²⁹⁰	69.23 ¹¹⁶
30.7	53.330 ³²⁷	25.42 ⁹¹	7.13 ⁶⁶	30.38 ¹⁴	18.173 ²⁹⁰	68.07 ¹³⁷
May 10.7	53.657 ³²⁰	24.51 ⁸²	7.79 ⁶⁵	30.24 ²⁷	18.463 ²⁸⁵	66.70 ¹⁵²
20.7	53.977 ³⁰⁷	23.69 ⁶⁹	8.44 ⁶⁰	30.51 ⁶⁶	18.748 ²⁷¹	65.18 ¹⁶⁵
30.6	54.284 ²⁸⁶	23.00 ⁵⁴	9.04 ⁵⁷	31.17 ¹⁰⁴	19.019 ²⁵⁷	63.53 ¹⁶⁶
June 9.6	54.570 ²⁵⁷	22.46 ³⁸	9.61 ⁵⁰	32.21 ¹⁴⁰	19.276 ²²⁹	61.87 ¹⁶⁶
19.6	54.827 ²²³	22.08 ¹⁹	10.11 ⁴³	33.61 ¹⁷¹	19.505 ¹⁹⁷	60.21 ¹⁶³
29.6	55.050 ¹⁸²	21.89 ¹	10.54 ³³	35.32 ¹⁹⁹	19.702 ¹⁶⁴	58.58 ¹⁵⁶
July 9.5	55.232 ¹³⁶	21.88 ¹⁷	10.87 ²⁵	37.31 ²²⁰	19.866 ¹²¹	57.02 ¹³⁹
19.5	55.368 ⁸⁷	22.05 ³⁴	11.12 ¹⁴	39.51 ²³⁵	19.987 ⁷⁹	55.63 ¹²⁵
29.5	55.455 ³⁷	22.39 ⁴⁸	11.26 ⁴	41.86 ²⁴¹	20.066 ³⁴	54.38 ¹¹¹
Aug. 8.5	55.492 ¹³	22.87 ⁵⁹	11.30 ⁶	44.27 ²⁴²	20.100 ⁸	53.27 ⁸⁹
18.4	55.479 ⁶²	23.46 ⁶⁷	11.24 ¹⁷	46.69 ²³¹	20.092 ⁵³	52.38 ⁷¹
28.4	55.417 ¹⁰⁴	24.13 ⁷⁰	11.07 ²⁵	49.00 ²¹³	20.039 ⁹⁰	51.67 ⁵⁰
Sept. 7.4	55.313 ¹⁴²	24.83 ⁷⁰	10.82 ³⁴	51.13 ¹⁸⁷	19.949 ¹²³	51.17 ³²
17.3	55.171 ¹⁷⁰	25.53 ⁶⁶	10.48 ⁴⁰	53.00 ¹⁵³	19.826 ¹⁴⁸	50.85 ¹⁸
27.3	55.001 ¹⁸⁹	26.19 ⁵⁸	10.08 ⁴⁵	54.53 ¹¹¹	19.678 ¹⁶³	50.67 ³
Oct. 7.3	54.812 ¹⁹⁶	26.77 ⁴⁷	9.63 ⁴⁷	55.64 ⁶⁸	19.515 ¹⁷³	50.70 ¹⁸
17.3	54.616 ¹⁹³	27.24 ³⁵	9.16 ⁴⁸	56.32 ¹⁶	19.342 ¹⁷⁰	50.88 ³³
27.2	54.423 ¹⁸⁰	27.59 ²¹	8.68 ⁴⁵	56.48 ³³	19.172 ¹⁶²	51.21 ⁴⁹
Nov. 6.2	54.243 ¹⁵⁶	27.80 ⁷	8.23 ⁴¹	56.15 ⁸⁰	19.010 ¹⁴³	51.70 ⁶³
16.2	54.087 ¹²⁵	27.87 ⁷	7.82 ³⁵	55.35 ¹³⁰	18.867 ¹¹⁷	52.33 ⁷⁶
26.2	53.962 ⁸⁸	27.80 ¹⁹	7.47 ²⁸	54.05 ¹⁶⁹	18.750 ⁸⁶	53.09 ⁸⁷
Dec. 6.1	53.874 ⁴⁷	27.61 ³⁰	7.19 ¹⁸	52.36 ²⁰⁶	18.664 ⁵²	53.96 ⁹⁷
16.1	53.827 ³	27.31 ⁴⁰	7.01 ⁹	50.30 ²³²	18.612 ¹⁷	54.93 ¹⁰⁵
26.1	53.824 ³⁹	26.91 ⁴⁸	6.92 ⁰	47.98 ²⁵³	18.595 ²¹	55.98 ¹⁰⁸
36.0	53.863	26.43	6.92	45.45	18.616	57.06
Mean Place	51.860	40.22	5.07	56.39	16.850	73.65
Sec δ, Tan δ	1.132	-0.530	2.496	-2.287	1.000	-0.018
L α, L δ	+0.01	+0.2	+0.05	+0.2	0.00	+0.2
ω α, ω δ	+0.02	-0.9	+0.08	-0.9	0.00	-0.9
AUTHORITY	A. N.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 409

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	4 Capricorni. Mag. 6.0		α^2 Capricorni. Mag. 3.8		β Capricorni. Mag. 3.3	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 20 13	° ' 22 2	h m 20 13	° ' 12 46	h m 20 16	° ' 15 1
Jan. 1.0	25.367 ^s 47	62.50 ^s 21	42.648 ^s 45	69.60 ^s 36	36.763 ^s 42	38.02 ^s 22
11.0	25.414 84	62.29 28	42.693 77	69.96 30	36.805 76	38.24 16
21.0	25.498 120	62.01 36	42.770 113	70.26 23	36.881 111	38.40 7
31.0	25.618 153	61.65 45	42.883 142	70.49 12	36.992 142	38.47 3
Feb. 10.0	25.771 182	61.20 54	43.025 173	70.61 2	37.134 171	38.44 16
19.9	25.953 211	60.66 65	43.198 198	70.59 17	37.305 199	38.28 30
Mar. 1.9	26.164 236	60.01 76	43.396 225	70.42 39	37.504 222	37.98 47
11.9	26.400 257	59.25 87	43.621 244	70.03 53	37.726 245	37.51 63
21.8	26.657 278	58.38 96	43.865 264	69.50 72	37.971 265	36.88 79
31.8	26.935 294	57.42 105	44.129 280	68.78 90	38.236 281	36.09 95
Apr. 10.8	27.229 306	56.37 111	44.409 293	67.88 104	38.517 293	35.14 108
20.8	27.535 314	55.26 114	44.702 298	66.84 116	38.810 302	34.06 117
30.7	27.849 316	54.12 112	45.000 301	65.68 126	39.112 303	32.89 124
May 10.7	28.165 312	53.00 109	45.301 297	64.42 129	39.415 301	31.65 127
20.7	28.477 300	51.91 100	45.598 285	63.13 130	39.716 291	30.38 124
30.7	28.777 284	50.91 89	45.883 267	61.83 127	40.007 273	29.14 119
June 9.6	29.061 257	50.02 75	46.150 247	60.56 117	40.280 249	27.95 109
19.6	29.318 226	49.27 58	46.397 213	59.39 106	40.529 219	26.86 96
29.6	29.544 188	48.69 41	46.610 179	58.33 96	40.748 182	25.90 81
July 9.5	29.732 145	48.28 22	46.789 136	57.37 75	40.930 142	25.09 64
19.5	29.877 99	48.06 4	46.925 91	56.62 57	41.072 97	24.45 47
29.5	29.976 50	48.02 12	47.016 47	56.05 44	41.169 50	23.98 29
Aug. 8.5	30.026 2	48.14 27	47.063 1	55.61 26	41.219 4	23.69 13
18.4	30.028 4	48.41 40	47.062 41	55.35 10	41.223 41	23.56 2
28.4	29.984 88	48.81 47	47.021 85	55.25 5	41.182 82	23.58 15
Sept. 7.4	29.896 124	49.28 53	46.936 117	55.30 16	41.100 117	23.73 25
17.4	29.772 153	49.81 55	46.819 145	55.46 23	40.983 145	23.98 33
27.3	29.619 172	50.36 54	46.674 163	55.69 31	40.838 164	24.31 38
Oct. 7.3	29.447 183	50.90 50	46.511 173	56.00 36	40.674 174	24.69 40
17.3	29.264 182	51.40 43	46.338 171	56.36 41	40.500 174	25.09 42
27.2	29.082 173	51.83 36	46.167 164	56.77 43	40.326 165	25.51 42
Nov. 6.2	28.909 152	52.19 27	46.003 145	57.20 43	40.161 147	25.93 40
16.2	28.757 127	52.46 17	45.858 119	57.63 44	40.014 122	26.33 39
26.2	28.630 92	52.63 10	45.739 87	58.07 45	39.892 90	26.72 37
Dec. 6.1	28.538 56	52.73 2	45.652 56	58.52 45	39.802 56	27.09 34
16.1	28.482 17	52.75 7	45.596 18	58.97 45	39.746 19	27.43 31
26.1	28.465 22	52.68 13	45.578 18	59.42 39	39.727 18	27.74 27
36.1	28.487	52.55	45.596	59.81	39.745	28.01
Mean Place	26.524	67.05	43.696	75.34	37.824	43.38
Sec δ , Tan δ	1.079	-0.405	1.025	-0.227	1.035	-0.268
L α , L δ	+0.01	+0.2	+0.01	+0.2	+0.01	+0.2
ω α , ω δ	+0.01	-0.8	+0.01	-0.8	+0.01	-0.8
AUTHORITY			A. E.		A. N.	

410 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Cygni. Mag. 2.3		α Pavonis. Mag. 2.1		ρ Capricorni. Mag. 5.0	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 20 19	° ' 0	h m 20 19	50 58	h m 20 24	18 4
Jan. 1.1	24.611 ^s ₂₃	36.10 ₂₈₂	26.769 ₃₃	70.31 ₂₁₈	23.729 ₃₄	16.38 ₃
11.0	24.588 ₂₃	33.28 ₂₉₂	26.802 ₉₇	68.13 ₂₃₆	23.763 ₇₀	16.41 ₅
21.0	24.611 ₇₁	30.36 ₂₉₂	26.899 ₁₆₆	65.77 ₂₄₀	23.833 ₁₀₅	16.36 ₁₄
31.0	24.682 ₁₁₆	27.44 ₂₇₉	27.065 ₂₂₄	63.37 ₂₄₁	23.938 ₁₃₇	16.22 ₂₄
Feb. 10.0	24.798 ₁₆₁	24.65 ₂₅₇	27.289 ₂₈₁	60.96 ₂₃₅	24.075 ₁₆₇	15.98 ₃₆
19.9	24.959 ₂₀₅	22.08 ₂₂₃	27.570 ₃₂₉	58.61 ₂₂₈	24.242 ₁₉₄	15.62 ₅₀
Mar. 1.9	25.164 ₂₄₀	19.85 ₁₈₁	27.899 ₃₇₆	56.33 ₂₁₄	24.436 ₂₂₀	15.12 ₆₃
11.9	25.404 ₂₇₂	18.04 ₁₃₄	28.275 ₄₁₂	54.19 ₁₉₈	24.656 ₂₄₄	14.49 ₇₈
21.9	25.676 ₃₀₂	16.70 ₇₇	28.687 ₄₄₆	52.21 ₁₇₅	24.900 ₂₆₄	13.71 ₉₂
31.8	25.978 ₃₂₄	15.93 ₁₉	29.133 ₄₇₅	50.46 ₁₅₀	25.164 ₂₈₂	12.79 ₁₀₄
Apr. 10.8	26.302 ₃₃₉	15.74 ₃₅	29.608 ₄₉₀	48.96 ₁₂₃	25.446 ₂₉₆	11.75 ₁₁₅
20.8	26.641 ₃₄₇	16.09 ₉₃	30.098 ₅₀₃	47.73 ₉₀	25.742 ₃₀₆	10.60 ₁₂₁
30.7	26.988 ₃₄₁	17.02 ₁₄₅	30.601 ₅₀₄	46.83 ₅₉	26.048 ₃₀₉	9.39 ₁₂₄
May 10.7	27.329 ₃₃₂	18.47 ₁₉₄	31.105 ₄₉₄	46.24 ₂₅	26.357 ₃₀₇	8.15 ₁₂₄
20.7	27.661 ₃₁₃	20.41 ₂₃₃	31.599 ₄₇₃	45.99 ₉	26.664 ₂₉₈	6.91 ₁₂₀
30.7	27.974 ₂₈₇	22.74 ₂₆₆	32.072 ₄₄₇	46.08 ₄₈	26.962 ₂₈₂	5.71 ₁₁₀
June 9.6	28.261 ₂₅₂	25.40 ₂₉₂	32.519 ₄₀₃	46.56 ₈₁	27.244 ₂₅₈	4.61 ₉₉
19.6	28.513 ₂₁₁	28.32 ₃₀₈	32.922 ₃₅₃	47.37 ₁₁₁	27.502 ₂₂₉	3.62 ₈₄
29.6	28.724 ₁₆₆	31.40 ₃₁₈	33.275 ₂₉₃	48.48 ₁₄₃	27.731 ₁₉₂	2.78 ₆₇
July 9.6	28.890 ₁₁₅	34.58 ₃₁₉	33.568 ₂₂₃	49.91 ₁₆₅	27.923 ₁₅₂	2.11 ₅₀
19.5	29.005 ₅₈	37.77 ₃₁₁	33.791 ₁₅₀	51.56 ₁₈₈	28.075 ₁₀₆	1.61 ₃₀
29.5	29.063 ₆	40.88 ₃₀₃	33.941 ₇₁	53.44 ₂₀₁	28.181 ₅₉	1.31 ₁₃
Aug. 8.5	29.069 ₄₄	43.91 ₂₇₉	34.012 ₇	55.45 ₂₀₆	28.240 ₁₂	1.18 ₄
18.4	29.025 ₉₇	46.70 ₂₅₃	34.005 ₈₆	57.51 ₂₀₃	28.252 ₃₄	1.22 ₁₉
28.4	28.928 ₁₄₃	49.23 ₂₂₅	33.919 ₁₅₈	59.54 ₁₉₃	28.218 ₇₇	1.41 ₃₀
Sept. 7.4	28.785 ₁₈₁	51.48 ₁₈₇	33.761 ₂₁₈	61.47 ₁₇₈	28.141 ₁₁₂	1.71 ₃₉
17.4	28.604 ₂₁₁	53.35 ₁₅₀	33.543 ₂₇₂	63.25 ₁₅₂	28.029 ₁₄₃	2.10 ₄₆
27.3	28.393 ₂₃₆	54.85 ₁₀₈	33.271 ₃₁₀	64.77 ₁₂₄	27.886 ₁₆₃	2.56 ₄₈
Oct. 7.3	28.157 ₂₅₀	55.93 ₆₂	32.961 ₃₃₃	66.01 ₈₃	27.723 ₁₇₅	3.04 ₄₈
17.3	27.907 ₂₅₂	56.55 ₁₉	32.628 ₃₃₈	66.84 ₄₄	27.548 ₁₇₆	3.52 ₄₆
27.3	27.655 ₂₄₆	56.74 ₃₁	32.290 ₃₂₆	67.28 ₁	27.372 ₁₆₈	3.98 ₄₃
Nov. 6.2	27.409 ₂₃₃	56.43 ₈₂	31.964 ₃₀₀	67.29 ₄₁	27.204 ₁₅₁	4.41 ₃₇
16.2	27.176 ₂₀₇	55.61 ₁₂₇	31.664 ₂₅₈	66.88 ₈₅	27.053 ₁₂₇	4.78 ₃₃
26.2	26.969 ₁₇₆	54.34 ₁₇₂	31.406 ₂₀₈	66.03 ₁₂₁	26.926 ₉₆	5.11 ₂₇
Dec. 6.1	26.793 ₁₄₀	52.62 ₂₁₃	31.198 ₁₄₆	64.82 ₁₅₆	26.830 ₆₃	5.38 ₂₁
16.1	26.653 ₉₈	50.49 ₂₄₂	31.052 ₇₉	63.26 ₁₈₇	26.767 ₂₆	5.59 ₁₅
26.1	26.555 ₅₂	48.07 ₂₇₂	30.973 ₁₀	61.39 ₂₀₇	26.741 ₁₁	5.74 ₉
36.1	26.503	45.35	30.963	59.32	26.752	5.83
Mean Place	25.711	22.72	29.146	71.10	24.810	20.99
Sec δ , Tan δ	1.305	+0.839	1.835	-1.539	1.052	-0.326
$L \alpha$, $L \delta$	-0.02	+0.2	+0.03	+0.2	+0.01	+0.2
$\omega \alpha$, $\omega \delta$	-0.03	-0.8	+0.06	-0.8	+0.01	-0.8
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 411

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Delphini. Mag. 4.0		α Indi. Mag. 3.2		α Delphini. Mag. 3.9	
	R. A.	Dec. N.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 20 29	° ′ 11 2	h m 20 32	° ′ 47 33	h m 20 36	° ′ 15 38
Jan. 1.1	28.325 ^s ₁₂	23.16 ^s ₁₆₄	3.292 ^s ₂₁	52.81 ^s ₁₇₁	0.062 ^s ₂	20.61 ^s ₁₈₃
11.0	28.337 ₄₆	21.52 ₁₆₆	3.313 ₇₂	51.10 ₁₈₄	0.064 ₃₅	18.78 ₁₈₆
21.0	28.383 ₈₂	19.86 ₁₅₉	3.385 ₁₂₅	49.26 ₁₉₅	0.099 ₇₂	16.92 ₁₈₅
31.0	28.465 ₁₁₁	18.27 ₁₄₇	3.510 ₁₇₂	47.31 ₂₀₀	0.171 ₁₀₃	15.07 ₁₇₂
Feb. 10.0	28.576 ₁₄₅	16.80 ₁₃₀	3.682 ₂₁₆	45.31 ₂₀₂	0.274 ₁₄₀	13.35 ₁₅₀
19.9	28.721 ₁₇₂	15.50 ₁₀₂	3.898 ₂₅₇	43.29 ₁₉₉	0.414 ₁₆₅	11.85 ₁₂₇
Mar. 1.9	28.893 ₂₀₃	14.48 ₇₀	4.155 ₂₉₂	41.30 ₁₉₅	0.579 ₁₉₈	10.58 ₉₃
11.9	29.096 ₂₂₇	13.78 ₃₆	4.447 ₃₃₀	39.35 ₁₈₇	0.777 ₂₂₄	9.65 ₅₅
21.9	29.323 ₂₄₈	13.42 ₂	4.777 ₃₅₅	37.48 ₁₇₃	1.001 ₂₄₈	9.10 ₁₃
31.8	29.571 ₂₆₄	13.44 ₄₁	5.132 ₃₈₂	35.75 ₁₅₈	1.249 ₂₆₅	8.97 ₂₆
Apr. 10.8	29.835 ₂₈₁	13.85 ₇₈	5.514 ₃₉₉	34.17 ₁₃₉	1.514 ₂₈₃	9.23 ₇₀
20.8	30.116 ₂₉₁	14.63 ₁₁₃	5.913 ₄₁₃	32.78 ₁₁₇	1.797 ₂₉₃	9.93 ₁₀₆
30.7	30.407 ₂₉₂	15.76 ₁₄₅	6.326 ₄₁₇	31.61 ₉₀	2.090 ₂₉₇	10.99 ₁₄₅
May 10.7	30.699 ₂₉₀	17.21 ₁₇₁	6.743 ₄₁₅	30.71 ₆₃	2.387 ₂₉₇	12.44 ₁₇₄
20.7	30.989 ₂₈₄	18.92 ₁₉₃	7.158 ₄₀₄	30.08 ₃₆	2.684 ₂₈₅	14.18 ₂₀₀
30.7	31.273 ₂₆₄	20.85 ₂₀₇	7.562 ₃₈₁	29.72 ₃	2.969 ₂₆₈	16.18 ₂₂₀
June 9.6	31.537 ₂₃₈	22.92 ₂₁₇	7.943 ₃₅₁	29.69 ₂₈	3.237 ₂₄₃	18.38 ₂₃₀
19.6	31.775 ₂₁₁	25.09 ₂₁₈	8.294 ₃₁₂	29.97 ₅₈	3.480 ₂₁₇	20.68 ₂₃₇
29.6	31.986 ₁₇₅	27.27 ₂₁₆	8.606 ₂₆₄	30.55 ₈₉	3.697 ₁₇₉	23.05 ₂₃₆
July 9.6	32.161 ₁₃₄	29.43 ₂₁₁	8.870 ₂₀₇	31.44 ₁₁₂	3.876 ₁₄₀	25.41 ₂₃₂
19.5	32.295 ₉₄	31.54 ₁₉₅	9.077 ₁₄₉	32.56 ₁₃₅	4.016 ₉₅	27.73 ₂₂₀
29.5	32.389 ₄₄	33.49 ₁₇₇	9.226 ₈₃	33.91 ₁₅₃	4.111 ₄₈	29.93 ₂₀₃
Aug. 8.5	32.433 ₅	35.26 ₁₆₁	9.309 ₂₀	35.44 ₁₆₃	4.159 ₈	31.96 ₁₈₃
18.4	32.438 ₄₁	36.87 ₁₃₇	9.329 ₄₄	37.07 ₁₆₉	4.167 ₃₉	33.79 ₁₆₂
28.4	32.397 ₈₀	38.24 ₁₁₄	9.285 ₁₀₇	38.76 ₁₆₇	4.128 ₇₉	35.41 ₁₄₀
Sept. 7.4	32.317 ₁₁₄	39.38 ₈₉	9.178 ₁₅₇	40.43 ₁₅₈	4.049 ₁₁₄	36.81 ₁₀₉
17.4	32.203 ₁₄₂	40.27 ₆₀	9.021 ₂₀₃	42.01 ₁₄₁	3.935 ₁₄₂	37.90 ₈₂
27.3	32.061 ₁₆₀	40.87 ₃₆	8.818 ₂₃₅	43.42 ₁₁₉	3.793 ₁₆₀	38.72 ₅₃
Oct. 7.3	31.901 ₁₇₁	41.23 ₈	8.583 ₂₅₄	44.61 ₉₁	3.633 ₁₇₅	39.25 ₂₃
17.3	31.730 ₁₇₅	41.31 ₁₆	8.329 ₂₆₂	45.52 ₅₉	3.458 ₁₈₀	39.48 ₈
27.3	31.555 ₁₆₉	41.15 ₄₄	8.067 ₂₅₅	46.11 ₂₇	3.278 ₁₇₄	39.40 ₃₇
Nov. 6.2	31.386 ₁₅₇	40.71 ₇₀	7.812 ₂₃₄	46.38 ₁₀	3.104 ₁₆₂	39.03 ₆₉
16.2	31.229 ₁₃₃	40.01 ₉₅	7.578 ₂₀₅	46.28 ₄₃	2.942 ₁₄₁	38.34 ₉₈
26.2	31.096 ₁₀₈	39.06 ₁₁₄	7.373 ₁₆₆	45.85 ₇₉	2.801 ₁₂₀	37.36 ₁₂₂
Dec. 6.1	30.988 ₇₇	37.92 ₁₃₆	7.207 ₁₁₆	45.06 ₁₀₈	2.681 ₈₆	36.14 ₁₄₆
16.1	30.911 ₄₆	36.56 ₁₅₁	7.091 ₆₅	43.98 ₁₃₄	2.595 ₅₇	34.68 ₁₆₄
26.1	30.865 ₉	35.05 ₁₆₀	7.026 ₁₂	42.64 ₁₅₆	2.538 ₂₀	33.04 ₁₇₉
36.1	30.856	33.45	7.014	41.08	2.518	31.25
Mean Place	29.209	14.07	5.100	53.30	0.922	10.74
Sec δ, Tan δ	1.019	+0.195	1.482	-1.094	1.038	+0.280
L α, L δ	0.00	+0.2	+0.02	+0.2	-0.01	+0.2
ω α, ω δ	-0.01	-0.8	+0.04	-0.8	-0.01	-0.8
AUTHORITY	A. E.		A. E.		A. E.	

412 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Pavonis. Mag. 3.6		α Cygni. Mag. 1.3		ϵ Cygni. Mag. 2.6	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	^h 20 ^m 37	^o 66 ['] 28	^h 20 ^m 38	^o 44 ['] 59	^h 20 ^m 43	^o 33 ['] 40
Jan. 1.1	53.49 ^s 3	67.61 ^s 260	45.275 ^s 60	78.08 ^s 283	2.409 ^s 35	51.59 ^s 250
11.0	53.46 ^s 6	65.01 ^s 282	45.215 ^s 12	75.25 ^s 294	2.374 ^s 9	49.09 ^s 260
21.0	53.52 ^s 15	62.19 ^s 288	45.203 ^s 42	72.31 ^s 302	2.383 ^s 49	46.49 ^s 262
31.0	53.67 ^s 24	59.31 ^s 292	45.245 ^s 90	69.29 ^s 298	2.432 ^s 91	43.87 ^s 256
Feb. 10.0	53.91 ^s 32	56.39 ^s 287	45.335 ^s 141	66.31 ^s 276	2.523 ^s 132	41.31 ^s 234
19.9	54.23 ^s 39	53.52 ^s 276	45.476 ^s 191	63.55 ^s 248	2.655 ^s 169	38.97 ^s 206
Mar. 1.9	54.62 ^s 46	50.76 ^s 260	45.667 ^s 232	61.07 ^s 206	2.824 ^s 208	36.91 ^s 169
11.9	55.08 ^s 52	48.16 ^s 236	45.899 ^s 275	59.01 ^s 159	3.032 ^s 241	35.22 ^s 126
21.9	55.60 ^s 56	45.80 ^s 211	46.174 ^s 307	57.42 ^s 105	3.273 ^s 269	33.96 ^s 74
31.8	56.16 ^s 61	43.69 ^s 180	46.481 ^s 337	56.37 ^s 48	3.542 ^s 292	33.22 ^s 22
Apr. 10.8	56.77 ^s 64	41.89 ^s 144	46.818 ^s 356	55.89 ^s 10	3.834 ^s 313	33.00 ^s 30
20.8	57.41 ^s 65	40.45 ^s 107	47.174 ^s 366	55.99 ^s 70	4.147 ^s 323	33.30 ^s 83
30.7	58.06 ^s 67	39.38 ^s 69	47.540 ^s 370	56.69 ^s 125	4.470 ^s 331	34.13 ^s 134
May 10.7	58.73 ^s 65	38.69 ^s 28	47.910 ^s 360	57.94 ^s 175	4.801 ^s 323	35.47 ^s 175
20.7	59.38 ^s 64	38.41 ^s 15	48.270 ^s 342	59.69 ^s 222	5.124 ^s 313	37.22 ^s 218
30.7	60.02 ^s 60	38.56 ^s 59	48.612 ^s 319	61.91 ^s 259	5.437 ^s 290	39.40 ^s 249
June 9.6	60.62 ^s 54	39.15 ^s 97	48.931 ^s 281	64.50 ^s 291	5.727 ^s 266	41.89 ^s 273
19.6	61.16 ^s 49	40.12 ^s 136	49.212 ^s 241	67.41 ^s 312	5.993 ^s 229	44.62 ^s 291
29.6	61.65 ^s 40	41.48 ^s 170	49.453 ^s 190	70.53 ^s 325	6.222 ^s 188	47.53 ^s 300
July 9.6	62.05 ^s 32	43.18 ^s 197	49.643 ^s 140	73.78 ^s 332	6.410 ^s 143	50.53 ^s 303
19.5	62.37 ^s 22	45.15 ^s 226	49.783 ^s 80	77.10 ^s 330	6.553 ^s 96	53.56 ^s 296
29.5	62.59 ^s 11	47.41 ^s 238	49.863 ^s 24	80.40 ^s 319	6.649 ^s 43	56.52 ^s 287
Aug. 8.5	62.70 ^s 2	49.79 ^s 246	49.887 ^s 32	83.59 ^s 304	6.692 ^s 8	59.39 ^s 268
18.4	62.72 ^s 10	52.25 ^s 244	49.855 ^s 87	86.63 ^s 283	6.684 ^s 54	62.07 ^s 244
28.4	62.62 ^s 19	54.69 ^s 234	49.768 ^s 139	89.46 ^s 252	6.630 ^s 98	64.51 ^s 219
Sept. 7.4	62.43 ^s 29	57.03 ^s 214	49.629 ^s 179	91.98 ^s 220	6.532 ^s 139	66.70 ^s 185
17.4	62.14 ^s 36	59.17 ^s 187	49.450 ^s 219	94.18 ^s 181	6.393 ^s 169	68.55 ^s 151
27.3	61.78 ^s 41	61.04 ^s 151	49.231 ^s 246	95.99 ^s 139	6.224 ^s 196	70.06 ^s 113
Oct. 7.3	61.37 ^s 46	62.55 ^s 109	48.985 ^s 263	97.38 ^s 95	6.028 ^s 210	71.19 ^s 71
17.3	60.91 ^s 48	63.64 ^s 61	48.722 ^s 273	98.33 ^s 44	5.818 ^s 219	71.90 ^s 33
27.3	60.43 ^s 47	64.25 ^s 11	48.449 ^s 271	98.77 ^s 3	5.599 ^s 215	72.23 ^s 16
Nov. 6.2	59.96 ^s 44	64.36 ^s 42	48.178 ^s 261	98.74 ^s 57	5.384 ^s 207	72.07 ^s 58
16.2	59.52 ^s 41	63.94 ^s 91	47.917 ^s 242	98.17 ^s 107	5.177 ^s 188	71.49 ^s 101
26.2	59.11 ^s 34	63.03 ^s 136	47.675 ^s 212	97.10 ^s 153	4.989 ^s 161	70.48 ^s 144
Dec. 6.1	58.77 ^s 26	61.67 ^s 180	47.463 ^s 178	95.57 ^s 199	4.828 ^s 131	69.04 ^s 178
16.1	58.51 ^s 18	59.87 ^s 216	47.285 ^s 135	93.58 ^s 238	4.697 ^s 96	67.26 ^s 215
26.1	58.33 ^s 9	57.71 ^s 245	47.150 ^s 92	91.20 ^s 267	4.601 ^s 58	65.11 ^s 239
36.1	58.24 ^s	55.26 ^s	47.058 ^s	88.53 ^s	4.543 ^s	62.72 ^s
Mean Place Sec δ , Tan δ	56.87 2.506	66.25 -2.299	46.343 1.414	63.36 +1.000	3.307 1.202	38.52 +0.666
L α , L δ ω α , ω δ	+0.05 +0.10	+0.3 -0.8	-0.02 -0.04	+0.3 -0.8	-0.01 -0.03	+0.3 -0.8
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 413

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Aquarii. Mag. 3.8		μ Aquarii. Mag. 4.8		ζ Vulpeculæ. Mag. 5.2	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 20 ^m 43	[°] 9 ['] 46	^h 20 ^m 48	[°] 9 ['] 16	^h 20 ^m 51	[°] 27 ['] 45
Jan. 1.1	26.348 ^s	50.60 ^s	25.962 ^s	32.07 ^s	13.301 ^s	49.21 ^s
11.1	26.361 ^s	51.10 ^s	25.971 ^s	32.59 ^s	13.270 ^s	46.96 ^s
21.0	26.409 ^s	51.53 ^s	26.013 ^s	33.04 ^s	13.277 ^s	44.60 ^s
31.0	26.488 ^s	51.86 ^s	26.087 ^s	33.40 ^s	13.323 ^s	42.22 ^s
Feb. 10.0	26.598 ^s	52.08 ^s	26.193 ^s	33.63 ^s	13.406 ^s	39.92 ^s
19.9	26.739 ^s	52.15 ^s	26.327 ^s	33.72 ^s	13.526 ^s	37.81 ^s
Mar. 1.9	26.908 ^s	52.04 ^s	26.492 ^s	33.63 ^s	13.682 ^s	35.97 ^s
11.9	27.105 ^s	51.74 ^s	26.683 ^s	33.33 ^s	13.875 ^s	34.47 ^s
21.9	27.325 ^s	51.21 ^s	26.900 ^s	32.82 ^s	14.097 ^s	33.39 ^s
31.8	27.569 ^s	50.47 ^s	27.140 ^s	32.10 ^s	14.348 ^s	32.78 ^s
Apr. 10.8	27.834 ^s	49.53 ^s	27.402 ^s	31.16 ^s	14.623 ^s	32.66 ^s
20.8	28.114 ^s	48.41 ^s	27.681 ^s	30.03 ^s	14.919 ^s	33.02 ^s
30.8	28.408 ^s	47.14 ^s	27.972 ^s	28.73 ^s	15.227 ^s	33.89 ^s
May 10.7	28.707 ^s	45.74 ^s	28.271 ^s	27.31 ^s	15.542 ^s	35.20 ^s
20.7	29.008 ^s	44.27 ^s	28.572 ^s	25.81 ^s	15.855 ^s	36.92 ^s
30.7	29.301 ^s	42.76 ^s	28.867 ^s	24.28 ^s	16.160 ^s	39.01 ^s
June 9.6	29.581 ^s	41.28 ^s	29.149 ^s	22.77 ^s	16.447 ^s	41.38 ^s
19.6	29.842 ^s	39.85 ^s	29.412 ^s	21.30 ^s	16.711 ^s	43.96 ^s
29.6	30.076 ^s	38.54 ^s	29.648 ^s	19.94 ^s	16.941 ^s	46.70 ^s
July 9.6	30.275 ^s	37.34 ^s	29.851 ^s	18.72 ^s	17.135 ^s	49.52 ^s
19.5	30.435 ^s	36.32 ^s	30.016 ^s	17.65 ^s	17.287 ^s	52.33 ^s
29.5	30.553 ^s	35.47 ^s	30.138 ^s	16.76 ^s	17.392 ^s	55.08 ^s
Aug. 8.5	30.626 ^s	34.82 ^s	30.215 ^s	16.07 ^s	17.448 ^s	57.71 ^s
18.5	30.653 ^s	34.37 ^s	30.248 ^s	15.57 ^s	17.458 ^s	60.17 ^s
28.4	30.636 ^s	34.09 ^s	30.234 ^s	15.27 ^s	17.421 ^s	62.41 ^s
Sept. 7.4	30.577 ^s	33.98 ^s	30.180 ^s	15.13 ^s	17.340 ^s	64.36 ^s
17.4	30.481 ^s	34.02 ^s	30.087 ^s	15.15 ^s	17.222 ^s	66.05 ^s
27.3	30.355 ^s	34.19 ^s	29.965 ^s	15.31 ^s	17.072 ^s	67.39 ^s
Oct. 7.3	30.207 ^s	34.48 ^s	29.820 ^s	15.59 ^s	16.898 ^s	68.39 ^s
17.3	30.046 ^s	34.85 ^s	29.661 ^s	15.95 ^s	16.706 ^s	69.02 ^s
27.3	29.881 ^s	35.28 ^s	29.496 ^s	16.39 ^s	16.508 ^s	69.26 ^s
Nov. 6.2	29.719 ^s	35.77 ^s	29.335 ^s	16.88 ^s	16.312 ^s	69.11 ^s
16.2	29.569 ^s	36.30 ^s	29.185 ^s	17.42 ^s	16.124 ^s	68.55 ^s
26.2	29.440 ^s	36.85 ^s	29.055 ^s	17.98 ^s	15.953 ^s	67.60 ^s
Dec. 6.2	29.338 ^s	37.42 ^s	28.950 ^s	18.56 ^s	15.805 ^s	66.30 ^s
16.1	29.264 ^s	37.98 ^s	28.873 ^s	19.15 ^s	15.684 ^s	64.67 ^s
26.1	29.223 ^s	38.55 ^s	28.828 ^s	19.73 ^s	15.597 ^s	62.73 ^s
36.1	29.215 ^s	39.09 ^s	28.816 ^s	20.29 ^s	15.544 ^s	60.56 ^s
Mean Place	27.298	55.79	26.893	37.20	14.120	37.01
Sec δ, Tan δ	1.015	-0.172	1.013	-0.163	1.130	+0.526
L α, L δ	0.00	+0.3	0.00	+0.3	-0.01	+0.3
ω α, ω δ	+0.01	-0.8	+0.01	-0.7	-0.02	-0.7
AUTHORITY	A. E.		A. E.		A. E.	

414 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Microscopii. Mag. 4.7		θ Capricorni. Mag. 4.2		61 Cygni (1st star). Mag. 5.6	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	^h 20 ^m 56	^o 32 ['] 33	^h 21 ^m 1	^o 17 ['] 32	^h 21 ^m 3	^o 38 ['] 21
Jan. 1.1	29.417 ^s	48.15 ^s 83	32.889 ^s	34.53 ^s 4	23.061 ^s 52	68.34 ^s 243
11.1	29.418 ⁴⁰	47.32 ^s 97	32.888 ³²	34.57 ^s 7	23.009 ¹²	65.91 ^s 258
21.0	29.458 ⁷⁸	46.35 ^s 111	32.920 ⁶⁵	34.50 ^s 18	22.997 ³²	63.33 ^s 264
31.0	29.536 ¹¹⁴	45.24 ^s 123	32.985 ⁹⁸	34.32 ^s 31	23.029 ⁷⁶	60.69 ^s 263
Feb. 10.0	29.650 ¹⁵¹	44.01 ^s 133	33.083 ¹²⁷	34.01 ^s 45	23.105 ¹²¹	58.06 ^s 244
20.0	29.801 ¹⁸⁴	42.68 ^s 141	33.210 ¹⁵⁹	33.56 ^s 61	23.226 ¹⁶⁵	55.62 ^s 218
Mar. 1.9	29.985 ²¹⁵	41.27 ^s 149	33.369 ¹⁸⁷	32.95 ^s 76	23.391 ²⁰⁶	53.44 ^s 186
11.9	30.200 ²⁴⁶	39.78 ^s 153	33.556 ²¹⁵	32.19 ^s 92	23.597 ²⁴⁴	51.58 ^s 141
21.9	30.446 ²⁷²	38.25 ^s 156	33.771 ²⁴⁰	31.27 ^s 108	23.841 ²⁷⁹	50.17 ^s 92
31.8	30.718 ²⁹⁷	36.69 ^s 156	34.011 ²⁶³	30.19 ^s 121	24.120 ³⁰⁸	49.25 ^s 37
Apr. 10.8	31.015 ³¹⁸	35.13 ^s 153	34.274 ²⁸³	28.98 ^s 133	24.428 ³³⁰	48.88 ^s 18
20.8	31.333 ³³⁴	33.60 ^s 145	34.557 ²⁹⁹	27.65 ^s 140	24.758 ³⁴⁷	49.06 ^s 73
30.8	31.667 ³⁴³	32.15 ^s 134	34.856 ³⁰⁸	26.25 ^s 146	25.105 ³⁵¹	49.79 ^s 124
May 10.7	32.010 ³⁴⁷	30.81 ^s 119	35.164 ³¹²	24.79 ^s 144	25.456 ³⁵²	51.03 ^s 172
20.7	32.357 ³⁴²	29.62 ^s 102	35.476 ³⁰⁹	23.35 ^s 142	25.808 ³⁴¹	52.75 ^s 216
30.7	32.699 ³³⁰	28.60 ^s 80	35.785 ²⁹⁹	21.93 ^s 132	26.149 ³²²	54.91 ^s 252
June 9.7	33.029 ³⁰⁸	27.80 ^s 57	36.084 ²⁷⁹	20.61 ^s 120	26.471 ²⁹⁷	57.43 ^s 283
19.6	33.337 ²⁸⁰	27.23 ^s 31	36.363 ²⁵⁵	19.41 ^s 104	26.768 ²⁶⁰	60.26 ^s 303
29.6	33.617 ²⁴⁴	26.92 ^s 5	36.618 ²²²	18.37 ^s 84	27.028 ²¹⁸	63.29 ^s 318
July 9.6	33.861 ²⁰⁰	26.87 ^s 21	36.840 ¹⁸⁴	17.53 ^s 66	27.246 ¹⁷³	66.47 ^s 323
19.5	34.061 ¹⁵²	27.08 ^s 44	37.024 ¹⁴¹	16.87 ^s 44	27.419 ¹²²	69.70 ^s 321
29.5	34.213 ¹⁰¹	27.52 ^s 67	37.165 ⁹⁵	16.43 ^s 23	27.541 ⁶⁸	72.91 ^s 314
Aug. 8.5	34.314 ⁴⁸	28.19 ^s 84	37.260 ⁴⁸	16.20 ^s 2	27.609 ¹⁷	76.05 ^s 299
18.5	34.362 ⁵	29.03 ^s 99	37.308 ¹	16.18 ^s 15	27.626 ³⁵	79.04 ^s 278
28.4	34.357 ⁵⁵	30.02 ^s 107	37.309 ⁴³	16.33 ^s 31	27.591 ⁸¹	81.82 ^s 253
Sept. 7.4	34.302 ¹⁰⁰	31.09 ^s 112	37.266 ⁸⁴	16.64 ^s 43	27.510 ¹²⁵	84.35 ^s 221
17.4	34.202 ¹³⁸	32.21 ^s 110	37.182 ¹¹⁶	17.07 ^s 53	27.385 ¹⁶⁰	86.56 ^s 187
27.4	34.064 ¹⁶⁸	33.31 ^s 102	37.066 ¹⁴²	17.60 ^s 57	27.225 ¹⁸⁹	88.43 ^s 147
Oct. 7.3	33.896 ¹⁸⁷	34.33 ^s 91	36.924 ¹⁶⁰	18.17 ^s 60	27.036 ²⁰⁷	89.90 ^s 107
17.3	33.709 ¹⁹⁵	35.24 ^s 75	36.764 ¹⁶⁶	18.77 ^s 60	26.829 ²²⁰	90.97 ^s 62
27.3	33.514 ¹⁹⁴	35.99 ^s 55	36.598 ¹⁶⁶	19.37 ^s 56	26.609 ²²¹	91.59 ^s 15
Nov. 6.2	33.320 ¹⁸²	36.54 ^s 35	36.432 ¹⁵⁶	19.93 ^s 51	26.388 ²¹⁶	91.74 ^s 30
16.2	33.138 ¹⁶¹	36.89 ^s 12	36.276 ¹³⁸	20.44 ^s 45	26.172 ¹⁹⁹	91.44 ^s 77
26.2	32.977 ¹³³	37.01 ^s 10	36.138 ¹¹⁵	20.89 ^s 37	25.973 ¹⁷⁷	90.67 ^s 121
Dec. 6.2	32.844 ¹⁰⁰	36.91 ^s 31	36.023 ⁸⁷	21.26 ^s 29	25.796 ¹⁴⁹	89.46 ^s 163
16.1	32.744 ⁶³	36.60 ^s 51	35.936 ⁵⁵	21.55 ^s 21	25.647 ¹¹⁶	87.83 ^s 199
26.1	32.681 ²³	36.09 ^s 70	35.881 ²²	21.76 ^s 12	25.531 ⁷⁷	85.84 ^s 231
36.1	32.658	35.39	35.859	21.88	25.454	83.53
Mean Place	30.687	48.84	33.876	37.57	23.893	54.25
Sec δ , Tan δ	1.187	-0.639	1.049	-0.316	1.275	+0.792
L α , L δ	+0.01	+0.3	+0.01	+0.3	-0.01	+0.3
ω α , ω δ	+0.03	-0.7	+0.02	-0.7	-0.04	-0.7

AUTHORITY

A. E.

APPARENT PLACES OF STARS, 1922. 415

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Cygni. Mag. 3.4		α Equulei. Mag. 4.1		θ ¹ Microscopii. Mag. 4.9	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	^h 21 ^m 9	^o 29 ['] 54	^h 21 ^m 11	^o 4 ['] 55	^h 21 ^m 15	^o 41 ['] 7
Jan. 1.1	36.204 ^s 50	35.26 ^s 223	54.752 ^s 19	36.00 ^s 121	45.226 ^s 29	85.79 ^s 125
11.1	36.154 16	33.03 237	54.733 10	34.79 121	45.197 14	84.54 147
21.0	36.138 23	30.66 240	54.743 44	33.58 117	45.211 56	83.07 163
31.0	36.161 60	28.26 236	54.787 73	32.41 106	45.267 98	81.44 177
Feb. 10.0	36.221 102	25.90 220	54.860 105	31.35 88	45.365 139	79.67 188
20.0	36.323 139	23.70 195	54.965 134	30.47 67	45.504 178	77.79 196
Mar. 1.9	36.462 175	21.75 163	55.099 165	29.80 41	45.682 214	75.83 199
11.9	36.637 211	20.12 125	55.264 195	29.39 13	45.896 250	73.84 200
21.9	36.848 245	18.87 76	55.459 220	29.26 21	46.146 284	71.84 197
31.8	37.093 266	18.11 29	55.679 244	29.47 54	46.430 313	69.87 191
Apr. 10.8	37.359 294	17.82 19	55.923 265	30.01 86	46.743 338	67.96 179
20.8	37.653 310	18.01 72	56.188 282	30.87 115	47.081 359	66.17 165
30.8	37.963 319	18.73 117	56.470 293	32.02 142	47.440 374	64.52 147
May 10.7	38.282 324	19.90 159	56.763 296	33.44 164	47.814 381	63.05 123
20.7	38.606 314	21.49 200	57.059 295	35.08 181	48.195 379	61.82 98
30.7	38.920 300	23.49 231	57.354 285	36.89 194	48.574 369	60.84 70
June 9.7	39.220 279	25.80 256	57.639 267	38.83 199	48.943 349	60.14 38
19.6	39.499 248	28.36 274	57.906 242	40.82 200	49.292 321	59.76 7
29.6	39.747 210	31.10 284	58.148 212	42.82 196	49.613 284	59.69 26
July 9.6	39.957 171	33.94 288	58.360 175	44.78 186	49.897 239	59.95 55
19.5	40.128 125	36.82 285	58.535 136	46.64 171	50.136 188	60.50 85
29.5	40.253 76	39.67 277	58.671 92	48.35 156	50.324 132	61.35 109
Aug. 8.5	40.329 28	42.44 260	58.763 45	49.91 135	50.456 73	62.44 130
18.5	40.357 19	45.04 238	58.808 4	51.26 115	50.529 15	63.74 145
28.4	40.338 67	47.42 217	58.812 38	52.41 93	50.544 42	65.19 153
Sept. 7.4	40.271 105	49.59 184	58.774 76	53.34 69	50.502 95	66.72 155
17.4	40.166 137	51.43 153	58.698 106	54.03 46	50.407 139	68.27 151
27.4	40.029 164	52.96 121	58.592 132	54.49 26	50.268 176	69.78 139
Oct. 7.3	39.865 186	54.17 81	58.460 149	54.75 3	50.092 202	71.17 121
17.3	39.679 196	54.98 45	58.311 157	54.78 15	49.890 217	72.38 98
27.3	39.483 198	55.43 0	58.154 158	54.63 36	49.673 220	73.36 70
Nov. 6.2	39.285 193	55.43 39	57.996 151	54.27 57	49.453 213	74.06 41
16.2	39.092 178	55.04 80	57.845 138	53.70 73	49.240 194	74.47 9
26.2	38.914 160	54.24 117	57.707 120	52.97 88	49.046 168	74.56 24
Dec. 6.2	38.754 136	53.07 155	57.587 93	52.09 102	48.878 134	74.32 53
16.1	38.618 106	51.52 184	57.494 67	51.07 112	48.744 97	73.79 83
26.1	38.512 74	49.68 212	57.427 39	49.95 120	48.647 54	72.96 109
36.1	38.438	47.56	57.388	48.75	48.593	71.87
Mean Place	36.937	22.47	55.501	28.60	46.682	83.87
Sec δ, Tan δ	1.154	+0.575	1.004	+0.086	1.328	-0.873
L α, L δ	-0.01	+0.3	0.00	+0.3	+0.02	+0.3
ω α, ω δ	-0.03	-0.7	0.00	-0.7	+0.04	-0.7
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 417

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Capricorni. Mag. 3·9		β Aquarii. Mag. 3·1		β Cephei. Mag. 3·3	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	h m	° ′	h m	° ′	h m	° ′
	21 22	22 44	21 27	5 54	21 27	70 12
	^s		^s		^s	
Jan. 1 1	12·041	58·98	26·469	49·89	38·15	84·91
11·1	12·018	58·74	26·444	50·55	37·78	82·32
21·1	12·029	58·35	26·446	51·14	37·51	79·39
31·0	12·074	57·79	26·480	51·62	37·35	76·19
Feb. 10·0	12·151	57·13	26·543	51·98	37·30	72·87
20·0	12·261	56·30	26·639	52·18	37·37	69·56
Mar. 2·0	12·402	55·33	26·761	52·18	37·56	66·37
11·9	12·575	54·21	26·917	51·98	37·86	63·45
21·9	12·780	52·95	27·099	51·55	38·26	60·92
31·9	13·011	51·55	27·312	50·85	38·76	58·87
Apr. 10·8	13·270	50·08	27·548	49·92	39·33	57·35
20·8	13·551	48·54	27·809	48·77	39·97	56·42
30·8	13·852	46·99	28·090	47·42	40·64	56·08
May 10·8	14·167	45·41	28·383	45·91	41·33	56·39
20·7	14·489	43·91	28·682	44·30	42·01	57·31
30·7	14·810	42·47	28·984	42·57	42·67	58·82
June 9·7	15·123	41·19	29·277	40·85	43·29	60·84
19·7	15·422	40·08	29·556	39·16	43·85	63·33
29·6	15·697	39·16	29·812	37·51	44·34	66·21
July 9·6	15·942	38·49	30·043	36·00	44·74	69·42
19·6	16·148	38·01	30·236	34·67	45·04	72·85
29·5	16·315	37·81	30·390	33·48	45·24	76·44
Aug. 8·5	16·434	37·82	30·502	32·52	45·33	80·09
18·5	16·504	38·07	30·569	31·75	45·31	83·74
28·5	16·526	38·53	30·595	31·19	45·18	87·30
Sept. 7·4	16·502	39·11	30·574	30·85	44·96	90·68
17·4	16·433	39·83	30·517	30·71	44·64	93·85
27·4	16·331	40·63	30·421	30·74	44·23	96·69
Oct. 7·4	16·196	41·45	30·304	30·90	43·76	99·19
17·3	16·043	42·26	30·165	31·20	43·22	101·24
27·3	15·877	43·04	30·014	31·63	42·64	102·81
Nov. 6·3	15·708	43·72	29·861	32·13	42·03	103·86
16·2	15·543	44·32	29·713	32·72	41·41	104·35
26·2	15·394	44·73	29·576	33·35	40·79	104·24
Dec. 6·2	15·265	45·04	29·456	34·02	40·19	103·51
16·2	15·164	45·21	29·359	34·71	39·64	102·24
26·1	15·089	45·22	29·288	35·40	39·14	100·40
36·1	15·048	45·09	29·243	36·09	38·72	98·06
Mean Place	13·041	59·94	27·240	54·37	39·65	65·13
Sec δ, Tan δ	1·084	-0·419	1·005	-0·104	2·955	+2·780
L α, L δ	+0·01	+0·3	0·00	+0·3	-0·05	+0·3
ω α, ω δ	+0·02	-0·6	+0·01	-0·6	-0·15	-0·6

AUTHORITY

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418 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ξ Aquarii. Mag. 4.8		ε Pegasi. Mag. 2.5		δ Capricorni. Mag. 3.0	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	^h ^m 21 33	[°] ['] 8 11	^h ^m 21 40	[°] ['] 9 30	^h ^m 21 42	[°] ['] 16 28
Jan.	1.1 35.297 ²⁹ 11.1 35.268 ¹ 21.1 35.267 ²⁸ 31.0 35.295 ⁵⁹	73.25 ⁵¹ 73.76 ⁴⁵ 74.21 ³⁴ 74.55 ²¹	20.679 ⁴⁵ 20.634 ¹⁹ 20.615 ¹² 20.627 ⁴³	68.09 ¹³¹ 66.78 ¹³⁹ 65.39 ¹³⁴ 64.05 ¹²⁴	43.435 ³⁸ 43.397 ⁹ 43.388 ²² 43.410 ⁵⁴	53.66 ¹¹ 53.77 ² 53.75 ¹⁴ 53.61 ³²
Feb.	10.0 35.354 ⁸⁸ 20.0 35.442 ¹¹⁹	74.76 ⁶ 74.82 ¹³	20.670 ⁷⁴ 20.744 ¹⁰⁶	62.81 ¹¹³ 61.68 ⁸⁹	43.464 ⁸³ 43.547 ¹¹⁴	53.29 ⁴⁸ 52.81 ⁶⁶
Mar.	2.0 35.561 ¹⁵⁰ 11.9 35.711 ¹⁷⁹ 21.9 35.890 ²⁰⁸ 31.9 36.098 ²³⁵	74.69 ³⁵ 74.34 ⁵⁶ 73.78 ⁸⁰ 72.98 ¹⁰³	20.850 ¹³⁹ 20.989 ¹⁷⁰ 21.159 ²⁰¹ 21.360 ²³⁰	60.79 ⁶⁴ 60.15 ³⁶ 59.79 ¹ 59.78 ³⁰	43.661 ¹⁴⁷ 43.808 ¹⁷⁷ 43.985 ²⁰⁸ 44.193 ²³⁴	52.15 ⁸⁴ 51.31 ¹⁰¹ 50.30 ¹¹⁸ 49.12 ¹³⁵
Apr.	10.9 36.333 ²⁵⁹ 20.8 36.592 ²⁷⁸ 30.8 36.870 ²⁹³ 10.8 37.163 ³⁰³ 20.7 37.466 ³⁰³ 30.7 37.769 ²⁹⁸	71.95 ¹²³ 70.72 ¹⁴⁰ 69.32 ¹⁵⁵ 67.77 ¹⁶⁵ 66.12 ¹⁶⁹ 64.43 ¹⁷¹	21.590 ²⁵³ 21.843 ²⁷⁵ 22.118 ²⁹⁰ 22.408 ²⁹⁷ 22.705 ³⁰¹ 23.006 ²⁹³	60.12 ⁷⁴ 60.82 ¹⁰³ 61.85 ¹³² 63.17 ¹⁶⁰ 64.77 ¹⁸⁴ 66.61 ²⁰¹	44.427 ²⁶² 44.689 ²⁸³ 44.972 ³⁰⁰ 45.272 ³¹⁰ 45.582 ³¹³ 45.895 ³¹⁰	47.77 ¹⁴⁸ 46.29 ¹⁵⁷ 44.72 ¹⁶³ 43.09 ¹⁶⁵ 41.44 ¹⁶⁵ 39.79 ¹⁵⁵
May	9.7 38.067 ²⁸⁴ 19.7 38.351 ²⁶⁴ 29.6 38.615 ²³⁶ 9.6 38.851 ²⁰¹ 19.6 39.052 ¹⁶² 29.6 39.214 ¹¹⁹	62.72 ¹⁶⁵ 61.07 ¹⁵⁶ 59.51 ¹⁴² 58.09 ¹²⁶ 56.83 ¹⁰⁶ 55.77 ⁸⁵	23.299 ²⁸³ 23.582 ²⁶⁰ 23.842 ²³⁰ 24.072 ¹⁹⁹ 24.271 ¹⁵⁷ 24.428 ¹¹⁸	68.62 ²¹⁰ 70.72 ²¹⁷ 72.80 ²¹⁷ 75.06 ²¹¹ 77.17 ¹⁹⁷ 79.14 ¹⁸³	46.205 ²⁹⁸ 46.503 ²⁷⁸ 46.781 ²⁵⁰ 47.031 ²¹⁶ 47.247 ¹⁷⁹ 47.426 ¹³⁴	38.24 ¹⁴² 36.82 ¹²⁷ 35.55 ¹⁰⁸ 34.47 ⁸⁶ 33.61 ⁶² 32.99 ³⁹
Aug.	8.5 39.333 ⁷⁵ 18.5 39.408 ³⁰ 28.5 39.438 ¹⁴ 7.4 39.424 ⁵⁴ 17.4 39.370 ⁸⁸ 27.4 39.282 ¹¹⁶	54.92 ⁶⁴ 54.28 ⁴² 53.86 ²² 53.64 ³ 53.61 ¹⁴ 53.75 ²⁹	24.546 ⁷⁰ 24.616 ³¹ 24.647 ¹⁵ 24.632 ⁵⁴ 24.578 ⁸⁴ 24.494 ¹¹⁵	80.97 ¹⁶⁹ 82.66 ¹⁴⁵ 84.11 ¹²² 85.33 ¹⁰¹ 86.34 ⁷⁵ 87.09 ⁴⁹	47.560 ⁸⁸ 47.648 ⁴¹ 47.689 ³ 47.686 ⁴⁷ 47.639 ⁸² 47.557 ¹¹²	32.60 ¹⁶ 32.44 ⁷ 32.51 ²⁶ 32.77 ⁴³ 33.20 ⁵⁵ 33.75 ⁶⁵
Sept.	7.4 39.166 ¹³⁶ 17.3 39.030 ¹⁴⁸ 27.3 38.882 ¹⁵² 6.3 38.730 ¹⁴⁹ 16.3 38.581 ¹³⁷ 26.2 38.444 ¹²¹	54.04 ³⁹ 54.43 ⁴⁸ 54.91 ⁵⁶ 55.47 ⁵⁹ 56.06 ⁶² 56.68 ⁶⁴	24.379 ¹³⁵ 24.244 ¹⁴⁶ 24.098 ¹⁵³ 23.945 ¹⁵² 23.793 ¹⁴² 23.651 ¹²⁸	87.58 ²⁸ 87.86 ¹ 87.87 ²² 87.65 ⁴³ 87.22 ⁶⁴ 86.58 ⁸⁷	47.445 ¹³⁵ 47.310 ¹⁵⁰ 47.160 ¹⁵⁵ 47.005 ¹⁵² 46.853 ¹⁴⁴ 46.709 ¹²⁷	34.40 ⁷¹ 35.11 ⁷¹ 35.82 ⁷³ 36.55 ⁶⁷ 37.22 ⁵⁹ 37.81 ⁵²
Oct.	6.2 38.323 ⁹⁹ 16.2 38.224 ⁷⁵ 26.1 38.149 ⁴⁸ 36.1 38.101	57.32 ⁶³ 57.95 ⁶¹ 58.56 ⁵⁸ 59.14	23.523 ¹¹² 23.411 ⁸⁸ 23.323 ⁶³ 23.260	85.71 ¹⁰² 84.69 ¹¹⁶ 83.53 ¹³¹ 82.22	46.582 ¹⁰⁸ 46.474 ⁸¹ 46.393 ⁵⁵ 46.338	38.33 ⁴² 38.75 ³² 39.07 ²² 39.29
Mean Place	36.066	76.97	21.284	60.14	44.266	55.00
Sec δ, Tan δ	1.010	-0.144	1.014	+0.168	1.043	-0.296
L α, L δ	0.00	+0.3	0.00	+0.3	0.00	+0.3
ω α, ω δ	+0.01	-0.6	-0.01	-0.6	+0.02	-0.6
AUTHORITY			A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 419

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Gruis. Mag. 3.2		16 Pegasi. Mag. 5.1		α Aquarii. Mag. 3.2	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m	° ' "	h m	° ' "	h m	° ' "
	21 49	37 43	21 49	25 33	22 I	0 41
	^s		^s		^s	
Jan. 1.1	11.382 ₆₂	60.64 ₉₆	30.221 ₇₇	39.53 ₁₈₅	46.124 ₅₃	52.82 ₈₄
11.1	11.320 ₂₆	59.68 ₁₁₉	30.144 ₄₃	37.68 ₂₀₂	46.071 ₃₀	53.66 ₈₀
21.1	11.294 ₁₁	58.49 ₁₄₂	30.101 ₁₄	35.66 ₂₀₇	46.041 _I	54.46 ₇₃
31.0	11.305 ₅₂	57.07 ₁₆₁	30.087 ₂₂	33.59 ₂₀₆	46.040 ₂₇	55.19 ₆₁
Feb. 10.0	11.357 ₈₉	55.46 ₁₇₈	30.109 ₅₇	31.53 ₁₉₆	46.067 ₅₆	55.80 ₄₈
20.0	11.446 ₁₂₇	53.68 ₁₉₂	30.166 ₉₆	29.57 ₁₇₆	46.123 ₈₈	56.28 ₂₈
Mar. 2.0	11.573 ₁₆₄	51.76 ₂₀₁	30.262 ₁₃₃	27.81 ₁₅₁	46.211 ₁₁₉	56.56 ₃
11.9	11.737 ₂₀₃	49.75 ₂₀₈	30.395 ₁₆₇	26.30 ₁₁₇	46.330 ₁₅₂	56.59 ₂₀
21.9	11.940 ₂₃₇	47.67 ₂₁₀	30.562 ₂₀₅	25.13 ₇₇	46.482 ₁₈₂	56.39 ₅₀
31.9	12.177 ₂₇₁	45.57 ₂₁₀	30.767 ₂₄₀	24.36 ₃₂	46.664 ₂₁₅	55.89 ₇₆
Apr. 10.9	12.448 ₃₀₁	43.47 ₂₀₂	31.007 ₂₆₆	24.04 ₁₁	46.879 ₂₄₂	55.13 ₁₀₂
20.8	12.749 ₃₂₉	41.45 ₁₉₃	31.273 ₂₈₆	24.15 ₅₈	47.121 ₂₆₁	54.11 ₁₂₇
30.8	13.078 ₃₄₈	39.52 ₁₇₈	31.559 ₃₀₆	24.73 ₁₀₁	47.382 ₂₈₃	52.84 ₁₄₈
May 10.8	13.426 ₃₆₁	37.74 ₁₆₁	31.865 ₃₁₈	25.74 ₁₄₃	47.665 ₂₉₆	51.36 ₁₆₆
20.7	13.787 ₃₆₈	36.13 ₁₃₆	32.183 ₃₁₈	27.17 ₁₇₈	47.961 ₃₀₁	49.70 ₁₈₀
30.7	14.155 ₃₆₃	34.77 ₁₁₁	32.501 ₃₁₀	28.95 ₂₁₀	48.262 ₃₀₀	47.90 ₁₈₈
June 9.7	14.518 ₃₅₂	33.66 ₈₀	32.811 ₂₉₅	31.05 ₂₃₅	48.562 ₂₈₉	46.02 ₁₉₂
19.7	14.870 ₃₂₈	32.86 ₄₈	33.106 ₂₇₆	33.40 ₂₅₃	48.851 ₂₇₂	44.10 ₁₈₇
29.6	15.198 ₂₉₉	32.38 ₁₇	33.382 ₂₄₂	35.93 ₂₆₄	49.123 ₂₅₁	42.23 ₁₇₉
July 9.6	15.497 ₂₆₁	32.21 ₁₈	33.624 ₂₀₆	38.57 ₂₇₀	49.374 ₂₁₆	40.44 ₁₆₉
19.6	15.758 ₂₁₄	32.39 ₅₀	33.830 ₁₆₈	41.27 ₂₆₈	49.590 ₁₈₀	38.75 ₁₅₃
29.6	15.972 ₁₆₅	32.89 ₈₁	33.998 ₁₂₀	43.95 ₂₆₁	49.770 ₁₄₁	37.22 ₁₃₃
Aug. 8.5	16.137 ₁₁₁	33.70 ₁₀₄	34.118 ₇₆	46.56 ₂₄₉	49.911 ₉₇	35.89 ₁₁₂
18.5	16.248 ₅₄	34.74 ₁₂₈	34.194 ₂₈	49.05 ₂₃₁	50.008 ₅₄	34.77 ₉₁
28.5	16.302 _I	36.02 ₁₄₁	34.222 ₁₃	51.36 ₂₀₈	50.062 ₁₁	33.86 ₆₈
Sept. 7.4	16.303 ₅₃	37.43 ₁₅₁	34.209 ₅₈	53.44 ₁₈₃	50.073 ₂₇	33.18 ₄₅
17.4	16.250 ₉₉	38.94 ₁₅₄	34.151 ₉₇	55.27 ₁₅₈	50.046 ₆₄	32.73 ₂₈
27.4	16.151 ₁₃₈	40.48 ₁₄₉	34.054 ₁₁₉	56.85 ₁₂₄	49.982 ₉₄	32.45 ₄
Oct. 7.4	16.013 ₁₆₈	41.97 ₁₃₈	33.935 ₁₅₀	58.09 ₉₂	49.888 ₁₁₆	32.41 ₁₂
17.3	15.845 ₁₈₈	43.35 ₁₂₁	33.785 ₁₆₃	59.01 ₅₇	49.772 ₁₃₄	32.53 ₂₈
27.3	15.657 ₁₉₈	44.56 ₉₉	33.622 ₁₇₂	59.58 ₂₄	49.638 ₁₄₁	32.81 ₄₄
Nov. 6.3	15.459 ₁₉₈	45.55 ₇₁	33.450 ₁₇₃	59.82 ₁₅	49.497 ₁₄₀	33.25 ₅₄
16.3	15.261 ₁₈₈	46.26 ₄₁	33.277 ₁₆₈	59.67 ₅₃	49.357 ₁₃₇	33.79 ₆₅
26.2	15.073 ₁₇₁	46.67 ₁₃	33.109 ₁₅₆	59.14 ₈₅	49.220 ₁₂₆	34.44 ₇₃
Dec. 6.2	14.902 ₁₄₇	46.80 ₁₇	32.953 ₁₃₉	58.20 ₁₁₉	49.094 ₁₁₄	35.17 ₇₈
16.2	14.755 ₁₁₆	46.63 ₅₀	32.814 ₁₁₈	57.10 ₁₅₀	48.980 ₉₁	35.95 ₈₃
26.1	14.639 ₈₂	46.13 ₇₈	32.696 ₉₄	55.60 ₁₇₂	48.889 ₆₉	36.78 ₈₆
36.1	14.557	45.35	32.602	53.88	48.820	37.64
Mean Place	12.614	56.98	30.725	27.63	46.704	57.47
Sec δ , Tan δ	1.264	-0.774	1.108	+0.478	1.000	-0.012
L α , L δ	+0.01	+0.3	-0.01	+0.3	0.00	+0.3
ω α , ω δ	+0.04	-0.5	-0.03	-0.5	0.00	-0.5
AUTHORITY	A. E.		A. E.		A. E.	

420 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	α Gruis. Mag. 2.2		ι Pegasi. Mag. 4.0		ζ Cephei. Mag. 3.6	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 22 3	° ' ° 47 19	h m 22 3	° ' ° 24 57	h m 22 8	° ' ° 57 48
Jan. 1.1	17.924 ⁹⁹	89.26 ¹³⁷	22.288 ⁸⁴	60.41 ¹⁷⁵	8.289 ²³⁷	78.25 ²²²
11.1	17.825 ⁶⁰	87.89 ¹⁶³	22.204 ⁵⁵	58.66 ¹⁹⁰	8.052 ¹⁹⁰	76.03 ²⁵⁷
21.1	17.765 ¹⁶	86.26 ¹⁹⁴	22.149 ²⁵	56.76 ¹⁹⁹	7.862 ¹³²	73.46 ²⁸⁷
31.1	17.749 ²⁸	84.32 ²¹³	22.124 ⁸	54.77 ¹⁹⁹	7.730 ⁶⁸	70.59 ³⁰³
Feb. 10.0	17.777 ⁷⁶	82.19 ²³⁴	22.132 ⁴³	52.78 ¹⁹¹	7.662 ²	67.56 ³⁰⁸
20.0	17.853 ¹²¹	79.85 ²⁴⁴	22.175 ⁸⁰	50.87 ¹⁷⁴	7.660 ⁷²	64.48 ³⁰²
Mar. 2.0	17.974 ¹⁶⁶	77.41 ²⁵³	22.255 ¹¹⁸	49.13 ¹⁴⁸	7.732 ¹⁴³	61.46 ²⁸²
12.0	18.140 ²¹¹	74.88 ²⁵⁴	22.373 ¹⁵⁵	47.65 ¹¹⁷	7.875 ²¹⁵	58.64 ²⁵¹
21.9	18.351 ²⁵²	72.34 ²⁵⁴	22.528 ¹⁹²	46.48 ⁷⁹	8.090 ²⁷⁹	56.13 ²⁰⁹
31.9	18.603 ²⁹³	69.80 ²⁴⁴	22.720 ²²⁶	45.69 ³⁷	8.369 ³⁴¹	54.04 ¹⁶³
Apr. 10.9	18.896 ³³²	67.36 ²³⁵	22.946 ²⁵⁷	45.32 ⁷	8.710 ³⁹⁰	52.41 ¹⁰⁸
20.8	19.228 ³⁶¹	65.01 ²¹³	23.203 ²⁸³	45.39 ⁵²	9.100 ⁴²⁹	51.33 ⁵¹
30.8	19.589 ³⁸⁶	62.88 ¹⁹³	23.486 ³⁰²	45.91 ⁹⁵	9.529 ⁴⁵⁸	50.82 ¹⁰
May 10.8	19.975 ⁴⁰⁷	60.95 ¹⁶⁶	23.788 ³¹⁵	46.86 ¹³⁵	9.987 ⁴⁷²	50.92 ⁶⁸
20.8	20.382 ⁴¹⁴	59.29 ¹³³	24.103 ³¹⁹	48.21 ¹⁷²	10.459 ⁴⁷⁴	51.60 ¹²⁵
30.7	20.796 ⁴¹⁰	57.96 ¹⁰⁰	24.422 ³¹⁵	49.93 ²⁰⁴	10.933 ⁴⁶¹	52.85 ¹⁷⁶
June 9.7	21.206 ⁴⁰³	56.96 ⁶³	24.737 ³⁰³	51.97 ²²⁸	11.394 ⁴³⁷	54.61 ²²⁴
19.7	21.609 ³⁷⁸	56.33 ²⁶	25.040 ²⁸²	54.25 ²⁴⁸	11.831 ⁴⁰⁰	56.85 ²⁶³
29.7	21.987 ³⁵¹	56.07 ¹⁸	25.322 ²⁵⁴	56.73 ²⁵⁹	12.231 ³⁵¹	59.48 ²⁹⁶
July 9.6	22.338 ³⁰⁶	56.25 ⁵³	25.576 ²²⁰	59.32 ²⁶⁶	12.582 ²⁹⁷	62.44 ³²⁴
19.6	22.644 ²⁵⁸	56.78 ⁹³	25.796 ¹⁸⁰	61.98 ²⁶⁵	12.879 ²³²	65.68 ³⁴¹
29.6	22.902 ²⁰¹	57.71 ¹²³	25.976 ¹³⁶	64.63 ²⁵⁹	13.111 ¹⁶⁷	69.09 ³⁵¹
Aug. 8.5	23.103 ¹⁴²	58.94 ¹⁵¹	26.112 ⁹²	67.22 ²⁴⁷	13.278 ²⁵	72.60 ³⁵³
18.5	23.245 ⁷⁶	60.45 ¹⁷⁶	26.204 ⁴⁵	69.69 ²³⁰	13.373 ⁹⁵	76.13 ³⁵⁰
28.5	23.321 ¹²	62.21 ¹⁹⁰	26.249 ⁰	71.99 ²⁰⁹	13.398 ⁴²	79.63 ³³⁴
Sept. 7.5	23.333 ⁴⁷	64.11 ¹⁹⁹	26.249 ⁴¹	74.08 ¹⁸⁶	13.356 ¹⁰⁹	82.97 ³¹⁶
17.4	23.286 ¹⁰²	66.10 ¹⁹⁸	26.208 ⁷⁹	75.94 ¹⁵⁸	13.247 ¹⁶⁷	86.13 ²⁹²
27.4	23.184 ¹⁵¹	68.08 ¹⁸⁸	26.129 ¹¹⁰	77.52 ¹²⁸	13.080 ²²¹	89.05 ²⁵⁸
Oct. 7.4	23.033 ¹⁹²	69.96 ¹⁷¹	26.019 ¹³⁵	78.80 ⁹⁶	12.859 ²⁶³	91.63 ²²¹
17.4	22.841 ²²¹	71.67 ¹⁵⁰	25.884 ¹⁵³	79.76 ⁶³	12.596 ²⁹⁹	93.84 ¹⁷⁶
27.3	22.620 ²³⁵	73.17 ¹¹⁷	25.731 ¹⁶³	80.39 ²⁹	12.297 ³²⁵	95.60 ¹²⁸
Nov. 6.3	22.385 ²⁴¹	74.34 ⁸³	25.568 ¹⁶⁶	80.68 ⁶	11.972 ³⁴²	96.88 ⁷⁶
16.3	22.144 ²³²	75.17 ⁴⁴	25.402 ¹⁶⁴	80.62 ⁴²	11.630 ³⁴⁶	97.64 ²¹
26.2	21.912 ²¹⁸	75.61 ³	25.238 ¹⁵⁴	80.20 ⁷⁵	11.284 ³⁴¹	97.85 ³⁵
Dec. 6.2	21.694 ¹⁹⁴	75.64 ³⁵	25.084 ¹⁴¹	79.45 ¹⁰⁸	10.943 ³²⁶	97.50 ⁹¹
16.2	21.500 ¹⁶²	75.29 ⁷⁵	24.943 ¹²²	78.37 ¹³⁸	10.617 ³⁰¹	96.59 ¹⁴⁴
26.2	21.338 ¹²⁵	74.54 ¹¹³	24.821 ⁹⁹	76.99 ¹⁶⁴	10.316 ²⁶⁸	95.15 ¹⁹⁴
36.1	21.213	73.41	24.722	75.35	10.048	93.21
Mean Place	19.434	82.82	22.706	48.75	8.758	59.21
Sec δ , Tan δ	1.476	-1.085	1.103	+0.465	1.877	+1.589
$L \alpha$, $L \delta$	+0.01	+0.3	-0.01	+0.3	-0.02	+0.4
$\omega \alpha$, $\omega \delta$	+0.06	-0.5	-0.03	-0.5	-0.09	-0.5
AUTHORITY	A. E.		A. N.		A. E.	

APPARENT PLACES OF STARS, 1922. 421

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	θ Aquarii. Mag. 4.3		α Tucanae. Mag. 2.9		γ Aquarii. Mag. 4.0	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	h m 22 12	8 9	h m 22 13	60 38	h m 22 17	1 46
Jan.	1.1 42.528 ⁶³	77.63 ⁵⁰	7.88 ¹⁹	64.84 ¹⁸⁹	37.167 ⁶⁷	46.97 ⁷⁶
	11.1 42.465 ³⁵	78.13 ⁴³	7.69 ¹³	62.95 ²²³	37.100 ⁴⁰	47.73 ⁷⁴
	21.1 42.430 ¹¹	78.56 ³¹	7.56 ⁶	60.72 ²⁵⁵	37.060 ¹⁸	48.47 ⁶³
	31.0 42.419 ²⁰	78.87 ¹⁵	7.50 ¹	58.17 ²⁷⁹	37.042 ¹³	49.10 ⁵³
Feb.	10.0 42.439 ⁴⁹	79.02 ³	7.49 ⁷	55.38 ²⁹⁵	37.055 ⁴¹	49.63 ³⁹
	20.0 42.488 ⁸¹	78.99 ²⁰	7.56 ¹²	52.43 ³⁰⁵	37.096 ⁷³	50.02 ¹⁹
Mar.	2.0 42.569 ¹¹⁰	78.79 ⁴⁰	7.68 ²⁰	49.38 ³⁰⁹	37.169 ¹⁰²	50.21 ⁵
	12.0 42.679 ¹⁴⁴	78.39 ⁶⁶	7.88 ²⁶	46.29 ³⁰⁸	37.271 ¹⁴⁰	50.16 ²⁹
	21.9 42.823 ¹⁷⁵	77.73 ⁸⁷	8.14 ³¹	43.21 ²⁹⁷	37.411 ¹⁶⁸	49.87 ⁵⁶
	31.9 42.998 ²⁰⁸	76.86 ¹¹⁰	8.45 ³⁷	40.24 ²⁸²	37.579 ²⁰⁴	49.31 ⁸⁰
Apr.	10.9 43.206 ²³⁵	75.76 ¹³¹	8.82 ⁴²	37.42 ²⁶⁰	37.783 ²³¹	48.51 ¹⁰⁷
	20.8 43.441 ²⁶¹	74.45 ¹⁴⁸	9.24 ⁴⁶	34.82 ²³³	38.014 ²⁵⁴	47.44 ¹³¹
	30.8 43.702 ²⁸³	72.97 ¹⁶³	9.70 ⁵⁰	32.49 ²⁰¹	38.268 ²⁷⁹	46.13 ¹⁵³
May	10.8 43.985 ²⁹⁷	71.34 ¹⁷⁵	10.20 ⁵²	30.48 ¹⁶⁴	38.547 ²⁹⁴	44.60 ¹⁶⁸
	20.8 44.282 ³⁰³	69.59 ¹⁷⁹	10.72 ⁵⁴	28.84 ¹²⁴	38.841 ³⁰⁰	42.92 ¹⁸¹
	30.7 44.585 ³⁰⁶	67.80 ¹⁸¹	11.26 ⁵³	27.60 ⁸⁰	39.141 ³⁰³	41.11 ¹⁸⁸
June	9.7 44.891 ²⁹⁸	65.99 ¹⁷⁸	11.79 ⁵³	26.80 ³⁵	39.444 ²⁹⁴	39.23 ¹⁹⁰
	19.7 45.189 ²⁸²	64.21 ¹⁶⁹	12.32 ⁵⁰	26.45 ¹²	39.738 ²⁸⁰	37.33 ¹⁸⁹
	29.7 45.471 ²⁵⁹	62.52 ¹⁵³	12.82 ⁴⁶	26.57 ⁶⁰	40.018 ²⁵⁸	35.44 ¹⁷⁸
July	9.6 45.730 ²³²	60.99 ¹³⁵	13.28 ⁴¹	27.17 ¹⁰¹	40.276 ²³¹	33.66 ¹⁶⁶
	19.6 45.962 ¹⁹³	59.64 ¹¹⁹	13.69 ³⁵	28.18 ¹⁴⁵	40.507 ¹⁹³	32.00 ¹⁴⁹
	29.6 46.155 ¹⁵⁴	58.45 ⁹³	14.04 ²⁷	29.63 ¹⁷⁹	40.700 ¹⁵⁷	30.51 ¹³²
Aug.	8.5 46.309 ¹¹⁴	57.52 ⁷³	14.31 ¹⁹	31.42 ²⁰⁹	40.857 ¹¹³	29.19 ¹⁰⁹
	18.5 46.423 ⁶⁶	56.79 ⁴⁶	14.50 ¹¹	33.51 ²³³	40.970 ⁷⁰	28.10 ⁸⁵
	28.5 46.489 ²⁵	56.33 ²⁵	14.61 ²	35.84 ²⁴⁵	41.040 ²⁶	27.25 ⁶⁵
Sept.	7.5 46.514 ¹⁷	56.08 ⁶	14.63 ⁷	38.29 ²⁵⁰	41.066 ¹³	26.60 ⁴⁰
	17.4 46.497 ⁵²	56.02 ¹⁶	14.56 ¹⁴	40.79 ²⁴⁵	41.053 ⁴⁸	26.20 ²⁰
	27.4 46.445 ⁸⁷	56.18 ³⁰	14.42 ²¹	43.24 ²³⁰	41.005 ⁸²	26.00 ³
Oct.	7.4 46.358 ¹⁰⁸	56.48 ⁴⁶	14.21 ²⁸	45.54 ²⁰⁵	40.923 ¹⁰⁴	25.97 ¹⁵
	17.4 46.250 ¹²⁹	56.94 ⁵⁴	13.93 ³¹	47.59 ¹⁷²	40.819 ¹²³	26.12 ³³
	27.3 46.121 ¹³⁷	57.48 ⁶²	13.62 ³⁴	49.31 ¹³²	40.696 ¹³⁵	26.45 ⁴⁶
Nov.	6.3 45.984 ¹⁴¹	58.10 ⁶⁵	13.28 ³⁶	50.63 ⁸⁵	40.561 ¹³⁶	26.91 ⁵⁶
	16.3 45.843 ¹³⁸	58.75 ⁶⁹	12.92 ³⁶	51.48 ³⁸	40.425 ¹³⁵	27.47 ⁶⁶
	26.2 45.705 ¹²⁷	59.44 ⁶⁸	12.56 ³⁴	51.86 ¹⁴	40.290 ¹²⁷	28.13 ⁷¹
Dec.	6.2 45.578 ¹¹⁶	60.12 ⁶⁷	12.22 ³¹	51.72 ⁶⁶	40.163 ¹¹⁵	28.84 ⁷⁷
	16.2 45.462 ⁹⁵	60.79 ⁶¹	11.91 ²⁷	51.06 ¹¹⁵	40.048 ¹⁰⁰	29.61 ⁷⁹
	26.2 45.367 ⁷³	61.40 ⁵⁵	11.64 ²²	49.91 ¹⁶⁰	39.948 ⁷⁷	30.40 ⁷⁹
	36.1 45.294	61.95	11.42	48.31	39.871	31.19
Mean Place	43.129	79.80	10.15	55.72	37.680	50.78
Sec δ , Tan δ	1.010	-0.144	2.040	-1.778	1.000	-0.031
$L \alpha$, $L \delta$	0.00	+0.4	+0.02	+0.4	0.00	+0.4
$\omega \alpha$, $\omega \delta$	+0.01	-0.5	+0.11	-0.5	0.00	-0.4
AUTHORITY	A. E.		A. E.		A. E.	

422 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	σ Aquarii. Mag. 4.9		η Aquarii. Mag. 4.1		κ Aquarii. Mag. 5.3	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. S.
	^h ^m 22 26	[°] ['] 11 4	^h ^m 22 31	[°] ['] 0 30	^h ^m 22 33	[°] ['] 4 37
Jan. 1.2	30.701 ^s 69	38.25 39	20.485 ^s 76	68.09 80	42.608 ^s 75	48.30 65
11.1	30.632 47	38.64 26	20.409 52	68.89 76	42.533 53	48.95 57
21.1	30.585 21	38.90 13	20.357 29	69.65 69	42.480 29	49.52 48
31.1	30.564 6	39.03 3	20.328 0	70.34 58	42.451 3	50.00 35
Feb. 10.0	30.570 34	39.00 20	20.328 24	70.92 44	42.448 25	50.35 19
20.0	30.604 65	38.80 40	20.352 60	71.36 27	42.473 56	50.54 1
Mar. 2.0	30.669 97	38.40 61	20.412 89	71.63 1	42.529 87	50.53 22
12.0	30.766 ^s 131	37.79 82	20.501 124	71.64 22	42.616 121	50.31 45
21.9	30.897 164	36.97 104	20.625 156	71.42 49	42.737 155	49.86 70
31.9	31.061 197	35.93 125	20.781 192	70.93 75	42.892 188	49.16 96
Apr. 10.9	31.258 227	34.68 144	20.973 220	70.18 103	43.080 220	48.20 120
20.9	31.485 256	33.24 160	21.193 249	69.15 128	43.300 249	47.00 141
30.8	31.741 278	31.64 173	21.442 273	67.87 150	43.549 271	45.59 159
May 10.8	32.019 296	29.91 181	21.715 291	66.37 167	43.820 291	44.00 174
20.8	32.315 306	28.10 185	22.006 300	64.70 182	44.111 301	42.26 184
30.7	32.621 309	26.25 182	22.306 303	62.88 190	44.412 305	40.42 189
June 9.7	32.930 304	24.43 176	22.609 298	60.98 193	44.717 301	38.53 189
19.7	33.234 291	22.67 163	22.907 285	59.05 191	45.018 288	36.64 182
29.7	33.525 269	21.04 148	23.192 265	57.14 186	45.306 269	34.82 172
July 9.6	33.794 243	19.56 129	23.457 239	55.28 174	45.575 241	33.10 158
19.6	34.037 207	18.27 106	23.696 203	53.54 158	45.816 208	31.52 139
29.6	34.244 168	17.21 82	23.899 168	51.96 138	46.024 171	30.13 118
Aug. 8.6	34.412 126	16.39 57	24.067 125	50.58 120	46.195 130	28.95 95
18.5	34.538 82	15.82 32	24.192 85	49.38 96	46.325 85	28.00 72
28.5	34.620 38	15.50 9	24.277 39	48.42 72	46.410 44	27.28 47
Sept. 7.5	34.658 3	15.41 13	24.316 1	47.70 50	46.454 2	26.81 25
17.4	34.655 42	15.54 32	24.317 38	47.20 27	46.456 35	26.56 4
27.4	34.613 75	15.86 47	24.279 68	46.93 7	46.421 67	26.52 15
Oct. 7.4	34.538 102	16.33 59	24.211 96	46.86 12	46.354 94	26.67 31
17.4	34.436 122	16.92 68	24.115 114	46.98 24	46.260 114	26.98 44
27.3	34.314 133	17.60 72	24.001 128	47.22 43	46.146 127	27.42 55
Nov. 6.3	34.181 139	18.32 74	23.873 131	47.65 55	46.019 134	27.97 63
16.3	34.042 137	19.06 71	23.742 133	48.20 64	45.885 133	28.60 68
26.3	33.905 130	19.77 69	23.609 128	48.84 72	45.752 128	29.28 72
Dec. 6.2	33.775 119	20.46 63	23.481 118	49.56 78	45.624 117	30.00 73
16.2	33.656 101	21.09 55	23.363 104	50.34 81	45.507 104	30.73 71
26.2	33.555 83	21.64 47	23.259 84	51.15 82	45.403 87	31.44 69
36.1	33.472	22.11 47	23.175	51.97	45.316	32.13
Mean Place	31.274	39.02	20.919	71.76	43.071	50.67
Sec δ , Tan δ	1.019	-0.196	1.000	-0.009	1.003	-0.081
$L \alpha$, $L \delta$	0.00	+0.4	0.00	+0.4	0.00	+0.4
$\omega \alpha$, $\omega \delta$	+0.01	-0.4	0.00	-0.4	+0.01	-0.4

AUTHORITY

A. E.

APPARENT PLACES OF STARS, 1922. 423

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ζ Pegasi. Mag. 3.6			β Gruis. Mag. 2.2			η Pegasi. Mag. 3.1					
	R. A.		Dec. N.	R. A.		Dec. S.	R. A.		Dec. N.			
	h	m	°	'	h	m	°	'	h	m	°	'
	22	37	10	25	22	37	47	17	22	39	29	48
Jan. 1.2	33.973	82	32.22	114	59.691	140	44.12	113	20.441	119	58.52	162
11.1	33.891	64	31.08	123	59.551	103	42.99	148	20.322	95	56.90	187
21.1	33.827	40	29.85	122	59.448	65	41.51	182	20.227	66	55.03	200
31.1	33.787	15	28.63	120	59.383	24	39.69	209	20.161	37	53.03	208
Feb. 10.0	33.772	15	27.43	106	59.359	20	37.60	232	20.124	1	50.95	206
20.0	33.787	51	26.37	89	59.379	65	35.28	250	20.125	38	48.89	195
Mar. 2.0	33.838	79	25.48	68	59.444	111	32.78	264	20.163	79	46.94	177
12.0	33.917	118	24.80	39	59.555	157	30.14	271	20.242	121	45.17	148
21.9	34.035	153	24.41	14	59.712	205	27.43	273	20.363	162	43.69	114
31.9	34.188	188	24.27	22	59.917	248	24.70	271	20.525	205	42.55	73
Apr. 10.9	34.376	221	24.49	56	60.165	292	21.99	262	20.730	239	41.82	31
20.9	34.597	245	25.05	88	60.457	331	19.37	249	20.969	274	41.51	14
30.8	34.842	274	25.93	120	60.788	362	16.88	224	21.243	299	41.65	61
May 10.8	35.116	292	27.13	149	61.150	387	14.64	204	21.542	318	42.26	104
20.8	35.408	302	28.62	172	61.537	406	12.60	173	21.860	332	43.30	145
30.7	35.710	306	30.34	192	61.943	410	10.87	137	22.192	331	44.75	181
June 9.7	36.016	301	32.26	206	62.353	412	9.50	100	22.523	324	46.56	213
19.7	36.317	290	34.32	215	62.765	396	8.50	58	22.847	310	48.69	238
29.7	36.607	268	36.47	217	63.161	371	7.92	19	23.157	285	51.07	256
July 9.6	36.875	238	38.64	214	63.532	337	7.73	24	23.442	254	53.63	269
19.6	37.113	208	40.78	206	63.869	293	7.97	67	23.696	216	56.32	275
29.6	37.321	169	42.84	195	64.162	243	8.64	104	23.912	175	59.07	274
Aug. 8.6	37.490	129	44.79	177	64.405	185	9.68	139	24.087	131	61.81	268
18.5	37.619	86	46.56	159	64.590	123	11.07	168	24.218	83	64.49	257
28.5	37.705	43	48.15	135	64.713	60	12.75	191	24.301	39	67.06	238
Sept. 7.5	37.748	2	49.50	117	64.773	1	14.66	205	24.340	5	69.44	219
17.4	37.750	33	50.67	89	64.772	62	16.71	210	24.335	46	71.63	193
27.4	37.717	65	51.56	65	64.710	110	18.81	209	24.289	81	73.56	167
Oct. 7.4	37.652	94	52.21	43	64.600	155	20.90	196	24.208	110	75.23	134
17.4	37.558	110	52.64	18	64.445	193	22.86	178	24.098	135	76.57	102
27.3	37.448	128	52.82	5	64.252	215	24.64	151	23.963	151	77.59	66
Nov. 6.3	37.320	134	52.77	24	64.037	230	26.15	118	23.812	162	78.25	30
16.3	37.186	137	52.53	48	63.807	232	27.33	79	23.650	167	78.55	7
26.3	37.049	133	52.05	66	63.575	225	28.12	38	23.483	166	78.48	46
Dec. 6.2	36.916	124	51.39	87	63.350	211	28.50	2	23.317	159	78.02	82
16.2	36.792	112	50.52	99	63.139	188	28.48	48	23.158	146	77.20	116
26.2	36.680	96	49.53	109	62.951	159	28.00	88	23.012	129	76.04	148
36.1	36.584		48.44		62.792		27.12		22.883		74.56	
Mean Place	34.283		25.39		61.010		35.24		20.614		45.93	
Sec δ, Tan δ	1.017		+0.184		1.474		-1.083		1.153		+0.573	
L α, L δ	0.00		+0.4		+0.01		+0.4		-0.01		+0.4	
ω α, ω δ	-0.01		-0.4		+0.07		-0.4		-0.04		-0.3	
AUTHORITY	A. E.			A. E.			A. E.					

424 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ε Gruis. Mag. 3·7		μ Pegasi. Mag. 3·7		λ Aquarii. Mag. 3·8	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m	° ' "	h m	° ' "	h m	° ' "
	22 43	51 43	22 46	24 11	22 48	7 59
Jan. 1·2	49 ^s ·536 ¹⁶⁸	48 ^{''} ·43 ¹²⁷	14 ^s ·039 ¹⁰⁸	32 ^{''} ·44 ¹⁴⁷	32 ^s ·339 ⁸²	41 ^{''} ·44 ⁵¹
11·2	49 ^s ·368 ¹²⁹	47 ^{''} ·16 ¹⁶³	13 ^s ·931 ⁸⁷	30 ^{''} ·97 ¹⁶⁵	32 ^s ·257 ⁶⁶	41 ^{''} ·95 ⁴¹
21·1	49 ^s ·239 ⁸⁵	45 ^{''} ·53 ²⁰²	13 ^s ·844 ⁶³	29 ^{''} ·32 ¹⁷⁶	32 ^s ·191 ⁴⁰	42 ^{''} ·36 ³³
31·1	49 ^s ·154 ⁴¹	43 ^{''} ·51 ²²⁹	13 ^s ·781 ³⁴	27 ^{''} ·56 ¹⁸¹	32 ^s ·151 ¹⁸	42 ^{''} ·69 ¹¹
Feb. 10·1	49 ^s ·113 ⁶	41 ^{''} ·22 ²⁵³	13 ^s ·747 ²	25 ^{''} ·75 ¹⁷⁸	32 ^s ·133 ¹¹	42 ^{''} ·80 ⁵
20·0	49 ^s ·119 ⁵⁷	38 ^{''} ·69 ²⁷³	13 ^s ·745 ³³	23 ^{''} ·97 ¹⁶⁵	32 ^s ·144 ⁴¹	42 ^{''} ·75 ²³
Mar. 2·0	49 ^s ·176 ¹⁰⁷	35 ^{''} ·96 ²⁸³	13 ^s ·778 ⁷¹	22 ^{''} ·32 ¹⁴⁷	32 ^s ·185 ⁷⁶	42 ^{''} ·52 ⁴⁶
12·0	49 ^s ·283 ¹⁵⁹	33 ^{''} ·13 ²⁹²	13 ^s ·849 ¹¹¹	20 ^{''} ·85 ¹²⁰	32 ^s ·261 ¹⁰⁷	42 ^{''} ·06 ⁶⁷
22·0	49 ^s ·442 ²¹⁰	30 ^{''} ·21 ²⁹¹	13 ^s ·960 ¹⁵⁰	19 ^{''} ·65 ⁸⁷	32 ^s ·368 ¹⁴⁴	41 ^{''} ·39 ⁹²
31·9	49 ^s ·652 ²⁵⁸	27 ^{''} ·30 ²⁸⁷	14 ^s ·110 ¹⁹⁰	18 ^{''} ·78 ⁴⁹	32 ^s ·512 ¹⁷⁷	40 ^{''} ·47 ¹¹³
Apr. 10·9	49 ^s ·910 ³⁰⁶	24 ^{''} ·43 ²⁷⁴	14 ^s ·300 ²²⁶	18 ^{''} ·29 ¹⁰	32 ^s ·689 ²¹¹	39 ^{''} ·34 ¹³⁶
20·9	50 ^s ·216 ³⁴⁹	21 ^{''} ·69 ²⁵⁸	14 ^s ·526 ²⁵⁹	18 ^{''} ·19 ³³	32 ^s ·900 ²³⁹	37 ^{''} ·98 ¹⁵³
30·9	50 ^s ·565 ³⁸⁴	19 ^{''} ·11 ²³⁵	14 ^s ·785 ²⁸⁶	18 ^{''} ·52 ⁷⁴	33 ^s ·139 ²⁶⁶	36 ^{''} ·45 ¹⁷¹
May 10·8	50 ^s ·949 ⁴¹⁴	16 ^{''} ·76 ²⁰⁶	15 ^s ·071 ³⁰⁵	19 ^{''} ·26 ¹¹⁴	33 ^s ·405 ²⁸⁷	34 ^{''} ·74 ¹⁸¹
20·8	51 ^s ·363 ⁴³¹	14 ^{''} ·70 ¹⁷⁵	15 ^s ·376 ³¹⁸	20 ^{''} ·40 ¹⁵⁰	33 ^s ·692 ³⁰⁰	32 ^{''} ·93 ¹⁹⁰
30·8	51 ^s ·794 ⁴⁴²	12 ^{''} ·95 ¹³⁶	15 ^s ·694 ³²²	21 ^{''} ·90 ¹⁸²	33 ^s ·992 ³⁰⁷	31 ^{''} ·03 ¹⁹⁰
June 9·7	52 ^s ·236 ⁴⁴¹	11 ^{''} ·59 ⁹⁴	16 ^s ·016 ³¹⁶	23 ^{''} ·72 ²⁰⁹	34 ^s ·299 ³⁰⁵	29 ^{''} ·13 ¹⁸⁷
19·7	52 ^s ·677 ⁴²⁷	10 ^{''} ·65 ⁵⁰	16 ^s ·332 ³⁰³	25 ^{''} ·81 ²²⁹	34 ^s ·604 ²⁹⁴	27 ^{''} ·26 ¹⁷⁸
29·7	53 ^s ·104 ⁴⁰²	10 ^{''} ·15 ⁷	16 ^s ·635 ²⁸³	28 ^{''} ·10 ²⁴⁵	34 ^s ·898 ²⁷⁷	25 ^{''} ·48 ¹⁶⁵
July 9·7	53 ^s ·506 ³⁶⁷	10 ^{''} ·08 ³⁷	16 ^s ·918 ²⁵³	30 ^{''} ·55 ²⁵³	35 ^s ·175 ²⁵⁴	23 ^{''} ·83 ¹⁴⁹
19·6	53 ^s ·873 ³²⁰	10 ^{''} ·45 ⁸²	17 ^s ·171 ²¹⁹	33 ^{''} ·08 ²⁵⁶	35 ^s ·429 ²²³	22 ^{''} ·34 ¹²⁷
29·6	54 ^s ·193 ²⁶⁸	11 ^{''} ·27 ¹²¹	17 ^s ·390 ¹⁷⁹	35 ^{''} ·64 ²⁵²	35 ^s ·652 ¹⁸²	21 ^{''} ·07 ¹⁰⁵
Aug. 8·6	54 ^s ·461 ²⁰⁵	12 ^{''} ·48 ¹⁵⁷	17 ^s ·569 ¹³⁷	38 ^{''} ·16 ²⁴⁴	35 ^s ·834 ¹⁴⁶	20 ^{''} ·02 ⁷⁹
18·6	54 ^s ·666 ¹⁴¹	14 ^{''} ·05 ¹⁸⁷	17 ^s ·706 ⁹²	40 ^{''} ·60 ²³⁰	35 ^s ·980 ¹⁰³	19 ^{''} ·23 ⁵³
28·5	54 ^s ·807 ⁷⁰	15 ^{''} ·92 ²⁰⁹	17 ^s ·798 ⁴⁸	42 ^{''} ·90 ²¹³	36 ^s ·083 ⁵⁹	18 ^{''} ·70 ³¹
Sept. 7·5	54 ^s ·877 ⁴	18 ^{''} ·01 ²²⁴	17 ^s ·846 ⁶	45 ^{''} ·03 ¹⁹⁰	36 ^s ·142 ¹⁷	18 ^{''} ·39 ⁵
17·5	54 ^s ·881 ⁶¹	20 ^{''} ·25 ²²⁹	17 ^s ·852 ³²	46 ^{''} ·93 ¹⁶⁷	36 ^s ·159 ²⁰	18 ^{''} ·34 ¹⁵
27·4	54 ^s ·820 ¹²⁰	22 ^{''} ·54 ²²⁶	17 ^s ·820 ⁶⁸	48 ^{''} ·60 ¹⁴⁰	36 ^s ·139 ⁵⁴	18 ^{''} ·49 ³⁰
Oct. 7·4	54 ^s ·700 ¹⁶⁷	24 ^{''} ·80 ²¹³	17 ^s ·752 ⁹⁶	50 ^{''} ·00 ¹¹¹	36 ^s ·085 ⁸⁴	18 ^{''} ·79 ⁴⁹
17·4	54 ^s ·533 ²¹¹	26 ^{''} ·93 ¹⁹⁰	17 ^s ·656 ¹¹⁹	51 ^{''} ·11 ⁸²	36 ^s ·001 ¹⁰³	19 ^{''} ·28 ⁵⁹
27·4	54 ^s ·322 ²³⁹	28 ^{''} ·83 ¹⁶¹	17 ^s ·537 ¹³⁶	51 ^{''} ·93 ⁴⁹	35 ^s ·898 ¹¹⁹	19 ^{''} ·87 ⁶⁷
Nov. 6·3	54 ^s ·083 ²⁵⁵	30 ^{''} ·44 ¹²⁶	17 ^s ·401 ¹⁴⁶	52 ^{''} ·42 ¹⁷	35 ^s ·779 ¹³⁰	20 ^{''} ·54 ⁷³
16·3	53 ^s ·828 ²⁶²	31 ^{''} ·70 ⁸¹	17 ^s ·255 ¹⁵¹	52 ^{''} ·59 ¹⁶	35 ^s ·649 ¹³²	21 ^{''} ·27 ⁷⁴
26·3	53 ^s ·566 ²⁵⁸	32 ^{''} ·51 ⁴⁰	17 ^s ·104 ¹⁵⁰	52 ^{''} ·43 ⁴⁸	35 ^s ·517 ¹²⁶	22 ^{''} ·01 ⁷³
Dec. 6·3	53 ^s ·308 ²⁴²	32 ^{''} ·91 ⁹	16 ^s ·954 ¹⁴⁵	51 ^{''} ·95 ⁸⁰	35 ^s ·391 ¹²¹	22 ^{''} ·74 ⁷⁰
16·2	53 ^s ·066 ²¹⁸	32 ^{''} ·82 ⁵⁵	16 ^s ·809 ¹³⁴	51 ^{''} ·15 ¹⁰⁸	35 ^s ·270 ¹¹¹	23 ^{''} ·44 ⁶⁵
26·2	52 ^s ·848 ¹⁸⁷	32 ^{''} ·27 ¹⁰⁰	16 ^s ·675 ¹²¹	50 ^{''} ·07 ¹³⁵	35 ^s ·159 ⁹⁴	24 ^{''} ·09 ⁶¹
36·2	52 ^s ·661	31 ^{''} ·27	16 ^s ·554	48 ^{''} ·72	35 ^s ·065	24 ^{''} ·70
Mean Place Sec δ, Tan δ	51·014 1·614	38·34 —1·267	14·197 1·096	21·62 +0·449	32·766 1·010	42·15 —0·140
L α, L δ ω α, ω δ	+0·01 +0·08	+0·4 —0·3	0·00 —0·03	+0·4 —0·3	—0·00 +0·01	+0·4 —0·3
AUTHORITY	A. E.		A. N.		A. E.	

APPARENT PLACES OF STARS, 1922. 425

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	♄ Aquarii. Mag. 3·5		♋ Piscis Australis. Mag. 1·3		♊ Piscium. Mag. 4·6	
	R. A.	Dec. S.	R. A.	Dec. S.	R. A.	Dec. N.
	h m 22 50	° ′ 16 13	h m 22 53	° ′ 30 1	h m 22 59	° ′ 3 23
Jan. 1·2	30·214 ^s 87	71·48 ["] 21	19·909 ^s 104	75·75 ["] 31	54·207 ^s 91	63·30 ["] 88
11·1	30·127 68	71·69 4	19·805 82	75·44 60	54·116 74	62·42 88
21·1	30·059 44	71·73 14	19·723 54	74·84 87	54·042 54	61·54 84
31·1	30·015 19	71·59 33	19·669 27	73·97 111	53·988 29	60·70 76
Feb. 10·1	29·996 9	71·26 55	19·642 5	72·86 136	53·959 4	59·94 63
20·0	30·005 41	70·71 74	19·647 42	71·50 157	53·955 27	59·31 46
Mar. 2·0	30·046 75	69·97 97	19·689 77	69·93 178	53·982 60	58·85 25
12·0	30·121 107	69·00 115	19·766 113	68·15 195	54·042 94	58·60 1
22·0	30·228 145	67·85 137	19·879 152	66·20 204	54·136 130	58·59 27
31·9	30·373 178	66·48 154	20·031 193	64·16 217	54·266 166	58·86 55
Apr. 10·9	30·551 214	64·94 169	20·224 226	61·99 222	54·432 201	59·41 84
20·9	30·765 242	63·25 183	20·450 262	59·77 227	54·633 233	60·25 112
30·8	31·007 272	61·42 190	20·712 290	57·50 218	54·866 260	61·37 138
May 10·8	31·279 293	59·52 195	21·002 314	55·32 211	55·126 282	62·75 160
20·8	31·572 306	57·57 194	21·316 334	53·21 195	55·408 297	64·35 178
30·8	31·878 315	55·63 187	21·650 339	51·26 176	55·705 304	66·13 191
June 9·7	32·193 313	53·76 175	21·989 339	49·50 153	56·009 304	68·04 199
19·7	32·506 306	52·01 161	22·328 330	47·97 123	56·313 295	70·03 202
29·7	32·812 286	50·40 138	22·658 314	46·74 94	56·608 278	72·05 199
July 9·7	33·098 263	49·02 116	22·972 289	45·80 58	56·886 254	74·04 191
19·6	33·361 230	47·86 89	23·261 254	45·22 26	57·140 224	75·95 179
29·6	33·591 192	46·97 61	23·515 213	44·06 11	57·364 190	77·74 162
Aug. 8·6	33·783 152	46·36 34	23·728 170	45·07 41	57·554 150	79·36 143
18·5	33·935 108	46·02 5	23·898 122	45·48 75	57·704 108	80·79 121
28·5	34·043 62	45·97 20	24·020 72	46·23 100	57·812 68	82·00 98
Sept. 7·5	34·105 22	46·17 42	24·092 23	47·23 121	57·880 27	82·98 75
17·5	34·127 20	46·59 61	24·115 19	48·44 136	57·907 12	83·73 52
27·4	34·107 54	47·20 78	24·096 60	49·80 146	57·895 43	84·25 30
Oct. 7·4	34·053 88	47·98 88	24·036 100	51·26 148	57·852 73	84·55 8
17·4	33·965 108	48·86 92	23·936 124	52·74 143	57·779 95	84·63 10
27·4	33·857 125	49·78 95	23·812 145	54·17 132	57·684 111	84·53 28
Nov. 6·3	33·732 135	50·73 90	23·667 155	55·49 119	57·573 122	84·25 42
16·3	33·597 138	51·63 85	23·512 161	56·68 95	57·451 126	83·83 56
26·3	33·459 134	52·48 74	23·351 160	57·63 71	57·325 126	83·27 67
Dec. 6·2	33·325 128	53·22 63	23·191 149	58·34 45	57·199 121	82·60 77
16·2	33·197 115	53·85 49	23·042 135	58·79 16	57·078 113	81·83 84
26·2	33·082 98	54·34 32	22·907 118	58·95 11	56·965 101	80·99 88
36·2	32·984	54·66 32	22·789	58·84	56·864	80·11
Mean Place	30·736	69·60	20·649	69·84	54·455	59·40
Sec δ, Tan δ	1·042	-0·291	1·155	-0·578	1·002	+0·059
L α, L δ	0·00	+0·4	0·00	+0·4	0·00	+0·4
ω α, ω δ	+0·02	-0·3	+0·04	-0·3	-0·01	-0·3
AUTHORITY	A. E.		A. E.		A. E.	

426 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	β Pegasi. Mag. 2.2-2.7		α Pegasi. Mag. 2.6		ϵ^2 Aquarii. Mag. 3.8	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m	° ' "	h m	° ' "	h m	° ' "
	22 59	27 39	23 0	14 47	23 5	21 35
Jan. 1.2	59.389 ¹²⁵	45.29 ¹⁴⁵	52.297 ¹⁰⁴	14.64 ¹¹⁹	16.858 ¹⁰¹	50.28 ⁶
11.2	59.264 ¹⁰²	43.84 ¹⁶⁵	52.193 ⁸³	13.45 ¹²⁹	16.757 ⁸⁰	50.34 ¹⁷
21.1	59.162 ⁸¹	42.19 ¹⁸⁴	52.110 ⁶³	12.16 ¹³⁴	16.677 ⁶¹	50.17 ⁴¹
31.1	59.081 ⁵¹	40.35 ¹⁸⁸	52.047 ³⁹	10.82 ¹³²	16.616 ³⁴	49.76 ⁶⁴
Feb. 10.1	59.030 ²⁰	38.47 ¹⁸⁹	52.008 ⁹	9.50 ¹²⁵	16.582 ⁶	49.12 ⁸⁵
20.0	59.010 ¹⁵	36.58 ¹⁸¹	51.999 ²⁰	8.25 ¹¹³	16.576 ²⁴	48.27 ¹⁰⁸
Mar. 2.0	59.025 ⁵⁸	34.77 ¹⁶⁶	52.019 ⁵⁷	7.12 ⁹⁴	16.600 ⁶⁰	47.19 ¹²⁹
12.0	59.083 ⁹⁷	33.11 ¹³⁹	52.076 ⁹⁶	6.18 ⁶⁷	16.660 ⁹⁶	45.90 ¹⁵¹
22.0	59.180 ¹⁴¹	31.72 ¹⁰⁸	52.172 ¹³²	5.51 ³⁷	16.756 ¹³¹	44.39 ¹⁶⁷
31.9	59.321 ¹⁸³	30.64 ⁷⁰	52.304 ¹⁶⁸	5.14 ⁶	16.887 ¹⁶⁸	42.72 ¹⁸³
Apr. 10.9	59.504 ²²⁰	29.94 ³¹	52.472 ²⁰⁷	5.08 ³⁰	17.055 ²⁰⁵	40.89 ¹⁹⁷
20.9	59.724 ²⁵⁵	29.63 ¹²	52.679 ²³⁹	5.38 ⁶⁶	17.260 ²³⁹	38.92 ²⁰⁵
30.9	59.979 ²⁸⁶	29.75 ⁵⁵	52.918 ²⁶⁴	6.04 ⁹⁹	17.499 ²⁶⁷	36.87 ²⁰⁹
May 10.8	60.265 ³⁰⁸	30.30 ⁹⁷	53.182 ²⁸⁸	7.03 ¹³⁰	17.766 ²⁹⁴	34.78 ²⁰⁹
20.8	60.573 ³²³	31.27 ¹³⁶	53.470 ³⁰²	8.33 ¹⁶⁰	18.060 ³¹⁰	32.69 ²⁰¹
30.8	60.896 ³³¹	32.63 ¹⁷¹	53.772 ³¹¹	9.93 ¹⁸⁵	18.370 ³²¹	30.68 ¹⁹¹
June 9.7	61.227 ³²⁶	34.34 ²⁰²	54.083 ³¹⁰	11.78 ²⁰²	18.691 ³²²	28.77 ¹⁷⁵
19.7	61.553 ³¹⁵	36.36 ²²⁷	54.393 ³⁰⁰	13.80 ²¹⁵	19.013 ³¹⁷	27.02 ¹⁵⁵
29.7	61.868 ²⁹⁶	38.63 ²⁴⁵	54.693 ²⁸⁰	15.95 ²²³	19.330 ³⁰¹	25.47 ¹³⁰
July 9.7	62.164 ²⁶⁸	41.08 ²⁵⁶	54.973 ²⁵⁷	18.18 ²²⁶	19.631 ²⁷⁷	24.17 ¹⁰¹
19.6	62.432 ²³³	43.64 ²⁶³	55.230 ²²⁶	20.44 ²²²	19.908 ²⁴⁹	23.16 ⁷⁰
29.6	62.665 ¹⁹⁴	46.27 ²⁶⁴	55.456 ¹⁸⁸	22.66 ²¹⁴	20.157 ²⁰⁹	22.46 ³⁸
Aug. 8.6	62.859 ¹⁵²	48.91 ²⁵⁹	55.644 ¹⁵¹	24.80 ¹⁹⁹	20.366 ¹⁷¹	22.08 ⁹
18.6	63.011 ¹⁰⁸	51.50 ²⁴⁷	55.795 ¹⁰⁸	26.79 ¹⁸³	20.537 ¹²⁶	21.99 ²²
28.5	63.119 ⁶³	53.97 ²³⁰	55.903 ⁶⁷	28.62 ¹⁶³	20.663 ⁸⁰	22.21 ⁴⁹
Sept. 7.5	63.182 ²¹	56.27 ²¹²	55.970 ²⁵	30.25 ¹⁴²	20.743 ³⁷	22.70 ⁷⁴
17.5	63.203 ²⁰	58.39 ¹⁸⁸	55.995 ¹⁰	31.67 ¹¹⁸	20.780 ⁷	23.44 ⁹³
27.4	63.183 ⁵³	60.27 ¹⁶³	55.985 ⁴⁷	32.85 ⁹⁵	20.773 ⁴⁵	24.37 ¹⁰⁷
Oct. 7.4	63.130 ⁸⁹	61.90 ¹³⁴	55.938 ⁷²	33.80 ⁶⁶	20.728 ⁷⁸	25.44 ¹¹⁶
17.4	63.041 ¹¹¹	63.24 ¹⁰⁴	55.866 ⁹⁹	34.46 ⁴²	20.650 ¹⁰³	26.60 ¹¹⁸
27.4	62.930 ¹³²	64.28 ⁶⁹	55.767 ¹¹⁵	34.88 ²⁰	20.547 ¹²²	27.78 ¹¹⁷
Nov. 6.3	62.798 ¹⁴⁵	64.97 ³⁷	55.652 ¹²⁵	35.08 ⁸	20.425 ¹³⁴	28.95 ¹⁰⁹
16.3	62.653 ¹⁵³	65.34 ⁰	55.527 ¹³⁴	35.00 ³⁰	20.291 ¹⁴²	30.04 ⁹⁵
26.3	62.500 ¹⁵⁵	65.34 ³¹	55.393 ¹³⁴	34.70 ⁵⁴	20.149 ¹³⁹	30.99 ⁸⁰
Dec. 6.3	62.345 ¹⁵³	65.03 ⁶⁹	55.259 ¹²⁹	34.16 ⁷⁶	20.010 ¹³⁶	31.79 ⁶⁴
16.2	62.192 ¹⁴⁶	64.34 ¹⁰¹	55.130 ¹²⁵	33.40 ⁹⁵	19.874 ¹²⁵	32.43 ⁴²
26.2	62.046 ¹³²	63.33 ¹²⁸	55.005 ¹¹¹	32.45 ¹¹¹	19.749 ¹¹²	32.85 ²⁰
36.2	61.914	62.05	54.894	31.34	19.637	33.05
Mean Place	59.436	33.70	52.436	7.11	17.383	46.07
Sec δ , Tan δ	1.129	+0.524	1.034	+0.264	1.075	-0.396
L α , L δ	0.00	+0.4	0.00	+0.4	0.00	+0.4
ω α , ω δ	-0.03	-0.3	-0.02	-0.3	+0.03	-0.2
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 427

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	γ Tucanae. Mag. 4.1		γ Piscium. Mag. 3.9		ψ^3 Aquarii. Mag. 5.2	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 23 12	$^{\circ}$ $'$ 58 39	h m 23 13	$^{\circ}$ $'$ 2 51	h m 23 14	$^{\circ}$ $'$ 10 1
Jan. 1.2	51.484 ²⁵⁴	63.57 ¹²⁷	7.102 ⁹⁵	24.10 ⁸⁵	54.000 ⁹⁸	75.94 ⁴⁷
11.2	51.230 ²¹⁴	62.30 ¹⁷²	7.007 ⁸¹	23.25 ⁸³	53.902 ⁸²	76.41 ³⁴
21.1	51.016 ¹⁶⁸	60.58 ²¹⁴	6.926 ⁶²	22.42 ⁷⁹	53.820 ⁶³	76.75 ¹⁹
31.1	50.848 ¹¹⁶	58.44 ²⁴⁸	6.864 ⁴⁰	21.63 ⁷⁰	53.757 ⁴⁰	76.94 ¹
Feb. 10.1	50.732 ⁶⁰	55.96 ²⁸⁰	6.824 ¹⁴	20.93 ⁵⁸	53.717 ¹⁵	76.95 ¹⁶
20.0	50.672 ⁴	53.16 ²⁹⁹	6.810 ¹⁵	20.35 ⁴²	53.702 ¹⁴	76.79 ³⁸
Mar. 2.0	50.668 ⁵⁸	50.17 ³¹⁷	6.825 ⁴⁷	19.93 ²⁰	53.716 ⁴⁶	76.41 ⁵⁹
12.0	50.726 ¹²⁰	47.00 ³²⁴	6.872 ⁸²	19.73 ³	53.762 ⁸⁰	75.82 ⁸²
22.0	50.846 ¹⁸⁴	43.76 ³²⁷	6.954 ¹¹⁸	19.76 ³⁰	53.842 ¹¹⁷	75.00 ¹⁰⁴
31.9	51.030 ²⁴⁴	40.49 ³²¹	7.072 ¹⁵⁶	20.06 ⁵⁷	53.959 ¹⁵⁴	73.96 ¹²⁷
Apr. 10.9	51.274 ³⁰³	37.28 ³¹⁰	7.228 ¹⁹¹	20.63 ⁸⁶	54.113 ¹⁸⁹	72.69 ¹⁴⁸
20.9	51.577 ³⁶⁰	34.18 ²⁹¹	7.419 ²²⁵	21.49 ¹¹²	54.302 ²²³	71.21 ¹⁶⁶
30.9	51.937 ⁴⁰⁷	31.27 ²⁶⁷	7.644 ²⁵³	22.61 ¹³⁸	54.525 ²⁵³	69.55 ¹⁸⁰
May 10.8	52.344 ⁴⁴⁸	28.60 ²³⁵	7.897 ²⁷⁸	23.99 ¹⁶⁰	54.778 ²⁷⁷	67.75 ¹⁹⁰
20.8	52.792 ⁴⁷⁸	26.25 ¹⁹⁷	8.175 ²⁹⁵	25.59 ¹⁷⁸	55.055 ²⁹⁶	65.85 ¹⁹⁷
30.8	53.270 ⁴⁹⁸	24.28 ¹⁵⁷	8.470 ³⁰⁴	27.37 ¹⁹¹	55.351 ³⁰⁷	63.88 ¹⁹⁶
June 9.7	53.768 ⁵⁰⁶	22.71 ¹¹³	8.774 ³⁰⁶	29.28 ¹⁹⁸	55.658 ³⁰⁹	61.92 ¹⁹²
19.7	54.274 ⁵⁰⁰	21.58 ⁶⁴	9.080 ³⁰⁰	31.26 ²⁰¹	55.967 ³⁰⁴	60.00 ¹⁸²
29.7	54.774 ⁴⁷⁸	20.94 ¹⁵	9.380 ²⁸⁵	33.27 ¹⁹⁸	56.271 ²⁹⁰	58.18 ¹⁶⁷
July 9.7	55.252 ⁴⁴⁷	20.79 ³⁴	9.665 ²⁶⁴	35.25 ¹⁹⁰	56.561 ²⁶⁹	56.51 ¹⁴⁸
19.6	55.699 ⁴⁰¹	21.13 ⁸⁴	9.929 ²³⁴	37.15 ¹⁷⁸	56.830 ²⁴¹	55.03 ¹²⁶
29.6	56.100 ³⁴⁴	21.97 ¹³⁰	10.163 ²⁰¹	38.93 ¹⁶⁰	57.071 ²⁰⁷	53.77 ¹⁰⁰
Aug. 8.6	56.444 ²⁷⁸	23.27 ¹⁷⁰	10.364 ¹⁶³	40.53 ¹⁴¹	57.278 ¹⁶⁹	52.77 ⁷³
18.6	56.722 ²⁰⁴	24.97 ²⁰⁵	10.527 ¹²³	41.94 ¹²⁰	57.447 ¹²⁸	52.04 ⁴⁶
28.5	56.926 ¹²⁷	27.02 ²³⁴	10.650 ⁸²	43.14 ⁹⁶	57.575 ⁸⁵	51.58 ²⁰
Sept. 7.5	57.053 ⁴⁸	29.36 ²⁵²	10.732 ⁴²	44.10 ⁷²	57.660 ⁴⁵	51.38 ⁵
17.5	57.101 ²⁹	31.88 ²⁵⁹	10.774 ⁴	44.82 ⁵⁰	57.705 ⁵	51.43 ²⁸
27.4	57.072 ¹⁰⁴	34.47 ²⁶⁰	10.778 ²⁹	45.32 ²⁷	57.710 ³¹	51.71 ⁴⁷
Oct. 7.4	56.968 ¹⁷⁰	37.07 ²⁴⁸	10.749 ⁵⁹	45.59 ⁶	57.679 ⁶¹	52.18 ⁶²
17.4	56.798 ²²⁶	39.55 ²²⁶	10.690 ⁸³	45.65 ¹³	57.618 ⁸⁶	52.80 ⁷³
27.4	56.572 ²⁷⁰	41.81 ¹⁹⁴	10.607 ¹⁰¹	45.52 ²⁹	57.532 ¹⁰⁵	53.53 ⁸⁰
Nov. 6.3	56.302 ³⁰¹	43.75 ¹⁵⁷	10.506 ¹¹³	45.23 ⁴⁴	57.427 ¹¹⁷	54.33 ⁸⁴
16.3	56.001 ³²⁰	45.32 ¹¹¹	10.393 ¹²⁰	44.79 ⁵⁶	57.310 ¹²⁴	55.17 ⁸²
26.3	55.681 ³²⁶	46.43 ⁶¹	10.273 ¹²²	44.23 ⁶⁶	57.186 ¹²⁷	55.99 ⁸⁰
Dec. 6.3	55.355 ³¹⁹	47.04 ¹⁰	10.151 ¹²⁰	43.57 ⁷⁵	57.059 ¹²⁴	56.79 ⁷⁴
16.2	55.036 ³⁰¹	47.14 ⁴⁵	10.031 ¹¹⁴	42.82 ⁸²	56.935 ¹¹⁶	57.53 ⁶⁶
26.2	54.735 ²⁷³	46.69 ⁹⁷	9.917 ¹⁰⁴	42.00 ⁸⁴	56.819 ¹⁰⁶	58.19 ⁵⁵
36.2	54.462	45.72	9.813	41.16	56.713	58.74
Mean Place	53.135	50.36	7.279	20.85	54.312	74.86
Sec δ , Tan δ	1.923	-1.642	1.001	+0.050	1.016	-0.177
L α , L δ	+0.01	+0.4	0.00	+0.4	0.00	+0.4
ω α , ω δ	+0.11	-0.2	0.00	-0.2	+0.01	-0.2
AUTHORITY	A. E.		A. N.			

428 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	τ Pegasi. Mag. 4.7		κ Piscium. Mag. 4.9		ι Phoenicis. Mag. 4.8	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 23 16	° ' 23 18	h m 23 22	° ' 0 49	h m 23 30	° ' 43 2
Jan. 1.2	46.447 ¹²⁶	57.06 ¹²⁹	55.891 ¹⁰¹	44.68 ⁷⁹	52.120 ¹⁶⁹	59.06 ⁵⁶
11.2	46.321 ¹⁰⁵	55.77 ¹⁴⁴	55.790 ⁸⁸	43.89 ⁷⁵	51.951 ¹⁴⁶	58.50 ⁹⁶
21.1	46.216 ⁸⁴	54.33 ¹⁵⁸	55.702 ⁷¹	43.14 ⁶⁹	51.805 ¹¹⁹	57.54 ¹³⁴
31.1	46.132 ⁶²	52.75 ¹⁶⁵	55.631 ⁴⁹	42.45 ⁵⁹	51.686 ⁸⁹	56.20 ¹⁶⁹
Feb. 10.1	46.070 ³³	51.10 ¹⁶⁷	55.582 ²⁴	41.86 ⁴⁵	51.597 ⁵³	54.51 ¹⁹⁹
20.1	46.037 ¹	49.43 ¹⁵⁶	55.558 ⁵	41.41 ²⁹	51.544 ¹⁵	52.52 ²²⁶
Mar. 2.0	46.038 ³⁸	47.87 ¹³⁹	55.563 ³⁶	41.12 ⁷	51.529 ²⁷	50.26 ²⁴⁸
12.0	46.076 ⁷⁸	46.48 ¹¹⁶	55.599 ⁷¹	41.05 ¹⁵	51.556 ⁷¹	47.78 ²⁶⁴
22.0	46.154 ¹²¹	45.32 ⁸⁸	55.670 ¹⁰⁸	41.20 ⁴²	51.627 ¹¹⁸	45.14 ²⁷⁷
31.9	46.275 ¹⁶⁰	44.44 ⁵⁴	55.778 ¹⁴⁵	41.62 ⁶⁸	51.745 ¹⁶⁵	42.37 ²⁸³
Apr. 10.9	46.435 ²⁰³	43.90 ¹⁷	55.923 ¹⁸³	42.30 ⁹⁶	51.910 ²¹²	39.54 ²⁸³
20.9	46.638 ²³⁹	43.73 ²¹	56.106 ²¹⁶	43.26 ¹²⁰	52.122 ²⁵⁵	36.71 ²⁷⁸
30.9	46.877 ²⁶⁵	43.94 ⁶²	56.322 ²⁴⁶	44.46 ¹⁴⁵	52.377 ²⁹⁶	33.93 ²⁶⁶
May 10.8	47.142 ²⁹³	44.56 ⁹⁹	56.568 ²⁷²	45.91 ¹⁶³	52.673 ³³⁰	31.27 ²⁴⁹
20.8	47.435 ³¹¹	45.55 ¹³⁶	56.840 ²⁹²	47.54 ¹⁸⁰	53.003 ³⁵⁶	28.78 ²²⁴
30.8	47.746 ³²⁰	46.91 ¹⁶⁷	57.132 ³⁰¹	49.34 ¹⁹²	53.359 ³⁷⁵	26.54 ¹⁹⁷
June 9.8	48.066 ³²⁴	48.58 ¹⁹⁵	57.433 ³⁰⁶	51.26 ¹⁹⁸	53.734 ³⁸⁴	24.57 ¹⁶²
19.7	48.390 ³¹²	50.53 ²¹⁴	57.739 ³⁰⁰	53.24 ¹⁹⁹	54.118 ³⁸⁴	22.95 ¹²³
29.7	48.702 ²⁹⁶	52.67 ²³³	58.039 ²⁸⁹	55.23 ¹⁹⁴	54.502 ³⁷²	21.72 ⁸²
July 9.7	48.998 ²⁷⁵	55.00 ²⁴²	58.328 ²⁶⁸	57.17 ¹⁸⁴	54.874 ³⁴⁹	20.90 ³⁸
19.6	49.273 ²⁴²	57.42 ²⁴⁶	58.596 ²⁴⁰	59.01 ¹⁷²	55.223 ³¹⁹	20.52 ⁶
29.6	49.515 ²⁰⁷	59.88 ²⁴³	58.836 ²⁰⁷	60.73 ¹⁵¹	55.542 ²⁸⁰	20.58 ⁴⁹
Aug. 8.6	49.722 ¹⁶⁷	62.31 ²³⁷	59.043 ¹⁷¹	62.24 ¹³¹	55.822 ²³³	21.07 ⁹¹
18.6	49.889 ¹²⁵	64.68 ²²⁶	59.214 ¹³²	63.55 ¹⁰⁹	56.055 ¹⁸⁰	21.98 ¹²⁸
28.5	50.014 ⁸⁶	66.94 ²¹⁰	59.346 ⁹¹	64.64 ⁸⁵	56.235 ¹²⁵	23.26 ¹⁶⁰
Sept. 7.5	50.100 ⁴⁰	69.04 ¹⁹⁰	59.437 ⁵⁰	65.49 ⁵⁹	56.360 ⁶⁹	24.86 ¹⁸⁷
17.5	50.140 ⁰	70.94 ¹⁶⁸	59.487 ¹⁴	66.08 ³⁸	56.429 ¹⁴	26.73 ²⁰⁵
27.5	50.140 ³²	72.62 ¹⁴⁴	59.501 ²¹	66.46 ¹⁵	56.443 ³⁸	28.78 ²¹³
Oct. 7.4	50.108 ⁶⁴	74.06 ¹¹⁷	59.480 ⁵⁴	66.61 ⁵	56.405 ⁸⁴	30.91 ²¹⁴
17.4	50.044 ⁹²	75.23 ⁸⁷	59.426 ⁷⁴	66.56 ²³	56.321 ¹²⁵	33.05 ²⁰⁶
27.4	49.952 ¹¹³	76.10 ⁶⁰	59.352 ⁹⁶	66.33 ³⁸	56.196 ¹⁵⁶	35.11 ¹⁸⁹
Nov. 6.3	49.839 ¹²⁸	76.70 ²⁸	59.256 ¹⁰⁸	65.95 ⁵¹	56.040 ¹⁸⁰	37.00 ¹⁶⁴
16.3	49.711 ¹³⁷	76.98 ⁰	59.148 ¹¹⁶	65.44 ⁶²	55.860 ¹⁹⁴	38.64 ¹³²
26.3	49.574 ¹⁴²	76.98 ³³	59.032 ¹²²	64.82 ⁶⁸	55.666 ²⁰²	39.96 ⁹⁶
Dec. 6.3	49.432 ¹⁴²	76.65 ⁶⁰	58.910 ¹²⁰	64.14 ⁷⁵	55.464 ²⁰⁰	40.92 ⁵⁶
16.2	49.290 ¹⁴⁰	76.05 ⁸⁹	58.790 ¹¹⁸	63.39 ⁷⁹	55.264 ¹⁹³	41.48 ¹³
26.2	49.150 ¹²⁹	75.16 ¹¹⁴	58.672 ¹⁰⁸	62.60 ⁸⁰	55.071 ¹⁷⁹	41.61 ²⁹
36.2	49.021	74.02	58.564	61.80	54.892	41.32
Mean Place	46.417	47.24	56.035	42.51	52.951	47.71
Sec δ , Tan δ	1.089	+0.431	1.000	+0.014	1.368	-0.934
$L \alpha$, $L \delta$	0.00	+0.4	0.00	+0.4	0.00	+0.4
$\omega \alpha$, $\omega \delta$	-0.03	-0.2	0.00	-0.2	+0.06	-0.1
AUTHORITY	A. E.		A. E.		A. E.	

APPARENT PLACES OF STARS, 1922. 429

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ι Piscium. Mag. 4.3		γ Cephei. Mag. 3.4		λ Piscium. Mag. 4.6	
	R. A.	Dec. N.	R. A.	Dec. N.	R. A.	Dec. N.
	h m 23 35	° ' " 5 12	h m 23 36	° ' " 77 11	h m 23 38	° ' " 1 21
Jan. 1.2	56.223 ¹⁰⁸	15.41 88	9.43 87	70.99 95	3.909 ¹⁰⁷	4.07 78
11.2	56.115 ⁹⁸	14.53 88	8.56 81	70.04 ¹⁵⁰	3.802 ⁹⁶	3.29 75
21.2	56.017 ⁸⁰	13.65 85	7.75 72	68.54 ²⁰⁸	3.706 ⁸²	2.54 70
31.1	55.937 ⁶⁰	12.80 79	7.03 60	66.46 ²⁴⁹	3.624 ⁶²	1.84 60
Feb. 10.1	55.877 ³⁸	12.01 71	6.43 45	63.97 ²⁸⁶	3.562 ³⁹	1.24 47
20.1	55.839 ⁸	11.30 53	5.98 29	61.11 ³⁰⁷	3.523 ¹¹	0.77 31
Mar. 2.0	55.831 ²¹	10.77 34	5.69 11	58.04 ³¹⁸	3.512 ¹⁹	0.46 10
12.0	55.852 ⁶⁰	10.43 10	5.58 8	54.86 ³¹⁵	3.531 ⁵⁶	0.36 13
Apr. 22.0	55.912 ⁹⁷	10.33 12	5.66 27	51.71 ³⁰⁰	3.587 ⁹²	0.49 38
1.0	56.009 ¹³⁶	10.45 43	5.93 44	48.71 ²⁷⁵	3.679 ¹³¹	0.87 64
10.9	56.145 ¹⁷¹	10.88 71	6.37 60	45.96 ²³⁸	3.810 ¹⁶⁹	1.51 91
20.9	56.316 ²⁰⁹	11.59 97	6.97 74	43.58 ¹⁹⁰	3.979 ²⁰⁴	2.42 117
May 30.9	56.525 ²⁴³	12.56 126	7.71 86	41.68 ¹⁴⁶	4.183 ²³⁸	3.59 141
10.9	56.768 ²⁶³	13.82 151	8.57 95	40.22 ⁸⁶	4.421 ²⁶⁴	5.00 161
20.8	57.031 ²⁹⁰	15.33 166	9.52 101	39.36 ²⁸	4.685 ²⁸⁶	6.61 179
30.8	57.321 ³⁰⁰	16.99 185	10.53 103	39.08 ³⁰	4.971 ³⁰⁰	8.40 191
June 9.8	57.621 ³⁰⁶	18.84 196	11.56 103	39.38 87	5.271 ³⁰⁵	10.31 197
19.7	57.927 ³⁰⁶	20.80 201	12.59 100	40.25 141	5.576 ³⁰³	12.28 199
29.7	58.233 ²⁹¹	22.81 200	13.59 94	41.66 192	5.879 ²⁹²	14.27 195
July 9.7	58.524 ²⁷⁶	24.81 195	14.53 87	43.58 239	6.171 ²⁷⁵	16.22 187
19.7	58.800 ²⁴⁷	26.76 186	15.40 76	45.97 276	6.446 ²⁴⁹	18.09 173
29.6	59.047 ²¹⁷	28.62 173	16.16 64	48.73 310	6.695 ²¹⁸	19.82 156
Aug. 8.6	59.264 ¹⁸³	30.35 152	16.80 52	51.83 341	6.913 ¹⁸⁴	21.38 135
18.6	59.447 ¹⁴²	31.87 131	17.32 38	55.24 356	7.097 ¹⁴⁴	22.73 112
Sept. 28.5	59.589 ¹⁰⁵	33.18 112	17.70 24	58.80 370	7.241 ¹⁰⁵	23.85 89
7.5	59.694 ⁶³	34.30 85	17.94 9	62.50 373	7.346 ⁶⁶	24.74 64
17.5	59.757 ²⁸	35.15 63	18.03 6	66.23 373	7.412 ²⁷	25.38 40
27.5	59.785 ⁷	35.78 38	17.97 21	69.96 359	7.439 ⁷	25.78 18
Oct. 7.4	59.778 ³⁸	36.16 21	17.76 34	73.55 337	7.432 ³⁷	25.96 3
17.4	59.740 ⁶⁵	36.37 3	17.42 47	76.92 311	7.395 ⁶⁴	25.93 21
27.4	59.675 ⁸⁴	36.34 19	16.95 59	80.03 279	7.331 ⁸⁵	25.72 36
Nov. 6.4	59.591 ¹⁰²	36.15 35	16.36 69	82.82 234	7.246 ¹⁰¹	25.36 50
16.3	59.489 ¹¹³	35.80 50	15.67 78	85.16 183	7.145 ¹¹¹	24.86 60
26.3	59.376 ¹¹⁷	35.30 64	14.89 86	86.99 120	7.034 ¹¹⁷	24.26 69
Dec. 6.3	59.259 ¹²¹	34.66 72	14.03 90	88.28 69	6.917 ¹²⁰	23.57 74
16.2	59.138 ¹²⁰	33.94 82	13.13 91	88.97 6	6.797 ¹¹⁸	22.83 78
26.2	59.018 ¹¹²	33.12 86	12.22 90	89.03 56	6.679 ¹¹³	22.05 80
36.2	58.906	32.26	11.32	88.47	6.566	21.25
Mean Place	56.248	12.26	8.07	49.29	3.962	2.32
Sec δ , Tan δ	1.004	+0.091	4.513	+4.400	1.000	+0.024
$L \alpha, I \delta$	0.00	+0.4	-0.01	+0.4	0.00	+0.4
$\omega \alpha, \omega \delta$	-0.01	-0.1	-0.29	-0.1	0.00	-0.1
AUTHORITY	A. E.		A. E.		A. E.	

430 APPARENT PLACES OF STARS, 1922.

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	δ Sculptoris. Mag. 4·6		φ Pegasi. Mag. 5·2		27 Piscium. Mag. 5·1	
	R. A.	Dec. S.	R. A.	Dec. N.	R. A.	Dec. S.
	h m 23 44	28 33	h m 23 48	18 41	h m 23 54	3 58
Jan. 1·2	51·464 ¹³⁷	51·85 ¹	31·213 ¹²⁴	20·61 ¹⁰⁴	40·764 ¹¹²	80·28 ⁶⁸
11·2	51·327 ¹¹⁹	51·86 ²⁹	31·089 ¹¹⁹	19·57 ¹¹⁶	40·652 ¹⁰⁴	80·96 ⁵⁷
21·2	51·208 ¹⁰¹	51·57 ⁶²	30·970 ¹⁰¹	18·41 ¹³⁰	40·548 ⁹¹	81·53 ⁴⁶
31·1	51·107 ⁸⁰	50·95 ⁹⁰	30·869 ⁸³	17·11 ¹³⁴	40·457 ⁷⁴	81·99 ³³
Feb. 10·1	51·027 ⁵²	50·05 ¹²⁰	30·786 ⁵⁷	15·77 ¹³²	40·383 ⁵²	82·32 ¹⁷
20·1	50·975 ²³	48·85 ¹⁴⁵	30·729 ²⁹	14·45 ¹²⁶	40·331 ²⁷	82·49 ²
Mar. 2·0	50·952 ¹⁴	47·40 ¹⁷¹	30·700 ⁵	13·19 ¹¹¹	40·304 ⁴	82·47 ²³
12·0	50·966 ⁵⁰	45·69 ¹⁹²	30·705 ⁴⁶	12·08 ⁹²	40·308 ³⁹	82·24 ⁴⁶
22·0	51·016 ⁹³	43·77 ²¹¹	30·751 ⁸⁴	11·16 ⁶⁵	40·347 ⁷⁵	81·78 ⁷⁰
Apr. 1·0	51·109 ¹³¹	41·66 ²²³	30·835 ¹²⁸	10·51 ³⁷	40·422 ¹¹⁵	81·08 ⁹⁵
10·9	51·240 ¹⁷²	39·43 ²³⁷	30·963 ¹⁶⁸	10·14 ²	40·537 ¹⁵³	80·13 ¹¹⁹
20·9	51·412 ²¹⁴	37·06 ²⁴⁰	31·131 ²⁰⁹	10·12 ³⁰	40·690 ¹⁹¹	78·94 ¹⁴¹
30·9	51·626 ²⁴⁷	34·66 ²⁴⁴	31·340 ²⁴²	10·42 ⁶⁷	40·881 ²²⁵	77·53 ¹⁶¹
May 10·9	51·873 ²⁸¹	32·22 ²³⁶	31·582 ²⁷¹	11·09 ¹⁰⁰	41·106 ²⁵⁵	75·92 ¹⁷⁸
20·8	52·154 ³⁰⁵	29·86 ²³¹	31·853 ²⁹⁶	12·09 ¹³²	41·361 ²⁷⁹	74·14 ¹⁹⁰
30·8	52·459 ³²⁵	27·55 ²¹¹	32·149 ³⁰⁹	13·41 ¹⁵⁹	41·640 ²⁹⁶	72·24 ¹⁹⁷
June 9·8	52·784 ³³⁴	25·44 ¹⁸⁸	32·458 ³¹⁸	15·00 ¹⁸³	41·936 ³⁰⁵	70·27 ²⁰⁰
19·7	53·118 ³³⁵	23·56 ¹⁶⁵	32·776 ³¹⁴	16·83 ²⁰⁴	42·241 ³⁰⁵	68·27 ¹⁹⁸
29·7	53·453 ³²⁶	21·91 ¹³¹	33·090 ³⁰⁶	18·87 ²¹³	42·546 ²⁹⁷	66·29 ¹⁸⁷
July 9·7	53·779 ³⁰⁹	20·60 ¹⁰¹	33·396 ²⁸⁶	21·00 ²²³	42·843 ²⁸³	64·42 ¹⁷⁴
19·7	54·088 ²⁸²	19·59 ⁶¹	33·682 ²⁶¹	23·23 ²²⁵	43·126 ²⁶⁰	62·68 ¹⁵⁷
29·6	54·370 ²⁵²	18·98 ²⁵	33·943 ²²⁹	25·48 ²²⁰	43·386 ²³¹	61·11 ¹³⁵
Aug. 8·6	54·622 ²¹⁵	18·73 ¹⁴	34·172 ¹⁹⁵	27·68 ²¹⁵	43·617 ¹⁹⁸	59·76 ¹¹²
18·6	54·837 ¹⁷⁰	18·87 ⁴⁹	34·367 ¹⁵⁶	29·83 ¹⁹⁹	43·815 ¹⁶¹	58·64 ⁸⁵
28·6	55·007 ¹²⁵	19·36 ⁸³	34·523 ¹¹⁶	31·82 ¹⁸⁴	43·976 ¹²²	57·79 ⁵⁹
Sept. 7·5	55·132 ⁸²	20·19 ¹¹²	34·639 ⁷⁵	33·66 ¹⁶⁶	44·098 ⁸³	57·20 ³³
17·5	55·214 ³⁶	21·31 ¹³¹	34·714 ³⁸	35·32 ¹⁴⁴	44·181 ⁴⁵	56·87 ⁹
27·5	55·250 ⁹	22·62 ¹⁵²	34·752 ³	36·76 ¹²¹	44·226 ⁹	56·78 ¹⁴
Oct. 7·5	55·241 ⁴⁵	24·14 ¹⁶¹	34·755 ³⁰	37·97 ⁹⁸	44·235 ²²	56·92 ³⁴
17·4	55·196 ⁸⁰	25·75 ¹⁶³	34·725 ⁵⁷	38·95 ⁷¹	44·213 ⁵¹	57·26 ⁵⁰
27·4	55·116 ¹⁰⁴	27·38 ¹⁵⁸	34·668 ⁸¹	39·66 ⁴⁷	44·162 ⁷³	57·76 ⁶²
Nov. 6·4	55·012 ¹²⁶	28·96 ¹⁴⁷	34·587 ¹⁰⁰	40·13 ²³	44·089 ⁹¹	58·38 ⁷¹
16·3	54·886 ¹⁴⁰	30·43 ¹²⁸	34·487 ¹¹⁴	40·36 ³	43·998 ¹⁰⁴	59·09 ⁷⁷
26·3	54·746 ¹⁴⁷	31·71 ¹¹¹	34·373 ¹²⁴	40·33 ²⁷	43·894 ¹¹³	59·86 ⁷⁹
Dec. 6·3	54·599 ¹⁵⁰	32·82 ⁷⁹	34·249 ¹³⁰	40·06 ⁵¹	43·781 ¹¹⁸	60·65 ⁸⁰
16·3	54·449 ¹⁴⁷	33·61 ⁵⁵	34·119 ¹³¹	39·55 ⁷³	43·663 ¹¹⁹	61·45 ⁷⁷
26·2	54·302 ¹⁴⁰	34·16 ²⁰	33·988 ¹²⁹	38·82 ⁹⁴	43·544 ¹¹⁶	62·22 ⁷¹
36·2	54·162	34·36	33·859	37·88	43·428	62·93
Mean Place	51·876	43·54	31·023	13·30	40·780	79·51
Sec δ, Tan δ	1·139	-0·544	1·056	+0·338	1·002	-0·070
L α, L δ	0·00	+0·4	0·00	+0·4	0·00	+0·4
ω α, ω δ	+0·04	-0·1	-0·02	-0·1	0·00	0·0
AUTHORITY	A. E.		A. E.		A. N.	

APPARENT PLACES OF STARS, 1922. 431

AT UPPER TRANSIT AT GREENWICH.

Mean Solar Date.	ω Piscium. Mag. 4.0		z Ceti. Mag. 4.6	
	R. A.	Dec. N.	R. A.	Dec. S.
	h m 23 55	° ' 5 6 25	h m 23 59	° ' 5 17 45
Jan. 1.2	18.397 ¹¹⁴	56.40 ⁸⁶	44.545 ¹²³	78.33 ³⁷
11.2	18.283 ¹⁰⁹	55.54 ⁸⁸	44.422 ¹¹³	78.70 ¹⁵
21.2	18.174 ⁹³	54.66 ⁸⁵	44.309 ⁹⁹	78.85 ⁹
31.1	18.081 ⁷⁷	53.81 ⁸⁰	44.210 ⁸²	78.76 ³³
Feb. 10.1	18.004 ⁵⁶	53.01 ⁷⁴	44.128 ⁶⁰	78.43 ⁵⁷
20.1	17.948 ²⁹	52.27 ⁵⁷	44.068 ³⁴	77.86 ⁸²
Mar. 2.0	17.919 ²	51.70 ³⁸	44.034 ²	77.04 ¹⁰⁶
12.0	17.921 ⁴⁰	51.32 ¹⁸	44.032 ³³	75.98 ¹³⁰
22.0	17.961 ⁷⁶	51.14 ⁵	44.065 ⁷¹	74.68 ¹⁵²
Apr. 1.0	18.037 ¹¹⁶	51.19 ³⁵	44.136 ¹¹⁰	73.16 ¹⁷²
10.9	18.153 ¹⁵⁵	51.54 ⁶⁵	44.246 ¹⁵⁰	71.44 ¹⁹⁰
20.9	18.308 ¹⁹⁵	52.19 ⁸⁸	44.396 ¹⁹⁰	69.54 ²⁰⁴
30.9	18.503 ²³⁰	53.07 ¹¹⁸	44.586 ²²⁶	67.50 ²¹⁴
May 10.9	18.733 ²⁵⁵	54.25 ¹⁴⁴	44.812 ²⁵⁷	65.36 ²²⁰
20.8	18.988 ²⁸²	55.69 ¹⁶¹	45.069 ²⁸⁴	63.16 ²²⁰
30.8	19.270 ²⁹⁷	57.30 ¹⁸¹	45.353 ³⁰²	60.96 ²¹⁴
June 9.8	19.567 ³⁰⁵	59.11 ¹⁹⁴	45.655 ³¹³	58.82 ²⁰³
19.7	19.872 ³⁰⁷	61.05 ²⁰¹	45.968 ³¹⁶	56.79 ¹⁸⁷
29.7	20.179 ²⁹⁷	63.06 ²⁰¹	46.284 ³¹⁰	54.92 ¹⁶⁵
July 9.7	20.476 ²⁸⁵	65.07 ¹⁹⁸	46.594 ²⁹⁵	53.27 ¹⁴⁰
19.7	20.761 ²⁶⁰	67.05 ¹⁹⁰	46.889 ²⁷⁴	51.87 ¹¹¹
29.6	21.021 ²²⁹	68.95 ¹⁷⁴	47.163 ²⁴⁵	50.76 ⁷⁹
Aug. 8.6	21.250 ¹⁹⁷	70.69 ¹⁶³	47.408 ²¹¹	49.97 ⁴⁶
18.6	21.447 ¹⁶⁰	72.32 ¹³⁹	47.619 ¹⁷³	49.51 ¹³
28.6	21.607 ¹²⁵	73.71 ¹¹⁹	47.792 ¹³³	49.38 ¹⁸
Sept. 7.5	21.732 ⁸³	74.90 ⁹⁴	47.925 ⁹⁰	49.56 ⁴⁸
17.5	21.815 ⁴⁴	75.84 ⁷³	48.015 ⁵¹	50.04 ⁷⁴
27.5	21.859 ¹¹	76.57 ⁴⁷	48.066 ¹²	50.78 ⁹⁴
Oct. 7.5	21.870 ¹⁹	77.04 ²⁷	48.078 ²³	51.72 ¹¹⁰
17.4	21.851 ⁴⁸	77.31 ⁵	48.055 ⁵³	52.82 ¹²¹
27.4	21.803 ⁶⁸	77.36 ¹¹	48.002 ⁷⁹	54.03 ¹²⁴
Nov. 6.4	21.735 ⁹¹	77.25 ³⁰	47.923 ⁹⁸	55.27 ¹²³
16.3	21.644 ¹⁰³	76.95 ⁴⁵	47.825 ¹¹³	56.50 ¹¹⁶
26.3	21.541 ¹¹³	76.50 ⁵⁵	47.712 ¹²³	57.66 ¹⁰⁴
Dec. 6.3	21.428 ¹¹⁷	75.95 ⁶⁷	47.589 ¹²⁹	58.70 ⁹⁰
16.3	21.311 ¹²⁰	75.28 ⁷⁸	47.460 ¹²⁹	59.60 ⁷¹
26.2	21.191 ¹¹⁸	74.50 ⁸⁴	47.331 ¹²⁶	60.31 ⁵²
36.2	21.073	73.66	47.205	60.83
Mean Place	18.296	53.58	44.702	72.68
Sec δ , Tan δ	1.006	+0.113	1.050	-0.320
L α , L δ	0.00	+0.4	0.00	+0.4
ω α , ω δ	-0.01	0.0	+0.02	0.0

AUTHORITY

A. E.

A. N.

432 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent Right Ascension.			Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semid. pass Merid.	Apparent Declination.			Var. of C's Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.		
			h	m	s			°	'	"					
Jan. 0	Moon I. U.	2.3	20	26	30.97	125.39	63.49	S. 14	21	11.2	+386.8	14	51.48	54	26.16
	Moon I. L.	-	20	51	22.03	123.15	62.93	12	59	23.3	+430.2	14	49.31	54	18.21
1	Moon I. U.	3.4	21	15	47.23	121.09	62.41	S. 11	29	28.6	+467.9	14	47.59	54	11.87
	Moon I. L.	-	21	39	49.20	119.29	61.97	9	52	35.7	+500.0	14	46.35	54	7.37
2	Moon I. U.	4.4	22	3	31.32	117.79	61.60	S. 8	9	50.9	+526.6	14	45.68	54	4.89
	Moon I. L.	-	22	26	57.66	116.66	61.33	6	22	17.4	+548.1	14	45.60	54	4.60
3	Moon I. U.	5.4	22	50	12.89	115.95	61.17	S. 4	30	55.9	+564.7	14	46.16	54	6.68
	Moon I. L.	-	23	13	22.10	115.67	61.13	2	36	44.6	+576.4	14	47.40	54	11.22
	263 B. Aquarii	6.1	22	57	29			5	8						
316 B. Aquarii	6.5	23	16	13			4	21							
4	Moon I. U.	6.5	23	36	30.75	115.86	61.21	S. 0	40	40.8	+583.4	14	49.36	54	18.39
	Moon I. L.	-	23	59	44.63	116.54	61.41	N. 1	16	18.9	+585.7	14	52.04	54	28.21
	60 B. Piscium	6.0	23	50	47			S. 0	19						
	80 B. Piscium	6.3	0	1	4			S. 0	56						
5	Moon I. U.	7.5	0	23	9.74	117.73	61.74	N. 3	13	16.2	+583.0	14	55.46	54	40.74
	Moon I. L.	-	0	46	52.21	119.44	62.22	5	9	10.3	+575.1	14	59.63	54	56.00
	147 B. Piscium	5.9	0	44	18			4	53						
171 B. Piscium	6.3	0	55	47			6	4							
6	Moon I. U.	8.5	1	10	58.28	121.66	62.82	N. 7	2	55.7	+561.5	15	4.51	55	13.90
	Moon I. L.	-	1	35	34.13	124.40	63.54	8	53	20.7	+541.6	15	10.09	55	34.33
	μ Piscium	5.0	1	20	6			5	45						
	ο Piscium	4.5	1	41	17			8	46						
7	Moon I. U.	9.6	2	0	45.67	127.61	64.36	N. 10	39	6.3	+514.8	15	16.31	55	57.15
	Moon I. L.	-	2	26	38.39	131.25	65.29	12	18	44.2	+480.2	15	23.12	56	22.07
	ξ Arietis	5.5	2	20	39			10	15						
31 Arietis	5.7	2	32	24			12	7							
8	Moon I. U.	10.6	2	53	17.01	135.24	66.29	N. 13	50	36.7	+437.1	15	30.41	56	48.79
	Moon I. L.	-	3	20	45.17	139.48	67.33	15	12	57.4	+384.7	15	38.08	57	16.87
	147 B. Arietis	5.8	3	2	8			12	53						
30 B. Tauri	6.4	3	33	26			15	11							
9	Moon I. U.	11.6	3	49	4.93	143.82	68.37	N. 16	23	51.7	+322.6	15	45.98	57	45.82
	Moon I. L.	-	4	18	16.38	148.06	69.38	17	21	21.7	+250.7	15	53.94	58	14.99
	48 Tauri	6.3	4	11	22			15	12						
264 B. Tauri	4.8	4	26	7			16	1							
10	Moon I. U.	12.7	4	48	17.23	152.01	70.30	N. 18	3	30.5	+169.2	16	1.79	58	43.79
	Moon I. L.	-	5	19	2.59	155.44	71.08	18	28	30.1	+79.4	16	9.35	59	11.47
	m Tauri	5.0	5	2	52			18	32						
115 Tauri	5.3	5	22	39			17	54							
11	Moon I. U.	13.7	5	50	24.99	158.15	71.69	N. 18	34	50.3	-17.0	16	16.38	59	37.24
	Moon I. L.	-	6	22	14.73	159.98	72.09	18	21	27.1	-117.3	16	22.68	60	0.33
	292 B. Orionis	6.5	6	16	55			17	48						
B.D. +17° 1275	6.2	6	26	41			N. 16	59							

MOON-CULMINATING STARS, 1922. 433

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of (s R.A. in 1 hour of Long.	Sid. Time of Semi- pass ² Merid.	Apparent			Var. of (s Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.		
			Right Ascension.	h	m			s	Declination.	°				'	"
Jan. 12	Moon I. U.	14.7	6	54	20.56	160.83	72.28	N. 17	47	51.4	-218.5	16	28.08	60	20.10
	Moon I. L.	-	7	26	30.69	160.70	72.24	16	54	14.3	-317.0	16	32.39	60	35.88
	λ Geminorum	3.6	7	13	39			16	41						
	f Geminorum	5.3	7	35	0			17	51						
13	Moon II. U.	15.8	8	0	57.82	159.63	72.00	N. 15	41	28.3	-409.4	16	35.48	60	47.22
	29 Cancri	5.9	8	24	18			14	28						
	A ¹ Cancri	5.5	8	38	56			12	57						
14	Moon II. L.	-	8	32	43.31	157.85	71.59	N. 14	11	5.4	-492.7	16	37.29	60	53.84
	Moon II. U.	16.8	9	4	4.05	155.54	71.06	12	25	10.5	-564.4	16	37.77	60	55.60
	h Leonis	5.2	9	27	48			10	3						
	18 Leonis	5.8	9	42	13			12	10						
15	Moon II. L.	-	9	34	54.98	152.92	70.46	N. 10	26	13.2	-622.9	16	36.95	60	52.60
	Moon II. U.	17.9	10	5	13.64	150.19	69.83	8	16	57.9	-667.3	16	34.91	60	45.11
	48 Leonis	5.2	10	30	45			7	21						
	37 Sextantis	6.3	10	42	3			6	47						
16	Moon II. L.	-	10	34	59.79	147.53	69.21	N. 6	0	15.3	-697.4	16	31.76	60	33.58
	Moon II. U.	18.9	11	4	15.13	145.07	68.64	3	38	54.5	-713.8	16	27.64	60	18.50
	7 Leonis	5.2	11	23	57			3	17						
	9 B. Virginis	6.2	11	45	4			0	7						
17	Moon II. L.	-	11	33	2.75	142.92	68.14	N. 1	15	37.4	-717.0	16	22.73	60	0.51
	Moon II. U.	19.9	12	1	26.62	141.13	67.72	S. 1	7	5.0	-708.2	16	17.21	59	40.24
	162 B. Virginis	6.2	12	23	52			4	11						
	319 B. Virginis	6.3	12	43	32			5	53						
18	Moon II. L.	-	12	29	31.30	139.72	67.39	S. 3	26	54.9	-688.4	16	11.22	59	18.33
	Moon II. U.	21.0	12	57	21.37	138.69	67.14	5	41	47.8	-658.9	16	4.96	58	55.38
	72 Virginis	6.1	13	26	22			6	4						
	m Virginis	5.2	13	37	32			8	19						
19	Moon II. L.	-	13	25	1.17	138.00	66.98	S. 7	49	53.2	-620.6	15	58.57	58	31.96
	Moon II. U.	22.0	13	52	34.66	137.62	66.89	9	49	32.4	-574.7	15	52.16	58	8.48
	2 Libræ	6.3	14	19	14			11	21						
	6 B. Libræ	6.2	14	32	51			11	58						
20	Moon II. L.	-	14	20	5.03	137.47	66.85	S. 11	39	19.7	-522.1	15	45.86	57	45.38
	Moon II. U.	23.0	14	47	34.64	137.48	66.84	13	17	59.7	-463.7	15	39.74	57	22.96
	o Libræ	6.2	15	16	40			15	16						
	ζ Libræ	5.6	15	28	31			16	35						
21	Moon II. L.	-	15	15	4.86	137.56	66.84	S. 14	44	28.3	-400.3	15	33.85	57	1.41
	Moon II. U.	24.1	15	42	36.02	137.62	66.83	15	57	51.8	-333.0	15	28.27	56	40.97
22	Moon II. L.	-	16	10	7.39	137.58	66.79	S. 16	57	27.9	-262.6	15	23.01	56	21.68
	Moon II. U.	25.1	16	37	37.31	137.37	66.71	17	42	45.9	-190.1	15	18.08	56	3.64
23	Moon II. L.	-	17	5	3.24	136.91	66.56	S. 18	13	26.7	-116.6	15	13.51	55	46.84
	Moon II. U.	26.2	17	32	22.08	136.18	66.34	S. 18	29	24.5	-43.1	15	9.27	55	31.33

434 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of (<i>s</i> 's R.A. in 1 hour of Long.	Sid. Time of Semi- pass ^r Merid.	Apparent			Var. of (<i>s</i> 's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.		
			Right Ascension.	h	m			s	Declination.	<i>o</i>				<i>'</i>	<i>"</i>
Jan. 24	Moon II. L.	-	17	59	30.35	135.15	66.05	S. 18	30	46.1	+ 29.3	15	5.36	55	17.00
	Moon II. U.	27.2	18	26	24.47	133.83	65.68	18	17	50.5	+ 99.6	15	1.78	55	3.88
25	Moon II. L.	-	18	53	1.15	132.25	65.25	S. 17	51	8.8	+ 166.8	14	58.52	54	51.92
	Moon II. U.	28.2	19	19	17.52	130.45	64.76	17	11	22.9	+ 230.2	14	55.56	54	41.11
26	Moon II. L.	-	19	45	11.39	128.51	64.24	S. 16	19	22.9	+ 289.0	14	52.91	54	31.40
	Moon II. U.	29.3	20	10	41.42	126.49	63.71	15	16	7.0	+ 342.8	14	50.58	54	22.85
27	Moon II. L.	-	20	35	47.12	124.47	63.17	S. 14	2	37.9	+ 391.2	14	48.56	54	15.43
28	Moon I. U.	0.5	20	58	23.56	122.60	62.66	S. 12	40	1.8	+ 433.9	14	46.86	54	9.22
	Moon I. L.	-	21	22	43.59	120.77	62.19	11	9	26.6	+ 471.0	14	45.50	54	4.25
29	Moon I. U.	1.6	21	46	42.89	119.15	61.77	S. 9	32	0.5	+ 502.4	14	44.52	54	0.65
	Moon I. L.	-	22	10	24.13	117.77	61.43	7	48	51.1	+ 528.2	14	43.93	53	58.47
30	Moon I. U.	2.6	22	33	50.64	116.70	61.17	S. 6	1	4.5	+ 548.6	14	43.76	53	57.83
	Moon I. L.	-	22	57	6.24	115.96	61.00	4	9	45.1	+ 563.7	14	44.04	53	58.89
31	Moon I. U.	3.6	23	20	15.17	115.59	60.93	S. 2	15	56.0	+ 573.6	14	44.82	54	1.79
	Moon I. L.	-	23	43	22.09	115.63	60.98	S. 0	20	38.4	+ 578.5	14	46.15	54	6.64
Feb. 1	Moon I. U.	4.7	0	6	31.92	116.08	61.14	N. 1	35	6.8	+ 578.2	14	48.05	54	13.58
	Moon I. L.	-	0	29	49.83	116.98	61.42	3	30	18.5	+ 572.9	14	50.54	54	22.72
44	Piscium	6.0	0	21	24			1	30						
147	B. Piscium	5.9	0	44	17			4	53						
2	Moon I. U.	5.7	0	53	21.21	118.33	61.82	N. 5	23	55.0	+ 562.3	14	53.67	54	34.17
	Moon I. L.	-	1	17	11.51	120.13	62.33	7	14	51.8	+ 546.2	14	57.44	54	48.01
88	Piscium	6.2	1	10	39			6	35						
263	B. Piscium	6.4	1	24	17			7	33						
3	Moon I. U.	6.7	1	41	26.23	122.40	62.95	N. 9	2	1.3	+ 524.3	15	1.90	55	4.32
	Moon I. L.	-	2	6	10.74	125.10	63.69	10	44	11.1	+ 496.2	15	7.02	55	23.06
ξ ¹	Ceti	4.5	2	8	52			8	29						
ξ	Arietis	5.5	2	20	38			10	15						
4	Moon I. U.	7.7	2	31	30.16	128.21	64.51	N. 12	20	2.8	+ 461.3	15	12.79	55	44.21
	Moon I. L.	-	2	57	29.13	131.68	65.42	13	48	12.0	+ 419.0	15	19.18	56	7.67
38	Arietis	5.2	2	40	43			12	7						
147	B. Arietis	5.8	3	2	7			12	53						
5	Moon I. U.	8.8	3	24	11.54	135.43	66.37	N. 15	7	7.4	+ 368.9	15	26.17	56	33.25
	Moon I. L.	-	3	51	40.22	139.37	67.35	16	15	11.5	+ 310.4	15	33.67	57	0.74
148	B. Tauri	5.9	3	48	43			17	6						
180	B. Tauri	6.1	4	3	33			17	8						
6	Moon I. U.	9.8	4	19	56.61	143.36	68.32	N. 17	10	42.8	+ 243.4	15	41.59	57	29.74
	Moon I. L.	-	4	49	0.41	147.24	69.25	17	51	58.9	+ 167.9	15	49.81	57	59.84
302	B. Tauri	6.1	4	41	45			18	36						
m	Tauri	5.0	5	2	52			N. 18	32						

MOON-CULMINATING STARS, 1922. 435

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semi- pass# Merid.	Apparent			Var. of C's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			Right Ascension.	h	m			s	Declination.	°			
Feb. 7	Moon I. U.	10.9	5 18 49.34	150.85	70.10	N. 18 17 20.6	+ 84.5	15 58.16	58 30.48				
	Moon I. L.	-	5 49 18.98	154.00	70.82	18 25 19.4	- 5.7	16 6.47	59 0.93				
	130 Tauri	5.6	5 42 55			17 42							
	64 Orionis	5.1	5 58 52			19 41							
8	Moon I. U.	11.9	6 20 22.87	156.53	71.39	N. 18 14 43.3	-101.0	16 14.55	59 30.50				
	Moon I. L.	-	6 51 52.85	158.33	71.77	17 44 46.0	-198.8	16 22.14	59 58.37				
	74 B. Geminor.	6.2	6 42 52			18 17							
	110 B. Geminor.	6.2	6 57 55			17 52							
9	Moon I. U.	12.9	7 23 39.57	159.32	71.98	N. 16 55 12.4	-296.5	16 29.05	60 23.68				
	Moon I. L.	-	7 55 33.37	159.51	71.99	15 46 24.9	-390.6	16 35.04	60 45.59				
	1 Caneri	6.0	7 52 36			16 0							
	30 B. Caneri	6.1	8 6 38			14 51							
10	Moon I. U.	14.0	8 27 25.01	158.98	71.84	N. 14 19 23.9	-478.1	16 39.88	61 3.35				
	Moon I. L.	-	8 59 6.38	157.83	71.55	12 35 47.7	-556.0	16 43.41	61 16.26				
	60 Caneri	5.7	8 51 42			11 55							
	209 B. Caneri	6.5	9 5 34			11 53							
11	Moon I. U.	15.0	9 30 31.15	156.24	71.17	N. 10 37 47.7	-621.7	16 45.50	61 23.91				
	77 Leonis	4.9	9 56 7			8 25							
	43 Leonis	6.3	10 18 58			6 56							
12	Moon II. L.	-	10 3 56.32	154.28	70.72	N. 8 28 1.0	-673.5	16 46.06	61 25.98				
	Moon II. U.	16.1	10 34 35.68	152.28	70.25	6 9 22.4	-710.3	16 45.11	61 22.48				
	d Leonis	5.0	10 56 34			4 2							
	75 Leonis	5.4	11 13 18			2 26							
13	Moon II. L.	-	11 4 51.01	150.29	69.79	N. 3 44 55.5	-731.6	16 42.68	61 13.59				
	Moon II. U.	17.1	11 34 43.17	148.43	69.36	N. 1 17 43.8	-737.8	16 38.90	60 59.74				
	31 B. Virginis	6.4	11 57 4			S. 1 20							
	13 Virginis	5.9	12 14 42			0 21							
14	Moon II. L.	-	12 4 14.10	146.76	68.98	S. 1 9 15.4	-729.7	16 33.91	60 41.48				
	Moon II. U.	18.1	12 33 26.33	145.32	68.65	3 33 16.6	-708.4	16 27.92	60 19.52				
	91 G. Virginis	6.5	12 49 38			3 48							
	θ Virginis	4.4	13 5 56			5 7							
15	Moon II. L.	-	13 2 22.71	144.12	68.39	S. 5 51 50.4	-675.4	16 21.14	59 54.69				
	Moon II. U.	19.2	13 31 5.95	143.13	68.17	8 2 45.0	-632.1	16 13.80	59 27.77				
	598 B. Virginis	6.1	13 50 54			7 41							
	96 Virginis	6.5	14 4 52			9 58							
16	Moon II. L.	-	13 59 38.46	142.32	68.00	S. 10 4 7.2	-580.2	16 6.08	58 59.49				
	Moon II. U.	20.2	14 28 2.14	141.64	67.86	11 54 22.2	-521.2	15 58.20	58 30.64				
	13 Libræ	5.7	14 50 10			11 35							
	o Libræ	6.2	15 16 41			15 16							
17	Moon II. L.	-	14 56 18.19	141.04	67.72	S. 13 32 13.5	-456.5	15 50.35	58 1.87				
	Moon II. U.	21.2	15 24 27.02	140.43	67.58	14 56 41.0	-387.5	15 42.67	57 33.70				
	77 Libræ	5.5	15 39 42			15 25							
	49 Libræ	5.4	15 55 58			S. 16 18							

436 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Sid. Time of Semid. pass [†] Merid.	Apparent			Semi-diameter.	Hor. Par.
			Right Ascension.	Var. of (C's R.A. in 1 hour of Long.	s		Declination.	(C's Dec. in 1 hour of Long.			
Feb. 18	Moon II. L.	-	h m s	s	s	S. 16 7 1.0	-315.4	15 35.26	57 6.55		
	Moon II. U.	22.3	15 52 28.34	139.77	67.43	17 2 44.3	-241.6	15 28.24	56 40.86		
	24 Scorpii	5.0	16 20 21.12	139.00	67.23	17 35					
	90 B. Ophiuchi	6.5	16 37 4			18 8					
19	Moon II. L.	-	16 48 3.74	138.07	66.99	S. 17 43 35.8	-167.0	15 21.68	56 16.82		
	Moon II. U.	23.3	17 15 34.15	136.96	66.69	18 9 32.9	-92.7	15 15.63	55 54.63		
	305 B. Ophiuchi	6.3	17 51 20			18 47					
	6 Sagittarii	6.5	17 56 51			17 9					
20	Moon II. L.	-	17 42 50.07	135.66	66.34	S. 18 20 45.2	-19.7	15 10.12	55 34.43		
	Moon II. U.	24.4	18 9 49.14	134.16	65.93	18 17 32.9	+51.3	15 5.17	55 16.28		
21	Moon II. L.	-	18 36 29.24	132.50	65.47	S. 18 0 25.6	+119.4	15 0.77	55 0.17		
	Moon II. U.	25.4	19 2 48.52	130.70	64.98	17 30 1.7	+184.0	14 56.91	54 46.02		
22	Moon II. L.	-	19 28 45.66	128.81	64.45	S. 16 47 6.4	+244.5	14 53.57	54 33.82		
	Moon II. U.	26.4	19 54 19.90	126.89	63.92	15 52 30.7	+300.6	14 50.75	54 23.47		
23	Moon II. L.	-	20 19 31.11	124.99	63.38	S. 14 47 10.3	+351.9	14 48.40	54 14.86		
	Moon II. U.	27.5	20 44 19.84	123.15	62.87	13 32 4.2	+398.2	14 46.51	54 7.97		
24	Moon II. L.	-	21 8 47.26	121.44	62.39	S. 12 8 14.2	+439.3	14 45.06	54 2.64		
	Moon II. U.	28.5	21 32 55.10	119.90	61.96	10 36 43.3	+475.0	14 44.02	53 58.82		
25	Moon II. L.	-	21 56 45.67	118.57	61.59	S. 8 58 35.8	+505.4	14 43.37	53 56.44		
	Moon II. U.	29.5	22 20 21.72	117.48	61.29	7 14 56.4	+530.3	14 43.10	53 55.45		
26	Moon I. L.	-	22 41 44.28	116.71	61.07	S. 5 26 49.7	+549.9	14 43.20	53 55.81		
27	Moon I. U.	0.8	23 5 1.39	116.19	60.93	S. 3 35 20.7	+564.1	14 43.68	53 57.56		
	Moon I. L.	-	23 28 14.25	116.01	60.90	S. 1 41 34.0	+572.8	14 44.52	54 0.65		
28	Moon I. U.	1.8	23 51 26.88	116.16	60.96	N. 0 13 25.6	+576.2	14 45.75	54 5.15		
	Moon I. L.	-	0 14 43.45	116.67	61.12	2 8 32.8	+574.1	14 47.38	54 11.13		
Mar. 1	Moon I. U.	2.8	0 38 8.34	117.54	61.39	N. 4 2 42.0	+566.5	14 49.52	54 18.62		
	Moon I. L.	-	1 1 45.94	118.79	61.75	5 54 46.4	+553.3	14 51.91	54 27.73		
2	Moon I. U.	3.8	1 25 40.69	120.40	62.22	N. 7 43 37.5	+534.3	14 54.86	54 38.53		
	Moon I. L.	-	1 49 56.91	122.37	62.78	9 28 4.9	+509.3	14 58.28	54 51.09		
3	Moon I. U.	4.9	2 14 38.84	124.68	63.42	N. 11 6 55.6	+478.1	15 2.22	55 5.50		
	Moon I. L.	-	2 39 50.39	127.30	64.14	12 38 53.6	+440.5	15 6.68	55 21.83		
	25 Arietis	6.5	2 23 15			9 51					
	38 Arietis	5.2	2 40 43			12 7					
4	Moon I. U.	5.9	3 5 34.99	130.18	64.92	N. 14 2 40.0	+396.1	15 11.67	55 40.12		
	Moon I. L.	-	3 31 55.52	133.27	65.74	15 16 52.7	+344.8	15 17.18	56 0.33		
	30 B. Tauri	6.4	3 33 25			15 10					
	148 B. Tauri	5.9	3 48 43			17 6					
5	Moon I. U.	6.9	3 58 53.94	136.48	66.57	N. 16 20 7.6	+286.5	15 23.22	56 22.45		
	Moon I. L.	-	4 26 31.27	139.73	67.40	17 10 59.8	+221.1	15 29.74	56 46.33		
	63 Tauri	5.7	4 18 57			16 36					
	89 Tauri	5.8	4 33 42			N. 15 53					

MOON-CULMINATING STARS, 1922. 437

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent	Var. of	Sid.	Apparent	Var. of	Semi-diameter.	Hor. Par.
			Right Ascension.	(α 's R.A. in 1 hour of Long.	Time of Somid. pass [†] Merid.	Declination.	(δ 's Dec. in 1 hour of Long.		
			h m s	s	s	° ' "	' "		
Mar. 6	Moon I. U.	8.0	4 54 47.23	142.91	68.20	N. 17 48 5.9	+148.8	15 36.70	57 11.83
	Moon I. L.	-	5 23 40.26	145.89	68.92	18 10 6.7	+70.3	15 44.02	57 38.64
	111 Tauri	5.1	5 19 53			17 19			
	122 Tauri	5.5	5 32 33			16 59			
7	Moon I. U.	9.0	5 53 7.37	148.57	69.57	N. 18 15 51.6	-13.6	15 51.60	58 6.44
	Moon I. L.	-	6 23 4.27	150.84	70.10	18 4 23.1	-101.7	15 59.34	58 34.77
	71 Orionis	5.1	6 10 17			19 11			
	B.D. +17° 1275	6.2	6 26 40			16 59			
8	Moon I. U.	10.1	6 53 25.57	152.62	70.50	N. 17 35 1.2	-192.2	16 7.06	59 3.07
	Moon I. L.	-	7 24 5.16	153.88	70.77	16 47 29.0	-283.1	16 14.60	59 30.71
	λ Geminorum	3.6	7 13 38			16 41			
	68 Geminorum	5.2	7 29 11			15 59			
9	Moon I. U.	11.1	7 54 56.59	154.60	70.91	N. 15 41 55.9	-371.9	16 21.76	59 56.97
	Moon I. L.	-	8 25 53.65	154.83	70.93	14 19 0.8	-456.3	16 28.33	60 21.03
	30 B. Cancri	6.1	8 6 38			14 51			
	90 B. Cancri	6.3	8 31 47			15 35			
10	Moon I. U.	12.1	8 56 50.74	154.62	70.85	N. 12 39 53.4	-533.5	16 34.10	60 42.15
	Moon I. L.	-	9 27 43.28	154.09	70.69	10 46 13.4	-601.3	16 38.84	60 59.51
	222 B. Cancri	6.3	9 13 40			11 49			
	0 Leonis	3.8	9 37 1			10 15			
11	Moon I. U.	13.2	9 58 27.90	153.32	70.48	N. 8 40 7.5	-657.5	16 42.38	61 12.49
	Moon I. L.	-	10 29 2.46	152.43	70.25	6 24 5.8	-700.4	16 44.57	61 20.50
	155 B. Leonis	6.5	10 19 14			6 5			
	35 Sextantis	6.1	10 39 20			5 9			
12	Moon I. U.	14.2	10 59 26.10	151.51	70.02	N. 4 0 55.9	-728.7	16 45.29	61 23.15
	79 Leonis	5.5	11 20 4			1 50			
	9 B. Virginis	6.2	11 45 5			0 7			
	13	Moon I. L.	-	11 29 38.84	150.63	69.80	N. 1 33 36.5	-741.9	16 44.51	61 20.31
Moon II. U.		15.3	12 2 0.68	149.80	69.61	S. 0 54 49.7	-739.9	16 42.26	61 12.05
162 B. Virginis		6.2	12 23 53			4 11			
319 B. Virginis		6.3	12 43 33			5 53			
14	Moon II. L.	-	12 31 53.99	149.11	69.45	S. 3 21 22.7	-723.2	16 38.59	60 58.63
	Moon II. U.	16.3	13 1 39.57	148.51	69.33	5 43 11.2	-692.7	16 33.66	60 40.55
	72 Virginis	6.1	13 26 23			6 4			
	575 B. Virginis	6.2	13 43 8			9 19			
15	Moon II. L.	-	13 31 18.35	147.97	69.22	S. 7 57 37.6	-649.8	16 27.62	60 18.44
	Moon II. U.	17.3	14 0 50.81	147.44	69.12	10 2 23.2	-596.2	16 20.70	59 53.06
	4 G. Libræ	6.5	14 20 31			11 19			
	6 B. Libræ	6.2	14 32 53			11 59			
16	Moon II. L.	-	14 30 16.78	146.87	69.01	S. 11 55 29.6	-533.6	16 13.10	59 25.21
	Moon II. U.	18.4	14 59 35.39	146.20	68.88	13 35 21.6	-464.1	16 5.05	58 55.72
	0 Libræ	6.2	15 16 41			15 16			
	190 B. Libræ	6.5	15 39 4			S. 14 48			

438 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Apparent	Var. of	Semi-	Hor.		
			Right	Ascension.	Var. of					Declination.	diameter.	Par.
			h	m	s	°	'	"	'	"	
Mar. 17	Moon II. L.	-	15	28	45.04	145.37	68.71	S. 15 0 47.0	-389.5	15 56.78	58 25.43
	Moon II. U.	19.4	15	57	43.45	144.33	68.48	16 10 56.4	-311.7	15 48.49	57 54.99
	χ Ophiuchi	4.9	16	22	32			18 17			
	24 Scorpii	5.0	16	37	5			17 35			
18	Moon II. L.	-	16	26	27.94	143.05	68.19	S. 17 5 21.6	-232.4	15 40.33	57 25.10
	Moon II. U.	20.4	16	54	55.58	141.52	67.83	17 43 54.3	-153.2	15 32.46	56 56.30
	125 B. Ophiuchi	6.2	17	3	44			17 30			
	164 B. Ophiuchi	6.0	17	15	22			17 40			
19	Moon II. L.	-	17	23	3.35	139.74	67.40	S. 18 6 43.2	-75.3	15 25.02	56 29.02
	Moon II. U.	21.5	17	50	48.48	137.75	66.91	18 14 11.3	+0.1	15 18.08	56 3.63
	64 B. Sagittarii	6.1	18	10	57			18 41			
	100 B. Sagittarii	5.0	18	26	53			18 27			
20	Moon II. L.	-	18	18	8.68	135.59	66.37	S. 18 6 53.7	+72.2	15 11.74	55 40.38
	Moon II. U.	22.5	18	45	2.21	133.31	65.78	17 45 34.7	+140.3	15 6.04	55 19.48
	187 B. Sagittarii	6.4	19	2	35			18 51			
	45 Sagittarii	6.0	19	17	18			18 27			
21	Moon II. L.	-	19	11	28.02	130.98	65.16	S. 17 11 4.9	+203.9	15 0.99	55 1.02
	Moon II. U.	23.5	19	37	25.91	128.67	64.54	16 24 19.8	+262.8	14 56.64	54 45.03
	9 Sagittarii	5.1	19	53	32			15 42			
	16 B. Capricorni	6.2	20	16	24			15 2			
22	Moon II. L.	-	20	2	56.32	126.42	63.93	S. 15 26 17.9	+316.7	14 52.95	54 31.53
	Moon II. U.	24.6	20	28	0.47	124.30	63.34	14 17 58.8	+365.6	14 49.92	54 20.46
23	Moon II. L.	-	20	52	40.22	122.36	62.80	S. 13 0 23.3	+409.5	14 47.55	54 11.74
	Moon II. U.	25.6	21	16	57.92	120.63	62.30	11 34 32.0	+448.3	14 45.78	54 5.26
24	Moon II. L.	-	21	40	56.46	119.17	61.87	S. 10 1 25.5	+482.0	14 44.59	54 0.92
	Moon II. U.	26.6	22	4	39.06	117.98	61.52	8 22 4.3	+510.7	14 43.95	53 58.57
25	Moon II. L.	-	22	28	9.24	117.10	61.25	S. 6 37 29.2	+534.3	14 43.82	53 58.08
	Moon II. U.	27.7	22	51	30.76	116.54	61.07	4 48 41.2	+552.8	14 44.15	53 59.30
26	Moon II. L.	-	23	14	47.55	116.31	60.98	S. 2 56 42.3	+566.1	14 44.91	54 2.10
	Moon II. U.	28.7	23	38	3.65	116.43	60.99	S. 1 2 35.7	+574.1	14 46.09	54 6.40
27	Moon II. L.	-	0	1	23.17	116.88	61.10	N. 0 52 34.1	+576.6	14 47.63	54 12.02
28	Moon II. U.	29.7	0	24	50.19	117.68	61.31	N. 2 47 40.2	+573.5	14 49.52	54 18.94
	Moon I. L.	-	0	46	25.58	118.75	61.62	4 41 33.6	+564.5	14 51.72	54 27.03
29	Moon I. U.	1.0	1	10	18.95	120.19	62.01	N. 6 33 3.1	+549.4	14 54.25	54 36.28
	Moon I. L.	-	1	34	31.47	121.94	62.50	8 20 54.5	+528.1	14 57.06	54 46.61
30	Moon I. U.	2.0	1	59	6.66	123.97	63.05	N. 10 3 51.4	+500.3	15 0.18	54 58.04
	Moon I. L.	-	2	24	7.66	126.24	63.67	11 40 35.0	+465.8	15 3.61	55 10.58
31	Moon I. U.	3.1	2	49	37.12	128.70	64.35	N. 13 9 44.6	+424.6	15 7.33	55 24.22
	Moon I. L.	-	3	15	37.06	131.31	65.05	N. 14 29 59.0	+376.6	15 11.36	55 38.98

MOON-CULMINATING STARS, 1922. 439

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^e Merid.	Apparent			Var. of C's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			Right Ascension.	h	m			s	Declination.	°			
Apr. 1	Moon I. U.	4.1	3 42	8.74	133.98	65.77	N. 15 39	56.5	+321.9	15 15.71	55 54.91		
	Moon I. L.	-	4 9	12.54	136.64	66.47	16 38	17.4	+260.6	15 20.37	56 12.00		
2	Moon I. U.	5.1	4 36	47.83	139.22	67.15	N. 17 23	45.3	+193.1	15 25.35	56 30.25		
	Moon I. L.	-	5 4	53.00	141.61	67.77	17 55	10.2	+120.1	15 30.63	56 49.58		
	318 B. Tauri	5.7	4 52	52			17	2					
111 Tauri	5.1	5 19	53			17	19						
3	Moon I. U.	6.2	5 33	25.39	143.74	68.32	N. 18 11	29.8	+42.4	15 36.20	57 10.00		
	Moon I. L.	-	6 2	21.49	145.55	68.79	18 11	53.8	-38.9	15 42.03	57 31.37		
	57 Orionis	5.8	5 50	20			19	44					
	19 B. Geminor.	6.2	6 8	59			18	42					
4	Moon I. U.	7.2	6 31	37.09	146.99	69.14	N. 17 55	45.7	-122.7	15 48.07	57 53.48		
	Moon I. L.	-	7 1	7.60	148.03	69.40	17 22	45.6	-207.3	15 54.23	58 16.08		
	110 B. Geminor.	6.2	6 57	54			17	52					
	51 Geminorum	5.3	7 8	55			16	17					
5	Moon I. U.	8.2	7 30	48.37	148.70	69.56	N. 16 32	52.7	-291.2	16 0.45	58 38.85		
	Moon I. L.	-	8 0	35.01	149.02	69.62	15 26	26.8	-372.6	16 6.61	59 1.42		
	1 Cancri	6.0	7 52	35			16	0					
	30 B. Cancri	6.1	8 6	37			14	51					
6	Moon I. U.	9.3	8 30	23.78	149.06	69.61	N. 14 4	8.7	-449.6	16 12.58	59 23.31		
	Moon I. L.	-	9 0	11.74	148.90	69.55	12 27	1.4	-520.5	16 18.23	59 44.01		
	60 Cancri	5.7	8 51	42			11	55					
	209 B. Cancri	6.5	9 5	34			11	53					
7	Moon I. U.	10.3	9 29	56.95	148.62	69.46	N. 10 36	28.8	-583.5	16 23.37	60 2.87		
	Moon I. L.	-	9 59	38.51	148.31	69.35	8 34	15.4	-637.0	16 27.87	60 19.33		
	83 B. Leonis	5.9	9 52	20			9	18					
	A Leonis	4.6	10 3	48			10	23					
8	Moon I. U.	11.4	10 29	16.50	148.04	69.25	N. 6 22	23.7	-679.6	16 31.54	60 32.77		
	Moon I. L.	-	10 58	51.74	147.86	69.18	4 3	13.7	-709.9	16 34.24	60 42.67		
	56 Leonis	6.1	10 52	0			6	36					
	p ⁴ Leonis	5.7	11 2	58			2	23					
9	Moon I. U.	12.4	11 28	25.70	147.83	69.15	N. 1 39	17.9	-727.1	16 35.84	60 48.52		
	Moon I. L.	-	11 58	0.16	147.94	69.15	S. 0 46	41.5	-730.4	16 36.24	60 49.99		
	β Virginis	3.8	11 46	40			N. 2	12					
	31 B. Virginis	6.4	11 57	4			S. 1	20					
10	Moon I. U.	13.4	12 27	36.85	148.20	69.20	S. 3 11	56.1	-719.7	16 35.38	60 46.85		
	Moon I. L.	-	12 57	17.24	148.55	69.28	5 33	37.8	-695.0	16 33.26	60 39.08		
	91 G. Virginis	6.5	12 49	39			3	48					
	θ Virginis	4.4	13 5	57			5	8					
11	Moon II. U.	14.5	13 29	20.91	148.96	69.37	S. 7 49	3.1	-657.1	16 29.92	60 26.84		
	598 B. Virginis	6.1	13 50	55			7	41					
	96 Virginis	6.5	14 4	53			S. 9	58					

440 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent Right Ascension.			Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^r Merid.	Apparent Declination.	Var. of C's Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
			h	m	s						
Apr. 12	Moon II. L.	-	13	59	10.57	149.31	69.46	S. 9 55 38.8	-606.9	16 25.45	60 10.47
	Moon II. U.	15.5	14	29	3.68	149.52	69.53	11 51 7.1	-546.1	16 19.95	59 50.35
	13 Libræ	5.7	14	50	11			11 35			
	o Libræ	6.2	15	16	42			15 16			
13	Moon II. L.	-	14	58	58.01	149.49	69.55	S. 13 33 30.2	-476.4	16 13.63	59 27.14
	Moon II. U.	16.5	15	28	50.24	149.15	69.49	15 1 13.8	-399.9	16 6.65	59 1.57
	7 Libræ	5.5	15	39	43			15 26			
	θ Libræ	4.4	15	49	25			16 30			
14	Moon II. L.	-	15	58	36.12	148.42	69.35	S. 16 13 9.3	-318.8	15 59.18	58 34.23
	Moon II. U.	17.6	16	28	10.72	147.27	69.10	17 8 34.3	-235.2	15 51.46	58 5.94
	78 B. Ophiuchi	6.5	16	51	34			16 41			
	125 B. Ophiuchi	6.2	17	3	45			17 30			
15	Moon II. L.	-	16	57	28.85	145.68	68.75	S. 17 47 12.5	-151.3	15 43.66	57 37.34
	Moon II. U.	18.6	17	26	25.43	143.68	68.29	18 9 10.4	-68.8	15 35.96	57 9.11
	305 B. Ophiuchi	6.3	17	51	22			18 47			
	32 G. Sagittarii	5.7	18	3	19			17 10			
16	Moon II. L.	-	17	54	55.90	141.34	67.74	S. 18 14 55.1	+10.7	15 28.50	56 41.78
	Moon II. U.	19.7	18	22	56.52	138.73	67.12	18 5 9.7	+86.1	15 21.42	56 15.84
	155 B. Sagittarii	5.5	18	51	3			16 28			
	187 B. Sagittarii	6.4	19	2	36			18 51			
17	Moon II. L.	-	18	50	24.65	135.94	66.43	S. 17 40 49.6	+156.4	15 14.83	55 51.70
	Moon II. U.	20.7	19	17	18.76	133.08	65.72	17 2 57.7	+221.3	15 8.82	55 29.68
	54 Sagittarii	5.4	19	36	17			16 28			
	9 Sagittarii	5.1	19	53	33			15 42			
18	Moon II. L.	-	19	43	38.58	130.24	65.00	S. 16 12 42.0	+280.4	15 3.45	55 10.02
	Moon II. U.	21.7	20	9	24.92	127.51	64.29	15 11 11.7	+333.7	14 58.78	54 52.89
	45 B. Capricorni	6.1	20	29	52			13 59			
	84 B. Capricorni	6.0	20	46	25			12 50			
19	Moon II. L.	-	20	34	39.57	124.97	63.62	S. 13 59 35.9	+381.3	14 54.83	54 38.42
	Moon II. U.	22.8	20	59	25.18	122.68	63.00	12 39 1.9	+423.4	14 51.61	54 26.63
	18 Aquarii	5.5	21	19	56			13 13			
	137 B. Capricorni	6.2	21	35	17			10 56			
20	Moon II. L.	-	21	23	45.08	120.69	62.45	S. 11 10 34.8	+460.2	14 49.12	54 17.50
	Moon II. U.	23.8	21	47	43.08	119.04	61.98	9 35 17.0	+491.9	14 47.35	54 11.02
	θ Aquarii	4.3	22	12	43			8 10			
	170 B. Aquarii	6.0	22	19	27			7 35			
21	Moon II. L.	-	22	11	23.46	117.76	61.61	S. 7 54 8.8	+518.6	14 46.28	54 7.11
	Moon II. U.	24.8	22	34	50.73	116.85	61.35	6 8 9.1	+540.5	14 45.88	54 5.64
22	Moon II. L.	-	22	58	9.51	116.35	61.16	S. 4 18 16.1	+557.5	14 46.11	54 6.49
	Moon II. U.	25.9	23	21	24.66	116.25	61.10	2 25 28.3	+569.6	14 46.94	54 9.50
23	Moon II. L.	-	23	44	40.99	116.54	61.14	S. 0 30 45.1	+576.7	14 48.30	54 14.50
	Moon II. U.	26.9	0	8	3.30	117.24	61.30	N. 1 24 51.7	+578.5	14 50.16	54 21.31

MOON-CULMINATING STARS, 1922. 441

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Apparent	Var. of		Semi-	Hor.			
			Right	Ascension.	Var. of C's R.A. in 1 hour of Long.		Sid. Time of Semi-d. pass Merid.	Declination.			Var. of C's Dec. in 1 hour of Long.	diameter.	Par.
			h	m	s		s	s	°	'	"	'	"
Apr. 24	Moon II. L.	-	0	31	36.27	118.32	61.56	N. 3 20 17.1	+574.8	14 52.46	54 29.75		
	Moon II. U.	27.9	0	55	24.46	119.77	61.92	5 14 22.8	+565.2	14 55.15	54 39.58		
25	Moon II. L.	-	1	19	32.13	121.56	62.38	N. 7 5 56.1	+549.3	14 58.17	54 50.67		
	Moon II. U.	28.9	1	44	3.23	123.67	62.92	8 53 39.6	+526.8	15 1.49	55 2.8f		
26	Moon II. L.	-	2	9	1.18	126.03	63.53	N. 10 36 11.8	+497.4	15 5.05	55 15.82		
27	Moon I. U.	0.3	2	32	20.38	128.49	64.20	N. 12 12 7.5	+460.7	15 8.78	55 29.53		
	Moon I. L.	-	2	58	18.28	131.18	64.90	13 39 58.6	+416.6	15 12.68	55 43.83		
28	Moon I. U.	1.3	3	24	48.93	133.93	65.62	N. 14 58 16.2	+365.0	15 16.70	55 58.58		
	Moon I. L.	-	3	51	52.33	136.63	66.32	16 5 32.1	+306.4	15 20.81	56 13.64		
29	Moon I. U.	2.4	4	19	27.35	139.18	66.98	N. 17 0 22.2	+240.9	15 25.01	56 29.00		
	Moon I. L.	-	4	47	31.58	141.48	67.59	17 41 29.4	+169.4	15 29.25	56 44.54		
30	Moon I. U.	3.4	5	16	1.48	143.44	68.10	N. 18 7 46.5	+92.7	15 33.53	57 0.23		
	Moon I. L.	-	5	44	52.50	144.99	68.51	18 18 20.1	+12.3	15 37.86	57 16.06		
May 1	Moon I. U.	4.4	6	13	59.42	146.08	68.81	N. 18 12 33.0	-70.4	15 42.20	57 31.94		
	Moon I. L.	-	6	43	16.65	146.71	68.99	17 50 6.5	-154.0	15 46.52	57 47.82		
2	Moon I. U.	5.5	7	12	38.74	146.90	69.06	N. 17 11 1.2	-236.6	15 50.85	58 3.66		
	Moon I. L.	-	7	42	0.73	146.71	69.03	16 15 38.0	-316.7	15 55.12	58 19.34		
	f Geminorum	5.3	7	34	59			17 51					
	1 Cancri	6.0	7	52	35			16 0					
3	Moon I. U.	6.5	8	11	18.56	146.22	68.93	N. 15 4 36.8	-392.7	15 59.33	58 34.76		
	Moon I. L.	-	8	40	29.28	145.54	68.77	13 38 55.6	-463.1	16 3.42	58 49.74		
	90 B. Cancri	6.3	8	31	46			15 35					
	60 Cancri	5.7	8	51	41			11 55					
4	Moon I. U.	7.6	9	9	31.26	144.78	68.58	N. 11 59 48.4	-526.8	16 7.32	59 4.03		
	Moon I. L.	-	9	38	24.13	144.04	68.39	10 8 44.0	-582.5	16 10.98	59 17.43		
	h Leonis	5.2	9	27	48			10 3					
	19 Leonis	6.4	9	43	16			11 56					
5	Moon I. U.	8.6	10	7	8.78	143.42	68.23	N. 8 7 23.7	-629.3	16 14.29	59 29.57		
	Moon I. L.	-	10	35	47.07	143.00	68.11	5 57 40.6	-666.2	16 17.19	59 40.18		
	48 Leonis	5.2	10	30	45			7 21					
	37 Sextantis	6.3	10	42	4			6 47					
6	Moon I. U.	9.6	11	4	21.74	142.83	68.04	N. 3 41 37.4	-692.5	16 19.55	59 48.89		
	Moon I. L.	-	11	32	56.07	142.94	68.04	1 21 25.8	-707.5	16 21.32	59 55.36		
	7 Leonis	5.2	11	23	57			3 17					
	9 B. Virginis	6.2	11	45	5			N. 0 7					
7	Moon I. U.	10.7	12	1	33.48	143.34	68.11	S. 1 0 35.5	-710.7	16 22.37	59 59.20		
	Moon I. L.	-	12	30	17.38	144.02	68.25	3 22 1.7	-701.6	16 22.64	60 0.17		
	162 B. Virginis	6.2	12	23	53			4 11					
	139 B. Virginis	6.3	12	43	33			S. 5 53					

442 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semid. pass Merid.	Apparent Declination.	Var. of C's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			Right Ascension.	h	m							s
May 8	Moon I. U.	11.7	12	59	10.71	144.91	68.44	S. 5 40 25.1	-680.2	16 22.04	59 58.00
	Moon I. L.	-	13	28	15.68	145.94	68.67	7 53 17.9	-646.5	16 20.56	59 52.57
	72 Virginis	6.1	13	26	24			6 4			
	m Virginis	5.2	13	37	33			8 19			
9	Moon I. U.	12.7	13	57	33.48	147.02	68.92	S. 9 58 15.3	-601.1	16 18.18	59 43.82
	Moon I. L.	-	14	27	3.96	148.04	69.15	11 53 1.1	-544.8	16 14.92	59 31.84
	2 Libræ	6.3	14	19	16			11 22			
	6 B. Libræ	6.2	14	32	53			11 59			
10	Moon I. U.	13.8	14	56	45.52	148.85	69.34	S. 13 35 31.2	-478.7	16 10.80	59 16.79
	o Libræ	6.2	15	16	42			15 16			
	γ Libræ	4.0	15	31	12			14 32			
11	Moon II. L.	-	15	28	53.89	149.34	69.46	S. 15 3 59.1	-404.7	16 5.95	58 58.98
	Moon II. U.	14.8	15	58	46.70	149.37	69.48	16 17 0.1	-324.6	16 0.43	58 38.80
	χ Ophiuchi	4.9	16	22	33			18 17			
	24 Scorpii	5.0	16	37	6			17 36			
12	Moon II. L.	-	16	28	36.79	148.88	69.38	S. 17 13 34.4	-240.7	15 54.41	58 16.76
	Moon II. U.	15.9	16	58	17.61	147.82	69.14	17 53 9.0	-155.0	15 48.02	57 53.30
	192 B. Ophiuchi	6.3	17	20	6			18 22			
13	226 B. Ophiuchi	6.9	17	28	29			17 26			
	Moon II. L.	-	17	27	42.33	146.20	68.77	S. 18 15 37.0	-69.9	15 41.40	57 29.04
	Moon II. U.	16.9	17	56	44.49	144.07	68.29	18 21 17.0	+12.7	15 34.71	57 4.53
14	H ³ Sagittarii	6.4	18	14	11			18 39			
	100 B. Sagittarii	5.0	18	26	54			18 27			
	Moon II. L.	-	18	25	18.38	141.51	67.69	S. 18 10 47.9	+91.3	15 28.09	56 40.28
15	Moon II. U.	17.9	18	53	19.55	138.64	67.00	17 45 6.2	+164.7	15 21.67	56 16.76
	ρ Sagittarii	4.0	19	17	11			18 0			
	54 Sagittarii	5.4	19	36	17			16 28			
16	Moon II. L.	-	19	20	45.01	135.58	66.27	S. 17 5 20.1	+232.0	15 15.59	55 54.48
	Moon II. U.	19.0	19	47	33.26	132.46	65.50	16 12 44.8	+292.8	15 9.94	55 33.77
	g Sagittarii	5.1	19	53	34			15 42			
17	16 B. Capricorni	6.2	20	16	25			15 2			
	Moon II. L.	-	20	13	44.31	129.40	64.74	S. 15 8 39.1	+347.1	15 4.82	55 14.99
	Moon II. U.	20.0	20	39	19.53	126.50	64.00	13 54 21.3	+394.8	15 0.28	54 58.41
18	95 B. Capricorni	5.9	20	54	25			14 47			
	51 G. Aquarii	6.5	21	10	5			10 56			
	Moon II. L.	-	21	4	21.40	123.86	63.32	S. 12 31 7.9	+436.4	14 56.41	54 44.24
19	Moon II. U.	21.0	21	28	53.37	121.53	62.72	11 0 11.1	+472.1	14 53.25	54 32.65
	e ^o Capricorni	6.3	21	42	8			9 38			
	96 B. Aquarii	6.5	21	49	27			10 41			
20	Moon II. L.	-	21	52	59.58	119.57	62.19	S. 9 22 39.4	+502.3	14 50.82	54 23.73
	Moon II. U.	22.1	22	16	44.72	118.02	61.77	7 39 37.0	+527.3	14 49.13	54 17.54
	167 G. Aquarii	6.3	22	34	18			8 18			
252 B. Aquarii	5.8	22	51	9			S. 5 24				

MOON-CULMINATING STARS, 1922. 443

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of (ζ 's R.A. in 1 hour of Long.	Sid. Time of Semid. pass Merid.	Apparent		Var. of (ζ 's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.					
			Right Ascension.	h	m			s	Declination.				\circ	'	"		
May 19	Moon II. L.	-	22	40	13.87	116.91	61.46	S.	5	52	4.7	+547.3	14	48.18	54	14.09	
	Moon II. U.	23.1	23	3	32.37	116.25	61.27		4	1	0.7	+562.6	14	47.98	54	13.35	
	316 B. Aquarii	6.5	23	16	14				4	21							
	14 Piscium	5.9	23	30	9				1	41							
20	Moon II. L.	-	23	26	45.74	116.06	61.19	S.	2	7	21.8	+573.1	14	48.51	54	15.27	
	Moon II. U.	24.1	23	49	59.56	116.33	61.23	S.	0	12	4.7	+578.9	14	49.73	54	19.73	
21	Moon II. L.	-	0	13	19.40	117.06	61.40	N.	1	43	52.2	+579.7	14	51.60	54	26.59	
	Moon II. U.	25.2	0	36	50.77	118.25	61.69		3	39	28.2	+575.4	14	54.08	54	35.68	
22	Moon II. L.	-	1	0	39.05	119.87	62.09	N.	5	33	38.4	+565.4	14	57.12	54	46.81	
	Moon II. U.	26.2	1	24	49.30	121.91	62.60		7	25	13.0	+549.4	15	0.65	54	59.74	
23	Moon II. L.	-	1	49	26.26	124.31	63.20	N.	9	12	56.5	+526.8	15	4.59	55	14.19	
	Moon II. U.	27.2	2	14	34.09	127.04	63.89		10	55	26.7	+497.1	15	8.89	55	29.93	
24	Moon II. L.	-	2	40	16.16	130.01	64.64	N.	12	31	16.0	+459.8	15	13.46	55	46.66	
	Moon II. U.	28.3	3	6	34.92	133.14	65.42		13	58	51.4	+414.7	15	18.19	56	4.05	
25	Moon II. L.	-	3	33	31.63	136.31	66.21	N.	15	16	37.1	+361.5	15	23.05	56	21.82	
	Moon II. U.	29.3	4	1	6.06	139.41	66.98		16	22	55.9	+300.3	15	27.93	56	39.69	
26	Moon I. L.	-	4	27	1.09	142.17	67.69	N.	17	16	14.5	+231.6	15	32.74	56	57.33	
27	Moon I. U.	0.8	4	55	42.78	144.71	68.32	N.	17	55	7.1	+156.1	15	37.44	57	14.52	
	Moon I. L.	-	5	24	52.24	146.78	68.84		18	18	19.9	+75.2	15	41.93	57	31.01	
28	Moon I. U.	1.8	5	54	23.20	148.28	69.23	N.	18	24	56.7	-9.6	15	46.19	57	46.60	
	Moon I. L.	-	6	24	8.50	149.16	69.46		18	14	22.3	-96.3	15	50.16	58	1.15	
29	Moon I. U.	2.9	6	54	0.62	149.42	69.55	N.	17	46	25.3	-183.0	15	53.81	58	14.54	
	Moon I. L.	-	7	23	52.27	149.10	69.50		17	1	19.9	-267.4	15	57.14	58	26.74	
30	Moon I. U.	3.9	7	53	37.02	148.29	69.33	N.	15	59	43.9	-347.7	16	0.12	58	37.66	
	Moon I. L.	-	8	23	9.70	147.11	69.08		14	42	37.5	-422.2	16	2.76	58	47.33	
31	Moon I. U.	4.9	8	52	26.81	145.71	68.76	N.	13	11	19.8	-489.4	16	5.06	58	55.73	
	Moon I. L.	-	9	21	26.48	144.23	68.42		11	27	24.9	-548.3	16	7.01	59	2.89	
	222 B. Cancri	6.3	9	13	39				11	50							
	ξ Leonis	5.1	9	27	45				11	39							
June 1	Moon I. U.	6.0	9	50	8.61	142.81	68.08	N.	9	32	38.3	-597.9	16	8.62	59	8.79	
	Moon I. L.	-	10	18	34.58	141.56	67.78		7	28	53.3	-637.9	16	9.90	59	13.47	
	4 Leonis	4.6	10	3	47				10	23							
	44 Leonis	5.9	10	21	10				9	11							
2	Moon I. U.	7.0	10	46	47.03	140.57	67.54	N.	5	18	9.4	-667.7	16	10.83	59	16.88	
	Moon I. L.	-	11	14	49.55	139.91	67.38		3	2	29.4	-687.2	16	11.41	59	19.00	
	p ⁴ Leonis	5.7	11	2	57				2	23							
	80 Leonis	6.4	11	21	51				4	17							
3	Moon I. U.	8.0	11	42	46.37	139.62	67.30	N.	0	43	58.8	-696.1	16	11.61	59	19.75	
	Moon I. L.	-	12	10	41.99	139.72	67.31	S.	1	35	15.2	-694.4	16	11.42	59	19.03	
	31 B. Virginis	6.4	11	57	4				1	20							
	η Virginis	4.0	12	15	57				S.	0	14						

444 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of (s R.A. in 1 hour of Long.	Sid. Time of Semid. pass [†] Merid.	Apparent			Var. of (s Dec. in 1 hour of Long.	Semi- diameter.	Hor Par.
			Right Ascension.	h	m			s	Declination.	°			
June 4	Moon I. U.	9.1	12 38 40.98	140.17	67.40	S. 3 53 4.1	-681.9	16 10.80	59 16.76				
	Moon I. L.	-	13 6 47.44	140.95	67.57	6 7 19.2	-658.8	16 9.73	59 12.86				
	<i>k</i> Virginis	5.7	12 55 40			3 24							
	<i>θ</i> Virginis	4.4	13 5 57			5 8							
5	Moon I. U.	10.1	13 35 4.90	141.99	67.80	S. 8 15 52.8	-625.1	16 8.19	59 7.22				
	Moon I. L.	-	14 3 35.88	143.19	68.07	10 16 39.8	-581.8	16 6.15	58 59.74				
	598 B. Virginis	6.1	13 50 55			7 41							
	<i>κ</i> Virginis	4.3	14 8 46			9 55							
6	Moon I. U.	11.2	14 32 21.69	144.44	68.35	S. 12 7 40.0	-527.4	16 3.60	58 50.40				
	Moon I. L.	-	15 1 22.10	145.60	68.61	13 47 1.4	-464.8	16 0.54	58 39.17				
	13 Libræ	5.7	14 50 11			11 35							
	<i>o</i> Libræ	6.2	15 16 42			15 16							
7	Moon I. U.	12.2	15 30 35.32	146.55	68.81	S. 15 13 4.0	-394.5	15 56.98	58 26.13				
	Moon I. L.	-	15 59 57.91	147.15	68.94	16 24 23.4	-317.9	15 52.95	58 11.38				
	<i>θ</i> Libræ	4.4	15 49 26			16 30							
	49 Libræ	5.4	15 56 0			16 18							
8	Moon I. U.	13.2	16 29 24.96	147.28	68.95	S. 17 19 55.0	-236.8	15 48.51	57 55.08				
	Moon I. L.	-	16 58 50.36	146.86	68.85	17 58 56.5	-153.2	15 43.70	57 37.47				
	78 B. Ophiuchi	6.5	16 51 35			16 41							
	125 B. Ophiuchi	6.2	17 3 46			17 30							
9	Moon II. U.	14.3	17 30 24.50	145.81	68.60	S. 18 21 9.7	-69.1	15 38.61	57 18.82				
	305 B. Ophiuchi	6.3	17 51 23			18 47							
	32 G. Sagittarii	5.7	18 3 20			17 10							
10	Moon II. L.	-	17 59 25.28	144.22	68.22	S. 18 26 40.5	+13.5	15 33.31	56 59.42				
	Moon II. U.	15.3	18 28 3.76	142.11	67.72	18 15 57.8	+92.9	15 27.93	56 39.70				
	155 B. Sagittarii	5.5	18 51 4			16 28							
	187 B. Sagittarii	6.4	19 2 37			18 51							
11	Moon II. L.	-	18 56 14.36	139.59	67.12	S. 17 49 49.4	+167.6	15 22.54	56 19.98				
	Moon II. U.	16.3	19 23 52.70	136.76	66.43	17 9 18.9	+236.4	15 17.26	56 0.63				
	283 B. Sagittarii	5.5	19 39 9			15 39							
	9 Sagittarii	5.1	19 53 34			15 42							
12	Moon II. L.	-	19 50 55.96	133.76	65.70	S. 16 15 40.4	+298.8	15 12.20	55 42.05				
	Moon II. U.	17.4	20 17 22.87	130.72	64.96	15 10 14.0	+354.4	15 7.42	55 24.56				
	7 Capricorni	5.2	20 34 57			15 14							
	84 B. Capricorni	6.0	20 46 26			12 50							
13	Moon II. L.	-	20 43 13.65	127.76	64.22	S. 13 54 22.7	+403.0	15 3.02	55 8.46				
	Moon II. U.	18.4	21 8 29.93	124.99	63.53	12 29 28.2	+444.9	14 59.11	54 54.10				
	72 B. Aquarii	6.5	21 24 3			11 54							
	<i>c</i> ¹ Capricorni	5.3	21 40 53			9 26							
14	Moon II. L.	-	21 33 14.40	122.48	62.89	S. 10 56 49.6	+480.4	14 55.73	54 41.73				
	Moon II. U.	19.4	21 57 30.75	120.31	62.34	9 17 41.6	+509.9	14 52.95	54 31.55				
	150 B. Aquarii	6.0	22 12 47			9 26							
	186 B. Aquarii	6.1	22 27 15			S. 6 57							

MOON-CULMINATING STARS, 1922. 445

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semid. pass* Merid.	Apparent			Var. of C's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			Right Ascension.	h	m			s	Declination.	°			
June 15	Moon II. L.	-	22 21 23	118.53	61.88	S. 7 33 14.0	+533.8	14 50.82	54 23.74				
	Moon II. U.	20.5	22 44 57.15	117.18	61.53	5 44 32.5	+552.3	14 49.38	54 18.47				
	263 B. Aquarii	6.1	22 57 31			5 8							
	316 B. Aquarii	6.5	23 16 15			4 20							
16	Moon II. L.	-	23 8 17.48	116.29	61.30	S. 3 52 38.1	+565.9	14 48.67	54 15.85				
	Moon II. U.	21.5	23 31 29.96	115.87	61.19	S. 1 58 29.5	+574.7	14 48.69	54 15.94				
	21 Piscium	5.6	23 45 29			N. 0 39							
	80 B. Piscium	6.3	0 1 5			S. 0 56							
17	Moon II. L.	-	23 54 40.41	115.95	61.21	S. 0 3 3.4	+578.9	14 49.46	54 18.76				
	Moon II. U.	22.5	0 17 54.72	116.52	61.36	N. 1 52 43.9	+578.2	14 50.97	54 24.30				
	147 B. Piscium	5.9	0 44 19			4 53							
	171 B. Piscium	6.3	0 55 48			6 4							
18	Moon II. L.	-	0 41 18.84	117.58	61.63	N. 3 47 54.4	+572.7	14 53.22	54 32.52				
	Moon II. U.	23.6	1 4 58.69	119.14	62.03	5 41 27.7	+562.0	14 56.16	54 43.30				
	263 B. Piscium	6.4	1 24 18			7 34							
	0 Piscium	4.5	1 41 17			8 46							
19	Moon II. L.	-	1 29 0.01	121.16	62.55	N. 7 32 18.9	+545.6	14 59.77	54 56.50				
	Moon II. U.	24.6	1 53 28.26	123.62	63.17	9 19 17.8	+523.1	15 3.99	55 11.97				
20	Moon II. L.	-	2 18 28.47	126.48	63.89	N. 11 1 7.5	+494.0	15 8.75	55 29.42				
	Moon II. U.	25.6	2 44 5.06	129.67	64.69	12 36 23.8	+457.5	15 13.98	55 48.56				
21	Moon II. L.	-	3 10 21.49	133.10	65.54	N. 14 3 36.1	+413.2	15 19.58	56 9.12				
	Moon II. U.	26.7	3 37 20.07	136.67	66.41	15 21 7.5	+360.6	15 25.47	56 30.70				
22	Moon II. L.	-	4 5 1.58	140.24	67.28	N. 16 27 18.0	+299.7	15 31.51	56 52.82				
	Moon II. U.	27.7	4 33 25.08	143.64	68.10	17 20 27.4	+230.5	15 37.60	57 15.12				
23	Moon II. L.	-	5 2 27.64	146.72	68.83	N. 17 59 0.0	+153.7	15 43.60	57 37.11				
	Moon II. U.	28.7	5 32 4.39	149.31	69.46	18 21 31.4	+70.5	15 49.38	57 58.30				
24	Moon II. L.	-	6 2 8.58	151.28	69.93	N. 18 26 53.1	-17.5	15 54.82	58 18.26				
25	Moon I. U.	0.3	6 30 11.71	152.49	70.23	N. 18 14 20.4	-108.2	15 59.82	58 36.57				
	Moon I. L.	-	7 0 45.52	153.02	70.36	17 43 35.2	-199.2	16 4.28	58 52.87				
26	Moon I. U.	1.4	7 31 21.23	152.81	70.32	N. 16 54 50.0	-287.8	16 8.09	59 6.86				
	Moon I. L.	-	8 1 50.53	151.97	70.14	15 48 47.6	-371.6	16 11.22	59 18.34				
27	Moon I. U.	2.4	8 32 6.48	150.61	69.84	N. 14 26 38.8	-448.5	16 13.65	59 27.21				
	Moon I. L.	-	9 2 3.89	148.91	69.45	12 49 58.2	-516.6	16 15.34	59 33.40				
28	Moon I. U.	3.5	9 31 39.60	147.03	69.02	N. 11 0 39.2	-574.7	16 16.32	59 37.01				
	Moon I. L.	-	10 0 52.44	145.12	68.58	9 0 47.8	-621.9	16 16.62	59 38.12				
29	Moon I. U.	4.5	10 29 43.05	143.34	68.17	N. 6 52 37.6	-657.8	16 16.31	59 36.94				
	Moon I. L.	-	10 58 13.62	141.80	67.81	4 38 25.3	-682.3	16 15.41	59 33.66				
	56 Leonis	6.1	10 52 0			6 36							
	p ⁴ Leonis	5.7	11 2 57			N. 2 23							

446 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of (ϵ 's R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^s Merid.	Apparent Declination.	Var. of (ϵ 's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			Right Ascension.	h	m							s
June 30	Moon I. \mathbf{U} .	5.5	11 26 27.51	140.58	67.53	N. 2 20 27.4	-695.5	16 14.01	59 28.54		
	Moon I. L.	-	11 54 28.89	139.72	67.33	0 0 57.7	-697.6	16 12.18	59 21.81		
	9 B. Virginis	6.2	11 45 4			N. 0 7					
31 B. Virginis	6.4	11 57 4			S. 1 20						
July 1	Moon I. \mathbf{U} .	6.6	12 22 22.37	139.26	67.22	S. 2 17 53.5	-689.2	16 9.95	59 13.67		
	Moon I. L.	-	12 50 12.61	139.18	67.20	4 34 1.1	-670.4	16 7.41	59 4.35		
	319 B. Virginis	6.3	12 43 33			5 53					
	48 Virginis	6.5	12 59 55			3 15					
2	Moon I. \mathbf{U} .	7.6	13 18 4.09	139.46	67.27	S. 6 45 24.2	-641.8	16 4.58	58 53.99		
	Moon I. L.	-	13 46 0.74	140.03	67.40	8 50 7.9	-603.9	16 1.52	58 42.77		
	m Virginis	5.2	13 37 33			8 19					
	598 B. Virginis	6.1	13 50 56			7 41					
3	Moon I. \mathbf{U} .	8.6	14 14 5.65	140.82	67.58	S. 10 46 23.0	-557.2	15 58.23	58 30.75		
	Moon I. L.	-	14 42 20.88	141.73	67.78	12 32 27.3	-502.2	15 54.77	58 18.07		
	6 B. Libræ	6.2	14 32 53			11 59					
	13 Libræ	5.7	14 50 11			11 35					
4	Moon I. \mathbf{U} .	9.7	15 10 47.21	142.65	67.98	S. 14 6 47.1	-439.9	15 51.14	58 4.74		
	Moon I. L.	-	15 39 23.97	143.45	68.14	15 27 58.9	-371.1	15 47.35	57 50.85		
	ζ Libræ	5.6	15 28 33			16 35					
	θ Libræ	4.4	15 49 26			16 30					
5	Moon I. \mathbf{U} .	10.7	16 8 9.04	144.01	68.25	S. 16 34 52.4	-297.0	15 43.42	57 36.43		
	Moon I. L.	-	16 36 58.94	144.24	68.28	17 26 32.7	-219.1	15 39.35	57 21.55		
	χ Ophiuchi	4.9	16 22 33			18 17					
24 Scorpil	5.0	16 37 7			17 35						
6	Moon I. \mathbf{U} .	11.7	17 5 48.99	144.03	68.20	S. 18 2 22.7	-138.9	15 35.17	57 6.23		
	Moon I. L.	-	17 34 33.69	143.34	68.00	18 22 4.7	-58.1	15 30.90	56 50.60		
	192 B. Ophiuchi	6.3	17 20 6			18 22					
305 B. Ophiuchi	6.3	17 51 23			18 47						
7	Moon I. \mathbf{U} .	12.8	18 3 7.08	142.14	67.68	S. 18 25 40.9	+21.7	15 26.58	56 34.75		
	Moon I. L.	-	18 31 23.28	140.48	67.26	18 13 33.5	+98.9	15 22.22	56 18.77		
	95 B. Sagittarii	5.7	18 25 40			18 47					
155 B. Sagittarii	5.5	18 51 5			16 28						
8	Moon I. \mathbf{U} .	13.8	18 59 16.95	138.40	66.73	S. 17 46 22.5	+172.1	15 17.87	56 2.86		
	45 Sagittarii	6.0	19 17 21			18 27					
	54 Sagittarii	5.4	19 36 19			16 28					
9	Moon II. L.	-	19 28 55.89	135.89	66.13	S. 17 5 3.0	+240.2	15 13.60	55 47.20		
	Moon II. \mathbf{U} .	14.9	19 55 51.02	133.27	65.47	16 10 41.9	+302.3	15 9.45	55 31.96		
	16 B. Capricorni	6.2	20 16 27			15 2					
45 B. Capricorni	6.1	20 29 54			13 59						
10	Moon II. L.	-	20 22 13.87	130.54	64.79	S. 15 4 34.0	+357.9	15 5.47	55 17.39		
	Moon II. \mathbf{U} .	15.9	20 48 3.93	127.82	64.10	13 47 59.6	+406.7	15 1.73	55 3.70		
	ν Aquarii	4.5	21 5 24			11 41					
18 Aquarii	5.5	21 19 59			S. 13 13						

MOON-CULMINATING STARS, 1922. 447

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of (s R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^s Merid.	Apparent			Var. of (s Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.				
			Right Ascension.	h	m			s	Declination.	o				'	"		
July 11	Moon II. L.	-	21 13 21	91	125	20	63	45	S. 12 22 19	3	+448	8	14 58	29	54 51	11	
	Moon II. U.	16	9	21 38 9	62	122	79	62	84	S. 10 48 54	0	+484	3	14 55	22	54 39	85
	96 B. Aquarii	6	5	21 49 29						10 40							
	θ Aquarii	4	3	22 12 46						8 10							
12	Moon II. L.	-	22 2 29	92	120	64	62	30	S. 9 9 0	9	+513	5	14 52	58	54 30	17	
	Moon II. U.	18	0	22 26 26	40	118	83	61	84	S. 7 23 53	9	+536	7	14 50	42	54 22	26
	67 Aquarii	6	4	22 39 13						7 22							
	263 B. Aquarii	6	1	22 57 32						5 8							
13	Moon II. L.	-	22 50 3	33	117	39	61	48	S. 5 34 42	7	+554	3	14 48	80	54 16	32	
	Moon II. U.	19	0	23 13 25	43	116	37	61	23	S. 3 42 33	0	+566	5	14 47	77	54 12	55
	13 Piscium	6	4	23 28 0						S. 1 31							
	21 Piscium	5	6	23 45 30						N. 0 39							
14	Moon II. L.	-	23 36 37	84	115	78	61	09	S. 1 48 26	8	+573	7	14 47	37	54 11	09	
	Moon II. U.	20	0	23 59 45	94	115	65	61	08	N. 0 6 36	4	+576	0	14 47	64	54 12	09
	98 B. Piscium	6	3	0 13 49						1 16							
	44 Piscium	6	0	0 21 26						1 31							
15	Moon II. L.	-	0 22 55	35	116	00	61	19	N. 2 1 39	1	+573	6	14 48	62	54 15	65	
	Moon II. U.	21	0	0 46 11	78	116	82	61	43	N. 3 55 43	6	+566	4	14 50	31	54 21	85
	73 Piscium	6	2	1 0 52						5 14							
	88 Piscium	6	2	1 10 41						6 35							
16	Moon II. L.	-	1 9 41	03	118	13	61	79	N. 5 47 51	5	+554	1	14 52	73	54 30	73	
	Moon II. U.	22	1	1 33 28	83	119	92	62	27	N. 7 37 1	5	+536	7	14 55	89	54 42	29
	54 Ceti	6	0	1 46 45						10 40							
	ξ ¹ Ceti	4	5	2 8 54						8 29							
17	Moon II. L.	-	1 57 40	83	122	16	62	86	N. 9 22 8	8	+513	6	14 59	76	54 56	49	
	Moon II. U.	23	1	2 22 22	37	124	84	63	55	N. 11 2 3	0	+484	4	15 4	33	55 13	22
	38 Arietis	5	2	2 40 44						12 7							
	147 B. Arietis	5	8	3 2 8						12 53							
18	Moon II. L.	-	2 47 38	40	127	90	64	35	N. 12 35 27	7	+448	6	15 9	55	55 32	33	
	Moon II. U.	24	1	3 13 33	12	131	27	65	19	N. 14 1 0	3	+405	6	15 15	36	55 53	62
19	Moon II. L.	-	3 40 9	87	134	88	66	09	N. 15 17 11	4	+354	9	15 21	69	56 16	84	
	Moon II. U.	25	2	4 7 30	72	138	60	67	00	N. 16 22 26	4	+296	2	15 28	43	56 41	55
20	Moon II. L.	-	4 35 36	20	142	29	67	88	N. 17 15 8	2	+229	4	15 35	50	57 7	43	
	Moon II. U.	26	2	5 4 25	00	145	79	68	72	N. 17 53 40	5	+154	7	15 42	73	57 33	93
21	Moon II. L.	-	5 33 53	84	148	94	69	46	N. 18 16 33	3	+ 73	0	15 49	98	58 0	48	
	Moon II. U.	27	2	6 3 57	44	151	56	70	07	N. 18 22 28	6	- 14	6	15 57	08	58 26	50
22	Moon II. L.	-	6 34 28	75	153	54	70	52	N. 18 10 27	5	-106	1	16 3	86	58 51	36	
	Moon II. U.	28	3	7 5 19	40	154	78	70	80	N. 17 39 57	0	-199	1	16 10	15	59 14	41
23	Moon II. L.	-	7 36 20	35	155	25	70	91	N. 16 50 53	9	-291	0	16 15	79	59 35	03	
24	Moon II. U.	29	3	8 7 22	65	155	01	70	84	N. 15 43 48	4	-379	0	16 20	59	59 52	68
	Moon I. L.	-	8 35 56	90	154	19	70	64	N. 14 19 44	0	-460	4	16 24	47	60 6	88	

448 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^d Merid.	Apparent			Var. of C's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			Right Ascension.	h	m			s	Declination.	°			
July 25	Moon I. U.	1.0	9 6 39.62	152.86	70.33	N. 12 40 14.7	-532.8	16 27.32	60 17.34				
	Moon I. L.	-	9 37 4.22	151.20	69.95	10 47 20.5	-594.3	16 29.09	60 23.82				
26	Moon I. U.	2.1	10 7 7.76	149.38	69.53	N. 8 43 20.4	-643.6	16 29.77	60 26.28				
	Moon I. L.	-	10 36 49.25	147.55	69.11	6 30 45.7	-680.0	16 29.37	60 24.83				
27	Moon I. U.	3.1	11 6 9.37	145.84	68.72	N. 4 12 14.1	-703.1	16 27.97	60 19.72				
	Moon I. L.	-	11 35 10.18	144.34	68.38	N. 1 50 23.2	-713.2	16 25.67	60 11.27				
28	Moon I. U.	4.1	12 3 54.73	143.13	68.12	S. 0 32 13.5	-710.8	16 22.56	59 59.88				
	Moon I. L.	-	12 32 26.64	142.24	67.92	2 53 9.8	-696.6	16 18.79	59 46.07				
29	Moon I. U.	5.2	13 0 49.77	141.67	67.80	S. 5 10 8.7	-671.5	16 14.49	59 30.28				
	Moon I. L.	-	13 29 7.90	141.40	67.75	7 21 4.4	-636.2	16 9.76	59 12.98				
72	Virginis	6.1	13 26 24			6 4							
	m Virginis	5.2	13 37 33			8 19							
30	Moon I. U.	6.2	13 57 24.34	141.38	67.76	S. 9 24 1.7	-591.9	16 4.76	58 54.64				
	Moon I. L.	-	14 25 41.78	141.55	67.80	11 17 17.4	-539.4	15 59.58	58 35.67				
2	Libræ	6.3	14 19 16			11 22							
	6 B. Libræ	6.2	14 32 53			11 58							
31	Moon I. U.	7.2	14 54 2.03	141.83	67.87	S. 12 59 19.9	-479.9	15 54.31	58 16.37				
	Moon I. L.	-	15 22 25.81	142.13	67.93	14 28 50.0	-414.2	15 49.05	57 57.06				
o	Libræ	6.2	15 16 42			15 16							
	γ Libræ	4.0	15 31 12			14 32							
Aug. 1	Moon I. U.	8.3	15 50 52.74	142.34	67.96	S. 15 44 41.3	-343.6	15 43.84	57 37.99				
	Moon I. L.	-	16 19 21.31	142.38	67.95	16 46 1.4	-269.2	15 38.74	57 19.28				
χ	Ophiuchi	4.9	16 22 33			18 17							
	24 Scorpii	5.0	16 37 7			17 35							
2	Moon I. U.	9.3	16 47 48.92	142.17	67.87	S. 17 32 12.4	-192.3	15 33.77	57 1.09				
	Moon I. L.	-	17 16 12.10	141.64	67.70	18 2 52.2	-114.2	15 28.98	56 43.54				
125	B. Ophiuchi	6.2	17 3 46			17 30							
	192 B. Ophiuchi	6.3	17 20 6			18 22							
3	Moon I. U.	10.3	17 44 26.75	140.74	67.45	S. 18 17 54.6	-36.3	15 24.36	56 26.64				
	Moon I. L.	-	18 12 28.51	139.49	67.10	18 17 29.4	+40.1	15 19.94	56 10.45				
32	G. Sagittarii	5.7	18 3 20			17 10							
	85 B. Sagittarii	6.0	18 23 27			17 51							
4	Moon I. U.	11.4	18 40 13.01	137.88	66.66	S. 18 2 1.9	+113.9	15 15.72	55 54.97				
	Moon I. L.	-	19 7 36.33	135.96	66.15	17 32 11.3	+183.8	15 11.70	55 40.23				
187	B. Sagittarii	6.4	19 2 38			18 51							
	v Sagittarii	4.4	19 17 19			16 6							
5	Moon I. U.	12.4	19 34 35.14	133.80	65.58	S. 16 48 49.0	+249.0	15 7.90	55 26.28				
	Moon I. L.	-	20 1 7.00	131.49	64.97	15 52 56.4	+308.8	15 4.30	55 13.12				
g	Sagittarii	5.1	19 53 35			15 42							
	16 B. Capricorni	6.2	20 16 27			S. 15 2							

MOON-CULMINATING STARS, 1922. 449

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent		Var. of G's R.A. in 1 hour of Long.	Sid. Time of Semi- pass Merid.	Apparent		Var. of G's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			Right Ascension.	Declination.							
Aug. 6	Moon I. U.	13.5	h m. s	s	s	S. 14 45 42.0	+362.6	15 0.94	55 0.81		
	Moon I. L.	-	20 27 10.50	129.09	64.34	13 28 19.2	+410.1	14 57.84	54 49.44		
	84 B. Capricorni	6.0	20 46 27			12 50					
	v Aquarii	4.5	21 5 24			11 41					
7	Moon II. U.	14.5	21 19 57.96	124.31	63.12	S. 12 2 3.9	+451.3	14 54.99	54 39.00		
	137 B. Capricorni	6.2	21 35 20			10 55					
	96 B. Aquarii	6.5	21 49 29			10 40					
8	Moon II. L.	-	21 44 36.67	122.18	62.56	S. 10 28 12.7	+486.2	14 52.45	54 29.69		
	Moon II. U.	15.5	22 8 51.07	120.27	62.06	8 48 1.0	+514.8	14 50.23	54 21.56		
	170 B. Aquarii	6.0	22 19 30			7 35					
	67 Aquarii	6.4	22 39 13			7 22					
9	Moon II. L.	-	22 32 44.21	118.64	61.64	S. 7 2 42.7	+537.3	14 48.37	54 14.76		
	Moon II. U.	16.5	22 56 19.66	117.33	61.31	5 13 28.6	+554.1	14 46.92	54 9.43		
	293 B. Aquarii	5.5	23 11 36			3 55					
	13 Piscium	6.4	23 28 0			1 31					
10	Moon II. L.	-	23 19 41.42	116.36	61.07	S. 3 21 26.7	+565.3	14 45.90	54 5.72		
	Moon II. U.	17.6	23 42 53.89	115.78	60.95	1 27 42.5	+571.2	14 45.36	54 3.75		
	80 B. Piscium	6.3	0 1 7			S. 0 56					
	98 B. Piscium	6.3	0 13 50			N. 1 16					
11	Moon II. L.	-	0 6 1.72	115.59	60.92	N. 0 26 41.4	+571.9	14 45.35	54 3.69		
	Moon II. U.	18.6	0 29 9.79	115.82	61.01	2 20 43.7	+567.6	14 45.90	54 5.69		
	147 B. Piscium	5.9	0 44 20			4 53					
	73 Piscium	6.2	1 0 53			5 15					
12	Moon II. L.	-	0 52 23.10	116.47	61.22	N. 4 13 24.9	+558.4	14 47.04	54 9.88		
	Moon II. U.	19.6	1 15 46.77	117.55	61.54	6 3 44.6	+544.1	14 48.81	54 16.38		
	μ Piscium	5.0	1 26 8			5 45					
	0 Piscium	4.5	1 41 19			8 46					
13	Moon II. L.	-	1 39 25.90	119.05	61.96	N. 7 50 42.2	+524.6	14 51.25	54 25.30		
	Moon II. U.	20.7	2 3 25.58	120.97	62.50	9 33 14.6	+499.9	14 54.36	54 36.71		
	ξ Arietis	5.5	2 20 40			10 16					
	85 Ceti	6.3	2 38 19			10 25					
14	Moon II. L.	-	2 27 50.66	123.28	63.13	N. 11 10 16.0	+469.4	14 58.16	54 50.65		
	Moon II. U.	21.7	2 52 45.75	125.96	63.84	12 40 36.4	+433.0	15 2.66	55 7.15		
	147 B. Arietis	5.8	3 2 9			12 53					
	30 B. Tauri	6.4	3 33 27			15 11					
15	Moon II. L.	-	3 18 14.92	128.96	64.63	N. 14 3 1.4	+390.1	15 7.86	55 26.14		
	Moon II. U.	22.7	3 44 21.67	132.21	65.46	15 16 11.9	+340.5	15 13.68	55 47.49		
	180 B. Tauri	6.1	4 3 33			17 8					
	δ Tauri	3.9	4 18 28			17 22					
16	Moon II. L.	-	4 11 8.51	135.62	66.32	N. 16 18 45.0	+283.8	15 20.12	56 11.12		
	Moon II. U.	23.8	4 38 36.82	139.10	67.19	17 9 14.6	+219.9	15 27.12	56 36.75		
	m Tauri	5.0	5 2 52			18 32					
	111 Tauri	5.1	5 19 54			N. 17 19					

450 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent Right Ascension.	Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semid. pass Merid.	Apparent Declination.	Var. of C's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
Aug. 17	Moon II. L.	-	h m s 5 6 46.62	s 142.51	s 68.02	N. 17 46 14.7	+148.9	' '' '' 15 34.56	' '' '' 57 4.01
	Moon II. U.	24.8	5 35 36.34	145.73	68.78	18 8 21.9	+71.2	15 42.36	57 32.54
18	Moon II. L.	-	6 5 2.79	148.61	69.46	N. 18 14 21.1	-12.3	15 50.33	58 1.79
	Moon II. U.	25.8	6 35 1.18	151.03	70.02	18 3 10.0	-100.2	15 58.35	58 31.19
19	Moon II. L.	-	7 5 25.34	152.90	70.44	N. 17 34 5.6	-190.8	16 6.23	59 0.04
	Moon II. U.	26.9	7 36 8.25	154.15	70.71	16 46 49.6	-281.8	16 13.76	59 27.62
20	Moon II. L.	-	8 7 2.43	154.78	70.84	N. 15 41 32.4	-370.5	16 20.72	59 53.14
	Moon II. U.	27.9	8 38 0.61	154.83	70.83	14 18 56.7	-454.4	16 26.92	60 15.84
21	Moon II. L.	-	9 8 56.30	154.38	70.71	N. 12 40 17.3	-530.7	16 32.15	60 34.99
	Moon II. U.	29.0	9 39 44.22	153.55	70.50	10 47 19.4	-597.1	16 36.24	60 50.01
22	Moon I. L.	-	10 8 0.07	152.52	70.24	N. 8 42 14.8	-651.5	16 39.07	61 0.37
23	Moon I. U.	0.7	10 38 23.13	151.32	69.96	N. 6 27 36.2	-692.6	16 40.55	61 5.79
	Moon I. L.	-	11 8 31.55	150.10	69.67	4 6 10.1	-719.3	16 40.65	61 6.13
24	Moon I. U.	1.7	11 38 25.72	148.95	69.42	N. 1 40 50.4	-731.5	16 39.39	61 1.52
	Moon I. L.	-	12 8 7.00	147.96	69.20	S. 0 45 28.4	-729.3	16 36.85	60 52.24
25	Moon I. U.	2.7	12 37 37.33	147.13	69.02	S. 3 9 56.9	-713.3	16 33.15	60 38.69
	Moon I. L.	-	13 6 58.89	146.49	68.90	5 29 56.1	-684.5	16 28.45	60 21.48
26	Moon I. U.	3.8	13 36 13.82	146.02	68.81	S. 7 42 59.8	-644.3	16 22.93	60 1.26
	Moon I. L.	-	14 5 23.90	145.68	68.76	9 46 58.4	-593.9	16 16.79	59 38.70
27	Moon I. U.	4.8	14 34 30.29	145.40	68.71	S. 11 39 59.9	-535.0	16 10.19	59 14.52
	Moon I. L.	-	15 3 33.45	145.12	68.67	13 20 30.3	-469.0	16 3.30	58 49.31
13 0	Libræ	5.7	14 50 10			11 35			
	Libræ	6.2	15 16 42			15 16			
28	Moon I. U.	5.9	15 32 32.94	144.77	68.59	S. 14 47 14.4	-397.6	15 56.31	58 23.72
	Moon I. L.	-	16 1 27.47	144.28	68.48	15 59 15.7	-322.1	15 49.36	57 58.23
49 χ	Libræ	5.4	15 55 59			16 18			
	Ophiuchi	4.9	16 22 32			18 17			
29	Moon I. U.	6.9	16 30 14.98	143.59	68.31	S. 16 55 55.3	-244.2	15 42.56	57 33.29
	Moon I. L.	-	16 58 52.75	142.65	68.07	17 36 52.2	-165.2	15 35.99	57 9.22
78 125	B. Ophiuchi	6.5	16 51 34			16 41			
	B. Ophiuchi	6.2	17 3 46			17 30			
30	Moon I. U.	7.9	17 27 17.60	141.44	67.75	S. 18 2 1.9	-86.6	15 29.74	56 46.34
	Moon I. L.	-	17 55 26.19	139.95	67.35	18 11 35.3	-9.4	15 23.86	56 24.77
305 32	B. Ophiuchi	6.3	17 51 23			18 47			
	G. Sagittarii	5.7	18 3 20			17 10			
31	Moon I. U.	9.0	18 23 15.24	138.19	66.89	S. 18 5 56.9	+65.2	15 18.38	56 4.71
	Moon I. L.	-	18 50 41.80	136.21	66.36	17 45 43.7	+136.3	15 13.32	55 46.15
155	B. Sagittarii	5.5	18 51 4			16 28			
187	B. Sagittarii	6.4	19 2 38			S. 18 51			

MOON-CULMINATING STARS, 1922. 451

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of (^c 's R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^s Merid.	Apparent			Var. of (^c 's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			Right Ascension.	h	m			s	Declination.	°			
Sept. 1	Moon I. U.	10.0	19 17 43.48	134.05	65.78	S. 17 11 42.7	+203.1	15 8.70	55 29.21				
	Moon I. L.	-	19 44 18.56	131.78	65.16	16 24 49.4	+264.9	15 4.49	55 13.83				
54	Sagittarii	5.4	19 36 19			16 28							
	g Sagittarii	5.1	19 53 35			15 42							
2	Moon I. U.	11.0	20 10 26.09	129.47	64.54	S. 15 26 5.4	+321.5	15 0.71	54 59.98				
	Moon I. L.	-	20 36 5.96	127.18	63.91	14 16 37.1	+372.3	14 57.34	54 47.63				
45	B. Capricorni	6.1	20 29 55			13 59							
84	B. Capricorni	6.0	20 46 27			12 50							
3	Moon I. U.	12.1	21 1 18.81	124.98	63.31	S. 12 57 33.5	+417.3	14 54.37	54 36.73				
	Moon I. L.	-	21 26 6.02	122.92	62.74	11 30 5.0	+456.4	14 51.77	54 27.24				
18	Aquarii	5.5	21 19 59			13 12							
137	B. Capricorni	6.2	21 35 20			10 55							
4	Moon I. U.	13.1	21 50 29.63	121.05	62.23	S. 9 55 23.0	+489.6	14 49.56	54 19.11				
	Moon I. L.	-	22 14 32.21	119.42	61.78	8 14 38.3	+516.9	14 47.70	54 12.31				
θ	Aquarii	4.3	22 12 47			8 10							
186	B. Aquarii	6.1	22 27 16			6 57							
5	Moon I. U.	14.1	22 38 16.81	118.06	61.41	S. 6 29 0.7	+538.4	14 46.21	54 6.84				
	G. Aquarii	6.3	22 53 18			5 13							
293	B. Aquarii	5.5	23 11 37			3 55							
6	Moon II. L.	-	23 3 49.06	116.96	61.13	S. 4 39 39.0	+554.3	14 45.08	54 2.71				
	Moon II. U.	15.2	23 27 7.83	116.23	60.93	S. 2 47 40.6	+564.5	14 44.32	53 59.93				
21	Piscium	5.6	23 45 31			N. 0 39							
80	B. Piscium	6.3	0 1 7			S. 0 56							
7	Moon II. L.	-	23 50 19.84	115.83	60.83	S. 0 54 11.7	+569.4	14 43.94	53 58.53				
	Moon II. U.	16.2	0 13 29.23	115.79	60.84	N. 0 59 43.0	+568.9	14 43.96	53 58.61				
44	Piscium	6.0	0 21 28			1 31							
147	B. Piscium	5.9	0 44 21			4 53							
8	Moon II. L.	-	0 36 40.18	116.10	60.94	N. 2 52 59.5	+563.0	14 44.40	54 0.21				
	Moon II. U.	17.2	0 59 57.01	116.76	61.15	4 44 34.3	+551.9	14 45.28	54 3.45				
88	Piscium	6.2	1 10 42			6 35							
μ	Piscium	5.0	1 26 9			5 45							
9	Moon II. L.	-	1 23 23.94	117.78	61.45	N. 6 33 23.6	+535.4	14 46.64	54 8.43				
	Moon II. U.	18.3	1 47 5.22	119.15	61.84	8 18 23.7	+513.7	14 48.50	54 15.23				
ξ ¹	Ceti	4.5	2 8 55			8 29							
ξ	Arietis	5.5	2 20 41			10 16							
10	Moon II. L.	-	2 11 4.94	120.86	62.33	N. 9 58 29.7	+486.4	14 50.89	54 23.99				
	Moon II. U.	19.3	2 35 27.00	122.87	62.90	11 32 35.4	+453.6	14 53.83	54 34.76				
147	B. Arietis	5.8	3 2 10			12 53							
B.D.+13°535		7.4	3 13 37			13 34							
11	Moon II. L.	-	3 0 14.97	125.17	63.53	N. 12 59 32.7	+415.0	14 57.36	54 47.69				
	Moon II. U.	20.3	3 25 32.00	127.71	64.22	14 18 11.7	+370.5	15 1.48	55 2.79				
33	B. Tauri	6.3	3 35 4			16 17							
162	B. Tauri	6.3	3 56 12			N. 17 5							

452 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent Right Ascension.	Var. of C's R.A. in 1 hour of Long.	Std. Time of Semi- pass# Merid.	Apparent Declination.	Var. of C's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			h m s	s	s	° ' "	"	' "	' "
Sept. 12	Moon II. L.	-	3 51 20.71	130.44	64.95	N. 15 27 20.4	+320.0	15 6.21	55 20.12
	Moon II. U.	21.3	4 17 42.99	133.29	65.70	16 25 46.2	+263.3	15 11.56	55 39.70
	89 Tauri	5.8	4 33 44			15 53			
	318 B. Tauri	5.7	4 52 55			17 2			
13	Moon II. L.	-	4 44 39.85	136.19	66.45	N. 17 12 15.3	+200.6	15 17.48	56 1.44
	Moon II. U.	22.4	5 12 11.32	139.04	67.18	17 45 36.1	+131.9	15 23.98	56 25.22
	122 Tauri	5.5	5 32 35			17 0			
	57 Orionis	5.8	5 50 22			19 44			
14	Moon II. L.	-	5 40 16.36	141.77	67.86	N. 18 4 40.1	+57.9	15 30.98	56 50.89
	Moon II. U.	23.4	6 8 52.87	144.27	68.48	18 8 25.8	-21.0	15 38.43	57 18.17
	B.D. +17° 1275	6.2	6 26 41			17 0			
	74 B. Geminor.	6.2	6 42 52			18 17			
15	Moon II. L.	-	6 37 57.67	146.47	69.00	N. 17 56 1.5	-103.6	15 46.22	57 46.71
	Moon II. U.	24.5	7 7 26.73	148.31	69.43	17 26 50.3	-188.6	15 54.21	58 16.01
16	Moon II. L.	-	7 37 15.48	149.75	69.76	N. 16 40 32.4	-274.4	16 2.28	58 45.55
	Moon II. U.	25.5	8 7 19.00	150.77	69.98	15 37 10.0	-359.0	16 10.23	59 14.68
17	Moon II. L.	-	8 37 32.54	151.42	70.11	N. 14 17 10.1	-440.3	16 17.86	59 42.64
	Moon II. U.	26.5	9 7 51.75	151.73	70.15	12 41 26.2	-515.9	16 24.96	60 8.69
18	Moon II. L.	-	9 38 13.06	151.78	70.13	N. 10 51 19.0	-583.8	16 31.31	60 31.94
	Moon II. U.	27.6	10 8 33.80	151.65	70.07	8 48 35.8	-641.6	16 36.69	60 51.64
19	Moon II. L.	-	10 38 52.34	151.43	70.00	N. 6 35 28.4	-687.5	16 40.90	61 7.09
	Moon II. U.	28.6	11 9 7.92	151.17	69.92	4 14 29.3	-720.0	16 43.80	61 17.70
20	Moon II. L.	-	11 39 20.65	150.96	69.86	N. 1 48 26.4	-737.9	16 45.26	61 23.02
21	Moon I. U.	0.3	12 7 11.48	150.81	69.83	S. 0 39 41.3	-740.8	16 45.21	61 22.86
	Moon I. L.	-	12 37 20.67	150.73	69.82	3 6 52.6	-728.6	16 43.67	61 17.21
22	Moon I. U.	1.4	13 7 29.32	150.72	69.83	S. 5 30 8.3	-701.7	16 40.70	61 6.35
	Moon I. L.	-	13 37 37.98	150.73	69.85	7 46 38.5	-661.2	16 36.42	60 50.66
23	Moon I. U.	2.4	14 7 46.60	150.70	69.87	S. 9 53 48.6	-608.6	16 30.99	60 30.78
	Moon I. L.	-	14 37 54.33	150.57	69.87	11 49 23.1	-545.6	16 24.61	60 7.42
24	Moon I. U.	3.4	15 7 59.44	150.25	69.83	S. 13 31 29.1	-474.2	16 17.52	59 41.39
	Moon I. L.	-	15 37 59.33	149.68	69.72	14 58 39.3	-396.6	16 9.89	59 13.46
25	Moon I. U.	4.4	16 7 50.61	148.81	69.54	S. 16 9 51.3	-314.9	16 1.98	58 44.46
	Moon I. L.	-	16 37 29.30	147.58	69.26	17 4 28.7	-231.2	15 53.95	58 15.05
26	Moon I. U.	5.5	17 6 51.17	146.00	68.89	S. 17 42 18.7	-147.3	15 46.01	57 45.95
	Moon I. L.	-	17 35 51.97	144.08	68.43	18 3 29.6	-64.9	15 38.29	57 17.65
	192 B. Ophiuchi	6.3	17 20 5			18 22			
	305 B. Ophiuchi	6.3	17 51 22			18 47			
27	Moon I. U.	6.5	18 4 27.79	141.85	67.88	S. 18 8 28.2	+14.6	15 30.91	56 50.62
	Moon I. L.	-	18 32 35.38	139.38	67.26	17 57 56.1	+90.1	15 23.98	56 25.22
	100 B. Sagittarii	5.0	18 26 55			18 27			
	155 B. Sagittarii	5.5	18 51 4			S. 16 28			

MOON-CULMINATING STARS, 1922. 453

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semid. pass# Merid.	Apparent		Var. of C's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			Right Ascension.	h	m			s	Declination.			
Sept. 28	Moon I. U.	7.6	19 0 12.26	136.75	66.59	S. 17 32 46.1	+160.7	15 17.54	56 1.64			
	Moon I. L.	-	19 27 16.93	134.03	65.89	16 53 59.7	+226.0	15 11.68	55 40.14			
	45 Sagittarii	6.0	19 17 21			18 27						
	54 Sagittarii	5.4	19 36 18			16 28						
29	Moon I. U.	8.6	19 53 48.84	131.30	65.17	S. 16 2 43.0	+285.7	15 6.39	55 20.77			
	Moon I. L.	-	20 19 48.40	128.65	64.46	15 0 5.3	+339.6	15 1.70	55 3.58			
	16 B. Capricorni	6.2	20 16 27			15 2						
	45 B. Capricorni	6.1	20 29 54			13 59						
30	Moon I. U.	9.7	20 45 16.94	126.14	63.77	S. 13 47 16.8	+387.5	14 57.61	54 48.59			
	Moon I. L.	-	21 10 16.43	123.82	63.14	12 25 27.9	+429.7	14 54.10	54 35.73			
	ν Aquarii	4.5	21 5 24			11 41						
	18 Aquarii	5.5	21 19 59			13 12						
Oct. 1	Moon I. U.	10.7	21 34 49.56	121.75	62.56	S. 10 55 47.7	+466.1	14 51.16	54 24.95			
	Moon I. L.	-	21 58 59.44	119.95	62.05	9 19 24.0	+496.9	14 48.76	54 16.18			
	96 B. Aquarii	6.5	21 49 29			10 40						
	θ Aquarii	4.3	22 12 46			8 10						
2	Moon I. U.	11.7	22 22 49.60	118.46	61.62	S. 7 37 23.5	+522.3	14 46.88	54 9.29			
	Moon I. L.	-	22 46 23.82	117.30	61.28	5 50 51.6	+542.2	14 45.48	54 4.18			
	67 Aquarii	6.4	22 39 13			7 22						
	197 G. Aquarii	6.3	22 53 18			5 13						
3	Moon I. U.	12.7	23 9 46.09	116.47	61.03	S. 4 0 52.9	+556.7	14 44.54	54 0.75			
	Moon I. L.	-	23 33 0.49	115.99	60.88	2 8 31.5	+566.0	14 44.05	53 58.91			
	13 Piscium	6.4	23 28 1			S. 1 31						
	21 Piscium	5.6	23 45 31			N. 0 39						
4	Moon I. U.	13.8	23 56 11.16	115.85	60.83	S. 0 14 51.5	+569.8	14 43.95	53 58.55			
	Moon I. L.	-	0 19 22.24	116.06	60.88	N. 1 39 3.1	+568.4	14 44.24	53 59.62			
	98 B. Piscium	6.3	0 13 51			1 16						
	44 Piscium	6.0	0 21 28			1 31						
5	Moon I. U.	14.8	0 42 37.83	116.60	61.02	N. 3 32 7.2	+561.4	14 44.89	54 2.05			
	73 Piscium	6.2	1 0 54			5 15						
	88 Piscium	6.2	1 10 42			6 35						
6	Moon II. L.	-	1 8 4.44	117.52	61.26	N. 5 23 14.9	+548.9	14 45.93	54 5.82			
	Moon II. U.	15.8	1 31 41.53	118.71	61.59	7 11 19.1	+530.8	14 47.32	54 10.92			
	54 Ceti	6.0	1 46 47			10 40						
	ξ ¹ Ceti	4.5	2 8 55			8 29						
7	Moon II. L.	-	1 55 34.73	120.20	62.00	N. 8 55 11.9	+507.0	14 49.07	54 17.33			
	Moon II. U.	16.9	2 19 47.34	121.94	62.49	10 33 43.6	+477.3	14 51.19	54 25.06			
	38 Arietis	5.2	2 40 46			12 7						
	147 B. Arietis	5.8	3 2 10			12 53						
8	Moon II. L.	-	2 44 22.29	123.92	63.03	N. 12 5 43.8	+441.7	14 53.68	54 34.21			
	Moon II. U.	17.9	3 9 22.03	126.07	63.63	13 30 1.1	+400.2	14 56.57	54 44.80			
30	B. Tauri	6.4	3 33 29			15 11						
	148 B. Tauri	5.9	3 48 46			N. 17 6						

454 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent Right Ascension.	Var. of C's R.A. in 1 hour of Long.	Sid. Time of Semi-d. pass ^r Merid.	Apparent Declination.	Var. of C's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			h m s	s	s	° ' "	"	' "	' "
Oct. 9	Moon II. L.	-	3 34 48.45	128.35	64.25	N. 14 45 24.4	+352.7	14 59.86	54 56.87
	Moon II. U.	18.9	4 0 42.78	130.71	64.89	15 50 43.1	+299.4	15 3.58	55 10.49
	63 Tauri	5.7	4 19 0			16 36			
	89 Tauri	5.8	4 33 45			15 53			
10	Moon II. L.	-	4 27 5.52	133.08	65.53	N. 16 44 48.4	+240.5	15 7.74	55 25.72
	Moon II. U.	20.0	4 53 56.35	135.38	66.15	17 26 34.5	+176.3	15 12.35	55 42.61
	111 Tauri	5.1	5 19 56			17 19			
	122 Tauri	5.5	5 32 35			17 0			
11	Moon II. L.	-	5 21 14.15	137.56	66.74	N. 17 55 0.9	+107.3	15 17.40	56 1.13
	Moon II. U.	21.0	5 48 57.02	139.55	67.26	18 9 13.6	+34.2	15 22.90	56 21.28
	124 H ¹ . Orionis	5.7	6 9 58			17 56			
	B.D. + 17°1275	6.2	6 26 42			17 0			
12	Moon II. L.	-	6 17 2.42	141.30	67.72	N. 18 8 27.7	-42.3	15 28.83	56 43.01
	Moon II. U.	22.0	6 45 27.25	142.79	68.11	17 52 8.9	-121.1	15 35.16	57 6.19
	51 Geminorum	5.3	7 8 56			16 17			
	162 B. Geminor.	5.7	7 27 21			17 15			
13	Moon II. L.	-	7 14 8.15	143.98	68.41	N. 17 19 56.5	-201.1	15 41.82	57 30.61
	Moon II. U.	23.1	7 43 1.72	144.90	68.64	16 31 44.2	-280.9	15 48.76	57 56.01
	30 B. Cancri	6.1	8 6 38			14 51			
	29 Cancri	5.9	8 24 18			14 28			
14	Moon II. L.	-	8 12 4.81	145.57	68.79	N. 15 27 42.6	-359.0	15 55.86	58 22.04
	Moon II. U.	24.1	8 41 14.73	146.05	68.90	14 8 20.6	-434.0	16 3.01	58 48.24
15	Moon II. L.	-	9 10 29.47	146.39	68.96	N. 12 34 25.7	-504.2	16 10.07	59 14.11
	Moon II. U.	25.2	9 39 47.83	146.67	69.00	10 47 4.8	-568.0	16 16.87	59 39.00
16	Moon II. L.	-	10 9 9.47	146.95	69.04	N. 8 47 45.5	-623.7	16 23.20	60 2.24
	Moon II. U.	26.2	10 38 34.80	147.29	69.09	6 38 14.6	-669.7	16 28.91	60 23.16
17	Moon II. L.	-	11 8 4.97	147.76	69.17	N. 4 20 38.0	-704.4	16 33.78	60 41.00
	Moon II. U.	27.2	11 37 41.57	148.37	69.29	N. 1 57 19.0	-726.5	16 37.63	60 55.09
18	Moon II. L.	-	12 7 26.45	149.14	69.46	S. 0 29 4.2	-735.0	16 40.30	61 4.84
	Moon II. U.	28.3	12 37 21.39	150.04	69.66	2 55 42.4	-728.9	16 41.64	61 9.78
19	Moon II. L.	-	13 7 27.71	151.03	69.88	S. 5 19 39.8	-708.1	16 41.60	61 9.65
	Moon II. U.	29.3	13 37 46.08	152.03	70.12	7 38 0.1	-672.8	16 40.14	61 4.30
20	Moon I. L.	-	14 5 55.39	152.91	70.34	S. 9 47 53.0	-623.8	16 37.30	60 53.88
21	Moon I. U.	1.0	14 36 34.94	153.64	70.52	S. 11 46 41.1	-562.3	16 33.16	60 38.70
	Moon I. L.	-	15 7 21.44	154.05	70.64	13 32 6.0	-490.3	16 27.85	60 19.26
22	Moon I. U.	2.0	15 38 10.46	154.04	70.66	S. 15 2 14.2	-409.9	16 21.55	59 56.20
	Moon I. L.	-	16 8 56.34	153.51	70.56	16 15 41.6	-323.9	16 14.48	59 30.26
23	Moon I. U.	3.0	16 39 32.56	152.42	70.33	S. 17 11 35.3	-234.8	16 6.85	59 2.28
	Moon I. L.	-	17 9 52.26	150.76	69.96	17 49 33.4	-145.1	15 58.85	58 32.99
24	Moon I. U.	4.1	17 39 48.73	148.56	69.46	S. 18 9 43.2	-57.1	15 50.72	58 3.17
	Moon I. L.	-	18 9 15.94	145.90	68.84	S. 18 12 37.1	+27.3	15 42.62	57 33.50

MOON-CULMINATING STARS, 1922. 455

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	<i>Apparent</i> Right Ascension.	Var. of (<i>s</i> 's R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^r Merid.	<i>Apparent</i> Declination.	Var. of (<i>s</i> 's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			h m s	s	s	° ' "	"	' "	' "
Oct. 25	Moon I. U.	5.1	18 38 8.99	142.89	68.12	S. 17 59 7.5	+106.6	15 34.74	57 4.64
	Moon I. L.	-	19 6 24.38	139.65	67.34	17 30 21.7	+179.9	15 27.22	56 37.11
	187 B. Sagittarii	6.4	19 2 37			18 51			
	ρ Sagittarii	4.0	19 17 11			17 59			
26	Moon I. U.	6.2	19 34 0.10	136.30	66.50	S. 16 47 36.1	+246.5	15 20.16	56 11.26
	Moon I. L.	-	20 0 55.63	132.97	65.67	15 52 12.2	+306.3	15 13.68	55 47.48
	9 Sagittarii	5.1	19 53 34			15 42			
	16 B. Capricorni	6.2	20 16 26			15 2			
27	Moon I. U.	7.2	20 27 11.87	129.77	64.84	S. 14 45 32.0	+359.3	15 7.81	55 25.96
	Moon I. L.	-	20 52 50.83	126.77	64.06	13 28 56.4	+405.6	15 2.59	55 6.89
	84 B. Capricorni	6.0	20 46 27			12 50			
	ν Aquarii	4.5	21 5 23			11 41			
28	Moon I. U.	8.2	21 17 55.47	124.06	63.34	S. 12 3 43.2	+445.6	14 58.08	54 50.36
	Moon I. L.	-	21 42 29.54	121.68	62.69	10 31 5.8	+479.6	14 54.27	54 36.37
	137 B. Capricorni	6.2	21 35 19			10 55			
	96 B. Aquarii	6.5	21 49 29			10 40			
29	Moon I. U.	9.3	22 6 37.28	119.67	62.13	S. 8 52 14.3	+508.0	14 51.16	54 24.97
	Moon I. L.	-	22 30 23.28	118.06	61.67	7 8 14.4	+531.1	14 48.73	54 16.06
	170 B. Aquarii	6.0	22 19 30			7 35			
	67 Aquarii	6.4	22 39 13			7 22			
30	Moon I. U.	10.3	22 53 52.40	116.87	61.32	S. 5 20 9.5	+548.9	14 46.96	54 9.58
	Moon I. L.	-	23 17 9.54	116.07	61.07	3 29 0.7	+561.7	14 45.82	54 5.41
	293 B. Aquarii	5.5	23 11 36			3 55			
	13 Piscium	6.4	23 28 1			1 31			
31	Moon I. U.	11.3	23 40 19.71	115.69	60.94	S. 1 35 48.0	+569.6	14 45.27	54 3.39
	Moon I. L.	-	0 3 27.82	115.72	60.92	N. 0 18 28.4	+572.3	14 45.27	54 3.41
	60 B. Piscium	6.0	23 50 50			S. 0 19			
	98 B. Piscium	6.3	0 13 51			N. 1 16			
Nov. 1	Moon I. U.	12.3	0 26 38.69	116.15	61.01	N. 2 12 47.3	+570.0	14 45.79	54 5.30
	Moon I. L.	-	0 49 56.96	116.96	61.20	4 6 6.4	+562.3	14 46.78	54 8.91
	147 B. Piscium	5.9	0 44 21			4 53			
	73 Piscium	6.2	1 0 54			5 15			
2	Moon I. U.	13.4	1 13 27.06	118.12	61.49	N. 5 57 20.2	+549.1	14 48.18	54 14.07
	Moon I. L.	-	1 37 13.08	119.61	61.87	7 45 21.1	+530.1	14 49.98	54 20.65
	μ Piscium	5.0	1 26 10			5 45			
	54 Ceti	6.0	1 46 47			10 40			
3	Moon I. U.	14.4	2 1 18.76	121.39	62.34	N. 9 28 58.2	+505.1	14 52.11	54 28.46
	Moon I. L.	-	2 25 47.32	123.41	62.87	11 6 57.9	+473.8	14 54.56	54 37.44
	ξ Arietis	5.5	2 20 42			10 16			
	85 Ceti	6.3	2 38 21			10 25			
4	Moon II. U.	15.4	2 52 48.27	125.73	63.44	N. 12 38 4.4	+436.2	14 57.29	54 47.45
	147 B. Arietis	5.8	3 2 11			12 53			
	30 B. Tauri	6.4	3 33 29			N. 15 11			

456 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent Right Ascension.	Var. of (α 's R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^W Merid.	Apparent Declination.	Var. of (δ 's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			h m s	s	s	° ' "	' "	' "	' "
Nov. 5	Moon II. L.	-	3 18 10.97	128.07	64.06	N. 14 1 0.2	+392.1	15 0.28	54 58.40
	Moon II. U.	16.5	3 44 2.15	130.46	64.69	15 14 28.3	+341.6	15 3.50	55 10.20
	180 B. Tauri	6.1	4 3 36			17 8			
	63 Tauri	5.7	4 19 2			16 36			
6	Moon II. L.	-	4 10 21.89	132.82	65.32	N. 16 17 12.9	+284.9	15 6.95	55 22.82
	Moon II. U.	17.5	4 37 9.27	135.05	65.91	17 8 2.0	+222.4	15 10.61	55 36.23
	m Tauri	5.0	5 2 54			18 32			
	111 Tauri	5.1	5 19 56			17 19			
7	Moon II. L.	-	5 4 22.38	137.09	66.45	N. 17 45 49.9	+154.8	15 14.48	55 50.39
	Moon II. U.	18.5	5 31 58.39	138.86	66.93	18 9 39.6	+82.8	15 18.54	56 5.31
	57 Orionis	5.8	5 50 23			19 44			
	19 B. Geminor.	6.2	6 9 2			18 42			
8	Moon II. L.	-	5 59 53.70	140.30	67.33	N. 18 18 44.8	+7.6	15 22.82	56 21.01
	Moon II. U.	19.6	6 28 4.19	141.39	67.64	18 12 32.5	-69.9	15 27.31	56 37.44
	74 B. Geminor.	6.2	6 42 54			18 17			
	41 H ¹ .Geminor.	6.0	6 58 7			16 47			
9	Moon II. L.	-	6 56 25.55	142.11	67.85	N. 17 50 44.0	-148.2	15 32.01	56 54.64
	Moon II. U.	20.6	7 24 53.56	142.50	67.98	17 13 16.6	-226.2	15 36.89	57 12.53
	1 Cancri	6.0	7 52 37			16 0			
	30 B. Cancri	6.1	8 6 39			14 51			
10	Moon II. L.	-	7 53 24.46	142.61	68.04	N. 16 20 23.3	-302.3	15 41.94	57 31.05
	Moon II. U.	21.6	8 21 55.27	142.50	68.03	15 12 33.0	-375.5	15 47.15	57 50.11
	A ² Cancri	5.7	8 42 43			12 24			
	α Cancri	4.3	8 54 16			12 9			
11	Moon II. L.	-	8 50 23.93	142.26	67.98	N. 13 50 29.5	-444.3	15 52.45	58 9.54
	Moon II. U.	22.7	9 18 49.47	142.00	67.92	12 15 11.1	-507.8	15 57.80	58 29.13
	18 Leonis	5.8	9 42 14			12 10			
	π Leonis	4.9	9 56 8			8 25			
12	Moon II. L.	-	9 47 12.08	141.79	67.87	N. 10 27 49.6	-564.7	16 3.10	58 48.57
	Moon II. U.	23.7	10 15 32.98	141.73	67.84	8 29 49.7	-614.0	16 8.29	59 7.58
	48 Leonis	5.2	10 30 46			7 21			
	56 Leonis	6.1	10 52 1			6 36			
13	Moon II. L.	-	10 43 54.36	141.89	67.86	N. 6 22 48.8	-654.7	16 13.24	59 25.69
	Moon II. U.	24.8	11 12 19.18	142.31	67.95	4 8 36.0	-685.8	16 17.81	59 42.46
14	Moon II. L.	-	11 40 50.93	143.04	68.10	N. 1 49 12.9	-706.2	16 21.88	59 57.39
	Moon II. U.	25.8	12 9 33.30	144.08	68.32	S. 0 33 7.7	-715.2	16 25.32	60 9.99
15	Moon II. L.	-	12 38 29.95	145.41	68.62	S. 2 56 2.5	-711.8	16 27.98	60 19.74
	Moon II. U.	26.8	13 7 44.08	146.98	68.97	5 16 59.3	-695.4	16 29.73	60 26.14
16	Moon II. L.	-	13 37 18.10	148.71	69.36	S. 7 33 20.1	-665.8	16 30.47	60 28.84
	Moon II. U.	27.9	14 7 13.21	150.48	69.77	S. 9 42 24.9	-622.8	16 30.11	60 27.55

MOON-CULMINATING STARS, 1922. 457

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent Right Ascension.			Var. of C's R.A. in 1 hour of Long.	Sld. Time of Semld. pass Merid.	Apparent Declination.			Var. of C's Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.		
			h	m	s	s	s	°	'	"	"	'	"		
Nov. 17	Moon II. L.	-	14	37	29.09	152.14	70.15	S. 11	41	37.4	-567.2	16	28.63	60	22.10
	Moon II. U.	28.9	15	8	3.61	153.55	70.48	13	28	31.2	-499.9	16	26.02	60	12.55
18	Moon II. L.	-	15	38	52.69	154.54	70.72	S. 15	0	56.4	-422.8	16	22.32	59	59.01
19	Moon I. U.	0.5	16	7	28.74	154.96	70.83	S. 16	17	6.7	-337.9	16	17.63	59	41.77
	Moon I. L.	-	16	38	27.61	154.73	70.78	17	15	44.5	-247.8	16	12.06	59	21.39
20	Moon I. U.	1.6	17	9	19.36	153.76	70.56	S. 17	56	5.2	-155.5	16	5.77	58	58.34
	Moon I. L.	-	17	39	55.03	152.06	70.18	18	17	57.0	-63.5	15	58.94	58	33.32
21	Moon I. U.	2.6	18	10	6.11	149.68	69.63	S. 18	21	40.4	+25.6	15	51.74	58	6.91
	Moon I. L.	-	18	39	45.08	146.74	68.95	18	8	2.6	+109.7	15	44.35	57	39.84
22	Moon I. U.	3.6	19	8	46.09	143.37	68.15	S. 17	38	12.5	+187.4	15	36.96	57	12.76
	Moon I. L.	-	19	37	5.04	139.76	67.29	16	53	34.3	+257.7	15	29.70	56	46.20
23	Moon I. U.	4.7	20	4	39.96	136.06	66.40	S. 15	55	39.9	+320.1	15	22.76	56	20.77
	Moon I. L.	-	20	31	30.70	132.42	65.49	14	46	4.5	+374.5	15	16.23	55	56.86
	β Capricorni	3.2	20	16	40			15	1						
τ Capricorni	5.2	20	34	57				15	13						
24	Moon I. U.	5.7	20	57	38.71	128.96	64.63	S. 13	26	21.7	+421.3	15	10.24	55	34.86
	Moon I. L.	-	21	23	6.86	125.79	63.82	11	58	1.2	+460.9	15	4.83	55	15.05
	18 Aquarii	5.5	21	19	58			13	13						
137 B. Capricorni	6.2	21	35	19				10	55						
25	Moon I. U.	6.7	21	47	59.01	122.97	63.09	S. 10	22	26.4	+493.8	15	0.10	54	57.73
	Moon I. L.	-	22	12	19.81	120.57	62.46	8	40	54.7	+520.8	14	56.07	54	42.97
	θ Aquarii	4.3	22	12	46			8	10						
186 B. Aquarii	6.1	22	27	16				6	57						
26	Moon I. U.	7.8	22	36	14.42	118.61	61.93	S. 6	54	37.1	+541.5	14	52.78	54	30.91
	Moon I. L.	-	22	59	48.39	117.13	61.52	5	4	39.3	+557.1	14	50.24	54	21.61
	197 G. Aquarii	6.3	22	53	18			5	13						
293 B. Aquarii	5.5	23	11	36				3	55						
27	Moon I. U.	8.8	23	23	7.41	116.12	61.24	S. 3	12	2.7	+568.0	14	48.45	54	15.05
	Moon I. L.	-	23	46	17.22	115.60	61.08	S. 1	17	45.9	+574.0	14	47.40	54	11.21
	21 Piscium	5.6	23	45	31			N. 0	39						
60 B. Piscium	6.0	23	50	50				S. 0	19						
28	Moon I. U.	9.8	0	9	23.63	115.55	61.04	N. 0	37	13.9	+575.2	14	47.08	54	10.02
	Moon I. L.	-	0	32	32.27	115.97	61.13	2	31	59.8	+571.6	14	47.43	54	11.32
	44 Piscium	6.0	0	21	28			1	31						
147 B. Piscium	5.9	0	44	21				4	53						
29	Moon I. U.	10.9	0	55	48.66	116.84	61.34	N. 4	25	33.2	+563.1	14	48.44	54	15.00
	Moon I. L.	-	1	19	18.09	118.14	61.66	6	16	53.1	+549.3	14	50.04	54	20.87
	ζ Piscium	5.6	1	9	43			7	10						
263 B. Piscium	6.4	1	24	21				N. 7	34						

458 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent Right Ascension.	Var. of (α 's R.A. in 1 hour of Long.	Sid. Time of Semid. pass ^e Merid.	Apparent Declination.	Var. of (δ 's Dec. in 1 hour of Long.	Semi- diameter.	Hor. Par.
			h m s	s	s	° ' "	"	' "	' "
Nov. 30	Moon I. U.	11.9	1 43 5.48	119.83	62.08	N. 8 4 55.1	+530.0	14 52.20	54 28.76
	Moon I. L.	-	2 7 15.38	121.88	62.59	9 48 30.1	+504.8	14 54.83	54 38.44
	ζ^1 Ceti	4.5	2 8 56			8 29			
	ϵ Arietis	5.5	2 20 42			10 16			
Dec. 1	Moon I. U.	12.9	2 31 51.71	124.22	63.18	N. 11 26 24.8	+473.3	14 57.91	54 49.70
	Moon I. L.	-	2 56 57.69	126.81	63.84	12 57 21.6	+435.1	15 1.33	55 2.24
	38 Arietis	5.2	2 40 47			12 7			
	147 B. Arietis	5.8	3 2 11			12 53			
2	Moon I. U.	13.9	3 22 35.65	129.54	64.52	N. 14 19 59.2	+390.0	15 5.06	55 15.89
	Moon I. L.	-	3 48 46.83	132.33	65.22	15 32 54.2	+338.0	15 9.01	55 30.38
	33 B. Tauri	6.3	3 35 5			16 17			
	162 B. Tauri	6.3	3 56 14			17 5			
3	Moon I. U.	15.0	4 15 31.24	135.06	65.90	N. 16 34 43.4	+279.1	15 13.13	55 45.44
	Moon II. L.	-	4 45 0.62	137.72	66.54	17 24 6.9	+213.8	15 17.33	56 0.90
	89 Tauri	5.8	4 33 46			15 53			
	318 B. Tauri	5.7	4 52 56			17.2			
4	Moon II. U.	16.0	5 12 47.21	139.99	67.12	N. 17 59 51.3	+142.7	15 21.60	56 16.50
	122 Tauri	5.5	5 32 37			16 59			
	B.D.+19°1110	6.0	5 47 51			19 51			
5	Moon II. L.	-	5 40 58.74	141.86	67.59	N. 18 20 53.4	+66.9	15 25.85	56 32.08
	Moon II. U.	17.1	6 9 30.06	143.27	67.96	18 26 24.5	-12.2	15 30.05	56 47.48
	B.D.+17°1275	6.2	6 26 43			17 0			
	74 B. Geminor.	6.2	6 42 54			18 17			
6	Moon II. L.	-	6 38 15.27	144.17	68.21	N. 18 15 53.0	-93.2	15 34.18	57 2.60
	Moon II. U.	18.1	7 7 8.22	144.56	68.34	17 49 6.5	-174.4	15 38.20	57 17.33
	68 Geminorum	5.2	7 29 14			16 0			
	1 Cancri	6.0	7 52 38			16 0			
7	Moon II. L.	-	7 36 2.94	144.48	68.35	N. 17 6 13.1	-254.1	15 42.10	57 31.59
	Moon II. U.	19.1	8 4 54.15	143.99	68.27	16 7 41.5	-330.5	15 45.86	57 45.36
	29 Cancri	5.9	8 24 20			14 28			
	A ¹ Cancri	5.5	8 38 58			12 57			
8	Moon II. L.	-	8 33 37.64	143.21	68.11	N. 14 54 18.9	-402.3	15 49.47	57 58.61
	Moon II. U.	20.2	9 2 10.57	142.25	67.91	13 27 9.0	-468.2	15 52.93	58 11.33
	ζ Leonis	5.1	9 27 48			11 38			
	18 Leonis	5.8	9 42 15			12 10			
9	Moon II. L.	-	9 30 31.55	141.24	67.68	N. 11 47 29.5	-527.1	15 56.25	58 23.49
	Moon II. U.	21.2	9 58 40.70	140.30	67.47	9 56 49.4	-578.2	15 59.42	58 35.07
	43 Leonis	6.3	10 18 59			6 56			
	35 Sextantis	6.1	10 39 21			5 9			
10	Moon II. L.	-	10 26 39.51	139.54	67.30	N. 7 56 46.3	-620.8	16 2.41	58 46.02
	Moon II. U.	22.2	10 54 30.68	139.04	67.18	5 49 5.6	-654.4	16 5.20	58 56.26
	76 Leonis	6.0	11 14 58			2 4			
	89 Leonis	5.7	11 30 25			N. 3.29			

MOON-CULMINATING STARS, 1922. 459

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Sid. Time of Semid. pass [#] Merid.	Apparent			Semi-diameter.	Hor. Par.
			Right Ascension.	Var. of (s R.A. in 1 hour of Long.	s		Declination.	Var. of (s Dec. in 1 hour of Long.	s		
Dec. 11	Moon II. L.	-	h m s	s	s	N. 3 35 38.1	-678.5	16 7.77	59 5.66		
	Moon II. U.	23.3	11 22 17.84	138.88	67.14	N. 1 18 20.1	-692.8	16 10.07	59 14.11		
	13 Virginis	5.9	12 14 43	139.10	67.19	S. 0 21					
	200 B. Virginis	6.3	12 27 40			4 38					
12	Moon II. L.	-	12 17 57.79	139.72	67.33	S. 1 0 47.2	-696.7	16 12.05	59 21.37		
	Moon II. U.	24.3	12 46 0.07	140.73	67.57	3 19 37.5	-689.9	16 13.65	59 27.24		
13	Moon II. L.	-	13 14 16.69	142.10	67.88	S. 5 36 0.6	-672.1	16 14.82	59 31.49		
	Moon II. U.	25.3	13 42 51.56	143.76	68.26	7 47 42.5	-643.0	16 15.46	59 33.84		
14	Moon II. L.	-	14 11 47.60	145.61	68.68	S. 9 52 27.1	-602.6	16 15.52	59 34.06		
	Moon II. U.	26.4	14 41 6.44	147.53	69.12	11 47 59.4	-551.0	16 14.94	59 31.91		
15	Moon II. L.	-	15 10 47.96	149.36	69.53	S. 13 32 8.9	-488.9	16 13.65	59 27.23		
	Moon II. U.	27.4	15 40 50.14	150.94	69.89	15 2 54.5	-417.2	16 11.65	59 19.89		
16	Moon II. L.	-	16 11 8.92	152.10	70.15	S. 16 18 30.3	-337.5	16 8.92	59 9.87		
	Moon II. U.	28.5	16 41 38.29	152.69	70.28	17 17 30.8	-251.7	16 5.46	58 57.22		
17	Moon II. L.	-	17 12 10.64	152.58	70.24	S. 17 58 56.7	-162.2	16 1.34	58 42.11		
	Moon II. U.	29.5	17 42 37.25	151.73	70.04	18 22 17.9	- 71.4	15 56.60	58 24.74		
18	Moon I. L.	-	18 10 29.80	150.20	69.66	S. 18 27 35.0	+ 18.1	15 51.35	58 5.52		
19	Moon I. U.	1.0	18 40 19.34	147.95	69.12	S. 18 15 17.4	+104.4	15 45.71	57 44.82		
	Moon I. L.	-	19 9 38.24	145.12	68.44	17 46 20.8	+184.4	15 39.76	57 23.05		
20	Moon I. U.	2.1	19 38 20.52	141.87	67.67	S. 17 2 0.4	+257.7	15 33.66	57 0.71		
	Moon I. L.	-	20 6 22.15	138.37	66.82	16 3 46.1	+323.2	15 27.54	56 38.28		
21	Moon I. U.	3.1	20 33 41.10	134.78	65.95	S. 14 53 15.3	+380.5	15 21.53	56 16.26		
	Moon I. L.	-	21 0 17.20	131.25	65.08	13 32 7.6	+429.4	15 15.74	55 55.04		
22	Moon I. U.	4.1	21 26 11.94	127.91	64.26	S. 12 2 1.5	+470.3	15 10.30	55 35.09		
	Moon I. L.	-	21 51 28.21	124.86	63.50	10 24 30.1	+503.7	15 5.30	55 16.76		
23	Moon I. U.	5.2	22 16 9.95	122.17	62.81	S. 8 41 0.3	+530.2	15 0.81	55 0.35		
	Moon I. L.	-	22 40 21.89	119.90	62.24	6 52 51.6	+550.3	14 56.94	54 46.13		
	167 G. Aquarii	6.3	22 34 19			8 18					
	252 B. Aquarii	5.8	22 51 11			5 24					
24	Moon I. U.	6.2	23 4 9.35	118.09	61.78	S. 5 1 16.9	+564.6	14 53.71	54 34.34		
	Moon I. L.	-	23 27 37.95	116.76	61.43	3 7 22.7	+573.6	14 51.21	54 25.13		
	316 B. Aquarii	6.5	23 16 16			4 20					
	14 Piscium	5.9	23 30 11			1 40					
25	Moon I. U.	7.2	23 50 53.61	115.93	61.22	S. 1 12 10.6	+577.6	14 49.43	54 18.65		
	Moon I. L.	-	0 14 2.31	115.60	61.14	N. 0 43 21.2	+576.9	14 48.43	54 14.95		
	80 B. Piscium	6.3	0 1 7			S. 0 56					
	44 Piscium	6.0	0 21 27			N. 1 31					
26	Moon I. U.	8.3	0 37 10.08	115.78	61.19	N. 2 38 16.8	+571.6	14 48.18	54 14.06		
	Moon I. L.	-	1 0 22.89	116.44	61.36	4 31 40.3	+561.6	14 48.71	54 15.99		
	171 B. Piscium	6.3	0 55 50			6 4					
	88 Piscium	6.2	1 10 42			N. 6 35					

460 MOON-CULMINATING STARS, 1922.

AT TRANSIT AT GREENWICH.

Date.	Name.	Mag.	Apparent			Apparent	Var. of		
			Right Ascension.	Var. of (s R.A. in 1 hour of Long.	Sid. Time of Semid. pass [†] Merid.		Declination.	(s Dec. in 1 hour of Long.	Semi-diameter.	Hor. Par.
Dec. 27	Moon I. U.	9.3	h m s	s	s	° ' "	"	' "	' "
	Moon I. L.	-	1 23 46.57	117.59	61.66	N. 6 22 35.1	+546.8	14 49.98	54 20.67
	o Piscium	4.5	1 47 26.77	119.19	62.07	8 10 2.0	+526.8	14 51.98	54 28.00
	54 Ceti	6.0	1 41 20			8 46			
28	Moon I. U.	10.3	2 11 28.77	121.21	62.59	N. 9 52 57.5	+501.5	14 54.67	54 37.85
	Moon I. L.	-	2 35 57.44	123.62	63.20	11 30 13.9	+470.2	14 58.00	54 50.02
	25 Arietis	6.5	2 23 18			9 51			
	38 Arietis	5.2	2 40 46			12 7			
29	Moon I. U.	11.4	3 0 57.01	126.35	63.88	N. 13 0 38.0	+432.7	15 1.90	55 4.32
	Moon I. L.	-	3 26 30.89	129.33	64.62	14 22 51.5	+388.4	15 6.31	55 20.47
	B.D.+13°535	7.4	3 13 38			13 34			
	30 B. Tauri	6.4	3 33 29			15 11			
30	Moon I. U.	12.4	3 52 41.44	132.45	65.39	N. 15 35 31.7	+337.1	15 11.13	55 38.15
	Moon I. L.	-	4 19 29.75	135.60	66.16	16 37 13.3	+278.6	15 16.28	55 57.05
	48 Tauri	6.3	4 11 25			15 12			
	119 H ¹ . Tauri	6.2	4 29 7			17 51			
31	Moon I. U.	13.4	4 46 55.44	138.65	66.89	N. 17 26 31.2	+213.2	15 21.67	56 16.78
	Moon I. L.	-	5 14 56.46	141.47	67.57	18 2 3.8	+141.2	15 27.18	56 36.97
	m Tauri	5.0	5 2 55			18 32			
	115 Tauri	5.3	5 22 42			N. 17 54			

Note.—The Mean Places of Moon-Culminating Stars are given in the section headed "Mean Places of Occultation Stars," on pages 471-474, with the exception of two stars whose positions are given below:—

Name of Star.	Magni- tude.	Right Ascension for 1922.0	Annual Proper Motion.	Declination for 1922.0	Annual Proper Motion.
B.D.+13.535	7.4	h m s 3 13 33.808	s +0.0033	° ' " +13 33 40.46	" -0.0
226 B. Ophiuchi	6.9	17 28 26.678	+0.0001	-17 26 28.75	

In the year 1922 there will be two eclipses, both of the Sun.

I.—*An Annular Eclipse of the Sun*, March 27–28, 1922, visible as a Partial Eclipse at Greenwich.

ELEMENTS OF THE ECLIPSE.

Greenwich Mean Time of ϕ in Right Ascension, March 28^d 1^h 11^m 36^s.7

	h	m	s
Sun and Moon's Right Ascension - - - - -	0	25	59.19
Hourly Motions - - - - -	9 ^s .10	and 114 ^s .33	
Sun's Declination - - - - -	+	2	48' 33.7"
Hourly Motion - - - - -	+	0	58.6
Moon's Declination - - - - -	+	2	58 16.9
Hourly Motion - - - - -	+	9	16.2
Sun's Equatorial Horizontal Parallax - - - - -			8.8
Sun's True Semidiameter - - - - -			16 1.1
Moon's Equatorial Horizontal Parallax - - - - -			54 20.0
Moon's True Semidiameter - - - - -			14 47.6

CIRCUMSTANCES OF THE ECLIPSE.

	Greenwich Mean Time.	Longitude from Greenwich.	Latitude.
	d h m		
Eclipse begins - - -	March 27 22 1.2	+58° 24'	-11° 19'
Central Eclipse begins -	,, 23 9.0	+75 32	- 7 43
Central Eclipse at Local Apparent Noon } -	,, 28 1 11.6	+16 34	+13 14
Central Eclipse ends -	,, 3 1.4	-47 26	+27 29
Eclipse ends - - -	,, 4 9.2	-30 17	+23 53

BESSELIAN ELEMENTS OF THE ANNULAR ECLIPSE OF THE SUN,
MARCH 27-28, 1922.

Greenwich Mean Time.	Co-ordinates of Centre of Shadow on Fundamental Plane.		Direction of Axis of Shadow.			Radius of Penumbra and Umbra on Fundamental Plane.	
	<i>x</i>	<i>y</i>	Log. sin <i>d</i>	Log. cos <i>d</i>	μ	<i>l</i> ₁	<i>l</i> ₂
h m							
22 0	-1.54819	-0.30945	+8.68232	+9.99950	328° 39.5'	+0.56874	+0.02271
10	1.46742	0.28394	8.68274	9.99950	331 9.5	0.56874	0.02271
20	1.38664	0.25842	8.68316	9.99949	333 39.6	0.56874	0.02271
30	1.30586	0.23291	8.68358	9.99949	336 9.6	0.56874	0.02271
40	1.22508	0.20739	8.68400	9.99949	338 39.6	0.56874	0.02271
50	1.14429	0.18188	8.68441	9.99949	341 9.7	0.56873	0.02270
23 0	-1.06350	-0.15636	+8.68482	+9.99949	343 39.7	+0.56873	+0.02270
10	0.98271	0.13085	8.68524	9.99949	346 9.8	0.56873	0.02270
20	0.90191	0.10533	8.68566	9.99949	348 39.8	0.56872	0.02269
30	0.82111	0.07982	8.68607	9.99949	351 9.9	0.56872	0.02269
40	0.74031	0.05431	8.68648	9.99949	353 39.9	0.56872	0.02268
50	0.65951	0.02880	8.68689	9.99949	356 9.9	0.56871	0.02268
0 0	-0.57870	-0.00329	+8.68730	+9.99949	358 40.0	+0.56870	+0.02267
10	0.49789	+0.02222	8.68772	9.99948	1 10.0	0.56870	0.02267
20	0.41709	0.04773	8.68813	9.99948	3 40.1	0.56869	0.02266
30	0.33628	0.07324	8.68854	9.99948	6 10.1	0.56868	0.02265
40	0.25547	0.09875	8.68895	9.99948	8 40.2	0.56867	0.02264
50	0.17466	0.12426	8.68936	9.99948	11 10.2	0.56866	0.02263
1 0	-0.09384	+0.14976	+8.68977	+9.99948	13 40.3	+0.56865	+0.02262
10	-0.01303	0.17527	8.69018	9.99948	16 10.3	0.56864	0.02261
20	+0.06778	0.20077	8.69059	9.99948	18 40.3	0.56863	0.02260
30	0.14860	0.22627	8.69100	9.99948	21 10.4	0.56862	0.02259
40	0.22941	0.25177	8.69141	9.99948	23 40.4	0.56861	0.02258
50	0.31022	0.27727	8.69182	9.99947	26 10.5	0.56860	0.02257
2 0	+0.39104	+0.30277	+8.69222	+9.99947	28 40.5	+0.56859	+0.02256
10	0.47186	0.32827	8.69263	9.99947	31 10.6	0.56857	0.02254
20	0.55267	0.35377	8.69304	9.99947	33 40.6	0.56856	0.02253
30	0.63348	0.37926	8.69345	9.99947	36 10.6	0.56854	0.02252
40	0.71430	0.40475	8.69386	9.99947	38 40.7	0.56853	0.02250
50	0.79511	0.43024	8.69426	9.99947	41 10.7	0.56851	0.02249
3 0	+0.87592	+0.45573	+8.69466	+9.99947	43 40.8	+0.56850	+0.02247
10	0.95674	0.48122	8.69507	9.99947	46 10.8	0.56848	0.02245
20	1.03755	0.50671	8.69548	9.99947	48 40.9	0.56847	0.02244
30	1.11836	0.53219	8.69589	9.99946	51 10.9	0.56845	0.02242
40	1.19917	0.55767	8.69629	9.99946	53 40.9	0.56843	0.02240
50	1.27998	0.58315	8.69669	9.99946	56 11.0	0.56841	0.02238
4 0	+1.36079	+0.60863	+8.69709	+9.99946	58 41.0	+0.56839	+0.02236
10	+1.44159	+0.63411	+8.69749	+9.99946	61 11.1	+0.56837	+0.02234

Greenwich Mean Time.	Log. <i>x'</i> for 1 Minute.	Log. <i>y'</i> for 1 Minute.	Log. μ' for 1 Minute.	Log. Tangents of Angles of Cones.	
				Penumbra.	Umbra.
h m					
22 0	+ 7.9073	+ 7.4068	+ 1.1762	+ 7.67063	+ 7.66846
23 0	7.9074	7.4068	1.1762	7.67062	7.66845
0 0	7.9074	7.4067	1.1762	7.67062	7.66845
1 0	7.9075	7.4066	1.1762	7.67061	7.66844
2 0	7.9075	7.4065	1.1762	7.67061	7.66844
3 0	7.9075	7.4064	1.1762	7.67060	7.66843
4 0	7.9075	7.4062	1.1762	7.67060	7.66843
5 0	+ 7.9074	+ 7.4059	+ 1.1762	+ 7.67059	+ 7.66842

ECLIPSES, 1922.

463

PATH OF ANNULAR PHASE DURING THE ECLIPSE OF THE SUN, MARCH 27-28, 1922.

Greenwich Mean Time.	Northern Limit.		Central Line.		Southern Limit.		Duration of Annular Phase on Central Line.
	Latitude.	Longitude from Greenwich.	Latitude.	Longitude from Greenwich.	Latitude.	Longitude from Greenwich.	
Limits.	— 6 23	+75 44	— 7 43	+75 32	— 9 2	+75 21	m s
23 ^h 10 ^m	6 6.0	70 54.2	7 11.5	68 14.2	8 17.7	66 16.9	5 32.3
15	4 50.7	59 54.3	5 56.3	58 44.4	7 1.5	57 39.5	5 52.3
20	3 50.3	54 28.6	4 54.2	53 30.8	5 57.6	52 35.8	6 5.6
25	2 54.1	50 30.1	3 56.4	49 37.8	4 58.2	48 47.2	6 16.6
30	— 2 0.2	+47 17.7	— 3 1.1	+46 28.5	— 4 1.5	+45 40.6	6 26.4
35	1 7.8	44 34.4	2 7.4	43 47.3	3 6.6	43 1.3	6 35.3
40	— 0 16.5	42 12.0	1 15.1	41 26.3	2 13.2	40 41.5	6 43.6
45	+ 0 33.9	40 4.9	— 0 23.7	39 20.3	1 20.9	38 36.4	6 51.3
50	1 23.6	38 9.4	+ 0 26.9	37 25.8	— 0 29.4	36 42.7	6 58.3
55	2 12.7	36 23.4	1 16.8	35 40.6	+ 0 21.3	34 58.2	7 4.8
0 0	+ 3 1.3	+34 45.4	+ 2 6.1	+34 3.2	+ 1 11.3	+33 21.4	7 10.9
5	3 49.5	33 13.7	2 54.9	32 32.1	2 0.7	31 50.8	7 16.5
10	4 37.2	31 47.3	3 43.2	31 6.1	2 49.6	30 25.3	7 21.6
15	5 24.6	30 24.9	4 31.1	29 44.3	3 38.0	29 4.0	7 26.4
20	6 11.7	29 6.2	5 18.6	28 26.0	4 25.9	27 46.1	7 30.7
25	6 58.6	27 50.3	6 5.8	27 10.7	5 13.4	26 31.3	7 34.6
30	+ 7 45.3	+26 37.2	+ 6 52.8	+25 58.0	+ 6 0.6	+25 19.0	7 38.2
35	8 31.8	25 26.0	7 39.4	24 47.3	6 47.4	24 8.8	7 41.2
40	9 18.1	24 16.4	8 25.8	23 38.1	7 33.9	23 0.0	7 43.8
45	10 4.1	23 8.0	9 11.9	22 30.1	8 20.1	21 52.4	7 45.9
50	10 50.0	22 0.5	9 57.8	21 23.0	9 6.0	20 45.7	7 47.7
55	11 35.7	20 53.5	10 43.4	20 16.4	9 51.5	19 39.5	7 49.0
1 0	+12 21.3	+19 46.5	+11 28.9	+19 9.9	+10 36.9	+18 33.5	7 49.8
5	13 6.8	18 39.4	12 14.2	18 3.3	11 22.0	17 27.4	7 50.2
10	13 52.2	17 31.9	12 59.3	16 56.3	12 6.8	16 20.9	7 50.1
15	14 37.5	16 23.5	13 44.2	15 48.5	12 51.3	15 13.7	7 49.6
20	15 22.5	15 13.9	14 28.9	14 39.5	13 35.6	14 5.2	7 48.6
25	16 7.5	14 2.7	15 13.4	13 29.1	14 19.6	12 55.5	7 47.1
30	+16 52.4	+12 49.9	+15 57.8	+12 17.0	+15 3.5	+11 44.1	7 45.1
35	17 37.2	11 34.8	16 42.0	11 2.7	15 47.1	10 30.6	7 42.7
40	18 21.7	10 17.2	17 25.9	9 45.9	16 30.4	9 14.6	7 39.8
45	19 6.1	8 56.4	18 9.6	8 26.0	17 13.3	7 55.6	7 36.4
50	19 50.5	7 31.8	18 53.2	7 2.5	17 56.1	6 33.1	7 32.6
55	20 34.8	6 3.0	19 36.6	5 34.9	18 38.6	5 6.7	7 28.3
2 0	+21 18.7	+ 4 29.2	+20 19.6	+ 4 2.4	+19 20.7	+ 3 35.5	7 23.5
5	22 2.4	2 49.6	21 2.3	2 24.3	20 2.4	1 58.9	7 18.2
10	22 45.9	+ 1 3.3	21 44.7	+ 0 39.7	20 43.7	+ 0 16.0	7 12.4
15	23 29.1	— 0 51.2	22 26.7	— 1 12.8	21 24.5	— 1 34.6	7 6.1
20	24 12.0	2 55.5	23 8.3	3 14.7	22 4.9	3 34.3	6 59.2
25	24 54.4	5 11.4	23 49.4	5 27.8	22 44.7	5 44.8	6 51.8
30	+25 36.1	— 7 41.4	+24 29.7	— 7 54.6	+23 23.6	— 8 8.6	6 43.9
35	26 17.1	10 29.5	25 9.1	10 38.8	24 1.6	10 49.3	6 35.3
40	26 57.1	13 42.1	25 47.4	13 46.2	24 38.2	13 51.9	6 26.0
45	27 35.5	17 28.4	26 24.0	17 25.5	25 13.1	17 25.0	6 15.9
50	28 11.7	22 6.4	26 58.2	21 53.1	25 45.4	21 43.6	6 4.4
55	28 43.4	28 19.4	27 27.9	27 47.1	26 13.1	27 21.6	5 50.9
3 0	+29 1.0	—39 44.8	+27 44.8	—37 49.2	+26 28.9	—36 27.7	5 31.6
Limits.	+28 48	—47 40	+27 29	—47 27	+26 11	—47 14	...

ECLIPSES, 1922.

At ARMAGH, a Partial Eclipse is visible, Magnitude 0.10.

		d	h	m	
Begins	-	Mar.	28	1 26	} Greenwich Mean Time.
Greatest Phase	-	„	28	2 5	
Ends	-	„	28	2 44	
Angle from North Point of First Contact	-	-	-	-	182°.
Angle from Vertex of First Contact	-	-	-	-	172°.
Angle from North Point of Last Contact	-	-	-	-	131°.
Angle from Vertex of Last Contact	-	-	-	-	108°.

At DUBLIN, a Partial Eclipse is visible, Magnitude 0.12.

		d	h	m	
Begins	-	Mar.	28	1 22	} Greenwich Mean Time.
Greatest Phase	-	„	28	2 6	
Ends	-	„	28	2 49	
Angle from North Point of First Contact	-	-	-	-	185°.
Angle from Vertex of First Contact	-	-	-	-	175°.
Angle from North Point of Last Contact	-	-	-	-	128°.
Angle from Vertex of Last Contact	-	-	-	-	104°.

At GLASGOW, a Partial Eclipse is visible, Magnitude 0.08.

		d	h	m	
Begins	-	Mar.	28	1 32	} Greenwich Mean Time.
Greatest Phase	-	„	28	2 8	
Ends	-	„	28	2 42	
Angle from North Point of First Contact	-	-	-	-	180°.
Angle from Vertex of First Contact	-	-	-	-	168°.
Angle from North Point of Last Contact	-	-	-	-	133°.
Angle from Vertex of Last Contact	-	-	-	-	112°.

At EDINBURGH, a Partial Eclipse is visible, Magnitude 0.09.

		d	h	m	
Begins	-	Mar.	28	1 32	} Greenwich Mean Time.
Greatest Phase	-	„	28	2 9	
Ends	-	„	28	2 44	
Angle from North Point of First Contact	-	-	-	-	181°.
Angle from Vertex of First Contact	-	-	-	-	169°.
Angle from North Point of Last Contact	-	-	-	-	133°.
Angle from Vertex of Last Contact	-	-	-	-	110°.

At LIVERPOOL, a Partial Eclipse is visible, Magnitude 0.14.

		d	h	m	
Begins	-	Mar.	28	1 23	} Greenwich Mean Time.
Greatest Phase	-	„	28	2 10	
Ends	-	„	28	2 55	
Angle from North Point of First Contact	-	-	-	-	188°.
Angle from Vertex of First Contact	-	-	-	-	175°.
Angle from North Point of Last Contact	-	-	-	-	126°.
Angle from Vertex of Last Contact	-	-	-	-	100°.

At DURHAM, a Partial Eclipse is visible, Magnitude 0.12.

		d	h	m		
Begins - - - Mar.		28	1	28	}	
Greatest Phase - - ,,		28	2	11		Greenwich Mean Time.
Ends - - - ,,		28	2	53		
Angle from North Point of First Contact - - - - -					186°.	
Angle from Vertex of First Contact - - - - -					172°.	
Angle from North Point of Last Contact - - - - -					129°.	
Angle from Vertex of Last Contact - - - - -					103°.	

At OXFORD, a Partial Eclipse is visible, Magnitude 0.19.

		d	h	m		
Begins - - - Mar.		28	1	19	}	
Greatest Phase - - ,,		28	2	13		Greenwich Mean Time.
Ends - - - ,,		28	3	5		
Angle from North Point of First Contact - - - - -					192°.	
Angle from Vertex of First Contact - - - - -					179°.	
Angle from North Point of Last Contact - - - - -					121°.	
Angle from Vertex of Last Contact - - - - -					92°.	

At GREENWICH, a Partial Eclipse is visible, Magnitude 0.20.

		d	h	m		
Begins - - - Mar.		28	1	19	}	
Greatest Phase - - ,,		28	2	15		Greenwich Mean Time.
Ends - - - ,,		28	3	8		
Angle from North Point of First Contact - - - - -					194°.	
Angle from Vertex of First Contact - - - - -					179°.	
Angle from North Point of Last Contact - - - - -					120°.	
Angle from Vertex of Last Contact - - - - -					89°.	

At CAMBRIDGE, a Partial Eclipse is visible, Magnitude 0.18.

		d	h	m		
Begins - - - Mar.		28	1	22	}	
Greatest Phase - - ,,		28	2	15		Greenwich Mean Time.
Ends - - - ,,		28	3	5		
Angle from North Point of First Contact - - - - -					192°.	
Angle from Vertex of First Contact - - - - -					177°.	
Angle from North Point of Last Contact - - - - -					121°.	
Angle from Vertex of Last Contact - - - - -					92°.	

II.—*A Total Eclipse of the Sun, September 20, 1922, invisible at Greenwich.*

ELEMENTS OF THE ECLIPSE.

Greenwich Mean Time of \odot in Right Ascension, Sept. 20^d 16^h 47^m 17^s.9

Sun and Moon's Right Ascension	-	-	-	-	-	-	-	h	m	s
								11	50	30.63
Hourly Motions	-	-	-	-	-	-	-	8 ^s .98	and	145 ^s .21
Sun's Declination	-	-	-	-	-	-	-	-	+ °	1' 42".7
Hourly Motion	-	-	-	-	-	-	-	-	-	o 58.3
Moon's Declination	-	-	-	-	-	-	-	-	+ o	48 0.3
Hourly Motion	-	-	-	-	-	-	-	-	-	11 53.1
Sun's Equatorial Horizontal Parallax	-	-	-	-	-	-	-	-	-	8.8
Sun's True Semidiameter	-	-	-	-	-	-	-	-	-	15 56.0
Moon's Equatorial Horizontal Parallax	-	-	-	-	-	-	-	-	-	61 24.1
Moon's True Semidiameter	-	-	-	-	-	-	-	-	-	16 43.0

CIRCUMSTANCES OF THE ECLIPSE.

	Greenwich Mean Time.	Longitude from Greenwich.	Latitude.
Eclipse begins	Sept. 20 ^d 14 ^h 4 ^m 4.3	- 57° 6'	+ 9° 50'
Central Eclipse begins	" 14 59.9	- 43 17	+ 5 30
Central Eclipse at Local Apparent Noon	" 16 47.3	- 106 31	- 11 59
Central Eclipse ends	" 18 20.6	- 172 36	- 30 15
Eclipse ends	" 19 16.2	- 158 47	- 25 54

BESSELIAN ELEMENTS OF THE TOTAL ECLIPSE OF THE SUN, SEPTEMBER 20, 1922.

Greenwich Mean Time.	Co-ordinates of Centre of Shadow on Fundamental Plane.		Direction of Axis of Shadow.			Radius of Penumbra and Umbra on Fundamental Plane.	
	<i>x</i>	<i>y</i>	Log. sin <i>d</i> .	Log. cos <i>d</i> .	μ	<i>l</i> ₁	<i>l</i> ₂
h m							
14 0	-1.55007	+0.27295	+8.27247	+9.99992	211 38.4	+0.53295	-0.01291
10	1.45744	0.24326	8.27141	9.99992	214 8.5	0.53296	0.01290
20	1.36480	0.21358	8.27034	9.99992	216 38.5	0.53297	0.01289
30	1.27216	0.18389	8.26927	9.99992	219 8.6	0.53298	0.01288
40	1.17952	0.15420	8.26820	9.99993	221 38.6	0.53299	0.01287
50	1.08687	0.12451	8.26712	9.99993	224 8.7	0.53299	0.01286
15 0	-0.99422	+0.09481	+8.26604	+9.99993	226 38.7	+0.53300	-0.01285
10	0.90157	0.06512	8.26496	9.99993	229 8.8	0.53301	0.01284
20	0.80892	0.03543	8.26388	9.99993	231 38.8	0.53302	0.01284
30	0.71626	+0.00574	8.26279	9.99993	234 8.9	0.53302	0.01283
40	0.62360	-0.02396	8.26170	9.99993	236 38.9	0.53303	0.01283
50	0.53094	0.05365	8.26061	9.99993	239 9.0	0.53303	0.01282
16 0	-0.43828	-0.08334	+8.25952	+9.99993	241 39.0	+0.53303	-0.01282
10	0.34562	0.11304	8.25842	9.99993	244 9.1	0.53304	0.01282
20	0.25296	0.14273	8.25732	9.99993	246 39.1	0.53304	0.01282
30	0.16029	0.17242	8.25622	9.99993	249 9.2	0.53304	0.01281
40	-0.06763	0.20211	8.25511	9.99993	251 39.2	0.53304	0.01281
50	+0.02503	0.23181	8.25400	9.99993	254 9.3	0.53304	0.01281
17 0	+0.11770	-0.26150	+8.25289	+9.99993	256 39.3	+0.53304	-0.01281
10	0.21036	0.29119	8.25178	9.99993	259 9.4	0.53304	0.01282
20	0.30302	0.32088	8.25066	9.99993	261 39.4	0.53303	0.01282
30	0.39568	0.35057	8.24954	9.99993	264 9.5	0.53303	0.01282
40	0.48834	0.38026	8.24842	9.99993	266 39.5	0.53303	0.01283
50	0.58100	0.40995	8.24729	9.99993	269 9.6	0.53302	0.01283
18 0	+0.67365	-0.43964	+8.24616	+9.99993	271 39.6	+0.53302	-0.01284
10	0.76631	0.46932	8.24503	9.99993	274 9.7	0.53301	0.01284
20	0.85896	0.49901	8.24390	9.99993	276 39.7	0.53300	0.01285
30	0.95161	0.52869	8.24276	9.99993	279 9.8	0.53300	0.01286
40	1.04425	0.55838	8.24162	9.99993	281 39.8	0.53299	0.01286
50	1.13690	0.58806	8.24048	9.99993	284 9.9	0.53298	0.01287
19 0	+1.22954	-0.61774	+8.23933	+9.99993	286 39.9	+0.53297	-0.01288
10	1.32218	0.64742	8.23818	9.99994	289 10.0	0.53296	0.01289
20	+1.41481	-0.67709	+8.23702	+9.99994	291 40.0	+0.53295	-0.01290

Greenwich Mean Time.	Log. <i>x'</i> for 1 Minute.	Log. <i>y'</i> for 1 Minute.	Log. μ' for 1 Minute.	Log. Tangents of Angles of Cones.	
				Penumbra.	Umbra.
h m					
14 0	+ 7.9668	- 7.4726	+ 1.1762	+ 7.66812	+ 7.66595
15 0	7.9669	7.4726	1.1762	7.66813	7.66596
16 0	7.9669	7.4727	1.1762	7.66813	7.66596
17 0	7.9669	7.4726	1.1762	7.66814	7.66597
18 0	7.9669	7.4726	1.1762	7.66814	7.66597
19 0	7.9668	7.4725	1.1762	7.66815	7.66598
20 0	+ 7.9667	- 7.4723	+ 1.1762	+ 7.66815	+ 7.66598

PATH OF TOTAL PHASE DURING THE ECLIPSE OF THE SUN,
SEPTEMBER 20, 1922.

Greenwich Mean Time.	Northern Limit.		Central Line.		Southern Limit.		Duration of Total Phase on Central Line.
	Latitude.	Longitude from Greenwich.	Latitude.	Longitude from Greenwich.	Latitude.	Longitude from Greenwich.	
Limits.	+ 6 15'	- 43 20'	+ 5 30'	- 43 17'	+ 4 44'	- 43 14'	m s
15 ^h 5 ^m	5 44.2	60 43.0	4 56.7	60 2.3	4 9.6	59 18.3	3 23.0
10	5 17.4	66 44.9	4 12.8	66 9.9	3 24.5	65 32.8	3 43.8
15	4 16.4	71 12.0	3 26.9	70 38.8	2 37.7	70 4.0	4 0.7
20	3 30.0	74 49.2	2 39.9	74 16.7	1 50.1	73 42.9	4 15.4
25	2 42.9	77 54.6	1 52.3	77 22.4	1 2.0	76 49.1	4 28.7
30	+ 1 55.0	- 80 37.9	+ 1 4.1	- 80 5.7	+ 0 13.4	- 79 32.6	4 40.7
35	1 6.7	83 4.6	+ 0 15.5	82 32.4	- 0 35.5	81 59.3	4 51.7
40	+ 0 18.0	85 18.6	- 0 33.5	84 46.2	1 24.8	84 13.1	5 1.7
45	- 0 31.2	87 22.4	1 22.8	86 49.8	2 14.3	86 16.6	5 10.9
50	1 20.7	89 18.0	2 12.4	88 45.3	3 4.0	88 12.0	5 19.3
55	2 10.3	91 6.9	3 2.2	90 34.1	3 54.0	90 0.8	5 26.8
16 0	- 3 0.3	- 92 50.3	- 3 52.3	- 92 17.5	- 4 44.2	- 91 44.2	5 33.5
5	3 50.5	94 29.3	4 42.6	93 56.5	5 34.6	93 23.2	5 39.4
10	4 41.0	96 4.7	5 33.2	95 31.8	6 25.3	94 58.6	5 44.5
15	5 31.9	97 37.1	6 24.1	97 4.3	7 16.2	96 31.2	5 48.9
20	6 22.9	99 7.2	7 15.2	98 34.5	8 7.4	98 1.5	5 52.4
25	7 14.1	100 35.6	8 6.5	100 3.1	8 58.8	99 30.3	5 55.1
30	- 8 5.7	- 102 2.9	- 8 58.1	- 101 30.5	- 9 50.5	- 100 58.0	5 57.1
35	8 57.5	103 29.4	9 50.0	102 57.3	10 42.6	102 25.1	5 58.3
40	9 49.6	104 55.7	10 42.2	104 24.0	11 34.9	103 52.2	5 58.7
45	10 42.0	106 22.3	11 34.7	105 51.0	12 27.5	105 19.6	5 58.3
50	11 34.6	107 49.6	12 27.5	107 18.8	13 20.5	106 48.0	5 57.1
55	12 27.7	109 18.3	13 20.7	108 48.0	14 13.8	108 17.7	5 55.1
17 0	- 13 21.0	- 110 48.7	- 14 14.2	- 110 19.0	- 15 7.5	- 109 49.4	5 52.3
5	14 14.8	112 21.5	15 8.1	111 52.5	16 1.5	111 23.6	5 48.7
10	15 8.9	113 57.1	16 2.3	113 29.0	16 55.9	113 1.1	5 44.4
15	16 3.5	115 36.5	16 57.0	115 9.3	17 50.7	114 42.4	5 39.3
20	16 58.4	117 20.2	17 52.1	116 54.1	18 46.1	116 28.4	5 33.4
25	17 53.8	119 9.2	18 47.7	118 44.4	19 41.9	118 20.0	5 26.7
30	- 18 49.7	- 121 4.8	- 19 43.8	- 120 41.3	- 20 38.2	- 120 18.4	5 19.3
35	19 46.2	123 8.0	20 40.5	122 46.2	21 35.1	122 25.0	5 11.1
40	20 43.4	125 20.8	21 37.8	125 0.9	22 32.5	124 41.6	5 2.0
45	21 41.3	127 45.3	22 35.8	127 27.5	23 30.6	127 10.5	4 52.1
50	22 40.1	130 24.5	23 34.5	130 9.2	24 29.3	129 54.9	4 41.2
55	23 39.7	133 22.6	24 34.1	133 10.4	25 29.0	132 59.3	4 29.3
18 0	- 24 40.4	- 136 45.6	- 25 34.7	- 136 37.1	- 26 29.5	- 136 30.0	4 16.2
5	25 42.5	140 44.2	26 36.6	140 40.4	27 31.1	140 38.7	4 1.7
10	26 46.4	145 37.5	27 40.1	145 40.7	28 34.2	145 46.5	3 45.2
15	27 53.3	152 12.3	28 46.3	152 27.6	29 39.6	152 47.3	3 25.1
20	29 8.2	164 21.0	30 0.0	165 38.8	30 52.1	167 32.4	2 52.8
Limits.	- 29 29	- 172 33	- 30 15	- 172 36	- 31 0	- 172 39	. . . .

At MAURITIUS, a Partial Eclipse is visible, Magnitude 0.28.

		d	h	m		
Begins	- - - Sept.	20	14	44	}	
Greatest Phase	- - - „	20	15	27		Greenwich Mean Time.
Ends	- - - „	20	16	14		
Angle from North Point of First Contact	- - - - -				336°.	
Angle from Vertex of First Contact	- - - - -				86°.	
Angle from North Point of Last Contact	- - - - -				65°.	
Angle from Vertex of Last Contact	- - - - -				179°.	

At BOMBAY, a Partial Eclipse is visible, Magnitude 0.51.

		d	h	m		
Begins	- - - Sept.	20	14	13	}	
Greatest Phase	- - - „	20	15	10		Greenwich Mean Time.
Ends	- - - „	20	16	12		
Angle from North Point of First Contact	- - - - -				261°.	
Angle from Vertex of First Contact	- - - - -				332°.	
Angle from North Point of Last Contact	- - - - -				144°.	
Angle from Vertex of Last Contact	- - - - -				208°.	

At MADRAS, a Partial Eclipse is visible, Magnitude 0.65.

		d	h	m		
Begins	- - - Sept.	20	14	15	}	
Greatest Phase	- - - „	20	15	20		Greenwich Mean Time.
Ends	- - - „	20	16	34		
Angle from North Point of First Contact	- - - - -				271°.	
Angle from Vertex of First Contact	- - - - -				347°.	
Angle from North Point of Last Contact	- - - - -				138°.	
Angle from Vertex of Last Contact	- - - - -				204°.	

At PERNH, a Partial Eclipse is visible, Magnitude 0.61.

		d	h	m		
Begins	- - - Sept.	20	16	14	}	
Greatest Phase	- - - „	20	17	29		Greenwich Mean Time.
Ends	- - - „	20	18	40		
Angle from North Point of First Contact	- - - - -				322°.	
Angle from Vertex of First Contact	- - - - -				144°.	
Angle from North Point of Last Contact	- - - - -				92°.	
Angle from Vertex of Last Contact	- - - - -				316°.	

MEAN PLACES OF OCCULTATION STARS, 1922. 471

Name of Star.	Magni- tude.	Right Ascension for 1922.0.	Annual Proper Motion.	Declination for 1922.0.	Annual Proper Motion.
		h m s	s		
80 B. Piscium . . .	6.3	0 1 3.891	+0.0037	- 0 56' 9".79	-0.052
98 B. Piscium . . .	6.3	0 13 47.248	+0.0051	+ 1 15 18.67	+0.012
44 Piscium . . .	6.0	0 21 24.208	-0.0014	1 30 27.87	-0.023
147 B. Piscium . . .	5.9	0 44 17.277	+0.0483	4 52 47.96	-1.132
155 B. Piscium . . .	6.5	0 47 17.231	+0.0011	2 57 42.40	-0.094
171 B. Piscium . . .	6.3	0 55 46.937	+0.0008	+ 6 3 45.98	-0.005
73 Piscium . . .	6.2	1 0 50.076	+0.0022	5 14 18.89	-0.008
77 Piscium . . .	6.4	1 1 46.964	+0.0011	4 29 36.43	-0.114
e Piscium . . .	5.6	1 4 20.976	-0.0180	5 14 15.40	-0.171
ζ Piscium . . .	5.6	1 9 39.259	+0.0096	7 9 47.75	-0.052
88 Piscium . . .	6.2	1 10 38.840	-0.0011	+ 6 34 58.51	-0.026
263 B. Piscium . . .	6.4	1 24 17.051	+0.0027	7 33 27.64	+0.008
μ Piscium . . .	5.0	1 26 5.788	+0.0199	5 44 33.14	-0.027
o Piscium . . .	4.5	1 41 16.344	+0.0049	8 45 56.30	+0.045
54 Ceti . . .	6.0	1 46 43.473	-0.0048	10 39 27.54	-0.027
ξ ¹ Ceti . . .	4.5	2 8 51.797	-0.0012	+ 8 28 52.84	-0.016
ξ Arietis . . .	5.5	2 20 37.980	+0.0006	10 15 28.67	-0.022
25 Arietis . . .	6.5	2 23 14.320	-0.0195	9 51 10.33	-0.200
31 Arietis . . .	5.7	2 32 22.511	+0.0189	12 6 36.51	-0.085
85 Ceti . . .	6.3	2 38 16.749	-0.0026	10 24 36.20	-0.012
38 Arietis . . .	5.2	2 40 42.382	+0.0081	+12 7 6.23	-0.079
147 B. Arietis . . .	5.8	3 2 6.654	+0.0016	12 53 13.93	-0.072
30 B. Tauri . . .	6.4	3 33 24.963	+0.0015	15 10 32.36	-0.003
33 B. Tauri . . .	6.3	3 35 0.871	+0.0028	16 17 2.70	-0.026
148 B. Tauri . . .	5.9	3 48 42.198	+0.0085	17 5 44.97	-0.036
162 B. Tauri . . .	6.3	3 56 9.353	-0.0003	+17 4 37.96	-0.061
179 B. Tauri . . .	5.9	4 3 16.990	+0.0104	14 57 17.67	-0.044
180 B. Tauri . . .	6.1	4 3 31.370	+0.0032	17 7 56.52	-0.022
193 B. Tauri . . .	6.2	4 8 2.624	+0.0005	17 4 40.51	-0.014
48 Tauri . . .	6.3	4 11 20.469	+0.0085	15 12 23.89	-0.024
γ Tauri . . .	3.9	4 15 21.138	+0.0083	+15 26 25.43	-0.026
δ Tauri . . .	3.9	4 18 26.042	+0.0076	17 21 38.59	-0.030
63 Tauri . . .	5.7	4 18 56.381	+0.0074	16 35 46.83	-0.027
64 Tauri . . .	4.9	4 19 35.852	+0.0084	17 15 52.03	-0.040
68 Tauri . . .	4.3	4 20 58.441	+0.0078	17 45 2.23	-0.031
70 Tauri . . .	6.4	4 21 10.003	+0.0073	+15 45 49.89	-0.026
71 Tauri . . .	4.6	4 21 53.928	+0.0075	15 26 32.66	-0.020
75 Tauri . . .	5.2	4 23 58.694	+0.0002	16 11 10.88	+0.020
θ ¹ Tauri . . .	4.2	4 24 6.960	+0.0071	15 47 24.87	-0.023
θ ² Tauri . . .	3.6	4 24 12.422	+0.0078	15 41 56.81	-0.020
264 B. Tauri . . .	4.8	4 26 5.667	+0.0084	+16 1 31.66	-0.027
85 Tauri . . .	6.0	4 27 24.311	+0.0070	15 41 7.74	-0.020
119 H ¹ Tauri . . .	6.2	4 29 1.970	+0.0025	17 51 11.26	-0.031
275 B. Tauri . . .	6.5	4 29 10.164	+0.0010	16 9 38.44	+0.019
α Tauri (Aldebaran)	1.1	4 31 26.560	+0.0047	16 21 13.19	-0.189
89 Tauri . . .	5.8	4 33 41.450	+0.0072	+15 52 41.41	-0.023
302 B. Tauri . . .	6.1	4 41 43.447	+0.0053	18 35 41.45	-0.067
i Tauri . . .	5.1	4 46 48.550	+0.0059	18 42 29.97	-0.035
318 B. Tauri . . .	5.7	4 52 51.913	-0.0008	17 1 57.05	-0.011
m Tauri . . .	5.0	5 2 50.303	+0.0381	18 32 30.03	+0.025
111 Tauri . . .	5.1	5 19 52.241	+0.0168	+17 18 44.05	-0.010
115 Tauri . . .	5.3	5 22 37.068	+0.0016	17 53 47.49	-0.021
117 Tauri . . .	6.0	5 23 29.908	+0.0017	17 10 30.11	-0.078
119 Tauri . . .	4.9	5 27 38.356	+0.0007	18 32 14.95	-0.004
167 H ¹ Tauri . . .	5.5	5 27 42.938	+0.0025	+17 0 4.45	-0.040

472 MEAN PLACES OF OCCULTATION STARS, 1922.

Name of Star.		Magni- tude.	Right Ascension for 1922.0.	Annual Proper Motion.	Declination for 1922.0.	Annual Proper Motion.
			h m s	s		
120	Tauri . . .	5.6	5 28 57.343	+0.0011	+18° 29' 9".22	+0.001
122	Tauri . . .	5.5	5 32 32.081	+0.0034	16 59 35.71	-0.037
130	Tauri . . .	5.6	5 42 53.322	+0.0004	17 42 3.93	-0.009
	B.D. +19° 11' 10"	6.0	5 47 40.098	-0.0008	19 50 55.68	-0.031
57	Orionis . . .	5.8	5 50 19.604	+0.0003	19 44 8.16	-0.013
64	Orionis . . .	5.1	5 58 50.355	+0.0014	+19 41 35.06	-0.021
19	B. Geminorum	6.2	6 8 58.356	+0.0027	18 42 6.67	-0.042
124	H ¹ . Orionis	5.7	6 9 55.280	+0.0010	17 55 45.87	-0.045
71	Orionis . . .	5.1	6 10 15.537	-0.0062	19 11 2.83	-0.194
	B.D. +17° 1' 19"	6.5	6 11 51.900	+0.0011	17 12 30.06	-0.031
287	B. Orionis . . .	6.2	6 14 29.633	-0.0031	+17 21 24.74	-0.037
292	B. Orionis . . .	6.5	6 16 52.763	+0.0006	17 48 4.34	..
	B.D. +17° 1' 27.5"	6.2	6 26 38.803	-0.0008	16 59 40.74	-0.028
26	Geminorum	5.2	6 37 51.883	+0.0010	17 43 21.84	-0.092
74	B. Geminorum	6.2	6 42 50.022	+0.0002	18 16 44.80	-0.056
110	B. Geminorum	6.2	6 57 53.338	..	+17 52 2.29	..
41	H ¹ . Geminorum	6.0	6 58 3.242	-0.0063	16 47 16.31	+0.006
51	Geminorum	5.3	7 8 53.656	+0.0019	16 17 33.15	-0.042
λ	Geminorum	3.6	7 13 36.721	-0.0029	16 40 56.00	-0.045
162	B. Geminorum	5.7	7 27 18.615	+0.0018	17 15 12.64	-0.065
68	Geminorum	5.2	7 29 9.503	-0.0007	+15 59 43.33	-0.024
f	Geminorum	5.3	7 34 58.404	-0.0002	17 51 12.37	+0.004
1	Cancri . . .	6.0	7 52 33.839	-0.0021	15 59 58.98	-0.044
2	B. Cancri . . .	6.0	7 54 4.618	+0.0003	16 43 48.04	+0.004
3	Cancri . . .	5.7	7 56 19.285	-0.0001	17 31 24.40	-0.010
5	Cancri . . .	5.9	7 57 3.680	+0.0004	+16 40 17.48	0.000
30	B. Cancri . . .	6.1	8 6 36.091	-0.0007	14 51 40.04	-0.013
29	Cancri . . .	5.9	8 24 16.277	-0.0017	14 28 11.62	-0.022
84	B. Cancri . . .	6.4	8 29 25.922	-0.0023	13 31 28.35	-0.095
90	B. Cancri . . .	6.3	8 31 45.409	+0.0006	15 35 3.36	-0.027
A ¹	Cancri . . .	5.5	8 38 54.592	-0.0002	+12 57 41.59	-0.002
A ²	Cancri . . .	5.7	8 42 39.592	-0.0049	12 23 49.39	-0.057
60	Cancri . . .	5.7	8 51 40.160	-0.0009	11 55 29.37	-0.019
α	Cancri . . .	4.3	8 54 13.414	+0.0024	12 9 37.70	-0.042
209	B. Cancri . . .	6.5	9 5 32.283	-0.0008	11 52 58.19	-0.079
222	B. Cancri . . .	6.3	9 13 38.027	+0.0046	+11 49 42.77	-0.007
ξ	Leonis . . .	5.1	9 27 44.629	-0.0063	11 38 45.60	-0.084
h	Leonis . . .	5.2	9 27 46.882	+0.0001	10 3 37.83	-0.013
o	Leonis . . .	3.8	9 36 59.393	-0.0096	10 14 52.78	-0.033
18	Leonis . . .	5.8	9 42 11.374	-0.0006	12 10 11.72	+0.008
19	Leonis . . .	6.4	9 43 14.395	-0.0049	+11 55 46.84	+0.008
R	Leonis (var.)	4.6	9 43 21.903	-0.0005	11 47 29.05	-0.040
83	B. Leonis . . .	5.9	9 52 17.922	-0.0074	9 18 12.47	+0.017
89	B. Leonis . . .	6.2	9 53 59.829	+0.0010	8 41 12.88	-0.029
π	Leonis . . .	4.9	9 56 5.579	-0.0029	8 25 8.66	-0.027
A	Leonis . . .	4.6	10 3 46.029	-0.0057	+10 22 49.53	-0.067
43	Leonis . . .	6.3	10 18 55.635	-0.0017	6 56 21.15	-0.101
155	B. Leonis . . .	6.5	10 19 11.594	-0.0167	6 5 25.41	-0.071
44	Leonis . . .	5.9	10 21 8.744	+0.0018	9 10 54.63	-0.041
48	Leonis . . .	5.2	10 30 43.958	-0.0072	7 21 20.34	+0.047
35	Sextantis . . .	6.1	10 39 18.096	+0.0018	+ 5 9 27.07	-0.019
37	Sextantis . . .	6.3	10 42 2.074	-0.0010	6 47 4.57	-0.040
56	Leonis . . .	6.1	10 51 58.565	-0.0013	6 36 7.36	-0.008
d	Leonis . . .	5.0	10 56 31.976	+0.0004	4 2 11.58	-0.022
c	Leonis . . .	5.1	10 56 42.289	-0.0035	+ 6 31 15.20	-0.025

MEAN PLACES OF OCCULTATION STARS, 1922. 473

Name of Star.		Magni- tude.	Right Ascension, for 1922.0.	Annual Proper Motion.	Declination for 1922.0.	Annual Proper Motion.
			h m s	s		
<i>p</i> ⁴	Leonis . . .	5.7	11 2 55.552	-0.0253	+ 2 22 45.74	-0.080
75	Leonis . . .	5.4	11 13 16.572	+0.0027	2 26 22.99	-0.145
76	Leonis . . .	6.0	11 14 54.774	-0.0038	2 4 42.09	-0.053
79	Leonis . . .	5.5	11 20 2.188	-0.0014	1 50 10.19	+0.003
80	Leonis . . .	6.4	11 21 49.608	-0.0051	4 17 22.82	-0.050
83	Leonis . . .	6.3	11 22 48.408	-0.0492	+ 3 26 18.78	+0.187
<i>τ</i>	Leonis . . .	5.2	11 23 55.584	+0.0008	3 17 9.61	-0.016
89	Leonis . . .	5.7	11 30 22.479	-0.0121	3 29 36.81	-0.104
9	B. Virginis . . .	6.2	11 45 2.613	-0.0148	0 6 53.57	+0.007
<i>β</i>	Virginis . . .	3.8	11 46 37.936	+0.0494	2 12 15.74	-0.275
27	B. Virginis . . .	6.5	11 55 4.024	-0.0033	+ 0 57 52.19	+0.034
31	B. Virginis . . .	6.4	11 57 2.181	-0.0006	- 1 19 56.06	-0.075
13	Virginis . . .	5.9	12 14 40.340	+0.0019	0 21 13.37	-0.021
<i>η</i>	Virginis . . .	4.0	12 15 54.915	-0.0036	0 14 0.43	-0.027
162	B. Virginis . . .	6.2	12 23 51.382	-0.0062	4 11 1.72	-0.003
200	B. Virginis . . .	6.3	12 27 38.040	-0.0022	- 4 37 20.58	+0.035
319	B. Virginis . . .	6.3	12 43 31.447	-0.0003	5 52 30.37	-0.053
38	Virginis . . .	6.1	12 49 11.462	-0.0173	3 7 45.89	-0.004
91	G. Virginis . . .	6.5	12 49 36.574	-0.0025	3 48 0.09	-0.070
<i>k</i>	Virginis . . .	5.7	12 55 38.352	-0.0027	3 23 29.58	-0.004
48	Virginis . . .	6.5	12 59 53.173	-0.0033	- 3 14 37.18	-0.028
<i>θ</i>	Virginis . . .	4.4	13 5 54.553	-0.0029	5 7 22.59	-0.040
72	Virginis . . .	6.1	13 26 21.414	+0.0023	6 4 4.96	+0.014
<i>l</i>	Virginis . . .	4.8	13 27 54.457	-0.0069	5 51 12.50	-0.045
<i>m</i>	Virginis . . .	5.2	13 37 30.929	-0.0073	8 18 35.71	+0.032
575	B. Virginis . . .	6.2	13 43 5.981	+0.0011	- 9 19 8.52	-0.044
598	B. Virginis . . .	6.1	13 50 52.564	-0.0121	7 40 32.30	-0.049
623	B. Virginis . . .	6.5	14 0 13.529	-0.0026	8 52 59.85	+0.006
95	Virginis . . .	5.4	14 2 35.138	-0.0098	8 56 30.34	+0.011
96	Virginis . . .	6.5	14 4 51.089	-0.0005	9 57 56.36	+0.016
<i>κ</i>	Virginis . . .	4.3	14 8 43.942	+0.0006	- 9 54 40.78	+0.132
2	Libræ . . .	6.3	14 19 13.599	-0.0014	11 21 30.56	-0.066
4	G. Libræ . . .	6.5	14 20 29.177	-0.0046	11 18 58.02	-0.028
6	B. Libræ . . .	6.2	14 32 50.669	-0.0591	11 58 27.07	+0.384
22	B. Libræ . . .	6.4	14 43 39.354	+0.0013	12 30 44.03	-0.083
<i>μ</i>	Libræ . . .	5.4	14 45 2.304	-0.0053	-13 49 29.52	-0.028
13	Libræ . . .	5.7	14 50 8.573	-0.0048	11 34 51.31	-0.020
<i>ο</i>	Libræ . . .	6.2	15 16 39.573	+0.0019	15 16 4.44	+0.024
34	Libræ . . .	6.0	15 26 16.169	+0.0012	16 20 33.80	-0.007
<i>ζ</i>	Libræ . . .	5.6	15 28 30.617	-0.0012	16 35 22.33	-0.033
<i>γ</i>	Libræ . . .	4.0	15 31 9.621	+0.0047	-14 31 48.93	+0.007
190	B. Libræ . . .	6.5	15 39 2.253	-0.0009	14 47 38.82	-0.115
<i>η</i>	Libræ . . .	5.5	15 39 40.925	-0.0028	15 25 31.51	-0.079
<i>θ</i>	Libræ . . .	4.4	15 49 22.866	+0.0066	16 30 5.49	+0.119
203	B. Libræ . . .	6.2	15 52 9.877	+0.0047	14 36 6.49	..
49	Libræ . . .	5.4	15 55 56.845	-0.0434	-16 18 16.18	-0.391
<i>χ</i>	Ophiuchi . . .	4.9	16 22 30.037	-0.0006	18 16 49.16	-0.022
<i>φ</i>	Ophiuchi . . .	4.4	16 26 40.302	-0.0039	16 26 36.94	-0.029
24	Scorpii . . .	5.0	16 37 3.554	-0.0017	17 35 32.37	-0.004
78	B. Ophiuchi . . .	6.5	16 51 31.620	+0.0062	16 40 59.51	+0.024
90	B. Ophiuchi . . .	6.5	16 55 11.554	-0.0047	-18 7 41.88	-0.156
29	Ophiuchi . . .	6.4	16 57 17.364	-0.0024	18 46 18.87	-0.020
125	B. Ophiuchi . . .	6.2	17 3 42.949	-0.0007	17 30 24.95	-0.049
164	B. Ophiuchi . . .	6.0	17 15 20.850	-0.0003	17 40 32.66	+0.001
192	B. Ophiuchi . . .	6.3	17 20 2.992	+0.0016	-18 22 27.21	+0.009

474 MEAN PLACES OF OCCULTATION STARS, 1922.

Name of Star.	Magni- tude.	Right Ascension for 1922.0.	Annual Proper Motion.	Declination for 1922.0.	Annual Proper Motion.
		h m s	s		
305 B. Ophiuchi . . .	6.3	17 51 19.723	+0.0019	-18 47 21.74	-0.003
6 Sagittarii . . .	6.5	17 56 51.188	+0.0005	17 9 17.77	-0.004
32 G. Sagittarii . . .	5.7	18 3 17.227	-0.0003	17 9 59.54	..
64 B. Sagittarii . . .	6.1	18 10 55.778	..	18 41 11.62	..
6 B. Scuti . . .	5.9	18 12 39.338	+0.0007	17 24 5.68	+0.013
52 G. Sagittarii . . .	6.4	18 12 54.120	+0.0004	-18 29 33.63	-0.036
17 H ¹ . Sagittarii . . .	6.4	18 14 8.381	..	18 39 2.55	..
Y Sagittarii (<i>var.</i>) . . .	5.4	18 16 47.658	..	18 53 44.99	-0.001
85 B. Sagittarii . . .	6.0	18 23 23.397	-0.0006	17 50 55.45	+0.006
95 B. Sagittarii . . .	5.7	18 25 36.869	+0.0041	18 46 45.06	-0.072
100 B. Sagittarii . . .	5.0	18 26 52.057	-0.0012	-18 27 26.34	-0.026
155 B. Sagittarii . . .	5.5	18 51 1.378	-0.0033	16 28 21.57	-0.180
187 B. Sagittarii . . .	6.4	19 2 34.616	+0.0036	18 51 34.65	-0.056
ϩ Sagittarii . . .	4.0	19 17 9.000	-0.0020	17 59 42.99	+0.015
v Sagittarii . . .	4.4	19 17 15.695	+0.0002	16 6 9.52	-0.009
45 Sagittarii . . .	6.0	19 17 17.950	+0.0064	-18 27 14.04	-0.082
54 Sagittarii . . .	5.4	19 36 15.358	+0.0046	16 28 23.74	-0.047
e Sagittarii . . .	5.2	19 38 3.514	+0.0040	16 18 28.62	-0.015
283 B. Sagittarii . . .	5.5	19 39 6.743	+0.0118	15 39 6.69	-0.162
g Sagittarii . . .	5.1	19 53 31.689	+0.0004	15 41 57.34	-0.081
16 B. Capricorni . . .	6.2	20 16 23.730	+0.0025	-15 1 54.19	+0.005
β Capricorni . . .	3.2	20 16 37.864	+0.0030	15 1 43.24	+0.007
31 B. Capricorni . . .	6.4	20 24 19.984	+0.0013	16 0 1.57	+0.019
27 G. Capricorni . . .	6.2	20 26 42.104	-0.0058	15 19 5.99	-0.092
45 B. Capricorni . . .	6.1	20 29 51.226	+0.0035	13 59 25.28	+0.060
τ Capricorni . . .	5.2	20 34 54.789	+0.0006	-15 13 45.26	-0.015
84 B. Capricorni . . .	6.0	20 46 24.012	+0.0106	12 50 3.11	-0.034
95 B. Capricorni . . .	5.9	20 54 22.926	..	14 47 6.25	..
ν Aquarii . . .	4.5	21 5 20.794	+0.0057	11 41 17.59	-0.006
51 G. Aquarii . . .	6.5	21 10 3.554	-0.0010	10 55 43.52	-0.051
53 B. Aquarii . . .	6.5	21 11 43.373	+0.0004	-13 31 34.66	-0.039
18 Aquarii . . .	5.5	21 19 55.841	+0.0054	13 12 49.25	+0.007
19 Aquarii . . .	5.6	21 21 1.655	+0.0012	10 4 52.90	-0.164
72 B. Aquarii . . .	6.5	21 24 0.344	-0.0045	11 54 24.15	+0.008
137 B. Capricorni . . .	6.2	21 35 16.640	+0.0001	10 55 42.03	-0.010
c ¹ Capricorni . . .	5.3	21 40 50.816	+0.0004	- 9 26 28.32	+0.008
c ² Capricorni . . .	6.3	21 42 6.683	+0.0008	9 38 11.72	+0.001
λ Capricorni . . .	5.5	21 42 20.280	+0.0015	11 43 34.68	-0.004
96 B. Aquarii . . .	6.5	21 49 25.885	-0.0001	10 40 46.08	+0.006
θ Aquarii . . .	4.3	22 12 43.129	+0.0074	8 10 19.80	-0.018
150 B. Aquarii . . .	6.0	22 12 45.629	-0.0034	- 9 25 45.06	-0.005
ϩ Aquarii . . .	5.3	22 16 5.758	+0.0008	8 12 48.54	-0.008
170 B. Aquarii . . .	6.0	22 19 26.841	+0.0012	7 35 20.68	+0.034
186 B. Aquarii . . .	6.1	22 27 13.016	+0.0129	6 57 13.92	-0.129
167 G. Aquarii . . .	6.3	22 34 16.495	+0.0010	8 18 11.00	+0.012
67 Aquarii . . .	6.4	22 39 9.951	+0.0015	- 7 22 17.91	-0.007
252 B. Aquarii . . .	5.8	22 51 8.188	-0.0003	5 24 12.59	+0.009
197 G. Aquarii . . .	6.3	22 53 14.912	-0.0024	5 13 38.06	+0.006
263 B. Aquarii . . .	6.1	22 57 29.551	+0.0007	5 7 51.69	+0.002
293 B. Aquarii . . .	5.5	23 11 33.196	-0.0011	3 55 18.19	+0.003
316 B. Aquarii . . .	6.5	23 16 13.235	+0.0191	- 4 20 38.96	-0.118
13 Piscium . . .	6.4	23 27 57.418	+0.0003	1 31 0.19	+0.023
14 Piscium . . .	5.9	23 30 8.401	+0.0073	- 1 40 42.23	-0.005
21 Piscium . . .	5.6	23 45 27.851	+0.0002	+ 0 38 34.56	-0.033
60 B. Piscium . . .	6.0	23 50 47.078	-0.0023	- 0 19 28.38	-0.013

ELEMENTS OF OCCULTATIONS, 1922. 475

JANUARY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
19 Aquarii	5.6	-0.84	+ 3.8	-10 4.8	1 4 43.5	+ 2 4.7	-1.2614	0.5301	+0.1414	-55	-90
72 B. Aquarii	6.5	0.84	3.2	11 54.3	6 15.1	+ 3 33.5	+0.9771	0.5296	0.1427	+78	+23
137 B. Capricorni	6.2	0.79	3.0	10 55.6	12 3.4	+ 9 11.5	+0.7356	0.5276	0.1473	+79	+7
c ¹ Capricorni	5.3	0.76	3.1	9 26.4	14 56.4	+11 59.5	-0.4850	0.5267	0.1494	+5	-66
c ² Capricorni	6.3	0.75	3.0	9 38.1	15 35.8	-11 22.3	-0.1703	0.5265	0.1499	+22	-44
θ Aquarii	4.3	-0.61	+ 2.1	- 8 10.3	2 7 36.0	+ 4 9.9	+0.6896	0.5222	+0.1600	+81	+4
ρ Aquarii	5.3	0.60	2.0	8 12.8	9 22.8	+ 5 53.6	+1.0211	0.5218	0.1610	+82	+26
170 B. Aquarii	6.0	0.58	2.0	7 35.3	11 8.9	+ 7 36.7	+0.6138	0.5214	0.1619	+74	0
186 B. Aquarii	6.1	0.54	1.8	6 57.2	15 15.4	+11 36.1	+0.5783	0.5206	0.1639	+72	-2
252 B. Aquarii	5.8	0.40	1.3	5 24.2	3 357.9	- 0 3.2	+0.9748	0.5188	0.1689	+85	+22
197 G. Aquarii	6.3	-0.39	+ 1.3	- 5 13.6	5 5.5	+ 1 2.4	+0.9696	0.5186	+0.1693	+85	+22
263 B. Aquarii	6.1	0.37	1.1	5 7.8	7 21.2	+ 3 14.2	+1.2466	0.5184	0.1700	+85	+47
293 B. Aquarii	5.5	0.28	0.9	3 55.3	14 51.5	+10 31.7	+1.1890	0.5180	0.1719	+86	+40
13 Piscium	6.4	0.17	1.0	1 31.0	23 37.0	- 4 57.8	+0.0394	0.5179	0.1735	+36	-32
14 Piscium	5.9	0.16	0.8	- 1 40.7	4 046.9	- 3 49.9	+0.4203	0.5180	0.1736	+61	-11
21 Piscium	5.6	-0.06	+ 1.0	+ 0 38.6	8 57.0	+ 4 6.2	-0.7233	0.5185	+0.1742	-6	-89
60 B. Piscium	6.0	-0.04	+ 0.4	- 0 19.5	11 46.8	+ 6 51.1	+0.8373	0.5188	0.1742	+90	+13
98 B. Piscium	6.3	+0.11	0.0	+ 1 15.3	23 57.8	- 5 18.9	+1.2137	0.5207	0.1734	+90	+43
147 B. Piscium	5.9	0.32	- 0.1	4 52.8	5 15 55.5	+10 11.0	-0.0194	0.5250	0.1699	+33	-35
171 B. Piscium	6.3	0.40	0.2	6 3.8	21 51.8	- 8 3.2	-0.3068	0.5270	0.1679	+18	-52
73 Piscium	6.2	+0.42	- 0.7	+ 5 14.3	6 0 27.6	- 5 32.0	+1.0256	0.5280	+0.1669	+90	+27
e Piscium	5.6	0.44	0.9	5 14.2	2 15.5	- 3 47.4	+1.3254	0.5288	0.1661	+79	+65
z Piscium	5.6	0.49	0.4	7 9.8	4 58.0	- 1 9.8	-0.3216	0.5298	0.1649	+17	-52
88 Piscium	6.2	0.49	0.7	6 35.0	5 28.3	- 0 40.4	+0.3924	0.5300	0.1647	+59	-11
263 B. Piscium	6.4	0.58	0.9	7 38.4	12 22.3	+ 6 1.1	+0.4579	0.5331	0.1611	+64	-7
o Piscium	4.5	+0.69	- 1.3	+ 8 45.9	20 51.1	- 9 45.7	+0.4954	0.5373	+0.1559	+67	-4
54 Ceti	6.0	0.74	0.8	10 39.4	23 32.7	- 7 9.0	-1.1256	0.5388	0.1541	-35	-79
31 Arietis	5.7	1.00	2.5	12 6.6	7 21 31.3	- 9 52.5	+0.5148	0.5519	0.1351	+69	-1
38 Arietis	5.2	1.04	2.9	12 7.1	8 1 25.1	- 6 6.4	+1.0230	0.5545	0.1310	+90	+32
30 B. Tauri	6.4	1.33	4.4	15 10.5	9 1 16.6	- 7 3.6	+0.5772	0.5710	0.1008	+76	+7
33 B. Tauri	6.3	+1.36	- 4.2	+16 17.0	1 58.8	- 6 22.9	-0.5092	0.5715	+0.0998	+6	-57
148 B. Tauri	5.9	1.42	4.6	17 5.7	7 57.0	- 0 37.4	-0.7826	0.5756	0.0908	-11	-73
162 B. Tauri	6.3	1.45	5.0	17 4.6	11 10.0	+ 2 28.6	-0.4780	0.5778	0.0857	+7	-53
180 B. Tauri	6.1	1.48	5.3	17 7.9	14 19.3	+ 5 31.2	-0.2719	0.5800	0.0805	+19	-39
193 B. Tauri	6.2	1.50	5.5	17 4.6	16 14.9	+ 7 22.5	-0.0633	0.5813	0.0773	+31	-26
δ Tauri	3.9	+1.54	- 6.0	+17 21.5	20 38.5	+11 36.4	-0.0314	0.5842	+0.0698	+33	-23
63 Tauri	5.7	1.53	6.2	16 35.7	20 51.3	+11 48.7	+0.7708	0.5844	0.0694	+90	+22
64 Tauri	4.9	1.54	6.0	17 15.8	21 7.9	-11 55.2	+0.1017	0.5845	0.0689	+40	-16
68 Tauri	4.3	1.55	6.0	17 44.9	21 42.6	-11 21.8	-0.3594	0.5849	0.0679	+14	-43
119 H ¹ Tauri	6.2	1.58	6.3	17 51.1	10 1 5.0	- 8 7.1	-0.2450	0.5870	0.0619	+20	-35
302 B. Tauri	6.1	+1.63	- 6.8	+18 35.6	6 20.8	- 3 3.1	-0.7034	0.5903	+0.0522	-6	-70
i Tauri	5.1	1.64	7.0	18 42.4	8 26.4	- 1 2.1	-0.7132	0.5915	0.0483	-7	-70
318 B. Tauri	5.7	1.64	7.6	17 1.8	10 55.4	+ 1 21.2	+1.1124	0.5930	0.0435	+90	+49
m Tauri	5.0	1.68	7.7	18 32.4	14 59.2	+ 5 15.7	-0.2663	0.5952	0.0356	+19	-34
111 Tauri	5.1	1.71	8.7	17 18.6	21 51.8	+11 52.4	+1.1784	0.5987	0.0218	+90	+58
115 Tauri	5.3	+1.72	- 8.8	+17 53.6	22 57.9	-11 4.0	+0.6084	0.5992	+0.0195	+80	+17
119 Tauri	4.9	1.74	8.8	18 32.1	11 0 58.5	- 9 8.2	-0.0058	0.6002	0.0153	+34	-17
120 Tauri	5.6	1.74	8.9	18 29.0	1 30.1	- 8 37.9	+0.0542	0.6004	0.0143	+38	-13
130 Tauri	5.6	1.76	9.6	17 41.9	7 2.7	- 3 18.2	+0.8926	0.6027	0.0027	+90	+36
B. D. + 19 ¹¹¹⁰	6.0	1.79	9.5	19 50.8	8 58.6	- 1 26.9	-1.2702	0.6034	-0.0014	-67	-70
57 Orionis	5.8	+1.79	- 9.6	+19 44.0	9 59.3	- 0 28.7	-1.1579	0.6037	-0.0035	-43	-70

476 ELEMENTS OF OCCULTATIONS, 1922.

JANUARY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	P	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
64 Orionis	5.1	+1.80	-9.9	+19 41.4	11 13 20.7	+ 2 44.8	-1.1367	0.6049	-0.0107	-40	-70
19 B. Geminorum	6.2	1.80	10.4	18 41.9	17 19.6	+ 6 34.2	-0.1996	0.6061	0.0192	+23	-28
124 H ¹ . Orionis	5.7	1.79	10.6	17 55.6	17 42.0	+ 6 55.7	+0.5676	0.6062	0.0200	+75	+14
71 Orionis	5.1	1.81	10.4	19 10.9	17 49.9	+ 7 3.3	-0.6929	0.6062	0.0202	- 6	-67
287 B. Orionis	6.2	1.79	10.8	17 21.2	19 29.4	+ 8 38.9	+1.1014	0.6066	0.0238	+90	+50
292 B. Orionis	6.5	+1.80	-10.8	+17 47.9	20 25.5	+ 9 32.8	+0.6329	0.6069	-0.0258	+83	+18
26 Geminorum	5.2	1.81	11.5	17 43.2	12 4 36.9	- 6 35.4	+0.4262	0.6084	0.0433	+62	+ 5
74 B. Geminorum	6.2	1.82	11.6	18 16.6	6 33.0	- 4 44.1	-0.2163	0.6086	0.0475	+22	-32
110 B. Geminorum	6.2	1.81	12.1	17 51.8	12 24.2	+ 0 53.1	-0.1202	0.6091	0.0599	+28	-7
41 H ¹ . Geminorum	6.0	1.80	12.2	16 47.1	12 28.0	+ 0 56.7	+0.9490	0.6091	0.0600	+90	+35
51 Geminorum	5.3	+1.80	-12.4	+16 17.3	16 40.7	+ 4 59.3	+1.1681	0.6092	-0.0688	+90	+53
λ Geminorum	3.6	1.80	12.6	16 40.7	18 30.7	+ 6 44.9	+0.6514	0.6091	0.0726	+85	+15
162 B. Geminorum	5.7	1.80	12.8	17 15.0	23 50.2	+11 51.6	-0.3304	0.6089	0.0834	+16	-42
68 Geminorum	5.2	1.79	12.9	15 59.5	13 0 33.4	-11 27.0	+0.8548	0.6088	0.0848	+90	+26
f Geminorum	5.3	1.79	13.0	17 51.0	2 49.2	- 9 16.6	-1.1811	0.6086	0.0893	-44	-72
1 Cancri	6.0	+1.76	-13.3	+15 59.8	9 40.8	- 2 41.6	-0.0061	0.6075	-0.1026	+34	-25
2 B. Cancri	6.0	1.76	13.4	16 43.6	10 16.2	- 2 7.5	-0.7882	0.6074	0.1037	-11	-73
5 Cancri	5.9	1.76	13.4	16 40.1	11 26.2	- 1 0.3	-0.8525	0.6072	0.1058	-15	-73
30 B. Cancri	6.1	1.74	13.5	14 51.4	15 10.4	+ 2 35.0	+0.5261	0.6064	0.1127	+70	+ 4
29 Cancri	5.9	1.70	13.6	14 28.0	22 7.4	+ 9 15.3	+0.0860	0.6045	0.1248	+40	-22
84 B. Cancri	6.4	+1.69	-13.6	+13 31.2	14 0 9.6	+11 12.8	+0.7597	0.6039	-0.1282	+90	+16
A ¹ Cancri	5.5	1.67	13.6	12 57.5	3 54.8	- 9 10.8	+0.8215	0.6027	0.1342	+90	+19
A ² Cancri	5.7	1.66	13.5	12 23.6	5 24.2	- 7 44.9	+1.1759	0.6022	0.1365	+90	+47
60 Cancri	5.7	1.64	13.5	11 55.3	8 59.4	- 4 18.1	+1.1410	0.6010	0.1420	+90	+42
α Cancri	4.3	1.63	13.5	12 9.4	10 0.6	- 3 19.4	+0.7633	0.6006	0.1435	+90	+14
209 B. Cancri	6.5	+1.61	-13.5	+11 52.7	14 32.6	+ 1 2.1	+0.3717	0.5989	-0.1499	+58	- 9
222 B. Cancri	6.3	1.58	13.4	11 49.5	17 48.1	+ 4 10.0	-0.0704	0.5976	0.1542	+30	-34
ξ Leonis	5.1	1.54	13.3	11 38.5	23 30.9	+ 9 39.7	-0.7922	0.5952	0.1613	-10	-78
h Leonis	5.2	1.55	13.0	10 3.4	23 31.8	+ 9 40.6	+0.7675	0.5953	0.1613	+90	+13
o Leonis	3.8	1.52	13.0	10 14.7	15 3 17.0	-10 42.9	-0.0303	0.5937	0.1655	+33	-32
83 B. Leonis	5.9	+1.47	-12.6	+ 9 18.0	9 33.8	- 4 40.3	-0.1590	0.5910	-0.1719	+25	-41
89 B. Leonis	6.2	1.47	12.5	8 41.0	10 15.8	- 3 59.9	+0.3288	0.5907	0.1725	+54	-14
π Leonis	4.9	1.46	12.4	8 24.9	11 7.7	- 3 10.0	+0.4436	0.5903	0.1733	+63	- 8
43 Leonis	6.3	1.39	11.6	6 56.2	20 37.3	+ 5 58.3	+0.2230	0.5863	0.1810	+48	-20
55 B. Leonis	6.5	1.40	11.4	6 5.2	20 44.0	+ 6 4.8	+1.0424	0.5862	0.1810	+90	+29
48 Leonis	5.2	+1.34	-11.5	+ 7 21.1	16 1 34.7	+10 44.8	-1.0950	0.5841	-0.1841	-32	-83
35 Sextantis	6.1	1.33	10.8	5 9.3	5 11.8	- 9 46.0	+0.4125	0.5827	0.1861	+60	-11
d Leonis	5.0	1.27	10.0	4 2.0	12 31.6	- 2 42.3	+0.1492	0.5797	0.1892	+43	-26
p ⁴ Leonis	5.7	1.25	9.4	2 22.6	15 15.9	- 0 3.9	+1.2784	0.5787	0.1901	+90	+52
75 Leonis	5.4	1.21	9.0	2 26.2	19 42.9	+ 4 13.4	+0.3709	0.5770	0.1912	+57	-14
76 Leonis	6.0	+1.20	- 8.9	+ 2 4.6	20 25.3	+ 4 54.4	+0.5961	0.5768	-0.1913	+75	- 1
79 Leonis	5.5	1.19	8.6	1 50.0	22 38.2	+ 7 2.4	+0.4140	0.5760	0.1916	+60	-12
9 B. Virginis	6.2	1.09	7.2	+ 0 6.8	17 9 31.2	- 6 27.8	+0.0466	0.5725	0.1919	+37	-32
31 B. Virginis	6.4	1.05	6.3	- 1 20.0	14 47.0	- 1 23.2	+0.4912	0.5709	0.1912	+66	- 7
62 B. Virginis	6.2	0.95	4.4	4 11.1	12 238.5	+10 3.4	+1.1207	0.5680	0.1876	+86	+34
100 B. Virginis	6.3	+0.94	- 4.1	- 4 37.4	4 19.2	+11 40.7	+1.2507	0.5676	-0.1869	+85	+48
119 B. Virginis	6.3	0.88	- 3.0	5 52.6	11 24.1	- 5 29.1	+1.2128	0.5663	0.1834	+84	+43
JUPITER	-1.7	..	..	6 0.4	23 31.6	+ 6 13.2	-0.8308	0.5630	0.1750	-14	-90
m Virginis	5.2	0.62	+ 0.1	8 18.6	19 1 38.9	- 6 4.3	-0.5407	0.5635	0.1652	+ 2	-70
175 B. Virginis	6.2	0.60	0.6	9 19.1	14 10.0	- 3 38.4	+0.0843	0.5633	0.1628	+36	-30
96 Virginis	6.5	+0.50	+ 1.7	- 9 57.9	23 59.1	+ 5 50.5	-0.8007	0.5630	-0.1527	-15	-90

ELEMENTS OF OCCULTATIONS, 1922. 477

JANUARY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	P	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
		s	"	°	d h m	h m				°	'
κ Virginis	4.3	+0.48	+ 1.8	- 9 54.6	20 1 44.3	+ 7 32.2	-1.1239	0.5630	-0.1508	-39	-90
2 Libræ	6.3	0.43	2.8	11 21.5	6 28.8	-11 53.0	-0.3267	0.5629	0.1454	+12	-54
4 G. Libræ	6.5	0.43	2.8	11 18.9	7 2.9	-11 20.1	-0.4534	0.5629	0.1447	+ 5	-64
6 B. Libræ	6.2	0.36	3.5	11 58.4	12 38.0	- 5 56.5	-0.5595	0.5629	0.1379	- 2	-73
22 B. Libræ.	6.4	0.31	4.0	12 30.7	17 31.1	- 1 13.4	-0.6585	0.5630	0.1317	- 8	-84
μ Libræ	5.4	+0.32	+ 4.5	-13 49.4	18 8.6	- 0 37.1	+0.6311	0.5630	-0.1309	+70	+ 1
o Libræ	6.2	0.16	5.9	15 16.0	21 8 25.5	-10 49.5	+0.4163	0.5634	0.1113	+51	-11
34 Libræ	6.0	0.11	6.5	16 20.5	12 45.9	- 6 38.0	+1.0815	0.5635	0.1049	+74	+33
ç Libræ	5.6	0.10	6.6	16 35.3	13 46.6	- 5 39.3	+1.2371	0.5635	0.1034	+73	+51
γ Libræ	4.0	0.07	6.0	14 31.7	14 58.3	- 4 30.1	-1.0597	0.5635	0.1016	-39	-90
190 B. Libræ	6.5	+0.03	+ 6.3	-14 47.5	18 31.7	- 1 4.0	-1.1346	0.5636	-0.0963	-46	-90
η Libræ	5.5	+0.04	6.5	15 25.4	18 49.1	- 0 47.2	-0.4947	0.5636	0.0958	- 3	-68
θ Libræ	4.4	-0.01	7.1	16 30.0	23 11.8	+ 3 26.5	+0.2400	0.5637	0.0891	+38	-21
49 Libræ	5.4	0.05	7.1	16 18.2	22 2 9.6	+ 6 18.3	-0.2262	0.5637	0.0844	+11	-48
χ Ophiuchi	4.9	0.18	8.1	18 16.7	14 9.0	- 6 7.0	+0.9820	0.5638	0.0651	+72	+25
φ Ophiuchi	4.4	-0.20	+ 7.6	-16 26.5	16 2.0	- 4 17.9	-1.0989	0.5638	-0.0620	-46	-90
24 Scorpïi	5.0	0.25	8.1	17 35.4	20 43.7	+ 0 14.2	-0.1447	0.5637	0.0542	+12	-43
90 B. Ophiuchi	6.5	0.34	8.4	18 7.6	23 4 50.1	+ 8 9.9	+0.0415	0.5633	0.0404	+21	-32
29 Ophiuchi	6.4	0.34	8.6	18 46.2	5 53.1	+ 9 5.0	+0.6954	0.5633	0.0388	+68	+ 6
125 B. Ophiuchi	6.2	0.37	8.2	17 30.3	8 47.9	+11 53.8	-0.7702	0.5631	0.0338	-25	-90
164 B. Ophiuchi	6.0	-0.43	+ 8.3	-17 40.4	14 4.8	- 7 0.0	-0.7450	0.5626	-0.0249	-24	-90
192 B. Ophiuchi	6.3	0.45	8.5	18 22.3	16 13.0	- 4 56.1	-0.0415	0.5625	-0.0212	+15	-37
305 B. Ophiuchi	6.3	0.58	8.4	18 47.2	24 6 29.7	+ 8 51.6	+0.2785	0.5607	+0.0031	+32	-18
64 B. Sagittarii	6.1	0.65	8.2	18 41.1	15 30.2	- 6 26.1	+0.2634	0.5592	0.0182	+32	-19
6 B. Scuti	5.9	0.65	8.0	17 24.0	16 18.0	- 5 39.8	-1.1190	0.5590	0.0195	-52	-90
52 G. Sagittarii	6.4	-0.65	+ 8.2	-18 29.4	16 24.8	- 5 33.3	+0.0699	0.5590	+0.0197	+21	-30
17 H ¹ .Sagittarii	6.4	0.66	8.2	18 38.9	16 59.1	- 5 0.1	+0.2533	0.5589	0.0206	+32	-20
Y Sagit. (var.)	5.4	0.67	8.2	18 53.6	18 12.7	- 3 49.0	+0.5466	0.5586	0.0226	+53	- 3
85 B. Sagittarii	6.0	0.69	7.9	17 50.8	21 15.8	- 0 52.0	-0.5166	0.5580	0.0277	-11	-70
95 B. Sagittarii	5.7	0.70	8.0	18 46.6	22 17.6	+ 0 7.8	+0.5265	0.5578	0.0293	+52	- 4
100 B. Sagittarii	5.0	-0.70	+ 7.9	-18 27.3	22 52.5	+ 0 41.5	+0.1932	0.5577	+0.0303	+29	-23
NEW MOON.											
θ Aquarii	4.3	-0.71	+ 1.0	- 8 10.3	29 14 17.7	-11 20.9	+0.5043	0.5245	+0.1588	+65	- 6
ϱ Aquarii	5.3	0.70	0.8	8 12.8	16 4.2	- 9 37.5	+0.8329	0.5241	0.1597	+82	+13
170 B. Aquarii	6.0	-0.69	+ 0.8	- 7 35.3	17 50.0	- 7 54.7	+0.4213	0.5237	+0.1607	+59	-11
186 B. Aquarii	6.1	0.66	+ 0.6	0 57.2	21 55.8	- 3 56.0	+0.3778	0.5229	0.1627	+56	-14
252 B. Aquarii	5.8	0.58	- 0.1	5 24.2	10 36.6	+ 8 23.1	+0.7522	0.5208	0.1679	+85	+ 8
197 G. Aquarii	6.3	0.57	0.2	5 13.6	11 44.1	+ 9 28.6	+0.7452	0.5206	0.1683	+85	+ 7
263 B. Aquarii	6.1	0.55	0.3	5 7.9	13 59.6	+11 40.3	+1.0192	0.5203	0.1690	+85	+26
293 B. Aquarii	5.5	-0.49	- 0.7	- 3 55.3	21 29.6	- 5 2.6	+0.9497	0.5196	+0.1709	+86	+20
13 Piscium	6.4	0.41	0.8	1 31.0	31 6 15.4	+ 3 28.0	-0.2164	0.5191	0.1724	+22	-47
14 Piscium	5.9	0.40	0.9	- 1 40.7	7 25.4	+ 4 36.2	+0.1644	0.5191	0.1726	+44	-25
21 Piscium	5.6	0.32	1.0	+ 0 38.6	15 36.6	-11 26.6	-0.9947	0.5191	0.1731	-24	-89
60 B. Piscium	6.0	-0.31	- 1.4	- 0 19.5	18 27.1	- 8 41.0	+0.5608	0.5192	+0.1731	+73	- 3

FEBRUARY.

98 B. Piscium	6.3	-0.19	- 1.9	+ 1 15.3	1 6 42.2	+ 3 13.1	+0.9367	0.5202	+0.1722	+90	+20
147 B. Piscium	5.9	-0.01	2.2	4 52.8	22 49.0	- 5 8.0	-0.3151	0.5229	0.1686	+17	-52
171 B. Piscium	6.3	+0.05	- 2.2	+ 6 3.7	2 4 50.0	+ 0 42.6	-0.6078	0.5243	+0.1664	+ 1	-75

478 ELEMENTS OF OCCULTATIONS, 1922.

FEBRUARY.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.		
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
73 Piscium	6.2	+0.07	-2.7	+5 14.3	2 7 27.9	+3 15.9	+0.7348	0.5250	+0.1654	+0	+8
e Piscium	5.6	0.09	2.8	5 14.2	9 17.5	+5 2.2	+1.0368	0.5255	0.1646	+90	+28
z Piscium	5.6	0.14	2.4	7 9.8	12 2.5	+7 42.4	-0.6253	0.5263	0.1634	0	-76
88 Piscium	6.2	0.13	2.6	6 34.9	12 33.3	+8 12.4	+0.0951	0.5265	0.1631	+40	-27
263 B. Piscium	6.4	0.22	2.9	7 33.4	19 34.5	-8 59.0	+0.1603	0.5288	0.1595	+44	-23
o Piscium	4.5	+0.32	-3.2	+8 45.9	3 4 13.5	-0 35.6	+0.1990	0.5321	+0.1543	+46	-21
31 Arietis	5.7	0.62	4.1	12 6.5	4 5 30.6	-0 5.4	+0.2300	0.5442	0.1336	+48	-16
38 Arietis	5.2	0.67	4.4	12 7.0	9 31.2	+3 47.6	+0.7479	0.5464	0.1296	+90	+13
147 B. Arietis	5.8	0.79	5.1	12 53.1	19 40.2	-10 23.2	+1.1788	0.5523	0.1184	+90	+48
30 B. Tauri	6.4	0.98	5.6	15 10.4	5 10 7.5	+3 35.2	+0.3216	0.5612	0.1001	+55	-8
33 B. Tauri	6.3	+1.00	-5.2	+16 17.0	10 51.1	+4 17.3	-0.7790	0.5616	+0.0991	-10	-74
148 B. Tauri	5.9	1.08	5.5	17 5.7	17 1.2	+10 14.7	-1.0481	0.5655	0.0903	-30	-73
162 B. Tauri	6.3	1.12	5.9	17 4.5	20 20.6	-10 32.9	-0.7346	0.5677	0.0854	-7	-73
180 B. Tauri	6.1	1.16	6.1	17 7.8	23 36.2	-7 24.0	-0.5208	0.5697	0.0803	+5	-56
193 B. Tauri	6.2	1.18	6.3	17 4.6	6 1 35.6	-5 28.8	-0.3064	0.5709	0.0772	+17	-40
delta Tauri	3.9	+1.23	-6.7	+17 21.5	6 8.1	-1 6.0	-0.2670	0.5739	+0.0699	+20	-37
63 Tauri	5.7	1.23	7.0	16 35.7	6 21.2	-0 53.4	+0.5466	0.5740	0.0695	+73	+9
64 Tauri	4.9	1.24	6.8	17 15.8	6 38.4	-0 36.7	-0.1313	0.5742	0.0691	+27	-29
68 Tauri	4.3	1.25	6.7	17 44.9	7 14.3	-0 2.1	-0.5977	0.5746	0.0681	+1	-61
75 Tauri	5.2	1.24	7.3	16 11.1	8 32.4	+1 13.2	+1.1212	0.5754	0.0659	+90	+48
119 H ¹ Tauri	6.2	+1.29	-7.0	+17 51.1	10 43.3	+3 19.4	-0.4760	0.5768	+0.0623	+8	-51
a Tauri (Alde.)	1.1	1.28	7.6	16 21.1	11 45.5	+4 19.3	+1.1480	0.5774	0.0605	+90	+51
302 B. Tauri	5.1	1.35	7.2	18 35.6	16 9.4	+8 33.8	-0.9310	0.5801	0.0528	-21	-72
i Tauri	5.1	1.38	7.4	18 42.4	18 19.0	+10 38.6	-0.0371	0.5814	0.0490	-22	-72
318 B. Tauri	5.7	1.38	8.2	17 1.8	20 52.7	-10 53.4	+0.9166	0.5829	0.0444	+90	+34
m Tauri	5.0	+1.45	-8.1	+18 32.4	7 1 4.1	-6 51.3	-0.4719	0.5853	+0.0367	+8	-48
111 Tauri	5.1	1.50	9.2	17 18.6	8 9.0	-0 2.3	+1.0035	0.5892	0.0232	+90	+42
115 Tauri	5.3	1.52	9.1	17 53.6	9 17.0	+1 3.2	+0.4291	0.5898	0.0210	+63	+7
117 Tauri	6.0	1.51	9.4	17 10.3	9 38.8	+1 24.2	+1.1757	0.5900	0.0203	+90	+58
119 Tauri	4.9	1.54	9.1	18 32.1	11 21.1	+3 2.6	-0.1882	0.5908	0.0170	+24	-28
120 Tauri	5.6	+1.55	-9.2	+18 29.0	11 53.5	+3 33.8	-0.1264	0.5912	+0.0159	+27	-24
130 Tauri	5.6	1.59	10.0	17 41.9	17 35.2	+9 2.5	+0.7325	0.5940	+0.0047	+90	+26
19 B. Geminorum	6.2	1.69	10.6	18 41.9	8 4 7.2	-4 49.9	-0.3481	0.5985	-0.0168	+15	-38
124 H ¹ Orionis	5.7	1.68	10.9	17 55.6	4 30.0	-4 28.0	+0.4267	0.5986	0.0176	+63	+7
71 Orionis	5.1	1.70	10.6	19 10.9	4 38.2	-4 20.1	-0.8447	0.5987	0.0178	-15	-71
B. D. +17° 1191	6.5	+1.68	-11.1	+17 12.3	5 16.8	-3 43.0	+1.1411	0.5989	-0.0192	+90	+55
287 B. Orionis	6.2	1.69	11.2	17 21.2	6 19.9	-2 42.4	+0.9690	0.5993	0.0214	+90	+40
292 B. Orionis	6.5	1.70	11.1	17 47.9	7 17.1	-1 47.4	+0.4985	0.5997	0.0233	+69	+10
B. D. +17° 1275	6.2	1.73	11.7	16 59.5	11 10.8	+1 57.1	+1.2031	0.6010	0.0314	+90	+60
26 Geminorum	5.2	1.76	11.9	17 43.2	15 38.1	+6 14.0	+0.3086	0.6024	0.0406	+54	-2
74 B. Geminorum	6.2	+1.78	-11.9	+18 16.5	17 36.2	+8 7.4	-0.3337	0.6029	-0.0447	+16	-39
110 B. Geminorum	6.2	1.81	12.4	17 51.8	23 32.8	-10 10.0	-0.2227	0.6043	0.0570	+22	-33
41 H ¹ Geminorum	6.0	1.80	12.7	16 47.1	23 36.7	-10 6.3	-0.08524	0.6043	0.0571	+90	+28
51 Geminorum	5.3	1.82	13.0	16 17.3	9 3 52.7	-6 0.4	+1.0819	0.6050	0.0659	+90	+45
lambda Geminorum	3.6	1.84	13.1	16 40.7	5 43.9	-4 13.6	+0.5672	0.6053	0.0697	+75	+10
162 B. Geminorum	5.7	+1.86	-13.4	+17 15.0	11 6.4	+0 56.1	-0.4048	0.6060	-0.0805	+12	-47
68 Geminorum	5.2	1.86	13.6	15 59.5	11 49.9	+1 37.8	+0.7854	0.6061	0.0819	+90	+22
f Geminorum	5.3	1.88	13.4	17 51.0	14 6.6	+3 49.1	-1.2494	0.6062	0.0865	-55	-73
1 Cancri	6.0	1.89	14.1	15 59.7	21 0.1	+10 26.1	-0.0544	0.6064	0.0998	+32	-27
2 B. Cancri	6.0	1.90	14.0	16 43.6	21 35.6	+11 0.2	-0.8353	0.6064	0.1009	-14	-74
5 Cancri	5.9	+1.90	-14.1	+16 40.1	22 45.8	-11 52.4	-0.8964	0.6065	-0.1031	-18	-74

ELEMENTS OF OCCULTATIONS, 1922. 479

FEBRUARY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, //	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
		s	"	°	d h m	h m					
30 B. Cancri	6.1	+1.90	-14.5	+14 51.4	10 2 30.1	- 8 17.0	+0.4917	0.6068	-0.1101	+68	+ 2
29 Cancri	5.9	1.91	14.8	14 27.9	9 26.0	- 1 37.7	+0.0698	0.6058	0.1224	+39	-22
84 B. Cancri	6.4	1.91	15.0	13 31.2	11 27.7	+ 0 19.2	+0.7470	0.6056	0.1259	+90	+15
A ¹ Cancri	5.5	1.92	15.1	12 57.4	15 11.4	+ 3 54.1	+0.8177	0.6051	0.1321	+90	+19
A ² Cancri	5.7	1.92	15.2	12 23.6	16 40.1	+ 5 19.2	+1.1742	0.6049	0.1345	+90	+47
60 Cancri	5.7	+1.91	-15.2	+11 55.2	20 13.4	+ 8 44.1	+1.1479	0.6043	-0.1402	+90	+43
a Cancri	4.3	1.92	15.2	12 9.4	21 13.9	+ 9 42.2	+0.7746	0.6041	0.1417	+90	+15
209 B. Cancri	6.5	1.92	15.3	11 52.7	11 42.6	- 9 59.6	+0.3963	0.6032	0.1483	+60	- 7
222 B. Cancri	6.3	1.91	15.3	11 49.5	4 55.3	- 6 54.5	-0.0346	0.6025	0.1529	+33	-31
ξ Leonis	5.1	1.91	15.3	11 38.5	10 32.5	- 1 30.5	-0.7359	0.6012	0.1603	- 7	-79
h Leonis	5.2	+1.91	-15.3	+10 3.4	10 33.4	- 1 29.6	+0.8114	0.6011	-0.1603	+90	+16
o Leonis	3.8	1.90	15.3	10 14.6	14 14.3	+ 2 27.7	+0.0296	0.6002	0.1647	+36	-29
83 B. Leonis	5.9	1.89	15.2	9 18.0	20 23.1	+ 7 57.2	-0.0820	0.5985	0.1716	+30	-36
89 B. Leonis	6.2	1.89	15.1	8 41.0	21 4.2	+ 8 36.8	+0.4026	0.5983	0.1723	+60	-10
π Leonis	4.9	1.89	15.1	8 24.9	21 54.9	+ 9 25.5	+0.5183	0.5980	0.1731	+69	- 3
43 Leonis	6.3	+1.87	-14.7	+ 6 56.1	12 7 10.0	- 5 40.8	+0.3225	0.5952	-0.1814	+54	-14
155 B. Leonis	6.5	1.87	14.7	6 5.2	7 16.4	- 5 34.6	+1.1322	0.5952	0.1814	+90	+37
48 Leonis	5.2	1.84	14.5	7 21.1	11 58.9	- 1 2.9	-0.9668	0.5938	0.1849	-21	-88
35 Sextantis	6.1	1.84	14.2	5 9.2	15 29.6	+ 2 19.8	+0.5292	0.5927	0.1870	+70	- 4
37 Sextantis	6.3	1.83	14.3	6 46.8	16 37.0	+ 3 24.5	-1.2724	0.5923	0.1877	-51	-84
d Leonis	5.0	+1.82	-13.7	+ 4 2.0	22 35.5	+ 9 9.6	+0.2855	0.5905	-0.1906	+52	-18
75 Leonis	5.4	1.79	13.0	2 26.2	13 5 32.3	- 8 9.2	+0.5187	0.5884	0.1929	+69	- 5
76 Leonis	6.0	1.79	12.9	2 4.5	6 13.2	- 7 29.8	+0.7418	0.5881	0.1930	+90	+ 7
79 Leonis	5.5	1.78	12.8	1 50.0	8 21.4	- 5 26.4	+0.5670	0.5875	0.1935	+73	- 3
83 Leonis	6.3	1.76	12.8	3 26.1	9 30.8	- 4 19.5	-1.2306	0.5871	0.1937	-45	-87
τ Leonis	5.2	+1.76	-12.8	+ 3 16.9	9 58.8	- 3 52.6	-1.1717	0.5870	-0.1938	-38	-87
9 B. Virginis	6.2	1.73	11.6	+ 0 6.7	18 50.7	+ 4 39.6	+0.2258	0.5845	0.1941	+48	-22
31 B. Virginis	6.4	1.71	10.9	- 1 20.1	23 54.7	+ 9 32.4	+0.6717	0.5831	0.1936	+84	+ 3
162 B. Virginis	6.2	1.66	9.2	4 11.2	14 11 19.1	+ 3 28.0	+1.3082	0.5803	0.1902	+84	+57
91 G. Virginis	6.5	1.57	8.1	3 48.1	21 21.7	+ 7 10.7	-1.1454	0.5779	0.1845	-37	-90
θ Virginis	4.4	+1.52	- 7.1	- 5 7.5	15 5 23.6	-10 2.6	-1.1073	0.5764	-0.1796	-34	-90
JUPITER	-1.8	..	..	5 55.6	7 36.1	- 7 54.9	-0.6988	0.5778	0.1788	- 6	-89
m Virginis	5.2	1.43	4.7	8 18.7	19 6.3	+ 3 10.7	-0.2902	0.5742	0.1677	+16	-52
575 B. Virginis	6.2	1.42	4.1	9 19.2	21 32.2	+ 5 31.4	+0.3258	0.5738	0.1653	+51	-17
96 Virginis	6.5	1.32	2.9	9 58.0	16 7 2.0	- 9 18.9	-0.5403	0.5725	0.1550	+ 1	-71
κ Virginis	4.3	+1.30	- 2.7	- 9 54.7	8 43.9	- 7 40.7	-0.8581	0.5723	-0.1530	-19	-90
2 Libræ	6.3	1.27	1.8	11 21.5	13 19.8	- 3 14.4	-0.0721	0.5717	0.1475	+26	-39
4 G. Libræ	6.5	1.26	1.7	11 19.0	13 53.0	- 2 42.5	-0.1968	0.5716	0.1468	+19	-46
6 B. Libræ	6.2	1.21	0.9	11 58.5	19 18.4	+ 2 31.5	-0.3008	0.5711	0.1399	+13	-53
22 B. Libræ	6.4	1.16	- 0.3	12 30.7	17 0 3.7	+ 7 6.7	-0.3984	0.5706	0.1335	+ 7	-60
μ Libræ	5.4	+1.17	+ 0.2	-13 49.5	0 40.2	+ 7 41.9	+0.8734	0.5705	-0.1327	+77	+16
o Libræ	6.2	1.02	2.1	15 16.0	14 37.3	- 2 50.3	+0.6602	0.5691	0.1127	+71	+ 3
γ Libræ	4.0	0.94	2.4	14 31.8	21 2.4	+ 3 21.4	-0.8015	0.5684	0.1030	-20	-90
190 B. Libræ	6.5	0.89	2.8	14 47.6	18 0 32.0	+ 6 43.7	-0.8776	0.5680	0.0975	-26	-90
η Libræ	5.5	0.90	3.0	15 25.5	0 49.1	+ 7 0.2	-0.2446	0.5680	0.0971	+11	-50
θ Libræ	4.4	+0.86	+ 3.8	-16 30.0	5 7.6	+11 9.7	+0.4805	0.5676	-0.0902	+54	- 8
49 Libræ	5.4	0.81	3.9	16 18.2	8 2.8	-10 1.2	+0.0171	0.5672	0.0856	+24	-34
χ Ophiuchi	4.9	0.68	5.5	18 16.7	19 53.6	+ 1 25.1	+1.2077	0.5658	0.0661	+72	+48
φ Ophiuchi	4.4	0.64	5.0	16 26.5	21 45.6	+ 3 13.1	-0.8596	0.5656	0.0630	-28	-90
24 Scorpii	5.0	0.59	5.6	17 35.4	19 2 24.9	+ 7 42.8	+0.0838	0.5649	0.0552	+25	-30
78 B. Ophiuchi	6.5	+0.50	+ 5.7	-16 40.9	8 55.2	-10 0.2	-1.2103	0.5639	-0.0443	-60	-90

480 ELEMENTS OF OCCULTATIONS, 1922.

FEBRUARY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declination.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
90 B. Ophiuchi	6.5	+0.49	+6.2	-18 7.6	19 10 34.3	- 8 24.6	+0.2613	0.5637	-0.0415	+34	-0
29 Ophiuchi	6.4	0.48	6.5	18 46.2	11 31.0	- 7 29.8	+0.9107	0.5035	0.0399	+72	+20
125 B. Ophiuchi	6.2	0.44	6.2	17 30.3	14 25.1	- 4 41.6	-0.5504	0.5030	0.0349	-12	-74
164 B. Ophiuchi	6.0	0.37	6.5	17 40.4	19 41.1	+ 0 23.5	-0.5315	0.5621	0.0260	-12	-72
192 B. Ophiuchi	6.3	0.35	6.8	18 22.3	21 49.1	+ 2 27.2	+0.1667	0.5618	-0.0224	+27	-25
305 B. Ophiuchi	6.3	+0.18	+7.3	-18 47.2	20 12 6.0	- 7 44.7	+0.4687	0.5589	+0.0017	+45	- 8
32 G. Sagittarii	5.7	0.11	6.9	17 9.9	17 36.3	- 2 25.6	-1.2554	0.5577	0.0108	-69	-83
64 B. Sagittarii	6.1	0.07	7.4	18 41.1	21 8.2	+ 0 59.3	+0.4419	0.5569	0.0166	+44	-11
6 B. Scuti	5.9	0.06	7.0	17 24.0	21 56.2	+ 1 45.6	-0.9400	0.5567	0.0179	-38	-90
52 G. Sagittarii	6.4	0.06	7.3	18 29.4	22 3.0	+ 1 52.2	+0.2473	0.5566	0.0181	+31	-20
17 H ^s Sagittarii	6.4	+0.05	+7.4	-18 38.9	22 37.5	+ 2 25.6	+0.4298	0.5565	+0.0191	+43	-10
Y Sagit. (var.)	5.4	+0.04	7.4	18 53.6	23 51.3	+ 3 36.9	+0.7212	0.5562	0.0211	+70	+ 7
85 B. Sagittarii	6.0	0.00	7.1	17 50.8	21 2 55.3	+ 6 34.9	-0.3454	0.5555	0.0261	- 1	-57
95 B. Sagittarii	5.7	0.00	7.4	18 46.6	3 57.4	+ 7 35.0	+0.6955	0.5552	0.0277	+68	+ 6
100 B. Sagittarii	5.0	-0.01	7.3	18 27.3	4 32.5	+ 8 8.8	+0.3615	0.5551	0.0286	+40	-14
ρ Sagittarii	4.0	-0.25	+6.9	-17 59.6	22 4 16.4	+ 7 6.4	+0.9797	0.5487	0.0651	+72	+25
ν Sagittarii	4.4	0.24	6.4	16 6.1	4 19.6	+ 7 9.4	-1.0949	0.5486	0.0651	-45	-90
54 Sagittarii	5.4	0.32	6.2	16 28.3	13 27.5	- 8 0.2	-0.9345	0.5460	0.0781	+21	-37
ϵ Sagittarii	5.2	0.33	6.2	16 18.4	14 19.8	- 7 9.5	-0.1480	0.5458	0.0793	+15	-44
283 B. Sagittarii	5.5	0.33	6.0	15 39.0	14 50.4	- 6 39.9	-0.8298	0.5456	0.0800	-24	-90
η Sagittarii	5.1	-0.38	+5.7	-15 41.9	21 50.8	+ 0 7.3	-0.1847	0.5435	+0.0894	+14	-46
16 B. Capricorni	6.2	0.46	5.2	15 1.8	23 9 4.8	+11 0.3	+0.1630	0.5402	0.1035	+35	-25
β Capricorni	3.2	0.46	5.2	15 1.6	9 11.8	+11 7.1	+0.1717	0.5402	0.1037	+36	-25
27 G. Capricorni	6.2	0.49	5.0	15 19.0	14 11.6	- 8 2.4	+1.0257	0.5387	0.1096	+75	+28
45 B. Capricorni	6.1	0.49	4.7	13 59.3	15 45.8	- 6 31.0	-0.2707	0.5382	0.1114	+12	-51
84 B. Capricorni	6.0	-0.52	+4.0	-12 50.0	24 0 3.0	+ 1 30.9	-0.5905	0.5359	+0.1205	- 5	-76
<i>NEW MOON.</i>											
98 B. Piscium	6.3	-0.38	-3.1	+ 1 15.3	28 12 41.1	+10 59.5	+0.8053	0.5224	+0.1717	+90	+11
44 Piscium	6.0	-0.36	-3.4	+ 1 30.4	16 42.9	- 9 5.7	+1.2158	0.5229	+0.1710	+90	+44

MARCH.

147 B. Piscium	5.9	-0.26	-3.8	+ 4 52.7	1 4 46.1	+ 2 36.6	-0.4680	0.5247	+0.1680	+ 9	-64
171 B. Piscium	6.3	0.22	3.8	6 3.7	10 47.0	+ 8 27.0	-0.7080	0.5258	0.1659	- 8	-84
73 Piscium	6.2	-0.21	-4.2	+ 5 14.2	13 25.1	+11 0.5	+0.5762	0.5264	+0.1648	+74	- 2
ζ Piscium	5.6	0.20	4.3	5 14.2	15 14.8	-11 13.0	+0.8776	0.5268	0.1640	+90	+17
η Piscium	5.6	0.16	4.1	7 9.7	18 0.0	- 8 32.7	-0.7929	0.5275	0.1627	-10	-83
88 Piscium	6.2	0.17	4.2	6 34.9	18 30.9	- 8 2.7	-0.0704	0.5276	0.1625	+30	-37
203 B. Piscium	6.4	0.11	4.5	7 33.4	2 1 33.3	- 1 12.7	-0.0106	0.5295	0.1588	+34	-33
θ Piscium	4.5	-0.03	-4.8	+ 8 45.9	10 14.7	+ 7 13.1	+0.0219	0.5320	+0.1535	+36	-31
ξ Arietis	5.5	+0.14	5.8	10 15.4	3 5 59.8	+ 2 22.1	+1.2744	0.5392	0.1380	+89	+58
31 Arietis	5.7	0.21	5.7	12 6.5	11 46.5	+ 7 57.9	+0.0419	0.5417	0.1326	+37	-27
38 Arietis	5.2	0.24	6.0	12 7.0	15 50.6	+11 54.4	+0.5636	0.5434	0.1285	+74	+ 2
147 B. Arietis	5.8	0.34	6.5	12 53.1	4 2 9.9	- 2 5.9	+0.9986	0.5481	0.1173	+90	+31
30 B. Tauri	6.4	+0.51	-6.8	+15 10.4	16 55.7	-11 49.0	+0.1338	0.5553	+0.0990	+43	-18
33 B. Tauri	6.3	0.53	6.5	16 16.9	17 40.3	-11 5.9	-0.9801	0.5556	0.0980	-24	-74
148 B. Tauri	5.9	0.60	6.7	17 5.6	23 59.7	- 4 59.2	-1.2519	0.5588	0.0893	-55	-73
162 B. Tauri	6.3	0.64	7.0	17 4.5	5 3 24.4	- 1 41.4	-0.9337	0.5605	0.0844	-21	-73
180 B. Tauri	6.1	0.68	7.2	17 7.8	6 45.4	+ 1 32.8	-0.7163	0.5622	0.0795	- 7	-73
193 B. Tauri	6.2	+0.70	-7.3	+17 4.6	8 48.2	+ 3 31.3	-0.4982	0.5633	+0.0764	+ 6	-54

ELEMENTS OF OCCULTATIONS, 1922. 481

MARCH.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.		
Name.	Mag.	Reductions from 1922-0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	F	z'	y'	N.	S.
		Δα	Δδ								
δ Tauri	3.9	+0.75	-7.6	+17 21.5	5 13 28.7	+ 8 2.3	-0.4565	0.5656	+0.0691	+ 9	-50
63 Tauri	5.7	0.75	7.9	16 35.6	13 42.3	+ 8 15.4	+0.3688	0.5658	0.0688	+58	- 2
64 Tauri	4.9	0.76	7.7	17 15.7	13 59.9	+ 8 32.4	-0.3188	0.5659	0.0684	+16	- 41
68 Tauri	4.3	0.77	7.6	17 44.9	14 36.9	+ 9 8.1	-0.7915	0.5662	0.0674	-12	-73
75 Tauri	5.2	0.76	8.2	16 11.0	15 57.4	+10 25.8	+0.9529	0.5669	0.0653	+90	+34
264 B. Tauri	4.8	+0.78	- 8.3	+16 1.4	16 53.9	+11 20.4	+1.1834	0.5674	+0.0637	+90	+54
119 H ¹ Tauri	6.2	0.80	7.8	17 51.1	18 12.3	-11 23.9	-0.6668	0.5681	0.0616	- 4	-67
275 B. Tauri	6.5	0.79	8.4	16 9.5	18 16.0	-11 20.4	+1.1252	0.5681	0.0615	+90	+48
a Tauri (Ald.)	1.1	0.80	8.4	16 21.1	19 16.5	-10 22.0	+0.9820	0.5686	0.0599	+90	+36
302 B. Tauri	6.1	0.87	7.9	18 35.6	23 48.9	- 5 59.1	-1.1260	0.5709	0.0524	-38	-72
i Tauri	5.1	+0.90	- 8.0	+18 42.4	6 2 2.8	- 3 49.9	-1.1311	0.5719	+0.0487	-39	-72
318 B. Tauri	5.7	0.91	8.8	17 1.8	4 41.6	- 1 16.7	+0.7531	0.5732	0.0441	+90	+23
m Tauri	5.0	0.98	8.6	18 32.4	9 1.7	+ 2 54.0	-0.6545	0.5752	0.0366	- 3	-64
111 Tauri	5.1	1.05	9.6	17 18.6	16 21.6	+ 9 58.1	+0.8499	0.5786	0.0235	+90	+31
115 Tauri	5.3	1.06	9.4	17 53.6	17 32.1	+11 6.1	+0.2670	0.5791	0.0213	+51	- 3
117 Tauri	6.0	+1.06	- 9.7	+17 10.3	17 54.7	+11 27.8	+1.0261	0.5794	+0.0206	+90	+44
119 Tauri	4.9	1.09	9.4	18 32.1	19 40.6	-10 50.2	-0.3587	0.5801	0.0174	+14	-39
167 H ¹ Tauri	5.5	1.08	9.9	16 59.9	19 42.6	-10 48.2	+1.2399	0.5801	0.0173	+88	+66
120 Tauri	5.6	1.10	9.4	18 29.0	20 14.2	-10 17.8	-0.2955	0.5803	0.0163	+18	-34
130 Tauri	5.6	1.15	10.2	17 41.9	7 2 8.4	- 4 36.4	+0.5826	0.5828	+0.0053	+77	+16
19 B. Geminorum	6.2	+1.28	-10.6	+18 41.9	13 4.1	+ 5 54.9	-0.5061	0.5870	-0.0156	+ 6	-49
124 H ¹ Orionis	5.7	1.27	10.9	17 55.6	13 27.8	+ 6 17.8	+0.2820	0.5871	0.0163	+52	- 1
71 Orionis	5.1	1.28	10.5	19 10.9	13 36.2	+ 6 25.8	-1.0104	0.5872	0.0166	-28	-71
B. D. +17° 1191	6.5	1.28	11.2	17 12.3	14 16.3	+ 7 4.4	+1.0091	0.5874	0.0179	+90	+43
287 B. Orionis	6.2	1.29	11.2	17 21.2	15 21.8	+ 8 7.5	+0.8352	0.5878	0.0200	+90	+30
292 B. Orionis	6.5	+1.30	-11.1	+17 47.9	16 21.2	+ 9 4.7	+0.3578	0.5881	-0.0219	+57	+ 2
B. D. +17° 1275	6.2	1.34	11.6	16 59.5	20 23.6	-11 2.0	+1.0782	0.5894	0.0298	+90	+47
26 Geminorum	5.2	1.39	11.7	17 43.2	8 1 0.8	- 6 35.3	+0.1737	0.5908	0.0388	+45	- 9
74 B. Geminorum	6.2	1.42	11.6	18 16.6	3 3.2	- 4 37.6	-0.4768	0.5914	0.0428	+ 7	-49
110 B. Geminorum	6.2	1.47	12.1	17 51.8	9 12.8	+ 1 18.0	-0.3568	0.5930	0.0548	+14	-42
41 H ¹ Geminorum	6.0	+1.47	-12.5	+16 47.1	9 16.9	+ 1 21.9	+0.7354	0.5930	-0.0549	+90	+21
51 Geminorum	5.3	1.51	12.9	16 17.3	13 42.0	+ 5 37.0	+0.9736	0.5939	0.0635	+90	+36
λ Geminorum	3.6	1.52	12.9	16 40.7	15 37.1	+ 7 27.7	+0.4530	0.5943	0.0672	+65	+ 3
162 B. Geminorum	5.7	1.58	13.0	17 15.0	21 10.7	-11 11.5	-0.5267	0.5953	0.0778	+ 5	-56
68 Geminorum	5.2	1.58	13.4	15 59.5	21 55.6	-10 28.4	+0.6821	0.5954	0.0792	+90	+15
1 Cancri	6.0	+1.66	-13.8	+15 59.8	9 7 23.5	- 1 22.3	-0.1575	0.5966	-0.0968	+26	-33
2 B. Cancri	6.0	1.67	13.6	16 43.6	8 0.2	- 0 47.0	-0.9482	0.5967	0.0979	-22	-74
5 Cancri	5.9	1.68	13.7	16 40.1	9 12.4	+ 0 22.5	-1.0083	0.5968	0.1001	-26	-74
30 B. Cancri	6.1	1.70	14.3	14 51.4	13 3.4	+ 4 4.5	+0.4035	0.5971	0.1070	+61	- 3
29 Cancri	5.9	1.75	14.6	14 28.0	20 10.9	+10 55.5	-0.0136	0.5974	0.1193	+34	-27
84 B. Cancri	6.4	+1.76	-15.0	+13 31.2	22 15.7	-11 4.5	+0.6743	0.5975	-0.1227	+88	+11
4 ¹ Cancri	5.5	1.78	15.2	12 57.4	10 2 5.0	- 7 24.1	+0.7511	0.5975	0.1289	+90	+14
4 ² Cancri	5.7	1.79	15.3	12 23.6	3 35.7	- 5 56.9	+1.1133	0.5974	0.1313	+90	+41
60 Cancri	5.7	1.82	15.5	11 55.2	7 13.7	- 2 27.3	+1.0914	0.5974	0.1370	+90	+38
a Cancri	4.3	1.82	15.4	12 9.4	8 15.6	- 1 27.8	+0.7158	0.5973	0.1386	+90	+11
209 B. Cancri	6.5	+1.85	-15.5	+11 52.7	12 49.6	+ 2 55.6	+0.3408	0.5972	-0.1453	+56	-10
222 B. Cancri	6.3	1.87	15.5	11 49.5	16 5.9	+ 6 4.3	-0.0886	0.5970	0.1499	+29	-35
ξ Leonis	5.1	1.90	15.6	11 38.5	21 48.4	+11 33.7	-0.7854	0.5966	0.1574	-10	-79
h Leonis	5.2	1.90	15.8	10 3.4	21 49.3	+11 34.6	+0.7722	0.5966	0.1575	+90	+12
o Leonis	3.8	1.91	15.8	10 14.6	11 1 33.2	- 8 50.0	-0.0088	0.5963	0.1620	+34	-31
83 B. Leonis	5.9	+ 94	-15.8	+ 9 17.9	7 46.1	- 2 51.4	-0.1108	0.5956	-0.1691	+28	-38

482 ELEMENTS OF OCCULTATIONS, 1922.

MARCH.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.		
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		Δα	Δδ								
89 B. Leonis	6.2	+1.94	-15.9	+ 8 41.0	11 8 27.5	- 2 11.6	+0.3769	0.5956	-0.1608	+58	-11
π Leonis	4.9	1.95	15.9	8 24.9	9 18.6	- 1 22.5	+0.4944	0.5955	0.1707	+67	- 5
43 Leonis	6.3	1.98	15.8	6 56.1	18 37.0	+ 7 34.6	+0.3123	0.5944	0.1795	+53	-16
155 B. Leonis	6.5	1.98	15.9	6 5.2	18 43.5	+ 7 40.9	+1.1237	0.5944	0.1796	+90	+36
48 Leonis	5.2	1.99	15.6	7 21.1	23 26.6	-11 46.8	-0.9704	0.5938	0.1832	-22	-83
35 Sextantis	6.1	+2.01	-15.6	+ 5 9.2	12 2 57.1	- 8 24.3	+0.5318	0.5934	-0.1856	+70	- 4
37 Sextantis	6.3	2.00	15.5	6 46.8	4 4.4	- 7 19.6	-1.2674	0.5932	0.1863	-50	-84
δ Leonis	5.0	2.03	15.3	4 1.9	10 1.7	- 1 35.9	+0.2991	0.5924	0.1896	+52	-17
75 Leonis	5.4	2.05	15.0	2 26.1	16 55.5	+ 5 2.4	10.5419	0.5915	0.1924	+70	- 4
76 Leonis	6.0	2.05	15.0	2 4.5	17 36.0	+ 5 41.4	+0.7651	0.5914	0.1926	+90	+ 9
79 Leonis	5.5	+2.05	-14.8	+ 1 49.9	19 43.0	+ 7 43.5	+0.5939	0.5911	-0.1932	+75	- 2
83 Leonis	6.3	2.03	14.6	3 26.1	20 51.0	+ 8 49.6	-1.1941	0.5910	0.1934	-41	-87
τ Leonis	5.2	2.04	14.6	3 16.9	21 19.4	+ 9 16.3	-1.1346	0.5910	0.1935	-35	-87
9 B. Virginis	6.2	2.06	14.0	+ 0 6.7	13 6 4.2	- 6 18.5	+0.2693	0.5898	0.1945	+50	-20
31 B. Virginis	6.4	2.08	13.5	- 1 20.2	11 3.1	- 1 30.8	+0.7188	0.5892	0.1942	+89	+ 6
91 G. Virginis	6.5	+2.05	-11.0	- 3 48.2	14 8 59.8	- 4 23.0	-1.0512	0.5868	-0.1862	-29	-90
JUPITER	-2.0	..	..	5 2.2	14 42.6	+ 1 7.0	-0.8893	0.5907	0.1843	-17	-90
θ Virginis	4.4	2.04	10.1	5 7.5	15 50.0	+ 2 11.9	-1.0046	0.5861	0.1816	-26	-90
m Virginis	5.2	2.01	8.0	8 18.7	15 5.7	- 9 0.0	-0.1841	0.5848	0.1699	+22	-45
575 B. Virginis	6.2	2.02	7.5	9 19.3	7 28.7	- 6 44.0	+0.4250	0.5845	0.1675	+58	-11
623 B. Virginis	6.5	+1.96	- 6.7	- 8 53.1	14 42.4	+ 0 13.7	-1.1950	0.5838	-0.1595	-45	-90
95 Virginis	5.4	1.95	6.5	8 56.6	15 42.2	+ 1 11.4	-1.2957	0.5838	0.1584	-61	-85
96 Virginis	6.5	1.96	6.2	9 58.0	16 39.7	+ 2 6.6	-0.4205	0.5836	0.1572	+ 8	-61
κ Virginis	4.3	1.95	6.0	9 54.8	18 18.1	+ 3 41.5	-0.7320	0.5835	0.1553	-10	-90
2 Libræ	6.3	1.94	5.1	11 21.6	22 44.6	+ 7 58.1	+0.0449	0.5829	0.1497	+33	-32
4 G. Libræ	6.5	+1.94	- 5.0	-11 19.1	23 16.6	+ 8 29.1	-0.0775	0.5829	-0.1490	+26	-39
6 B. Libræ	6.2	1.89	4.1	11 58.5	4 30.8	-10 28.2	-0.1705	0.5824	0.1420	+19	-45
22 B. Libræ	6.4	1.87	3.5	12 30.8	9 6.2	- 6 2.8	-0.2700	0.5818	0.1356	+12	-51
μ Libræ	5.4	1.89	3.1	13 49.5	9 41.4	+ 5 28.9	+0.9816	0.5817	0.1348	+77	+23
ο Libræ	6.2	1.78	0.9	15 16.1	23 9.7	+ 7 30.0	+0.7777	0.5799	0.1145	+75	+ 9
γ Libræ	4.0	+1.71	- 0.4	-14 31.8	17 5 22.0	-10 31.2	-0.6588	0.5789	-0.1046	-11	-85
190 B. Libræ	6.5	1.68	+ 0.1	14 47.6	8 44.7	- 7 15.9	-0.7331	0.5783	0.0901	-16	-90
η Libræ	5.5	1.68	0.3	15 25.5	9 1.3	- 6 59.8	-0.1099	0.5783	0.0986	+19	-41
θ Libræ	4.4	1.65	1.2	16 30.1	13 11.4	- 2 58.7	+0.6046	0.5774	0.0917	+64	0
49 Libræ	5.4	1.61	1.4	16 18.2	16 1.1	- 0 15.2	+0.1489	0.5770	0.0869	+32	-26
φ Ophiuchi	4.4	+1.46	+ 2.9	-16 26.6	18 5 19.2	-11 25.5	-0.7143	0.5741	-0.0640	-18	-90
24 Scorpii	5.0	1.42	3.7	17 35.5	9 50.8	- 7 3.6	+0.2155	0.5730	0.0561	+33	-22
78 B. Ophiuchi	6.5	1.33	4.0	16 40.9	16 10.7	- 0 57.0	-1.0619	0.5714	0.0450	-44	-90
90 B. Ophiuchi	6.5	1.32	4.6	18 7.6	17 47.3	+ 0 36.1	+0.3900	0.5710	0.0421	+43	-12
29 Ophiuchi	6.4	1.32	5.0	18 46.2	18 42.7	+ 1 29.6	+1.0310	0.5707	0.0405	+72	+30
125 B. Ophiuchi	6.2	+1.27	+ 4.8	-17 30.3	21 32.5	+ 4 13.4	-0.4116	0.5699	-0.0356	- 4	-61
164 B. Ophiuchi	6.0	1.20	5.2	17 40.5	2 41.1	+ 9 11.1	-0.3943	0.5685	0.0265	- 4	-60
192 B. Ophiuchi	6.3	1.18	5.7	18 22.4	4 46.3	+11 12.0	+0.2951	0.5678	-0.0229	+35	-17
305 B. Ophiuchi	6.3	1.00	6.7	18 47.2	18 46.5	+ 0 43.3	+0.5905	0.5634	+0.0013	+55	- 1
6 Sagittarii	6.5	0.96	6.3	17 9.2	21 16.2	+ 3 7.8	-1.1525	0.5626	0.0055	-56	-90
32 G. Sagittarii	5.7	+0.92	+ 6.4	-17 9.9	20 0 11.2	+ 5 56.8	-1.1186	0.5616	+0.0105	-53	-90
64 B. Sagittarii	6.1	0.88	7.2	18 41.1	3 40.0	+ 9 18.5	+0.5613	0.5604	0.0163	+54	- 2
6 B. Scuti	5.9	0.86	6.7	17 24.0	4 27.2	+10 4.1	-0.8084	0.5601	0.0176	-28	-90
52 G. Sagittarii	6.4	0.87	7.1	18 29.4	4 34.0	+10 10.8	+0.3682	0.5601	0.0178	+39	-13
17 H ¹ .Sagittarii	6.4	0.86	7.2	18 38.9	5 7.9	+10 43.4	+0.5488	0.5598	0.0187	+53	- 3
Y Sagit. (var.)	5.4	+0.85	+ 7.4	-18 53.6	6 20.7	+11 53.8	+0.8371	0.5594	+0.0207	+72	+15

ELEMENTS OF OCCULTATIONS, 1922. 483

MARCH.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922 ^o		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, <i>H</i>	<i>F</i>	<i>x'</i>	<i>y'</i>	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
85 B. Sagittarii	6.0	+0.80	+ 7.1	-17 50.8	20 9 22.2	- 9 10.8	-0.2214	0.5584	+0.0257	+ 5	-4.8
95 B. Sagittarii	5.7	0.80	7.4	18 46.6	10 23.6	- 8 11.4	+0.8102	0.5580	0.0273	+72	+13
100 B. Sagittarii	5.0	0.78	7.4	18 27.3	10 58.2	- 7 38.1	+0.4789	0.5578	0.0283	+49	- 7
155 B. Sagittarii	5.5	0.63	7.0	16 28.2	22 10.4	+ 3 11.9	-1.2562	0.5537	0.0460	-66	-85
<i>q</i> Sagittarii	4.0	0.48	7.7	17 59.6	21 10 29.2	- 8 53.4	+1.0827	0.5492	0.0645	+73	+34
<i>v</i> Sagittarii	4.4	+0.48	+ 7.1	-16 6.0	10 32.4	- 8 50.3	-0.9805	0.5491	+0.0645	-36	-90
54 Sagittarii	5.4	0.38	7.2	16 28.3	19 37.5	- 0 2.7	+0.0686	0.5459	0.0774	+27	-31
<i>e</i> Sagittarii	5.2	0.37	7.2	16 18.4	20 29.6	+ 0 47.8	-0.0449	0.5456	0.0786	+21	-37
283 B. Sagittarii	5.5	0.36	6.9	15 39.0	21 0.1	+ 1 17.4	-0.7241	0.5454	0.0793	-17	-90
<i>g</i> Sagittarii	5.1	0.28	6.9	15 41.8	22 3 59.3	+ 8 3.3	-0.0865	0.5429	0.0886	+20	-40
16 B. Capricorni	6.2	+0.16	+ 6.5	-15 1.8	15 12.6	- 5 4.5	+0.2524	0.5390	+0.1026	+41	-20
β Capricorni	3.2	0.16	6.5	15 1.6	15 19.6	- 4 57.7	+0.2610	0.5389	0.1027	+41	-20
27 G. Capricorni	6.2	0.11	6.5	15 19.0	20 19.4	- 0 7.3	+1.1093	0.5373	0.1085	+75	+35
45 B. Capricorni	6.1	0.10	6.0	13 59.3	21 53.6	+ 1 24.1	-0.1851	0.5369	0.1103	+17	-46
84 B. Capricorni	6.0	+0.03	5.5	12 50.0	23 6 11.2	+ 9 26.6	-0.5105	0.5343	0.1194	0	-69
<i>v</i> Aquarii	4.5	-0.04	+ 4.8	-11 41.2	15 47.3	- 5 14.6	-0.5875	0.5316	+0.1290	- 3	-76
51 G. Aquarii	6.5	0.06	4.5	10 55.6	18 11.5	- 2 54.8	-1.1169	0.5309	0.1313	-39	-90
19 Aquarii	5.6	0.10	4.0	10 4.8	23 48.7	+ 2 32.4	-1.3055	0.5295	0.1363	-66	-80
72 B. Aquarii	6.5	0.12	4.5	11 54.3	24 1 20.6	+ 4 1.4	+0.9298	0.5291	0.1376	+79	+20
137 B. Capricorni	6.2	0.16	4.0	10 55.6	7 9.6	+ 9 40.2	+0.6591	0.5278	0.1425	+76	+ 3
<i>c</i> ¹ Capricorni	5.3	-0.16	+ 3.5	- 9 26.4	10 2.7	-11 31.7	-0.5781	0.5272	+0.1447	- 1	-75
<i>c</i> ² Capricorni	6.3	0.17	3.5	9 38.1	10 42.1	-10 53.5	-0.2660	0.5271	0.1452	+16	-50
θ Aquarii	4.3	0.25	2.3	8 10.3	25 2 41.4	+ 4 37.7	+0.5188	0.5243	0.1561	+66	- 6
<i>q</i> Aquarii	5.3	0.27	2.2	8 12.8	4 27.8	+ 6 21.0	+0.8426	0.5241	0.1572	+82	+13
170 B. Aquarii	6.0	0.27	2.0	7 35.3	6 13.6	+ 8 3.8	+0.4264	0.5239	0.1581	+59	-11
186 B. Aquarii	6.1	-0.28	+ 1.6	- 6 57.2	10 19.3	-11 57.6	+0.3721	0.5234	+0.1603	+56	-14
252 B. Aquarii	5.8	0.33	0.6	5 24.2	22 58.4	+ 0 19.7	+0.7137	0.5223	0.1659	+85	+ 5
197 G. Aquarii	6.3	0.33	+ 0.5	- 5 13.6	26 0 5.5	+ 1 24.9	+0.7037	0.5223	0.1663	+84	+ 5
<i>NEW MOON.</i>											
ξ Arietis	5.5	-0.13	- 6.7	+10 15.4	30 11 40.2	+ 9 49.9	+1.2378	0.5420	+0.1384	+90	+52
31 Arietis	5.7	0.09	6.8	12 6.5	17 25.4	- 8 35.7	+0.0037	0.5442	0.1329	+35	-29
38 Arietis	5.2	-0.07	7.0	12 7.0	21 28.6	- 4 40.3	+0.5249	0.5458	0.1288	+70	0
147 B. Arietis	5.8	0.00	7.5	12 53.1	31 7 46.4	+ 5 17.9	+0.9592	0.5499	0.1175	+90	+28
30 B. Tauri	6.4	+0.11	7.9	15 10.4	22 32.6	- 4 24.8	+0.0910	0.5559	0.0990	+40	-20
33 B. Tauri	6.3	+0.12	- 7.6	+16 16.9	23 17.3	- 3 41.6	-1.0260	0.5563	+0.0980	-29	-74

APRIL.

162 B. Tauri	6.3	+0.20	- 8.0	+17 4.5	1 9 3.7	+ 5 45.2	-0.9821	0.5603	+0.0843	-25	-73
180 B. Tauri	6.1	+0.23	- 8.2	+17 7.8	12 26.0	+ 9 0.7	-0.7642	0.5616	+0.0793	-10	-73
193 B. Tauri	6.2	0.24	8.3	17 4.5	14 29.6	+11 0.2	-0.5450	0.5623	0.0762	+ 4	-58
δ Tauri	3.9	0.29	8.5	17 21.5	19 12.3	- 8 26.7	-0.5036	0.5643	0.0690	+ 6	-54
63 Tauri	5.7	0.28	8.7	16 35.6	19 26.0	- 8 13.5	+0.3269	0.5644	0.0686	+55	- 4
64 Tauri	4.9	0.29	8.5	17 15.7	19 43.9	- 7 56.3	-0.3648	0.5645	0.0682	+15	-44
68 Tauri	4.3	+0.30	- 8.4	+17 44.9	20 21.1	- 7 20.4	-0.8407	0.5648	+0.0672	-15	-73
75 Tauri	5.2	0.30	9.0	16 11.0	21 42.4	- 6 1.8	+0.9151	0.5653	0.0650	+90	+31
264 B. Tauri	4.8	0.31	9.1	16 1.4	22 39.5	- 5 6.7	+1.1472	0.5657	0.0635	+90	+50
119 H ¹ Tauri	6.2	0.33	8.6	17 51.0	23 58.7	- 3 50.2	-0.7154	0.5661	0.0614	- 7	-72
275 B. Tauri	6.5	0.32	9.1	16 9.5	2 0 2.4	+ 3 46.6	+1.0889	0.5662	0.0613	+90	+45
<i>a</i> Tauri (<i>Ald.</i>)	1.1	+0.33	- 9.2	+16 21.1	1 3.5	- 2 47.5	+0.9449	0.5666	+0.0597	+90	+34

484 ELEMENTS OF OCCULTATIONS, 1922.

APRIL.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.		
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
302 B. Tauri	6.1	+0.38	-8.7	+18 35.5	2 539.1	+ 1 38.5	-1.1785	0.5683	+0.0522	-45	-72
i Tauri	5.1	0.40	8.8	18 42.4	7 54.7	+ 3 49.4	-1.1837	0.5691	0.0484	-45	-72
318 B. Tauri	5.7	0.42	9.4	17 1.8	10 35.7	+ 6 24.7	+0.7158	0.5701	0.0439	+90	+20
m Tauri	5.0	0.48	9.2	18 32.3	14 59.6	+10 39.6	-0.7036	0.5716	0.0364	- 6	-70
111 Tauri	5.1	0.54	10.0	17 18.6	22 27.1	- 6 8.9	+0.8160	0.5741	0.0234	+90	+29
115 Tauri	5.3	+0.55	- 9.8	+17 53.6	23 38.9	- 4 59.6	+0.2274	0.5744	+0.0212	+48	- 5
117 Tauri	6.0	0.55	10.1	17 10.3	3 0 1.8	- 4 37.6	+0.9945	0.5745	0.0205	+90	+41
119 Tauri	4.9	0.57	9.7	18 32.1	1 49.8	- 2 53.4	+0.4046	0.5751	0.0173	+11	-42
167 H ¹ Tauri	5.5	0.56	10.2	16 59.9	1 51.8	- 2 51.5	+1.2108	0.5751	0.0173	+90	+62
120 Tauri	5.6	0.58	9.8	18 29.0	2 24.1	- 2 20.4	-0.3405	0.5753	0.0163	+15	-38
122 Tauri	5.5	+0.59	-10.4	+16 59.4	3 57.2	- 0 50.6	+1.2502	0.5758	+0.0135	+86	+68
130 Tauri	5.6	0.63	10.3	17 41.9	8 25.7	+ 3 28.3	+0.5481	0.5770	+0.0054	+73	+14
19 B. Geminorum	6.2	0.76	10.5	18 41.9	19 37.0	- 9 44.7	-0.5521	0.5798	-0.0152	+ 3	-53
124 H ¹ Orionis	5.7	0.75	10.8	17 55.6	20 1.3	- 9 21.2	+0.2463	0.5799	0.0160	+50	- 3
71 Orionis	5.1	0.76	10.4	19 10.9	20 10.0	- 9 12.9	-1.0629	0.5800	0.0162	-33	-71
B. D. +17° 1191	6.5	+0.76	-11.1	+17 12.3	20 51.0	- 8 33.3	+0.9832	0.5801	-0.0175	+90	+41
287 B. Orionis	6.2	0.77	11.1	17 21.2	21 58.3	- 7 28.5	+0.8074	0.5803	0.0196	+90	+28
292 B. Orionis	6.5	0.78	11.0	17 47.9	22 59.2	- 6 29.8	+0.3239	0.5806	0.0215	+55	0
B. D. +17° 1275	6.2	0.82	11.4	16 59.5	4 3 8.3	- 2 29.8	+1.0553	0.5814	0.0292	+90	+46
26 Geminorum	5.2	0.88	11.4	17 43.2	7 53.5	+ 2 5.0	+0.1392	0.5823	0.0381	+43	-11
74 B. Geminorum	6.2	+0.90	-11.3	+18 16.6	9 59.6	+ 4 6.5	-0.5203	0.5827	-0.0420	+ 5	-53
110 B. Geminorum	6.2	0.97	11.6	17 51.8	16 20.6	+10 13.5	-0.3975	0.5836	0.0537	+12	-45
41 H ¹ Geminorum	6.0	0.96	12.0	16 47.1	16 24.8	+10 17.5	+0.7115	0.5836	0.0538	+90	+19
51 Geminorum	5.3	1.01	12.4	16 17.3	20 58.5	- 9 18.9	+0.9548	0.5842	0.0622	+90	+34
λ Geminorum	3.6	1.04	12.3	16 40.7	22 57.4	- 7 24.3	+0.4266	0.5845	0.0658	+62	+ 2
162 B. Geminorum	5.7	+1.10	-12.3	+17 15.0	5 442.3	- 1 52.1	-0.5675	0.5849	-0.0762	+ 2	-60
68 Geminorum	5.2	1.10	12.7	15 59.5	5 28.7	- 1 7.6	+0.6612	0.5851	0.0776	+86	+14
1 Cancri	6.0	1.21	13.0	15 59.8	15 16.7	+ 8 18.6	-0.1896	0.5857	0.0948	-1.24	-35
2 B. Cancri	6.0	1.22	12.7	16 43.6	15 54.7	+ 8 55.2	-0.9936	0.5857	0.0959	-26	-74
5 Cancri	5.9	1.23	12.8	16 40.1	17 9.6	+10 7.3	-1.0544	0.5858	0.0980	-31	-74
30 B. Cancri	6.1	+1.27	-13.5	+14 51.4	21 9.0	-10 2.1	+0.3824	0.5859	-0.1047	+59	- 4
29 Cancri	5.9	1.34	13.8	14 28.0	6 432.2	- 2 55.4	-0.0398	0.5860	0.1167	+32	-29
84 B. Cancri	6.4	1.36	14.1	13 31.2	6 41.6	- 0 50.8	+0.6605	0.5860	0.1201	+86	+10
A ¹ Cancri	5.5	1.40	14.3	12 57.5	10 39.4	+ 2 58.3	+0.7396	0.5860	0.1262	+90	+14
A ² Cancri	5.7	1.42	14.5	12 23.6	12 13.5	+ 4 28.8	+1.1085	0.5861	0.1286	+90	+40
60 Cancri	5.7	+1.46	-14.6	+11 55.2	15 59.6	+ 8 6.5	+1.0872	0.5860	-0.1341	+90	+38
α Cancri	4.3	1.47	14.6	12 9.4	17 3.7	+ 9 8.3	+0.7056	0.5860	0.1356	+90	+11
209 B. Cancri	6.5	1.51	14.6	11 52.7	21 47.8	-10 18.2	+0.3254	0.5859	0.1423	+54	-11
222 B. Cancri	6.3	1.55	14.6	11 49.5	7 111.2	- 7 2.4	-0.1103	0.5858	0.1468	+28	-36
ξ Leonis	5.1	1.60	14.6	11 38.5	7 5.9	- 1 20.8	-0.8167	0.5857	0.1543	-12	-79
h Leonis	5.2	+1.60	-15.1	+10 3.4	7 6.8	- 1 19.9	+0.7661	0.5857	-0.1543	+90	+13
o Leonis	3.8	1.64	15.0	10 14.6	10 58.5	+ 2 23.2	-0.0265	0.5856	0.1589	+33	-31
83 B. Leonis	5.9	1.70	15.1	9 18.0	17 24.0	+ 8 34.5	-0.1283	0.5854	0.1660	+27	-39
89 B. Leonis	6.2	1.71	15.3	8 41.0	18 6.8	+ 9 15.7	+0.3671	0.5854	0.1666	+57	-12
π Leonis	4.9	1.71	15.3	8 24.9	18 59.6	+10 6.5	+0.4865	0.5854	0.1676	+66	- 6
43 Leonis	6.3	+1.80	-15.4	+ 6 56.1	8 435.5	- 4 38.9	+0.3039	0.5851	-0.1764	+53	-17
155 B. Leonis	6.5	1.80	15.6	6 5.2	4 42.2	- 4 32.4	+1.1265	0.5851	0.1765	+90	+36
48 Leonis	5.2	1.84	15.0	7 21.1	9 33.5	+ 0 8.1	-0.9946	0.5850	0.1803	-24	-83
35 Sextantis	6.1	1.88	15.4	5 9.2	13 9.9	+ 3 36.6	+0.5280	0.5850	0.1828	+69	- 5
37 Sextantis	6.3	1.88	15.0	6 46.8	14 19.0	+ 4 43.1	-1.2936	0.5850	0.1835	-55	-84
d Leonis	5.0	+1.94	-15.2	+ 4 1.9	20 25.4	+10 36.0	+0.2937	0.5850	-0.1870	+52	-18

ELEMENTS OF OCCULTATIONS, 1922. 485

APRIL.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.		
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		Δα	Δδ								
75 Leonis	5.4	+2.00	-15.1	+ 2 26.1	9 3 28.7	- 6 36.2	+0.5400	0.5850	-0.1900	+70	- 4
76 Leonis	6.0	2.00	15.1	2 4.4	4 10.1	- 5 56.3	+0.7656	0.5850	0.1903	+90	+ 9
79 Leonis	5.5	2.02	15.0	1 49.9	6 19.6	- 3 51.7	+0.5929	0.5850	0.1909	+75	- 2
83 Leonis	6.3	2.00	14.6	3 26.1	7 29.7	- 2 44.1	-1.2119	0.5851	0.1913	-43	-87
τ Leonis	5.2	2.02	14.6	3 16.9	7 58.0	- 2 16.9	-1.1516	0.5851	0.1914	-37	-87
9 B. Virginis	6.2	+2.09	-14.4	+ 0 6.7	16 51.9	+ 6 17.4	+0.2664	0.5853	-0.1928	+50	-20
31 B. Virginis	6.4	2.14	14.2	- 1 20.2	21 55.0	+11 9.3	+0.7194	0.5855	0.1928	+89	+ 6
91 G. Virginis	6.5	2.25	12.0	3 48.2	10 20 1.4	+ 8 26.8	-1.0544	0.5867	0.1861	-29	-90
JUPITER	-2.0	..	..	3 43.1	20 31.3	+ 8 55.6	-1.2311	0.5919	0.1879	-46	-90
θ Virginis	4.4	2.28	11.3	5 7.6	11 2 51.6	- 8 58.1	-1.0058	0.5871	0.1818	-26	-90
m Virginis	5.2	+2.34	- 9.5	- 8 18.8	16 5.4	+ 3 46.1	-0.1844	0.5879	-0.1708	+22	-45
575 B. Virginis	6.2	2.36	9.2	9 19.3	18 25.5	+ 6 1.1	+0.4230	0.5880	0.1685	+58	-11
623 B. Virginis	6.5	2.35	8.2	8 53.1	12 1 34.6	-11 5.8	-1.1906	0.5883	0.1608	-45	-90
95 Virginis	5.4	2.35	8.0	8 56.6	2 33.6	-10 9.0	-1.2905	0.5883	0.1596	-59	-87
96 Virginis	6.5	2.36	7.8	9 58.1	3 30.4	- 9 14.3	-0.4194	0.5884	0.1585	+ 8	-61
κ Virginis	4.3	+2.36	- 7.6	- 9 54.8	5 7.5	- 7 40.9	-0.7293	0.5884	-0.1566	- 9	-90
2 Libræ	6.3	2.38	6.8	11 21.6	9 30.1	- 3 28.0	+0.0433	0.5885	0.1512	+32	-32
4 G. Libræ	6.5	2.38	6.8	11 19.1	10 1.6	- 2 57.7	-0.0784	0.5885	0.1505	+26	-39
6 B. Libræ	6.2	2.36	5.8	11 58.5	15 10.7	+ 1 59.9	-0.1770	0.5886	0.1436	+20	-45
22 B. Libræ	6.4	2.37	5.2	12 30.8	19 41.1	+ 6 20.2	-0.2700	0.5885	0.1373	+14	-51
μ Libræ	5.4	+2.39	- 4.9	-13 49.6	20 15.6	+ 6 53.5	+0.9718	0.5885	-0.1365	+77	+23
ο Libræ	6.2	2.36	2.6	15 16.1	13 9 26.7	- 4 24.8	+0.7666	0.5879	0.1162	+75	+ 9
γ Libræ	4.0	2.32	1.8	14 31.8	15 30.1	+ 1 25.0	-0.6564	0.5873	0.1063	-11	-86
190 B. Libræ	6.5	2.30	1.3	14 47.7	18 47.7	+ 4 35.3	-0.7301	0.5870	0.1007	-16	-90
η Libræ	5.5	2.31	1.2	15 25.5	19 3.9	+ 4 50.9	-0.1137	0.5869	0.1002	+19	-41
θ Libræ	4.4	+2.30	- 0.3	-16 30.1	23 7.6	+ 8 45.6	+0.5923	0.5864	-0.0932	+63	- 1
49 Libræ	5.4	2.26	0.0	16 18.3	14 1 52.8	+11 24.6	+0.1412	0.5860	0.0884	+32	-26
φ Ophiuchi	4.4	2.17	+ 2.0	16 26.6	14 49.0	- 0 7.8	-0.7138	0.5834	0.0652	-18	-90
24 Scorpii	5.0	2.15	2.9	17 35.5	19 12.9	+ 4 6.5	+0.2037	0.5824	0.0572	+33	-23
78 B. Ophiuchi	6.5	2.08	3.4	16 40.9	15 1 22.1	+10 2.1	-1.0589	0.5808	0.0459	-44	-90
90 B. Ophiuchi	6.5	+2.08	+ 4.0	-18 7.6	2 55.9	+11 32.6	+0.3745	0.5803	-0.0430	+42	-13
29 Ophiuchi	6.4	2.08	4.3	18 46.2	3 49.7	-11 35.6	+1.0071	0.5800	0.0414	+72	+27
125 B. Ophiuchi	6.2	2.03	4.3	17 30.3	6 34.7	- 8 56.5	-0.4179	0.5792	0.0303	- 4	-62
164 B. Ophiuchi	6.0	1.98	5.0	17 40.5	11 34.6	- 4 7.5	-0.4017	0.5776	0.0272	- 4	-61
192 B. Ophiuchi	6.3	1.97	5.4	18 22.4	13 36.3	- 2 10.2	+0.2785	0.5768	-0.0234	+34	-19
305 B. Ophiuchi	6.3	+1.81	+ 7.0	-18 47.2	16 3 13.3	+10 57.8	+0.5676	0.5717	+0.0011	+54	- 2
6 Sagittarii	6.5	1.76	6.7	17 9.2	5 39.0	-10 41.5	-1.1546	0.5707	0.0054	-57	-90
32 G. Sagittarii	5.7	1.73	7.0	17 9.9	8 29.5	- 7 50.0	-1.1219	0.5695	0.0204	-53	-90
64 B. Sagittarii	6.1	1.70	7.8	18 41.1	11 52.8	+ 4 40.8	+0.5371	0.5681	0.0163	+52	- 4
6 B. Scuti	5.9	1.68	7.4	17 24.0	12 38.9	- 3 56.3	-0.8164	0.5677	0.0176	-29	-90
52 G. Sagittarii	6.4	+1.69	+ 7.8	-18 29.4	12 45.5	- 3 49.9	+0.3461	0.5677	+0.0178	+38	-15
17 H. Sagittarii	6.4	1.68	7.9	18 38.9	13 18.5	- 3 18.1	+0.5245	0.5675	0.0188	+51	- 5
Y Sagit. (var.)	5.4	1.67	8.1	18 53.6	14 29.6	- 2 9.4	+0.8093	0.5669	0.0208	+72	+13
85 B. Sagittarii	6.0	1.62	8.0	17 50.8	17 26.5	+ 0 41.4	-0.2375	0.5656	0.0258	+ 6	-49
95 B. Sagittarii	5.7	1.62	8.3	18 46.6	18 26.4	+ 1 39.2	+0.7821	0.5652	0.0275	+72	+11
100 B. Sagittarii	5.0	+1.61	+ 8.3	-18 27.3	19 0.2	+ 2 11.8	+0.4544	0.5650	+0.0284	+47	- 9
155 B. Sagittarii	5.5	1.45	8.3	16 28.2	17 5 56.9	-11 13.8	-1.2639	0.5600	0.0463	-68	-83
ρ Sagittarii	4.0	1.30	9.5	17 59.6	18 0.7	+ 0 25.8	+1.0488	0.5543	0.0649	+73	+31
ν Sagittarii	4.4	1.29	8.8	16 6.0	18 3.8	+ 0 28.8	-0.9944	0.5543	0.0650	-36	-90
54 Sagittarii	5.4	1.18	9.2	16 28.2	18 2 59.3	+ 9 6.8	+0.0431	0.5500	0.0779	+26	-32
ε Sagittarii	5.2	+1.17	+ 9.2	-16 18.3	3 50.6	+ 9 56.4	-0.0694	0.5497	+0.0790	+19	-39

486 ELEMENTS OF OCCULTATIONS, 1922.

APRIL.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922-0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, <i>H</i>	<i>Y</i>	<i>z'</i>	<i>y'</i>	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
283 B. Sagittarii	5.5	+1.16	+ 9.0	-15 39.0	18 4 20.6	+10 25.5	-0.7428	0.5494	+0.0797	-18	-90
<i>g</i> Sagittarii	5.1	1.07	9.2	15 41.8	11 13.4	- 6 55.1	-0.1118	0.5463	0.0890	+18	-41
16 B. Capricorni	6.2	0.93	9.1	15 1.8	22 17.9	+ 3 48.5	+0.2232	0.5414	0.1029	+39	-22
β Capricorni	3.2	0.93	9.1	15 1.6	22 24.8	+ 3 55.2	+0.2317	0.5414	0.1031	+40	-22
27 G. Capricorni	6.2	0.87	9.2	15 18.9	19 3 21.3	+ 8 42.4	+1.0741	0.5393	0.1089	+75	+32
45 B. Capricorni	6.1	+0.85	+ 8.8	-13 59.3	4 54.6	+10 12.7	-0.2119	0.5387	+0.1107	+15	-47
84 B. Capricorni	6.0	0.76	8.3	12 49.9	13 7.8	- 5 49.2	-0.5363	0.5354	0.1196	- 1	-71
<i>v</i> Aquarii	4.5	0.65	7.8	11 41.2	22 39.9	+ 3 25.4	-0.6137	0.5320	0.1291	- 5	-78
51 G. Aquarii	6.5	0.63	7.4	10 55.6	20 1 3.4	+ 5 44.7	-1.1407	0.5312	0.1314	-42	-90
72 B. Aquarii	6.5	0.55	7.6	11 54.3	8 10.4	-11 21.1	+0.8968	0.5289	0.1376	+79	+17
137 B. Capricorni	6.2	+0.49	+ 7.1	-10 55.6	13 58.2	- 5 43.5	+0.6276	0.5273	+0.1424	+73	0
<i>c</i> ¹ Capricorni	5.3	0.47	6.5	9 26.4	16 50.9	- 2 56.0	-0.6049	0.5266	0.1446	- 2	-77
<i>c</i> ² Capricorni	6.3	0.46	6.5	9 38.1	17 30.2	- 2 17.8	-0.2938	0.5264	0.1451	+15	-52
<i>0</i> Aquarii	4.3	0.32	5.4	8 10.2	21 9 28.2	-10 47.8	+0.4900	0.5231	0.1559	+64	- 7
<i>Q</i> Aquarii	5.3	0.30	5.3	8 12.7	11 14.7	- 9 4.5	+0.8133	0.5228	0.1569	+82	+11
170 B. Aquarii	6.0	+0.29	+ 5.1	- 7 35.3	13 0.5	- 7 21.8	+0.3984	0.5225	+0.1578	+57	-13
186 B. Aquarii	6.1	0.27	4.6	6 57.2	17 6.1	- 3 23.2	+0.3449	0.5220	0.1600	+54	-15
252 B. Aquarii	5.8	0.17	3.5	5 24.2	22 5 45.6	+ 8 54.4	+0.6884	0.5208	0.1657	+83	+ 4
197 G. Aquarii	6.3	0.17	3.4	5 13.6	6 52.8	+ 9 59.6	+0.6788	0.5208	0.1661	+83	+ 3
263 B. Aquarii	6.1	0.15	3.3	5 7.8	9 8.0	-11 49.0	+0.9470	0.5207	0.1670	+85	+20
293 B. Aquarii	5.5	+0.11	+ 2.5	- 3 55.3	16 36.1	- 4 33.8	+0.8613	0.5206	+0.1692	+87	+14
13 Piscium	6.4	0.07	1.4	1 31.0	23 1 19.0	+ 3 54.2	-0.3198	0.5211	0.1711	+17	-54
14 Piscium	5.9	0.06	1.3	- 1 40.7	2 28.6	+ 5 1.9	+0.0576	0.5212	0.1712	+38	-31
21 Piscium	5.6	0.04	0.3	+ 0 38.6	10 36.4	-11 4.5	-1.1137	0.5218	0.1722	-33	-90
60 B. Piscium	6.0	+0.01	+ 0.3	- 0 19.5	13 25.4	- 8 20.2	+0.4416	0.5221	0.1723	+63	-10
98 B. Piscium	6.3	-0.04	- 0.8	+ 1 15.3	24 1 33.8	+ 3 27.2	+0.7877	0.5240	+0.1720	+90	+10
44 Piscium	6.0	-0.06	1.2	1 30.4	5 33.8	+ 7 20.2	+1.1954	0.5249	0.1715	+90	+41
<i>NEW MOON</i>											
180 B. Tauri	6.1	+0.01	- 8.7	+17 7.8	28 18 14.6	- 7 23.2	-0.7038	0.5660	+0.0806	- 6	-72
193 B. Tauri	6.2	+0.02	- 8.8	+17 4.5	20 16.8	- 5 25.2	-0.4844	0.5668	+0.0775	+ 7	-53
δ Tauri	3.9	0.04	9.0	17 21.5	29 0 56.3	- 0 55.3	-0.4404	0.5686	0.0701	+10	-50
63 Tauri	5.7	0.03	9.1	16 35.6	1 9.9	- 0 42.2	+0.3877	0.5686	0.0698	+59	- 1
64 Tauri	4.9	0.04	9.0	17 15.7	1 27.5	- 0 25.3	-0.3017	0.5687	0.0693	+17	-40
68 Tauri	4.3	0.04	9.0	17 44.9	2 4.4	+ 0 10.3	-0.7758	0.5690	0.0683	-11	-73
75 Tauri	5.2	+0.04	- 9.3	+16 11.0	3 24.8	+ 1 27.9	+0.9755	0.5694	+0.0663	+90	+36
264 B. Tauri	4.8	0.04	9.4	16 1.4	4 21.3	+ 2 22.5	+1.2075	0.5698	0.0647	+90	+57
119 H. Tauri	6.2	0.06	9.1	17 51.0	5 39.7	+ 3 38.2	-0.6488	0.5704	0.0625	- 3	-66
275 B. Tauri	6.5	0.05	9.4	16 9.5	5 43.3	+ 3 41.6	+1.1503	0.5703	0.0624	+90	+51
<i>a</i> Tauri (<i>Ald.</i>)	1.1	0.06	9.5	16 21.1	6 43.9	+ 4 40.2	+1.0074	0.5706	0.0608	+90	+38
302 B. Tauri	6.1	+0.09	- 9.2	+18 35.5	11 16.7	+ 9 3.5	-1.1079	0.5722	+0.0532	-37	-72
<i>i</i> Tauri	5.1	0.10	9.3	18 42.3	13 31.1	+11 13.1	-1.1122	0.5729	0.0494	-37	-72
318 B. Tauri	5.7	0.11	9.7	17 1.8	16 10.6	-10 12.9	+0.7850	0.5737	0.0448	+90	+25
<i>m</i> Tauri	5.0	0.15	9.6	18 32.3	20 32.4	- 6 0.4	-0.6296	0.5750	0.0372	- 2	-62
111 Tauri	5.1	0.18	10.2	17 18.6	30 3 56.3	+ 1 7.6	+0.8923	0.5770	0.0240	+90	+34
115 Tauri	5.3	+0.19	-10.1	+17 53.6	5 8.1	+ 2 16.9	+0.3048	0.5773	+0.0219	+54	- 1
117 Tauri	6.0	0.19	10.3	17 10.3	5 30.9	+ 2 38.9	+1.0717	0.5773	0.0212	+90	+47
119 Tauri	4.9	0.20	10.0	18 32.1	7 18.3	+ 4 22.5	-0.3257	0.5777	0.0180	+10	-37
120 Tauri	5.6	0.21	10.1	18 29.0	7 52.4	+ 4 55.3	-0.2615	0.5779	0.0169	+21	-32
130 Tauri	5.6	+0.25	-10.5	+17 41.9	13 52.4	+10 42.4	+0.6304	0.5791	+0.0059	+83	+19

ELEMENTS OF OCCULTATIONS, 1922. 487

MAY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922·0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	P	z'	y'	N.	S.
		Δα	Δδ								
19 B. Geminorum	6·2	+0·34	-10·5	+18 41·9	1 1 2·4	- 2 31·9	-0·4660	0·5808	-0·0148	+ 8	-40
124 H ¹ . Orionis	5·7	0·34	10·8	17 55·6	1 26·7	- 2 8·5	+0·3342	0·5809	0·0155	+56	+ 2
71 Orionis	5·1	0·34	10·5	19 10·9	1 35·4	- 2 0·1	-0·9777	0·5809	0·0158	-25	-71
B. D. + 17° 110·6	6·5	0·34	11·0	17 12·3	2 16·5	- 1 20·5	+1·0730	0·5810	0·0171	+90	+48
287 B. Orionis	6·2	0·35	11·0	17 21·2	3 23·7	- 0 15·7	+0·8974	0·5811	0·0192	+90	+34
292 B. Orionis	6·5	+0·36	-10·9	+17 47·9	4 24·7	+ 0 43·0	+0·4133	0·5812	-0·0210	+62	+ 5
B. D. + 17° 127·5	6·2	0·40	11·2	16 59·5	8 34·2	+ 4 43·4	+1·1489	0·5816	0·0288	+90	+54
26 Geminorum	5·2	0·44	11·1	17 43·2	13 20·3	+ 9 19·1	+0·2320	0·5819	0·0377	+49	- 5
74 B. Geminorum	6·2	0·46	11·0	18 16·6	15 26·9	+11 21·1	-0·4294	0·5820	0·0415	+10	-46
110 B. Geminorum	6·2	0·52	11·2	17 51·9	21 50·1	- 6 29·7	-0·3043	0·5822	0·0532	+17	-38
41 H ¹ . Geminorum	6·0	+0·51	-11·6	+16 47·1	21 54·3	- 6 25·7	+0·8103	0·5822	-0·0534	+90	+25
51 Geminorum	5·3	0·56	11·8	16 17·4	2 230·1	- 1 59·9	+1·0570	0·5822	0·0617	+90	+42
λ Geminorum	3·6	0·58	11·7	16 40·7	4 30·1	- 0 43·0	+0·5264	0·5822	0·0653	+71	+ 7
162 B. Geminorum	5·7	0·64	11·6	17 15·0	10 18·6	+ 5 31·5	-0·4727	0·5820	0·0756	+ 8	-52
68 Geminorum	5·2	0·64	12·0	15 59·5	11 5·7	+ 6 16·8	+0·7649	0·5820	0·0770	+90	+20
1 Cancri	6·0	+0·74	-12·1	+15 59·8	21 1·8	- 8 8·8	-0·0904	0·5814	-0·0939	+29	-29
2 B. Cancri	6·0	0·75	11·8	16 43·6	21 40·3	- 7 31·7	-0·9012	0·5813	0·0950	-19	-74
5 Cancri	5·9	0·76	11·8	16 40·1	22 56·4	- 6 18·4	-0·9626	0·5812	0·0971	-23	-74
30 B. Cancri	6·1	0·81	12·5	14 51·5	3 259·9	- 2 32·8	+0·4878	0·5808	0·1037	+68	+ 1
29 Cancri	5·9	0·89	12·6	14 28·0	10 31·6	+ 4 51·4	+0·0621	0·5801	0·1155	+38	-23
84 B. Cancri	6·4	+0·91	-12·9	+13 31·3	12 43·8	+ 6 58·9	+0·7700	0·5798	-0·1188	+90	+16
A ¹ Cancri	5·5	0·96	13·1	12 57·5	16 46·8	+10 53·1	+0·8504	0·5793	0·1248	+90	+21
A ² Cancri	5·7	0·98	13·3	12 23·6	18 23·0	-11 34·3	+1·2236	0·5792	0·1271	+90	+53
60 Cancri	5·7	1·02	13·4	11 55·3	22 14·5	- 7 51·1	+1·2025	0·5787	0·1325	+90	+49
α Cancri	4·3	1·04	13·3	12 9·4	23 20·2	- 6 47·7	+0·8163	0·5786	0·1340	+90	+18
209 B. Cancri	6·5	+1·09	-13·3	+11 52·7	4 411·6	- 2 7·0	+0·4312	0·5780	-0·1405	+62	- 6
222 B. Cancri	6·3	1·13	13·2	11 49·5	7 40·4	+ 1 14·4	-0·0106	0·5776	0·1449	+34	-30
ξ Leonis	5·1	1·20	13·2	11 38·5	13 45·0	+ 7 5·8	-0·7280	0·5769	0·1522	- 6	-79
η Leonis	5·2	1·20	13·7	10 3·4	13 46·0	+ 7 6·9	+0·8766	0·5769	0·1522	+90	+20
ο Leonis	3·8	1·24	13·6	10 14·7	17 44·5	+10 56·8	+0·0721	0·5765	0·1567	+39	-27
83 B. Leonis	5·9	+1·32	-13·6	+ 9 18·0	5 021·7	- 6 40·2	-0·0332	0·5758	-0·1636	+33	-34
89 B. Leonis	6·2	1·34	13·8	8 41·0	1 5·8	- 5 57·7	+0·4691	0·5758	0·1643	+65	- 5
π Leonis	4·9	1·35	13·9	8 24·9	2 0·3	- 5 5·2	+0·5900	0·5757	0·1652	+76	+ 1
43 Leonis	6·3	1·47	14·0	6 56·1	11 54·7	+ 4 28·0	+0·4007	0·5750	0·1738	+60	-10
155 B. Leonis	6·5	1·47	14·3	6 5·2	12 1·6	+ 4 34·7	+1·2357	0·5750	0·1739	+90	+48
48 Leonis	5·2	+1·52	-13·6	+ 7 21·1	17 2·6	+ 9 24·9	-0·9203	0·5748	-0·1777	-18	-83
35 Sextantis	6·1	1·58	14·1	5 9·2	20 46·3	-10 59·3	+0·6236	0·5746	0·1801	+79	+ 1
37 Sextantis	6·3	1·58	13·5	6 46·8	21 57·6	- 9 50·6	-1·2267	0·5746	0·1809	-45	-84
d Leonis	5·0	1·67	14·0	4 2·0	6 416·4	- 3 45·3	+0·3810	0·5745	0·1843	+58	-13
75 Leonis	5·4	1·76	14·0	2 26·2	11 34·0	+ 3 16·8	+0·6260	0·5746	0·1874	+79	0
76 Leonis	6·0	+1·77	-14·1	+ 2 4·5	12 16·8	+ 3 58·1	+0·8545	0·5746	-0·1877	+90	+15
79 Leonis	5·5	1·79	13·9	1 49·9	14 30·7	+ 6 7·2	+0·6773	0·5747	0·1884	+85	+ 3
83 Leonis	6·3	1·78	13·3	3 26·1	15 43·0	+ 7 17·0	-1·1558	0·5748	0·1887	-37	-87
τ Leonis	5·2	1·80	13·4	3 16·9	16 12·3	+ 7 45·3	-1·0948	0·5748	0·1888	-31	-87
9 B. Virginis	6·2	1·92	13·5	+ 0 6·7	7 123·8	- 7 22·9	+0·3367	0·5753	0·1904	+55	-16
31 B. Virginis	6·4	+1·99	-13·4	- 1 20·2	6 36·5	- 2 21·3	+0·7914	0·5758	-0·1905	+89	+10
91 G. Virginis	6·5	2·22	11·6	3 48·2	8 521·2	- 4 25·4	-1·0288	0·5788	0·1847	-27	-90
θ Virginis	4·4	2·30	10·9	5 7·6	12 21·5	+ 2 19·7	-0·9867	0·5799	0·1808	-24	-90
m Virginis	5·2	2·44	9·6	8 18·8	9 152·0	- 8 39·2	-0·1720	0·5823	0·1704	+23	-45
575 B. Virginis	6·2	2·48	9·4	9 19·3	4 14·6	- 6 21·7	+0·4377	0·5828	0·1682	+59	-10
623 B. Virginis	6·5	+2·51	- 8·2	- 8 53·1	11 30·5	+ 0 38·2	-1·1970	0·5841	-0·1609	-45	-90

488 ELEMENTS OF OCCULTATIONS, 1922.

MAY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	F	α'	γ'	N.	S.
		Δα	Δδ								
		s	"		d h m	h m					
95 Virginis	5.4	+2.51	-8.0	-8 56.6	9 12 30.4	+ 1 36.0	-1.2987	0.5842	-0.1598	-61	-85
96 Virginis	6.5	2.54	8.0	9 58.1	13 28.0	+ 2 31.4	-0.4226	0.5844	0.1587	+ 8	-62
κ Virginis	4.3	2.54	7.7	9 54.8	15 6.4	+ 4 6.2	-0.7365	0.5847	0.1569	-10	-90
2 Libræ	6.3	2.59	7.2	11 21.6	19 32.2	+ 8 22.2	+0.0357	0.5854	0.1516	+32	-33
4 G. Libræ	6.5	2.59	7.1	11 19.1	20 4.0	+ 8 52.9	-0.0874	0.5855	0.1510	+25	-40
6 B. Libræ	6.2	+2.60	-6.2	-11 58.6	10 1 16.2	-10 6.5	-0.1930	0.5863	-0.1443	+19	-46
22 B. Libræ	6.4	2.65	5.6	12 30.8	5 48.6	- 5 44.1	-0.2920	0.5869	0.1382	+13	-52
μ Libræ	5.4	2.68	5.5	13 49.6	6 23.4	- 5 10.7	+0.9540	0.5870	0.1374	+77	+22
ο Libræ	6.2	2.73	3.2	15 16.1	19 37.3	+ 7 33.8	+0.7294	0.5882	0.1176	+75	+ 7
γ Libræ	4.0	2.72	2.2	14 31.9	11 1 40.5	-10 36.5	-0.7026	0.5885	0.1077	-13	-90
190 B. Libræ	6.5	+2.72	-1.6	-14 47.7	4 57.7	- 7 26.7	-0.7801	0.5886	-0.1022	-19	-90
η Libræ	5.5	2.73	1.6	15 25.6	5 13.8	- 7 11.1	-0.1640	0.5886	0.1017	+16	-44
θ Libræ	4.4	2.76	0.7	16 30.1	9 16.5	- 3 17.5	+0.5366	0.5886	0.0948	+59	- 4
49 Libræ	5.4	2.73	-0.4	16 18.3	12 0.8	- 0 39.2	+0.0824	0.5885	0.0900	+29	-30
χ Ophiuchi	4.9	2.76	+1.8	18 16.8	23 6.1	+10 1.3	+1.2235	0.5877	0.0701	+72	+51
φ Ophiuchi	4.4	+2.71	+1.9	-16 26.6	12 0 50.8	+11 42.1	-0.7856	0.5875	-0.0668	-23	-90
24 Scorpil	5.0	2.72	2.8	17 35.5	5 11.8	- 8 6.5	+0.1240	0.5869	0.0588	+28	-28
78 B. Ophiuchi	6.5	2.67	3.7	16 40.9	11 16.3	- 2 15.5	-1.1400	0.5858	0.0474	-51	-90
90 B. Ophiuchi	6.5	2.69	4.1	18 7.6	12 48.9	- 0 46.3	+0.2851	0.5855	0.0445	+36	-18
29 Ophiuchi	6.4	2.70	4.4	18 46.2	13 41.9	+ 0 4.8	+0.9137	0.5852	0.0428	+72	+20
125 B. Ophiuchi	6.2	+2.66	+4.6	-17 30.3	16 24.5	+ 2 41.3	-0.5074	0.5846	-0.0377	- 9	-69
164 B. Ophiuchi	6.0	2.63	5.4	17 40.5	21 19.7	+ 7 25.7	-0.4964	0.5834	0.0285	- 9	-68
192 B. Ophiuchi	6.3	2.63	5.8	18 22.4	23 19.4	+ 9 21.0	+0.1778	0.5828	-0.0247	+28	-24
305 B. Ophiuchi	6.3	2.53	7.9	18 47.2	13 12 41.8	- 1 45.6	+0.4507	0.5784	+0.0002	+44	- 9
6 Sagittarii	6.5	2.48	7.8	17 9.2	15 4.8	+ 0 32.3	-1.2617	0.5774	0.0046	-70	-82
32 G. Sagittarii	5.7	+2.45	+8.2	-17 9.9	17 51.9	+ 3 13.3	-1.2316	0.5763	+0.0097	-65	-90
64 B. Sagittarii	6.1	2.45	9.0	18 41.0	21 11.3	+ 6 25.6	+0.4120	0.5750	0.0157	+42	-10
6 B. Scuti	5.9	2.42	8.7	17 23.9	21 56.4	+ 7 9.1	-0.9321	0.5746	0.0170	-37	-90
52 G. Sagittarii	6.4	2.44	9.0	18 29.4	22 2.8	+ 7 15.3	+0.2216	0.5746	0.0172	+30	-22
17 H ¹ . Sagittarii	6.4	2.43	9.1	18 38.9	22 35.2	+ 7 46.5	+0.3981	0.5744	0.0182	+42	-12
Y Sagit. (var.)	5.4	+2.42	+9.3	-18 53.6	23 44.8	+ 8 53.7	+0.6796	0.5739	+0.0202	+67	+ 5
85 B. Sagittarii	6.0	2.38	9.4	17 50.8	14 2 38.2	+11 41.0	-0.3618	0.5726	0.0253	- 2	-58
95 B. Sagittarii	5.7	2.39	9.7	18 46.6	3 36.8	-11 22.5	+0.6490	0.5721	0.0271	+63	+ 3
100 B. Sagittarii	5.0	2.37	9.7	18 27.3	4 9.9	-10 50.5	+0.3233	0.5719	0.0280	+37	-16
ε Sagittarii	4.0	2.12	11.8	17 59.5	15 2 41.8	+10 54.7	+0.8945	0.5609	0.0651	+73	+19
ν Sagittarii	4.4	+2.10	+11.2	-16 6.0	2 44.8	+10 57.7	-1.1321	0.5608	+0.0652	-49	-90
54 Sagittarii	5.4	2.00	11.9	16 28.2	11 29.6	- 4 35.1	-0.1091	0.5562	0.0782	+17	-41
e Sagittarii	5.2	1.99	12.0	16 18.3	12 19.8	- 3 46.6	-0.2213	0.5558	0.0794	+11	-48
283 B. Sagittarii	5.5	1.98	11.7	15 38.9	12 49.2	- 3 18.1	-0.8895	0.5555	0.0801	-28	-90
g Sagittarii	5.1	1.90	12.2	15 41.8	19 34.0	+ 3 13.3	-0.2677	0.5520	0.0895	+10	-51
16 B. Capricorni	6.2	+1.76	+12.4	-15 1.7	16 6 26.6	-10 15.0	+0.0591	0.5464	+0.1036	+29	-31
β Capricorni	3.2	1.76	12.4	15 1.5	6 33.4	-10 8.5	+0.0675	0.5463	0.1037	+30	-31
27 G. Capricorni	6.2	1.70	12.6	15 18.9	11 24.9	- 5 26.2	+0.9018	0.5440	0.1095	+75	+18
45 B. Capricorni	6.1	1.68	12.3	13 59.2	12 56.7	- 3 57.4	-0.3757	0.5432	0.1113	+ 6	-58
τ Capricorni	5.2	1.65	12.7	15 13.5	15 24.5	- 1 34.2	+1.2531	0.5420	0.1141	+75	+52
84 B. Capricorni	6.0	+1.58	+12.0	-12 49.9	21 2.5	+ 3 53.3	-0.7008	0.5393	+0.1203	-11	-90
ν Aquarii	4.5	1.47	11.7	11 41.1	17 6 26.9	-10 59.8	-0.7805	0.5351	0.1298	-15	-90
51 G. Aquarii	6.5	1.44	11.4	10 55.5	8 48.6	- 8 42.5	-1.3052	0.5341	0.1320	-67	-79
72 B. Aquarii	6.5	1.35	11.7	11 54.2	15 51.0	- 1 52.8	+0.7203	0.5313	0.1384	+79	+ 7
137 B. Capricorni	6.2	1.29	11.3	10 55.5	21 35.5	+ 3 41.3	+0.4525	0.5292	0.1430	+59	-10
ε ¹ Capricorni	5.3	+1.26	+10.8	- 9 26.3	18 0 26.7	+ 6 27.4	-0.7741	0.5282	+0.1452	-12	-90

ELEMENTS OF OCCULTATIONS, 1922. 489

MAY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	P	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
c ² Capricorni	6.3	+1.25	+10.8	9 38.0	18 1 5.6	+ 7 5.2	-0.4645	0.5280	+0.1457	+ 6	-6
96 B. Aquarii	6.5	1.21	11.1	10 40.6	4 51.8	+10 44.6	+1.2396	0.5268	+0.1884	+80	+48
θ Aquarii	4.3	1.09	9.8	8 10.2	16 57.6	- 1 30.8	+0.3184	0.5234	+0.1563	+51	-17
ρ Aquarii	5.3	1.07	9.8	8 12.6	18 43.6	+ 0 12.1	+0.6412	0.5230	+0.1573	+77	+ 1
170 B. Aquarii	6.0	1.05	9.5	7 35.2	20 29.0	+ 1 54.4	+0.2282	0.5226	+0.1582	+46	-22
186 B. Aquarii	6.1	+1.02	+ 9.1	6 57.1	19 0 33.8	+ 5 52.2	+0.1762	0.5218	+0.1604	+43	-25
252 B. Aquarii	5.8	0.89	8.0	5 24.1	13 11.9	- 5 51.6	+0.5246	0.5199	+0.1659	+68	- 6
197 G. Aquarii	6.3	0.88	7.9	5 13.5	14 19.1	- 4 46.3	+0.5157	0.5198	+0.1663	+67	- 6
263 B. Aquarii	6.1	0.86	7.7	5 7.7	16 34.2	- 2 35.1	+0.7846	0.5196	+0.1671	+85	+ 9
293 B. Aquarii	5.5	0.80	6.9	3 55.2	20 0 2.5	+ 4 40.3	+0.7039	0.5192	+0.1694	+86	+ 4
13 Piscium	6.4	+0.74	+ 5.6	- 1 30.9	8 46.2	-10 51.0	-0.4690	0.5192	+0.1712	+ 9	-65
14 Piscium	5.9	0.73	5.6	- 1 40.6	9 55.9	- 9 43.3	-0.0912	0.5193	+0.1714	+29	-40
21 Piscium	5.6	0.68	4.3	+ 0 38.6	18 4.8	- 1 48.3	-1.2543	0.5197	+0.1723	-48	-90
60 B. Piscium	6.0	0.64	4.4	- 0 19.4	20 54.4	+ 0 56.4	+0.3018	0.5200	+0.1726	+53	-18
98 B. Piscium	6.3	0.56	3.0	+ 1 15.4	21 9 5.0	-11 13.9	+0.6597	0.5219	+0.1723	+83	+ 2
44 Piscium	6.0	+0.53	+ 2.7	+ 1 30.5	13 5.7	- 7 20.0	+1.0713	0.5226	+0.1719	+90	+30
147 B. Piscium	5.9	0.49	0.4	4 52.8	22 1 4.4	+ 4 17.6	-0.5903	0.5257	+0.1696	+ 2	-74
171 B. Piscium	6.3	0.44	+0.1	6 3.8	7 2.2	+10 4.9	-0.8810	0.5276	+0.1676	-16	-84
73 Piscium	6.2	0.42	0.0	5 14.3	9 38.7	-11 23.2	+0.4581	0.5284	+0.1667	+64	- 9
e Piscium	5.6	0.39	-0.2	5 14.3	11 27.4	- 9 37.8	+0.7600	0.5291	+0.1660	+90	+ 9
ζ Piscium	5.6	+0.41	- 0.8	+ 7 9.8	14 10.8	- 6 59.3	-0.8957	0.5300	+0.1649	-17	-83
88 Piscium	6.2	0.40	0.7	6 35.0	14 41.3	- 6 29.7	-0.1772	0.5302	+0.1647	+25	-44
263 B. Piscium	6.4	0.36	1.4	7 33.4	21 38.5	+ 0 15.1	-0.1075	0.5329	+0.1613	+29	-39
o Piscium	4.5	0.32	2.4	8 45.9	23 6 12.5	+ 8 33.5	-0.0613	0.5365	+0.1564	+31	-36
ξ Arietis	5.5	0.22	4.2	10 15.4	24 1 36.8	+ 3 21.7	+1.2165	0.5457	+0.1415	+90	+50
<i>NEW MOON.</i>											
19 B. Geminorum	6.2	+0.18	-10.4	+18 41.9	28 7 12.4	+ 5 25.6	-0.3390	0.5872	-0.0135	+15	-37
124 H ¹ . Orionis	5.7	0.18	10.5	17 55.6	7 36.2	+ 5 48.5	+0.4560	0.5872	+0.0143	+65	+ 8
71 Orionis	5.1	0.18	10.4	19 10.9	7 44.7	+ 5 56.7	-0.8462	0.5873	+0.0145	-15	-71
B. D. +17° 1191	6.5	+0.18	-10.6	+17 12.3	8 25.1	+ 6 35.6	+1.1908	0.5873	-0.0158	+90	+60
287 B. Orionis	6.2	0.18	10.7	17 21.2	9 31.1	+ 7 39.2	+1.0180	0.5874	+0.0180	+90	+43
292 B. Orionis	6.5	0.19	10.6	17 47.9	10 30.9	+ 8 36.7	+0.5387	0.5875	+0.0199	+73	+12
26 Geminorum	5.2	0.23	10.8	17 43.2	19 16.8	- 6 56.9	+0.3706	0.5880	+0.0367	+58	+ 2
74 B. Geminorum	6.2	0.24	10.7	18 16.6	21 21.2	- 4 57.1	-0.2840	0.5881	+0.0407	+18	-36
110 B. Geminorum	6.2	10.28	-10.8	+17 51.9	29 3 38.0	+ 1 5.6	-0.1517	0.5880	-0.0525	+26	-29
41 H ¹ . Geminorum	6.0	0.27	11.1	16 47.1	3 42.2	+ 1 9.5	+0.9563	0.5880	+0.0527	+90	+36
51 Geminorum	5.3	0.30	11.2	16 17.4	8 13.5	+ 5 30.9	+1.2073	0.5877	+0.0611	+90	+58
λ Geminorum	3.6	0.32	11.2	16 40.7	10 11.6	+ 7 24.6	+0.6823	0.5876	+0.0647	+90	+16
162 B. Geminorum	5.7	0.36	11.0	17 15.0	15 55.0	-11 4.8	-0.3053	0.5871	+0.0752	+17	-41
68 Geminorum	5.2	+0.36	-11.3	+15 59.5	16 41.4	-10 20.2	+0.9273	0.5869	-0.0765	+90	+31
f Geminorum	5.3	0.38	10.9	17 51.0	19 7.4	- 7 59.6	-1.1702	0.5866	+0.0809	-43	-73
1 Cancri	6.0	0.44	11.3	15 59.8	2 29.9	- 0 53.4	+0.0862	0.5855	+0.0936	+40	-19
2 B. Cancri	6.0	0.44	11.1	16 43.6	3 8.0	- 0 16.7	-0.7211	0.5854	+0.0947	- 6	-74
5 Cancri	5.9	0.45	11.1	16 40.1	4 23.3	+ 0 55.8	-0.7812	0.5852	+0.0968	-10	-74
30 B. Cancri	6.1	+0.49	-11.6	+14 51.5	8 24.2	+ 4 47.9	+0.6683	0.5844	-0.1034	+87	+12
29 Cancri	5.9	0.55	11.6	14 28.0	15 52.0	+11 59.2	+0.2503	0.5828	+0.1153	+50	-13
84 B. Cancri	6.4	0.58	11.8	13 31.3	18 3.2	- 9 54.3	+0.9590	0.5823	+0.1186	+90	+29
90 B. Cancri	6.3	0.58	11.2	15 34.9	19 2.4	- 8 57.3	-1.2600	0.5821	+0.1201	-54	-75
A ¹ Cancri	5.5	0.62	11.9	12 57.5	22 4.8	- 6 1.6	+1.0427	0.5814	+0.1246	+90	+35
α Cancri	4.3	+0.68	-12.0	+12 9.4	31 4 36.6	+ 0 16.0	+1.0138	0.5798	-0.1338	+90	+31

490 ELEMENTS OF OCCULTATIONS, 1922.

MAY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declination.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
209 B. Cancri	6.5	+0.73	-12.0	+11 52.8	31 9 27.3	+ 4 56.1	+0.6317	0.5787	-0.1402	+81	+ 6
222 B. Cancri	6.3	0.77	11.8	11 49.5	12 56.0	+ 8 17.3	+0.1913	0.5778	0.1446	+46	-18
ε Leonis	5.1	0.83	11.7	11 38.6	19 1.2	- 9 50.7	-0.5252	0.5764	0.1518	+ 6	-64
h Leonis	5.2	0.81	12.2	10 3.4	19 2.1	- 9 49.8	+1.0831	0.5764	0.1518	+90	+35
o Leonis	3.8	+0.88	-12.0	+10 14.7	23 1.4	- 5 59.0	+0.2780	0.5754	-0.1562	+51	-16

JUNE.

83 B. Leonis	5.9	+0.97	-12.0	+ 9 18.0	1 5 40.8	+ 0 26.1	+0.1739	0.5739	-0.1629	+44	-22
89 B. Leonis	6.2	0.98	12.2	8 41.0	6 25.2	+ 1 9.0	+0.6783	0.5737	0.1636	+86	+ 6
π Leonis	4.9	+0.99	-12.3	+ 8 24.9	7 20.1	+ 2 1.9	+0.7999	0.5736	-0.1645	+90	+14
43 Leonis	6.3	1.12	12.3	6 56.1	17 20.0	+11 40.6	+0.6106	0.5716	0.1729	+77	+ 1
48 Leonis	5.2	1.18	11.8	7 21.1	22 31.7	- 7 18.7	-0.7195	0.5707	0.1766	- 6	-83
35 Sextantis	6.1	1.24	12.4	5 9.2	2 2 18.5	- 3 39.7	+0.8340	0.5701	0.1790	+90	+14
37 Sextantis	6.3	1.24	11.7	6 46.9	3 30.9	- 2 29.9	-1.0298	0.5699	0.1797	-26	-83
d Leonis	5.0	+1.34	-12.3	+ 4 2.0	9 55.9	+ 3 41.6	+0.5875	0.5691	-0.1831	+74	- 1
75 Leonis	5.4	1.45	12.3	2 26.2	17 21.6	+10 51.9	+0.8312	0.5684	0.1860	+90	+13
76 Leonis	6.0	1.46	12.4	2 4.5	18 5.2	+11 34.1	+1.0614	0.5683	0.1862	+90	+29
79 Leonis	5.5	1.49	12.2	1 50.0	20 21.9	-10 14.2	+0.8814	0.5682	0.1869	+90	+16
83 Leonis	6.3	1.47	11.5	3 26.1	21 35.8	- 9 2.8	-0.9698	0.5681	0.1872	-22	-87
τ Leonis	5.2	+1.50	-11.6	+ 3 17.0	22 5.6	- 8 34.0	-0.9088	0.5681	-0.1873	-18	-87
9 B. Virginis	6.2	1.64	11.9	0 6.7	3 7 29.5	+ 0 30.2	+0.5296	0.5679	0.1888	+69	- 5
27 B. Virginis	6.5	1.69	11.2	+ 0 57.7	11 57.3	+ 4 48.8	-1.1730	0.5679	0.1889	-39	-89
31 B. Virginis	6.4	1.73	11.9	- 1 20.1	12 50.0	+ 5 39.5	+0.9843	0.5679	0.1889	+89	+23
JUPITER	-1.8	..	..	2 14.7	4 5 47.8	- 1 57.8	-1.2831	0.5695	0.1858	-53	-90
91 G. Virginis	6.5	+2.04	-10.2	- 3 48.2	12 11.5	+ 4 12.5	-0.8856	0.5698	-0.1832	-17	-90
θ Virginis	4.4	2.15	9.6	5 7.5	19 23.8	+11 9.7	-0.8536	0.5709	0.1794	-15	-90
m Virginis	5.2	2.35	8.6	8 18.7	5 9 17.6	+ 0 34.0	-0.0515	0.5734	0.1695	+29	-37
575 B. Virginis	6.2	2.40	8.5	9 19.3	11 44.2	+ 2 55.5	+0.5614	0.5739	0.1674	+69	- 3
623 B. Virginis	6.5	2.47	7.3	8 53.1	19 12.3	+10 7.7	-1.1064	0.5755	0.1603	-36	-90
95 Virginis	5.4	+2.48	- 7.1	- 8 56.6	20 13.8	+11 7.0	-1.2112	0.5757	-0.1593	-47	-90
96 Virginis	6.5	2.51	7.2	9 58.1	21 12.9	-11 56.0	-0.3264	0.5759	0.1582	+13	-54
κ Virginis	4.3	2.52	6.9	9 54.8	22 54.0	-10 18.5	-0.6471	0.5763	0.1565	- 5	-82
2 Libræ	6.3	2.59	6.6	11 21.6	6 3 26.9	- 5 55.3	+0.1256	0.5772	0.1514	+37	-27
4 G. Libræ	6.5	2.60	6.5	11 19.1	3 59.6	- 5 23.7	+0.0001	0.5774	0.1508	+30	-34
6 B. Libræ	6.2	+2.64	- 5.6	-11 58.5	9 19.6	- 0 15.3	-0.1170	0.5785	-0.1443	+23	-41
22 B. Libræ	6.4	2.71	5.1	12 30.8	13 58.8	+ 4 13.9	-0.2262	0.5794	0.1384	+16	-48
μ Libræ	5.4	2.74	5.2	13 49.6	14 34.4	+ 4 48.2	+1.0320	0.5796	0.1376	+76	+28
o Libræ	6.2	2.88	3.0	15 16.1	7 4 6.0	- 6 9.6	+0.7767	0.5820	0.1183	+75	+10
γ Libræ	4.0	2.90	1.8	14 31.8	10 16.2	- 0 12.9	-0.6810	0.5830	0.1087	-12	-88
190 B. Libræ	6.5	+2.92	- 1.2	-14 47.7	13 36.9	+ 3 0.4	-0.7658	0.5834	-0.1034	-18	-90
η Libræ	5.5	2.94	1.2	15 25.5	13 53.3	+ 3 16.3	-0.1451	0.5834	0.1029	+17	-43
θ Libræ	4.4	2.98	0.5	16 30.1	18 0.1	+ 7 14.1	+0.5524	0.5838	0.0961	+60	- 3
49 Libræ	5.4	2.97	- 0.2	16 18.3	20 47.0	+ 9 54.8	+0.0889	0.5841	0.0914	+29	-29
χ Ophiuchi	4.9	3.07	+ 2.0	18 16.8	8 8 1.0	- 3 16.0	+1.2133	0.5846	0.0718	+72	+49
φ Ophiuchi	4.4	+3.03	+ 2.4	-16 26.6	9 46.8	- 1 34.0	-0.8114	0.5846	-0.0686	-24	-90
24 Scorpii	5.0	3.07	3.2	17 35.5	14 10.4	+ 2 39.9	+0.0943	0.5845	0.0606	+26	-29
78 B. Ophiuchi	6.5	3.06	4.4	16 40.9	20 17.9	+ 8 33.9	-1.1881	0.5841	0.0493	-57	-90
90 B. Ophiuchi	6.5	3.08	4.5	18 7.6	21 51.1	+10 3.8	+0.2401	0.5840	0.0464	+33	-20
29 Ophiuchi	6.4	3.10	4.8	18 46.2	22 44.4	+10 55.1	+0.8694	0.5839	0.0448	+71	+17
125 B. Ophiuchi	6.2	+3.07	+ 5.3	-17 30.3	9 1 28.0	-10 27.4	-0.5630	0.5836	-0.0397	-12	-74

ELEMENTS OF OCCULTATIONS, 1922. 491

JUNE.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922·0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
164 B. Ophiuchi	6·0	+3·07	+ 6·2	-17 40·4	d h m	h m					
192 B. Ophiuchi	6·3	3·08	6·5	18 22·3	9 6 24·4	- 5 41·6	-0·5617	0·5829	-0·0304	-13	-74
305 B. Ophiuchi	6·3	3·06	8·8	18 47·2	8 24·5	- 3 45·9	+0·1105	0·5826	0·0267	+24	-28
64 B. Sagittarii	6·1	3·02	10·2	18 41·0	21 47·5	+ 9 8·0	+0·3568	0·5796	-0·0017	+37	-14
6 B. Scuti	5·9	3·00	10·2	17 23·9	10 6 15·5	- 6 42·3	+0·3011	0·5770	+0·0139	+34	-17
					7 0·4	- 5 58·9	-1·0446	0·5768	0·0152	-46	-90
52 G. Sagittarii	6·4	+3·01	+10·3	-18 20·4	7 6·9	- 5 52·7	+0·1091	0·5767	+0·0154	+23	-28
17 H. Sagittarii	6·4	3·02	10·4	18 38·9	7 39·1	- 5 21·6	+0·2845	0·5766	0·0164	+33	-18
Y Sagit. (var.)	5·4	3·01	10·6	18 53·6	8 48·4	- 4 14·8	+0·5637	0·5761	0·0185	+54	-2
85 B. Sagittarii	6·0	2·98	10·9	17 50·7	11 40·9	- 1 28·4	+0·4830	0·5752	0·0237	- 9	-67
95 B. Sagittarii	5·7	2·99	11·1	18 46·6	12 39·2	- 0 32·2	+0·5255	0·5748	0·0254	+51	- 4
100 B. Sagittarii	5·0	+2·98	+11·2	-18 27·3	13 12·1	- 0 0·4	+0·1990	0·5746	+0·0263	+29	-23
187 B. Sagittarii	6·4	2·88	13·3	18 51·4	11 4 59·6	- 8 46·0	+1·2637	0·5680	0·0534	+71	+61
g Sagittarii	4·0	2·82	14·0	17 59·5	11 32·8	- 2 26·3	+0·7281	0·5649	0·0640	+72	+ 8
45 B. Sagittarii	6·0	2·82	14·0	18 27·0	11 36·8	- 2 22·4	+1·2231	0·5649	0·0641	+72	+51
54 Sagittarii	5·4	2·72	14·6	16 28·2	20 14·7	+ 5 57·9	-0·2874	0·5607	0·0774	+ 7	-52
e Sagittarii	5·2	+2·72	+14·6	-16 18·2	21 4·4	+ 6 46·0	-0·4007	0·5602	+0·0786	+ 1	-60
283 B. Sagittarii	5·5	2·71	14·5	15 38·9	21 33·4	+ 7 13·9	-1·0677	0·5600	0·0793	-42	-90
g Sagittarii	5·1	2·64	15·1	15 41·7	12 4 13·4	-10 19·4	-0·4582	0·5566	0·0889	- 1	-65
16 B. Capricorni	6·2	2·54	15·7	15 1·6	14 57·7	+ 0 3·9	-0·1483	0·5510	0·1032	+17	-43
β Capricorni	3·2	2·53	15·8	15 1·5	15 4·4	+ 0 10·3	-0·1400	0·5510	0·1034	+18	-43
27 G. Capricorni	6·2	+2·48	+16·1	-15 18·8	19 52·2	+ 4 48·9	+0·6846	0·5485	+0·1093	+73	+ 4
45 B. Capricorni	6·1	2·47	15·9	13 59·2	21 22·8	+ 6 16·5	-0·5903	0·5478	0·1111	- 6	-76
τ Capricorni	5·2	2·44	16·3	15 13·5	23 48·7	+ 8 37·7	+1·0292	0·5465	0·1140	+75	+28
84 B. Capricorni	6·0	2·38	15·9	12 49·8	13 5 22·3	- 9 59·1	-0·9244	0·5437	0·1203	-26	-90
ν Aquarii	4·5	2·28	15·9	11 41·0	14 39·8	- 0 59·1	-1·0146	0·5392	0·1299	-31	-90
72 B. Aquarii	6·5	+2·18	+16·1	-11 54·1	23 57·4	+ 8 1·4	+0·4714	0·5350	+0·1385	+59	- 8
137 B. Capricorni	6·2	2·12	15·9	10 55·4	14 5 38·2	-10 28·2	+0·1996	0·5325	0·1433	+42	-23
c ¹ Capricorni	5·3	2·09	15·4	9 26·2	8 27·7	- 7 43·8	-1·0255	0·5314	0·1455	-30	-90
c ² Capricorni	6·3	2·08	15·5	9 37·9	9 6·2	- 7 6·4	-0·7174	0·5312	0·1460	- 9	-90
96 B. Aquarii	6·5	2·04	15·8	10 40·5	12 50·2	- 3 29·2	+0·9789	0·5297	0·1487	+79	+23
θ Aquarii	4·3	+1·92	+14·8	- 8 10·1	15 0 50·2	+ 8 9·4	+0·0533	0·5256	+0·1565	+35	-31
g Aquarii	5·3	1·90	14·8	8 12·6	2 35·5	+ 9 51·7	+0·3745	0·5250	0·1575	+55	-14
170 B. Aquarii	6·0	1·89	14·5	7 35·1	4 20·2	+11 33·3	-0·0383	0·5245	0·1585	+30	-36
186 B. Aquarii	6·1	1·85	14·1	6 57·0	8 23·5	- 8 30·4	-0·0917	0·5234	0·1606	+28	-40
252 B. Aquarii	5·8	1·72	13·2	5 24·0	20 58 4	+ 3 42·5	+0·2534	0·5206	0·1661	+48	-20
197 G. Aquarii	6·3	+1·71	+13·1	- 5 13·4	22 5·4	+ 4 47·6	+0·2444	0·5204	+0·1665	+48	-21
263 B. Aquarii	6·1	1·69	13·0	5 7·6	16 0 20·2	+ 6 58·7	+0·5129	0·5200	0·1673	+67	- 6
293 B. Aquarii	5·5	1·62	12·2	3 55·1	7 47·9	- 9 46·5	+0·4328	0·5190	0·1694	+61	-10
316 B. Aquarii	6·5	1·60	12·1	4 20·4	10 16·8	- 7 21·8	+1·3214	0·5188	0·1700	+81	+61
13 Piscium	6·4	1·56	10·8	1 30·8	16 31·8	- 1 17·6	-0·7379	0·5183	0·1713	- 7	-90
14 Piscium	5·9	+1·54	+10·8	- 1 40·5	17 41·6	- 0 9·8	-0·3598	0·5183	+0·1715	+14	-56
60 B. Piscium	6·0	1·45	9·6	0 19·3	17 4 41·9	+10 31·7	+0·0379	0·5184	0·1725	+36	-32
98 B. Piscium	6·3	1·35	8·2	+ 1 15·4	16 56·0	- 1 35·2	+0·4042	0·5195	0·1722	+59	-12
44 Piscium	6·0	1·31	7·7	1 30·6	20 58·2	+ 2 20·0	+0·8198	0·5201	0·1717	+90	+12
147 B. Piscium	5·9	1·26	5·1	4 52·9	18 9 2·1	- 9 56·9	-0·8325	0·5226	0·1694	-13	-85
171 B. Piscium	6·3	+1·20	+ 4·7	+ 6 3·8	15 2·8	- 4 6·7	-1·1170	0·5242	+0·1676	-34	-84
73 Piscium	6·2	1·16	4·7	5 14·4	17 40·7	- 1 33·5	+0·2276	0·5250	0·1667	+48	-21
77 Piscium	6·4	1·15	4·9	4 29·7	18 10·2	- 1 4·8	+1·1269	0·5252	0·1665	+90	+35
ϵ Piscium	5·6	1·14	4·5	5 14·3	19 30·2	+ 0 12·8	+0·5322	0·5256	0·1660	+69	- 4
ζ Piscium	5·6	1·15	3·7	7 9·9	22 15·1	+ 2 52·9	-1·1227	0·5265	0·1650	-34	-83
88 Piscium	6·2	+1·13	+ 3·8	+ 6 35·0	22 45·9	+ 3 22·7	-0·4023	0·5267	+0·1648	+12	-58

492 ELEMENTS OF OCCULTATIONS, 1922.

JUNE.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922-0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
263 B. Piscium	6.4	+1.08	+2.9	+7 33.5	19 5 46.8	+10 11.1	-0.3229	0.5293	+0.1615	+16	-52
o Piscium	4.5	1.02	+1.7	8 46.0	14 25.4	-5 25.8	-0.2636	0.5328	0.1567	+20	-47
ξ Arietis	5.5	0.86	-0.7	10 15.5	9 59.4	-10 27.9	+1.0487	0.5424	0.1424	+90	+33
31 Arietis	5.7	0.85	1.8	12 6.6	15 41.7	-4 56.4	-0.1531	0.5455	0.1372	+26	-38
38 Arietis	5.2	0.81	2.1	12 7.1	19 42.2	-1 3.5	+0.3804	0.5477	0.1333	+58	-8
147 B. Arietis	5.8	+0.74	-3.3	+12 53.2	21 5 51.6	+8 46.1	+0.8529	0.5536	+0.1225	+90	+21
30 B. Tauri	6.4	0.66	5.1	15 10.5	20 20.6	-1 13.9	+0.0568	0.5622	0.1045	+38	-22
33 B. Tauri	6.3	0.66	5.4	16 17.0	21 4.3	-0 31.6	-1.0446	0.5626	0.1035	-30	-74
148 B. Tauri	5.9	0.63	6.1	17 5.6	22 3 15.8	+5 27.1	-1.2871	0.5663	0.0948	-66	-72
162 B. Tauri	6.3	0.60	6.3	17 4.5	6 36.1	+8 40.5	-0.9568	0.5682	0.0900	-23	-73
180 B. Tauri	6.1	+0.58	-6.6	+17 7.8	9 52.8	+11 50.4	-0.7266	0.5701	+0.0850	-8	-73
193 B. Tauri	6.2	0.57	6.7	17 4.6	11 52.9	-10 13.7	-0.5015	0.5713	+0.0819	+6	-54
<i>NEW MOON.</i>											
29 Cancrī	5.9	+0.43	-10.7	+14 28.0	26 22 30.6	-3 34.7	+0.4161	0.5911	-0.1151	+61	-3
84 B. Cancrī	6.4	+0.44	-10.8	+13 31.2	27 0 38.5	-1 31.5	+1.1212	0.5906	-0.1185	+90	+43
90 B. Cancrī	6.3	0.44	10.4	15 34.9	1 36.2	-0 36.0	-1.0727	0.5904	0.1200	-32	-74
A ¹ Cancrī	5.5	0.47	10.8	12 57.5	4 34.0	+2 15.2	+1.2113	0.5896	0.1246	+90	+52
a Cancrī	4.3	0.51	10.8	12 9.4	10 56.2	+8 23.1	+1.1940	0.5878	0.1340	+90	+49
209 B. Cancrī	6.5	0.54	10.8	11 52.8	15 40.0	-11 3.6	+0.8239	0.5864	0.1405	+90	+18
222 B. Cancrī	6.3	+0.57	-10.6	+11 49.5	19 3.8	-7 47.4	+0.3932	0.5854	-0.1450	+59	-7
ξ Leonis	5.1	0.61	10.5	11 38.6	28 1 0.7	-2 3.7	-0.3077	0.5836	0.1523	+17	-48
h Leonis	5.2	0.62	10.8	10 3.4	1 1.6	-1 2.8	-1.2858	0.5836	0.1523	+86	+60
o Leonis	3.8	0.65	10.6	10 14.7	4 55.7	+1 42.7	+0.4938	0.5824	0.1568	+67	-3
83 B. Leonis	5.9	0.72	10.5	9 18.0	11 26.9	+7 59.7	+0.3992	0.5803	0.1636	+59	-9
89 B. Leonis	6.2	+0.73	-10.7	+8 41.0	12 10.5	+8 41.7	+0.9006	0.5801	-0.1643	+90	+20
π Leonis	4.9	0.74	10.7	8 25.0	13 4.3	+9 33.5	+1.0222	0.5798	0.1652	+90	+29
43 Leonis	6.3	0.85	10.6	6 56.2	22 53.5	-4 58.4	+0.8461	0.5768	0.1736	+90	+16
48 Leonis	5.2	0.90	10.1	7 21.2	29 4 0.3	-0 2.6	-0.4706	0.5754	0.1773	+8	-62
35 Sextantis	6.1	0.96	10.6	5 9.3	7 43.9	+3 33.0	+1.0768	0.5744	0.1797	+90	+32
37 Sextantis	6.3	+0.96	-10.0	+6 46.9	8 55.4	+4 41.9	-0.7758	0.5741	-0.1804	-9	-83
d Leonis	5.0	1.05	10.4	4 2.0	15 15.7	+10 48.7	+0.8374	0.5725	0.1837	+90	+14
75 Leonis	5.4	1.15	10.4	2 26.2	22 37.2	-6 5.3	+1.0847	0.5709	0.1865	+90	+31
76 Leonis	6.0	1.16	10.4	2 4.5	23 20.5	-5 23.5	+1.3145	0.5707	0.1867	+84	+60
79 Leonis	5.5	1.19	10.3	1 50.0	30 1 36.1	-3 12.6	+1.1362	0.5703	0.1873	+90	+36
83 Leonis	6.3	+1.17	-9.6	+3 26.2	2 49.5	-2 1.7	-0.7092	0.5701	-0.1876	-5	-86
τ Leonis	5.2	1.20	9.7	3 17.0	3 19.2	-1 33.1	-0.6483	0.5700	0.1877	-2	-80
9 B. Virginis	6.2	1.34	10.0	0 6.7	12 40.6	+7 28.7	+0.7883	0.5685	0.1890	+90	+10
27 B. Virginis	6.5	1.40	9.2	+0 57.7	17 8.0	+11 46.8	-0.9128	0.5680	0.1891	-8	-89
31 B. Virginis	6.4	+1.43	-10.0	-1 20.1	18 0.6	-11 22.4	+1.2432	0.5679	-0.1890	+89	+47

JULY.

13 Virginis	5.9	+1.52	-8.8	-0 21.4	1 1 52.1	-3 47.3	-1.2296	0.5672	-0.1881	-45	-90
JUPITER	-1.6	..	..	2 44.0	12 32.2	+6 30.6	-0.8156	0.5643	0.1837	-12	-90
38 Virginis	6.1	+1.75	-8.1	-3 7.9	17 16.8	+11 5.4	-1.2852	0.5668	-0.1831	-54	-90
91 G. Virginis	6.5	1.77	8.3	3 48.1	17 28.0	+11 16.3	-0.6385	0.5668	0.1830	-1	-80
θ Virginis	4.4	1.89	7.9	5 7.5	2 044.6	-5 42.2	-0.6131	0.5671	0.1791	0	-78
72 Virginis	6.1	2.02	7.0	6 4.2	9 51.6	+3 5.8	-1.2591	0.5677	0.1730	-51	-90
m Virginis	5.2	2.12	7.1	8 18.7	14 49.6	+7 53.4	+0.1775	0.5682	0.1691	+42	-25
575 B. Virginis	6.2	+2.17	-7.1	-9 19.3	17 18.5	+10 17.3	+0.7911	0.5685	-0.1670	+81	+10

ELEMENTS OF OCCULTATIONS, 1922. 493

JULY.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.		
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
623 B. Virginis	6.5	+2.26	-5.8	-8 53.1	3 0 54.3	-6 23.0	-0.8976	0.5695	-0.1600	-20	-90
95 Virginis	5.4	2.27	5.7	8 56.6	1 57.0	-9 22.5	-1.0048	0.5696	0.1590	-28	-90
96 Virginis	6.5	2.31	5.9	9 58.0	2 57.1	-4 24.4	-0.1154	0.5698	0.1580	+25	-41
κ Virginis	4.3	2.33	5.5	9 54.8	4 40.1	-2 45.0	-0.4409	0.5700	0.1562	+7	-63
2 Libræ	6.3	2.41	5.4	11 21.6	9 18.2	+1 43.3	+0.3303	0.5707	0.1512	+50	-16
4 G. Libræ	6.5	+2.42	-5.2	-11 19.1	9 51.6	+2 15.6	+0.2031	0.5708	-0.1506	+42	-23
6 B. Libræ	6.2	2.47	4.4	11 58.5	15 18.1	+7 30.6	+0.0763	0.5716	0.1442	+35	-31
22 B. Libræ	6.4	2.57	4.0	12 30.8	20 3.1	-11 54.4	-0.0418	0.5724	0.1384	+27	-38
μ Libræ	5.4	2.60	4.3	13 49.5	20 39.5	-11 19.3	+1.2256	0.5725	0.1376	+77	+43
o Libræ	6.2	2.79	2.2	15 16.1	4 10 28.8	+2 0.7	+0.9435	0.5747	0.1188	+75	+21
γ Libræ	4.0	+2.84	-0.9	-14 31.8	16 47.3	+8 5.8	-0.5395	0.5757	-0.1094	-4	-72
190 B. Libræ	6.5	2.88	0.4	14 47.7	20 12.5	+11 23.6	-0.6319	0.5761	0.1041	-10	-81
η Libræ	5.5	2.90	-0.5	15 25.5	20 29.3	+11 39.9	-0.0063	0.5762	0.1037	+25	-35
θ Libræ	4.4	2.97	+0.1	16 30.1	5 0 41.6	-8 16.9	+0.6890	0.5767	0.0970	+72	+5
49 Libræ	5.4	2.96	0.4	16 18.3	3 32.2	-5 32.4	+0.2155	0.5770	0.0924	+37	-22
φ Ophiuchi	4.4	+3.09	+3.1	-16 26.6	16 48.7	+7 15.6	-0.7210	0.5780	-0.0700	-18	-90
24 Scorpïi	5.0	3.15	3.7	17 35.5	21 17.6	+11 34.9	+0.1826	0.5782	0.0622	+32	-24
78 B. Ophiuchi	6.5	3.17	5.1	16 40.9	6 3 32.2	-6 24.1	-1.1243	0.5782	0.0511	-49	-90
90 B. Ophiuchi	6.5	3.21	5.0	18 7.6	5 7.2	-4 52.5	+0.3121	0.5782	0.0482	+39	-17
29 Ophiuchi	6.4	3.24	5.2	18 46.2	6 1.5	-4 0.1	+0.9445	0.5782	0.0466	+72	+22
125 B. Ophiuchi	6.2	+3.22	+5.9	-17 30.3	8 48.0	-1 19.7	-0.5057	0.5781	-0.0416	-8	-69
164 B. Ophiuchi	6.0	3.25	6.8	17 40.4	13 49.7	+3 31.3	-0.5157	0.5778	0.0325	-10	-70
192 B. Ophiuchi	6.3	3.27	7.1	18 22.3	15 51.8	+5 29.0	+0.1570	0.5776	0.0287	+27	-26
305 B. Ophiuchi	6.3	3.32	9.5	18 47.2	7 5 26.7	-5 25.1	+0.3734	0.5758	-0.0040	+38	-13
64 B. Sagittarii	6.1	3.33	11.0	18 41.0	14 0.9	+2 50.9	+0.2973	0.5740	+0.0115	+34	-18
6 B. Scuti	5.9	+3.31	+11.2	-17 23.9	14 46.4	+3 34.8	-1.0580	0.5738	+0.0128	-47	-90
52 G. Sagittarii	6.4	3.33	11.2	18 29.4	14 52.9	+3 41.0	+0.1021	0.5738	0.0130	+23	-29
17 H. Sagittarii	6.4	3.33	11.2	18 38.9	15 25.5	+4 12.5	+0.2773	0.5737	0.0140	+33	-19
Y Sagit. (var.)	5.4	3.34	11.4	18 53.6	16 35.5	+5 20.1	+0.5554	0.5734	0.0161	+53	-3
85 B. Sagittarii	6.0	3.32	12.0	17 50.7	19 29.7	+8 8.2	-0.5039	0.5726	0.0212	-10	-69
95 B. Sagittarii	5.7	+3.34	+12.0	-18 46.6	20 28.6	+9 5.0	+0.5078	0.5724	+0.0230	+50	-6
100 B. Sagittarii	5.0	3.33	12.2	18 27.2	21 1.8	+9 37.1	+0.1782	0.5722	0.0239	+28	-24
187 B. Sagittarii	6.4	3.32	14.6	18 51.3	8 12 56.2	+0 58.2	+1.2099	0.5671	0.0511	+72	+50
ρ Sagittarii	4.0	3.28	15.5	17 59.5	19 31.0	+7 19.6	+0.6567	0.5646	0.0617	+66	+3
45 Sagittarii	6.0	3.29	15.5	18 27.0	19 35.1	+7 23.5	+1.1534	0.5646	0.0619	+72	+41
54 Sagittarii	5.4	+3.22	+16.5	-16 28.1	9 4 14.3	-8 14.7	-0.3818	0.5610	+0.0753	+2	-59
e Sagittarii	5.2	3.22	16.6	16 18.2	5 4.0	-7 26.7	-0.4972	0.5607	0.0765	-4	-68
283 B. Sagittarii	5.5	3.21	16.6	15 38.8	5 33.1	-6 58.6	-1.1670	0.5605	0.0772	-51	-90
g Sagittarii	5.1	3.18	17.3	15 41.7	12 13.2	-0 31.8	-0.5705	0.5576	0.0869	-8	-75
16 B. Capricorni	6.2	3.11	18.3	15 1.6	22 56.7	+9 50.7	-0.2831	0.5527	0.1015	+10	-52
β Capricorni	3.2	+3.11	+18.3	-15 1.4	23 3.4	+9 57.1	-0.2751	0.5527	+0.1017	+10	-52
31 B. Capricorni	6.4	3.10	18.7	15 59.7	10 2 42.7	-10 30.8	+1.1599	0.5510	0.1063	+75	+40
27 G. Capricorni	6.2	3.08	18.7	15 18.8	3 50.4	-9 25.3	+0.5402	0.5505	0.1077	+60	-4
45 B. Capricorni	6.1	3.07	18.7	15 59.1	5 20.7	-7 57.8	-0.7391	0.5498	0.1096	-15	-90
τ Capricorni	5.2	3.06	19.0	15 13.4	7 46.1	-5 37.1	+0.8769	0.5487	0.1125	+75	+16
84 B. Capricorni	6.0	+3.01	+19.1	-12 49.7	13 18.4	-0 15.4	-1.0896	0.5461	+0.1189	-39	-90
v Aquarii	4.5	2.94	19.4	11 41.0	22 33.1	+8 41.9	-1.1976	0.5419	0.1288	-48	-90
53 B. Aquarii	6.5	2.92	19.8	13 31.2	11 1 41.6	+11 44.5	+1.2214	0.5405	0.1319	+77	+47
72 B. Aquarii	6.5	2.87	19.7	11 54.1	7 47.5	-6 20.9	+0.2716	0.5378	0.1376	+46	-19
137 B. Capricorni	6.2	2.82	19.7	10 55.4	13 26.3	-0 52.4	-0.0102	0.5355	0.1425	+30	-35
e ¹ Capricorni	5.3	+2.80	+19.5	-9 26.1	16 14.7	+1 50.9	-1.2400	0.5342	+0.1447	-51	-90

494 ELEMENTS OF OCCULTATIONS, 1922.

JULY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$									d	h	m	h	m
c ^a Capricorni	6.3	+2.79	+19.5	- 9 37.9	11 16 53.1	+ 2 28.1	-0.9330	0.5340	+0.1452	-23	-0
96 B. Aquarii	6.5	2.76	19.8	10 40.4	20 35.7	+ 6 4.0	+0.7579	0.5325	+0.1481	+80	+ 8
θ Aquarii	4.3	2.67	19.2	8 10.0	12 8 31.4	- 6 21.6	-0.1869	0.5282	+0.1560	+22	-46
150 B. Aquarii	6.0	2.66	19.5	9 25.4	8 32.7	- 6 20.3	+1.2018	0.5282	+0.1560	+81	+42
ρ Aquarii	5.3	2.65	19.2	8 12.5	10 16.1	- 4 39.9	+0.1318	0.5277	+0.1570	+40	-27
170 B. Aquarii	6.0	+2.64	+19.1	- 7 35.0	12 0.2	- 2 58.9	-0.2834	0.5270	+0.1580	+17	-52
186 B. Aquarii	6.1	2.61	18.8	6 56.9	16 2.3	+ 0 56.0	-0.3422	0.5258	+0.1602	+14	-55
67 Aquarii	6.4	2.55	18.8	7 22.0	22 16.7	+ 6 59.6	+1.1285	0.5240	+0.1632	+83	+34
252 B. Aquarii	5.8	2.50	18.1	5 23.9	13 4 34.0	-10 54.1	-0.0119	0.5225	+0.1657	+33	-35
197 G. Aquarii	6.3	2.49	18.0	5 13.3	5 40.7	- 9 49.4	-0.0222	0.5222	+0.1661	+32	-36
263 B. Aquarii	6.1	+2.48	+17.9	- 5 7.6	7 55.1	- 7 38.8	+0.2443	0.5217	+0.1669	+48	-21
293 B. Aquarii	5.5	2.42	17.2	3 55.0	15 21.7	- 0 25.1	+0.1573	0.5203	+0.1691	+43	-26
316 B. Aquarii	6.5	2.40	17.2	4 20.4	17 50.4	+ 1 59.3	+1.0448	0.5199	+0.1697	+86	+27
13 Piscium	6.4	2.36	16.1	1 30.7	14 0 5.0	+ 8 3.4	-1.0218	0.5191	+0.1709	-26	-90
14 Piscium	5.9	2.35	16.1	1 40.4	1 14.8	+ 9 11.1	-0.6439	0.5190	+0.1711	- 1	-81
60 B. Piscium	6.0	+2.26	+15.0	- 0 19.2	12 15.8	- 4 6.7	-0.2518	0.5183	+0.1720	+21	-50
98 B. Piscium	6.3	2.17	13.5	+ 1 15.5	15 0 32.6	+ 7 49.0	+0.1120	0.5185	+0.1717	+41	-28
44 Piscium	6.0	2.14	13.1	1 30.7	4 36.1	+11 45.7	+0.5285	0.5188	+0.1712	+69	- 5
147 B. Piscium	5.9	2.09	10.3	4 53.0	16 45.2	- 0 26.1	-1.1289	0.5204	+0.1688	-34	-86
155 B. Piscium	6.5	2.03	11.4	2 57.9	18 20.3	+ 1 6.2	+1.2549	0.5207	+0.1683	+90	+50
73 Piscium	6.2	+1.99	+10.0	+ 5 14.5	16 1 28.6	+ 8 2.1	-0.0622	0.5221	+0.1660	+31	-37
77 Piscium	6.4	1.98	10.1	4 29.8	1 58.5	+ 8 31.2	+0.8412	0.5223	+0.1658	+90	+14
e Piscium	5.6	1.96	9.7	5 14.4	3 19.3	+ 9 49.6	+0.2446	0.5226	+0.1654	+49	-19
88 Piscium	6.2	1.96	9.0	6 35.1	6 37.2	-10 58.2	-0.6928	0.5234	+0.1641	- 4	-83
263 B. Piscium	6.4	1.91	7.9	7 33.6	13 43.2	- 4 4.6	-0.6091	0.5255	+0.1608	+ 1	-74
o Piscium	4.5	+1.84	+ 6.6	+ 8 46.0	22 28.7	+ 4 25.3	-0.5432	0.5285	+0.1562	+ 5	-68
ξ Arietis	5.5	1.67	3.8	10 15.5	17 18 20.7	- 0 18.9	+0.7964	0.5371	+0.1420	+90	+14
31 Arietis	5.7	1.65	2.4	12 6.6	18 0 8.6	+ 5 18.2	-0.4051	0.5401	+0.1369	+12	-54
38 Arietis	5.2	1.61	2.0	12 7.1	4 13.2	+ 9 15.2	+0.1368	0.5423	+0.1331	+43	-22
147 B. Arietis	5.8	1.51	+ 0.5	12 53.2	14 32.8	- 4 44.9	+0.6269	0.5480	+0.1225	+80	+ 7
30 B. Tauri	6.4	+1.40	- 1.9	+15 10.5	19 5 16.0	+ 9 29.5	-0.1496	0.5567	+0.1050	+26	-34
33 B. Tauri	6.3	1.41	2.3	16 17.0	6 0.4	+10 12.4	-1.2550	0.5572	+0.1040	-54	-74
162 B. Tauri	6.3	1.32	3.6	17 4.6	15 40.8	- 4 26.8	-1.1485	0.5631	+0.0908	-40	-73
180 B. Tauri	6.1	1.28	4.0	17 7.9	19 0.2	+ 1 14.2	-0.9110	0.5651	+0.0860	-20	-73
193 B. Tauri	6.2	1.26	4.2	17 4.6	21 2.0	+ 0 43.4	-0.6809	0.5664	+0.0830	- 4	-70
δ Tauri	3.9	+1.22	- 4.8	+17 21.6	20 1 39.8	+ 5 11.5	-0.6098	0.5692	+0.0759	0	-63
63 Tauri	5.7	1.21	4.6	16 35.7	1 53.3	+ 5 24.5	+0.2134	0.5693	+0.0755	+48	-10
64 Tauri	4.9	1.22	4.8	17 15.8	2 10.8	+ 5 41.5	-0.4691	0.5695	+0.0751	+ 8	-52
68 Tauri	4.3	1.21	5.0	17 45.0	2 47.4	+ 6 16.8	-0.9359	0.5699	+0.0741	-22	-73
70 Tauri	6.4	1.19	4.4	15 45.8	2 52.4	+ 6 21.6	+1.1645	0.5699	+0.0740	+90	+51
75 Tauri	5.2	+1.18	- 4.7	+16 11.1	4 7.0	+ 7 33.6	+0.8094	0.5707	+0.0720	+90	+23
θ ¹ Tauri	4.2	1.17	4.6	15 47.3	4 10.6	+ 7 37.1	+1.2309	0.5707	+0.0719	+90	+60
264 B. Tauri	4.8	1.17	4.7	16 1.4	5 3.0	+ 8 27.6	+1.0448	0.5712	+0.0705	+90	+40
119 H ¹ Tauri	6.2	1.18	5.4	17 51.1	6 20.6	+ 9 42.4	-0.7886	0.5720	+0.0684	-11	-73
275 B. Tauri	6.5	1.15	4.9	16 9.6	6 24.2	+ 9 46.0	+0.9956	0.5720	+0.0683	+90	+37
α Tauri (Ald.)	1.1	+1.15	- 5.1	+16 21.1	7 24.0	+10 43.6	+0.8596	0.5726	+0.0667	+90	+27
302 B. Tauri	6.1	1.13	6.1	18 35.6	11 53.3	- 8 56.5	-1.2095	0.5752	+0.0593	-49	-72
ι Tauri	5.1	1.11	6.3	18 42.4	14 5.6	- 6 49.0	-1.2000	0.5765	+0.0555	-47	-72
318 B. Tauri	5.7	1.06	6.2	17 1.8	16 42.5	+ 4 17.8	+0.6926	0.5780	+0.0510	+90	+19
m Tauri	5.0	1.06	6.9	18 32.4	20 59.2	- 0 10.4	-0.6802	0.5803	+0.0435	- 4	-67
111 Tauri	5.1	+0.97	- 7.3	+17 18.6	21 4 13.2	+ 6 47.9	+0.8654	0.5841	+0.0303	+90	+31

ELEMENTS OF OCCULTATIONS, 1922. 495

JULY.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922·0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	F	x'	y'	N.	S.
		Δα	Δδ								
115 Tauri	5·3	+0·95	- 7·5	+17 53·7	21 5 22·7	+ 7 54·9	+0·2928	0·5846	+0·0282	+52	- 2
117 Tauri	6·0	0·94	7·4	17 10·4	5 44·9	+ 8 16·2	+1·0510	0·5848	0·0275	+90	+45
119 Tauri	4·9	0·94	7·8	18 32·1	7 29·4	+ 9 56·8	-0·3161	0·5857	0·0242	+17	-37
120 Tauri	5·6	0·94	7·8	18 29·0	8 2·5	+10 28·7	-0·2494	0·5859	0·0232	+20	-32
130 Tauri	5·6	0·88	8·1	17 41·9	13 51·7	- 7 55·0	+0·6637	0·5886	+0·0121	+88	+20
19 B. Geminorum	6·2	+0·80	- 9·0	+18 42·0	22 0 38·1	+ 2 27·0	-0·3495	0·5928	-0·0091	+15	-37
<i>NEW MOON.</i>											
43 Leonis	6·3	+0·72	- 9·3	+ 6 56·2	26 6 21·6	+ 4 17·3	+1·0028	0·5865	-0·1748	+90	+26
48 Leonis	5·2	0·74	8·8	7 21·2	11 19·2	+ 9 4·0	-0·2871	0·5851	0·1786	+19	-50
35 Sextantis	6·1	+0·79	- 9·1	+ 5 9·3	14 56·0	-11 27·2	+1·2459	0·5840	-0·1811	+90	+49
37 Sextantis	6·3	0·78	8·7	6 46·9	16 5·4	-10 20·4	-0·5798	0·5837	0·1818	+ 3	-72
56 Leonis	6·1	0·82	8·4	6 36·0	20 18·1	- 6 17·0	-1·1700	0·5825	0·1842	-38	-84
d Leonis	5·0	0·86	8·9	4 2·0	22 14·3	- 4 24·9	+1·0221	0·5820	0·1852	+90	+26
75 Leonis	5·4	0·93	8·8	2 26·2	27 5 22·9	+ 2 28·0	+1·2771	0·5801	0·1881	+90	+53
79 Leonis	5·5	+0·96	- 8·6	+ 1 50·0	8 16·7	+ 5 15·5	+1·3321	0·5793	-0·1890	+79	+65
80 Leonis	6·4	0·94	7·9	4 17·2	9 2·8	+ 6 0·0	-1·2559	0·5791	0·1892	-48	-86
83 Leonis	6·3	0·93	8·0	3 26·2	9 28·1	+ 6 24·4	-0·4881	0·5790	0·1893	+ 8	-66
τ Leonis	5·2	0·97	8·1	3 17·0	9 56·9	+ 6 52·1	-0·4273	0·5789	0·1894	+11	-61
89 Leonis	5·7	0·98	7·8	3 29·5	12 43·3	+ 9 32·5	-1·1606	0·5782	0·1900	-37	-87
9 Virginis	6·2	+1·08	- 8·2	+ 0 6·8	19 3·0	- 8 21·5	+1·0026	0·5768	-0·1907	+90	+24
β Virginis	3·8	1·10	7·7	2 12·1	19 44·3	- 7 41·7	-1·2136	0·5766	0·1908	-43	-88
27 B. Virginis	6·5	1·12	7·5	+ 0 57·7	23 23·5	- 4 10·3	-0·6738	0·5759	0·1908	- 3	-85
13 Virginis	5·9	1·24	7·0	- 0 21·3	28 7 54·8	+ 4 2·9	-0·9802	0·5743	0·1897	-21	-90
η Virginis	4·0	1·24	7·0	0 14·1	8 27·3	+ 4 34·3	-1·2036	0·5741	0·1896	-42	-90
38 Virginis	6·1	+1·44	- 6·2	- 3 7·9	23 0·3	- 5 23·6	-1·0286	0·5724	-0·1844	-26	-90
JUPITER	-1·4	..	..	3 58·3	23 0·3	- 5 23·6	-0·1835	0·5674	0·1822	+24	-45
91 G. Virginis	6·5	1·46	6·5	3 48·1	23 11·3	- 5 13·0	-0·3876	0·5724	0·1844	+13	-59
k Virginis	5·7	1·48	6·0	3 23·6	29 1 50·0	- 2 40·0	-1·2856	0·5721	0·1830	-54	-90
θ Virginis	4·4	1·56	6·1	5 7·5	6 20·5	+ 1 41·0	-0·3608	0·5717	0·1804	+14	-57
72 Virginis	6·1	+1·70	- 5·2	- 6 4·2	15 19·8	+10 21·3	-1·0023	0·5713	-0·1741	-26	-90
m Virginis	5·2	1·79	5·4	8 18·7	20 14·3	- 8 54·5	+0·4244	0·5712	0·1701	+59	-11
575 B. Virginis	6·2	1·84	5·4	9 19·2	22 41·7	- 6 32·3	+1·0342	0·5711	0·1680	+81	+27
598 B. Virginis	6·1	1·85	4·4	7 40·6	30 2 7·0	- 3 14·2	-1·2057	0·5711	0·1648	-45	-90
623 B. Virginis	6·5	1·94	4·2	8 53·1	6 13·7	+ 0 43·8	-0·6479	0·5711	0·1608	- 4	-82
95 Virginis	5·4	+1·94	- 4·0	- 8 56·6	7 16·0	+ 1 44·0	-0·7551	0·5711	-0·1598	-11	-90
96 Virginis	6·5	1·98	4·3	9 58·0	8 15·8	+ 2 41·7	+0·1300	0·5712	0·1587	+39	-27
κ Virginis	4·3	2·00	3·9	9 54·7	9 58·2	+ 4 20·5	-0·1949	0·5712	0·1569	+20	-46
2 Libræ	6·3	2·09	3·9	11 21·6	14 35·1	+ 8 47·6	+0·5712	0·5713	0·1519	+68	- 3
4 G. Libræ	6·5	2·10	3·8	11 19·0	15 8·3	+ 9 19·7	+0·4440	0·5713	0·1512	+57	-10
6 B. Libræ	6·2	+2·15	- 2·9	-11 58·5	20 34·1	- 9 26·0	+0·3145	0·5715	-0·1449	+48	-17
22 B. Libræ	6·4	2·26	2·7	12 30·8	31 1 18·9	- 4 51·3	+0·1933	0·5717	0·1389	+41	-24
13 Libræ	5·7	2·27	1·8	11 34·9	4 9·7	- 2 6·5	-1·1552	0·5719	0·1353	-44	-90
o Libræ	6·2	2·50	- 1·2	15 16·1	15 47·0	+ 9 6·2	+1·1659	0·5725	0·1193	+75	+41
γ Libræ	4·0	+2·57	+ 0·1	-14 31·8	22 7·8	- 8 46·5	-0·3247	0·5729	-0·1099	+ 8	-55

AUGUST.

190 B. Libræ	6·5	+2·61	+ 0·6	-14 47·6	1 1 34·5	- 5 27·1	-0·4212	0·5730	-0·1047	+ 3	-62
η Libræ	5·5	2·63	0·4	15 25·5	1 51·4	- 5 10·8	+0·2050	0·5731	0·1042	+37	-23
θ Libræ	4·4	+2·71	+ 0·9	-16 30·1	6 5·8	- 1 5·4	+0·8964	0·5732	-0·0976	+74	+18

496 ELEMENTS OF OCCULTATIONS, 1922.

AUGUST.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.		
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$									s	"
203 B. Libræ	6.2	+2.68	+1.7	-14 36.1	1 7 18.8	+ 0 5.0	-1.1988	0.5732	-0.0957	-53	-90
49 Libræ	5.4	2.71	1.2	16 18.2	8 58.0	+ 1 40.7	+0.4184	0.5733	0.0931	+50	-11
φ Ophiuchi	4.4	2.89	3.8	16 26.6	22 23.4	- 9 22.4	-0.5395	0.5735	0.0709	- 7	-72
24 Scorii	5.0	2.97	4.2	17 35.5	2 55.8	- 4 59.6	+0.3607	0.5735	0.0632	+43	-14
78 B. Ophiuchi	6.5	3.01	5.7	16 40.9	9 15.5	+ 1 6.6	-0.9616	0.5733	0.0523	-36	-90
90 B. Ophiuchi	6.5	+3.06	+ 5.4	-18 7.6	10 51.8	+ 2 39.6	+0.4787	0.5733	-0.0494	+50	- 7
29 Ophiuchi	6.4	3.08	5.5	18 46.2	11 46.9	+ 3 32.7	+1.1125	0.5732	0.0478	+72	+37
125 B. Ophiuchi	6.2	3.08	6.4	17 30.3	14 35.8	+ 6 15.6	-0.3490	0.5730	0.0429	0	-57
164 B. Ophiuchi	6.0	3.12	7.3	17 40.4	19 41.9	+11 10.9	-0.3675	0.5726	0.0339	- 2	-58
192 B. Ophiuchi	6.3	3.16	7.4	18 22.3	21 45.8	-10 49.5	+0.3051	0.5724	0.0302	+36	-17
305 B. Ophiuchi	6.3	+3.27	+ 9.8	-18 47.2	3 11 33.2	+ 2 28.8	+0.4987	0.5706	-0.0058	+48	- 6
6 Sagittarii	6.5	3.25	10.6	17 9.1	14 0.0	+ 4 50.5	-1.2508	0.5703	-0.0015	-69	-85
32 G. Sagittarii	5.7	3.27	11.1	17 9.8	16 51.3	+ 7 35.9	-1.2371	0.5697	+0.0035	-66	-89
64 B. Sagittarii	6.1	3.32	11.3	18 41.0	20 15.2	+10 52.6	+0.4062	0.5691	0.0095	+41	-11
6 B. Scuti	5.9	3.30	11.7	17 23.9	21 1.3	+11 37.2	-0.9583	0.5689	0.0108	-39	-90
52 G. Sagittarii	6.4	+3.32	+11.5	-18 29.4	21 7.9	+11 43.5	+0.2083	0.5689	+0.0110	+29	-23
17 H. Sagittarii	6.4	3.33	11.6	18 38.8	21 41.0	-11 44.5	+0.3834	0.5688	0.0120	+40	-13
Y Sagit. (var.)	5.4	3.34	11.7	18 53.6	22 52.1	-10 35.8	+0.6609	0.5686	0.0140	+63	+ 3
85 B. Sagittarii	6.0	3.34	12.4	17 50.7	4 1 48.9	- 7 45.1	-0.4100	0.5679	0.0191	- 5	-62
95 B. Sagittarii	5.7	3.36	12.3	18 46.5	2 48.6	- 6 47.5	+0.6056	0.5677	0.0208	+58	0
100 B. Sagittarii	5.0	+3.35	+12.5	-18 27.2	3 22.3	- 6 14.9	+0.2731	0.5675	+0.0218	+34	-19
e Sagittarii	4.0	3.42	16.1	17 59.4	5 2 9.5	- 8 14.3	+0.7094	0.5612	0.0593	+71	+ 6
45 Sagittarii	6.0	3.43	15.9	18 27.0	2 13.6	- 8 10.4	+1.2085	0.5612	0.0594	+72	+49
54 Sagittarii	5.4	3.41	17.4	16 28.1	10 58.6	+ 0 17.1	-0.3252	0.5581	0.0728	+ 3	-57
e Sagittarii	5.2	3.41	17.6	16 18.2	11 48.8	+ 1 5.6	-0.4698	0.5578	0.0741	- 3	-66
283 B. Sagittarii	5.5	+3.40	+17.6	-15 38.8	12 18.2	+ 1 34.0	-1.1440	0.5577	+0.0748	-49	-90
g Sagittarii	5.1	3.40	18.4	15 41.6	19 2.2	+ 8 4.7	-0.5581	0.5552	0.0845	- 7	-74
16 B. Capricorni	6.2	3.39	19.6	15 1.6	6 5 50.8	- 5 27.7	-0.2914	0.5511	0.0992	+ 9	-53
β Capricorni	3.2	3.39	19.6	15 1.4	5 57.6	- 5 21.1	-0.2836	0.5511	0.0993	+10	-52
31 B. Capricorni	6.4	3.40	19.9	15 59.7	9 38.4	- 1 47.4	+1.1497	0.5496	0.1040	+75	+39
27 G. Capricorni	6.2	+3.38	+20.0	-15 18.8	10 46.5	- 0 41.5	+0.5252	0.5492	+0.1055	+60	- 5
45 B. Capricorni	6.1	3.37	20.3	13 59.1	12 17.4	+ 0 46.5	-0.7622	0.5486	0.1073	-16	-90
τ Capricorni	5.2	3.38	20.4	15 13.4	14 43.6	+ 3 8.0	+0.8549	0.5476	0.1103	+75	+15
84 B. Capricorni	6.0	3.35	20.9	12 49.7	20 17.5	+ 8 31.3	-1.1299	0.5454	0.1168	-42	-90
v Aquarii	4.5	3.32	21.5	11 40.9	7 5 34.3	- 6 29.3	-1.2566	0.5419	0.1268	-57	-90
53 B. Aquarii	6.5	+3.32	+21.7	-13 31.2	8 43.4	- 3 26.1	+1.1634	0.5406	+0.1300	+77	+40
72 B. Aquarii	6.5	3.28	22.0	11 54.0	14 50.0	+ 2 29.2	+0.1986	0.5383	0.1358	+41	-24
137 B. Capricorni	6.2	3.26	22.2	10 55.3	20 29.1	+ 7 58.1	-0.0951	0.5362	0.1408	+24	-40
c ² Capricorni	6.3	3.25	22.2	9 37.8	23 56.0	+11 18.6	-1.0266	0.5350	0.1436	-30	-90
λ Capricorni	5.5	3.25	22.3	11 43.2	8 0 2.9	+11 25.3	+1.2904	0.5349	0.1437	+79	+57
96 B. Aquarii	6.5	+3.24	+22.4	-10 40.4	3 38.7	- 9 5.4	+0.6601	0.5337	+0.1465	+76	+ 2
θ Aquarii	4.3	3.18	22.3	8 10.0	15 33.9	+ 2 28.5	-0.3077	0.5297	0.1547	+15	-53
150 B. Aquarii	6.0	3.18	22.4	9 25.4	15 35.2	+ 2 29.8	+1.0837	0.5297	0.1548	+81	+31
ϱ Aquarii	5.3	3.17	22.3	8 12.4	17 18.4	+ 4 9.9	+0.0085	0.5293	0.1558	+33	-34
170 B. Aquarii	6.0	3.16	22.3	7 35.0	19 2.4	+ 5 50.8	-0.4106	0.5287	0.1568	+10	-60
186 B. Aquarii	6.1	+3.15	+22.1	- 6 56.9	23 4.1	+ 9 45.4	-0.4765	0.5275	+0.1591	+ 7	-65
67 Aquarii	6.4	3.11	22.2	7 21.9	9 5 17.8	- 8 11.7	+0.9863	0.5258	0.1621	+83	+23
252 B. Aquarii	5.8	3.09	21.8	5 23.8	11 34.3	- 2 6.2	-0.1663	0.5243	0.1648	+24	-44
197 G. Aquarii	6.3	3.08	21.7	5 13.3	12 40.9	- 1 1.5	-0.1784	0.5241	0.1652	+24	-45
263 B. Aquarii	6.1	3.07	21.7	5 7.5	14 55.0	+ 1 8.8	+0.0851	0.5236	0.1660	+39	-30
293 B. Aquarii	5.5	+3.03	+21.2	- 3 55.0	22 20.7	+ 8 21.6	-0.0131	0.5221	+0.1682	+33	-35

ELEMENTS OF OCCULTATIONS, 1922. 497

AUGUST.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922·0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		Δα	Δδ								
		s	"	°	d h m	h m				°	°
316 B. Aquarii	6·5	+3·03	+21·1	- 4 20·3	10 0 49·2	+10 45·7	+0·8724	0·5217	+0·1689	+86	+15
13 Piscium	6·4	3·00	20·4	1 30·7	7 3·2	- 7 10·9	-1·2067	0·5208	0·1701	-43	-90
14 Piscium	5·9	3·00	20·3	1 40·4	8 12·9	- 6 3·3	-0·8296	0·5207	0·1703	-13	-90
60 B. Piscium	6·0	2·94	19·3	0 19·2	19 13·4	+ 4 38·5	-0·4502	0·5196	0·1713	+10	-63
80 B. Piscium	6·3	2·90	19·1	- 0 55·8	11 0 42·9	+ 9 58·6	+1·1697	0·5194	0·1714	+90	+38
98 B. Piscium	6·3	+2·88	+18·1	+ 1 15·6	7 30·7	- 7 25·2	-0·0982	0·5193	+0·1710	+29	-40
44 Piscium	6·0	2·85	17·7	1 30·8	11 34·6	- 3 28·4	+0·3159	0·5194	0·1705	+54	-17
155 B. Piscium	6·5	2·77	16·0	2 58·0	12 1 21·8	+ 9 55·3	+1·0353	0·5204	0·1675	+90	+27
73 Piscium	6·2	2·75	14·7	5 14·6	8 32·6	- 7 6·3	-0·2915	0·5214	0·1652	+18	-51
77 Piscium	6·4	2·73	14·8	4 29·9	9 2·6	- 6 37·1	+0·6160	0·5215	0·1650	+78	0
e Piscium	5·6	+2·72	+14·4	+ 5 14·5	10 24·0	- 5 18·1	+0·0159	0·5217	+0·1645	+35	-33
88 Piscium	6·2	2·73	13·8	6 35·2	13 43·3	- 2 4·5	-0·9278	0·5223	0·1632	-19	-84
263 B. Piscium	6·4	2·69	12·7	7 33·7	20 52·9	+ 4 52·6	-0·8465	0·5238	0·1599	-14	-83
μ Piscium	5·0	2·66	13·1	5 44·8	21 49·8	+ 5 47·9	+1·3090	0·5240	0·1594	+84	+61
o Piscium	4·5	2·64	11·3	8 46·1	13 5 44·0	-10 31·8	-0·7826	0·5261	0·1551	-10	-82
ξ Arietis	5·5	+2·48	+ 8·2	+10 15·6	14 1 52·7	+ 9 0·8	+0·5674	0·5330	+0·1409	+74	+ 1
25 Arietis	6·5	2·45	8·1	9 51·3	3 11·5	+10 17·2	+1·1949	0·5336	0·1398	+90	+46
31 Arietis	5·7	2·48	6·8	12 6·7	7 46·6	- 9 16·0	-0·6422	0·5355	0·1358	- 1	-73
38 Arietis	5·2	2·43	6·2	12 7·2	11 55·6	- 5 14·6	-0·0943	0·5373	0·1321	+29	-35
147 B. Arietis	5·8	2·34	4·5	12 53·3	22 27·4	+ 4 57·5	+0·4052	0·5422	0·1216	+60	- 6
30 B. Tauri	6·4	+2·22	+ 1·6	+15 10·6	15 13 30·1	+ 4 28·8	-0·3686	0·5500	+0·1042	+14	-48
179 B. Tauri	5·9	2·06	- 0·2	14 57·3	16 3 27·4	+ 9 1·1	+1·1942	0·5576	0·0857	+90	+53
180 B. Tauri	6·1	2·10	1·0	17 7·9	3 34·0	+ 9 7·4	-1·1255	0·5577	0·0856	-38	-73
193 B. Tauri	6·2	2·07	1·3	17 4·7	5 38·7	+11 7·9	-0·8911	0·5589	0·0826	-18	-73
48 Tauri	6·3	2·02	0·8	15 12·4	7 9·3	-11 24·5	+1·2303	0·5597	0·0805	+90	+59
γ Tauri	3·9	+2·01	- 1·2	+15 26·4	8 59·2	- 9 38·3	+1·1247	0·5608	+0·0778	+90	+47
δ Tauri	3·9	2·03	2·0	17 21·6	10 23·4	- 8 17·0	-0·8144	0·5615	0·0757	-13	-73
63 Tauri	5·7	2·01	1·8	16 35·8	10 37·2	- 8 3·7	+0·0173	0·5617	0·0754	+35	-22
64 Tauri	4·9	2·02	2·1	17 15·8	10 55·1	- 7 46·3	-0·6718	0·5619	0·0749	- 4	-69
68 Tauri	4·3	2·02	2·3	17 45·0	11 32·6	- 7 10·1	-1·1425	0·5622	0·0740	-40	-73
70 Tauri	6·4	+1·98	- 1·7	+15 45·8	11 37·8	- 7 5·1	+0·9790	0·5622	+0·0738	+90	+35
75 Tauri	5·2	1·97	1·9	16 11·1	12 54·2	- 5 51·3	+0·6215	0·5630	0·0719	+81	+12
θ ¹ Tauri	4·2	1·97	1·8	15 47·4	12 58·0	- 5 47·6	+1·0474	0·5631	0·0718	+90	+40
θ ² Tauri	3·6	1·97	1·8	15 41·9	13 0·4	+ 5 45·2	+1·1472	0·5630	0·0718	+90	+49
264 B. Tauri	4·8	1·96	2·0	16 1·5	13 51·6	- 4 55·8	+0·8604	0·5635	0·0705	+90	+27
85 Tauri	6·0	+1·95	- 2·0	+15 41·1	14 27·1	- 4 21·5	+1·2628	0·5638	+0·0696	+84	+66
119 H ¹ Tauri	6·2	1·98	2·8	17 51·1	15 11·1	- 3 39·1	-0·9897	0·5642	0·0684	-26	-73
275 B. Tauri	6·5	1·94	2·2	16 9·6	15 14·8	- 3 35·5	+0·8122	0·5643	0·0683	+90	+25
α Tauri (Ald.)	1·1	1·94	2·6	16 21·2	16 16·1	- 2 36·3	+0·6760	0·5649	0·0668	+89	+16
89 Tauri	5·8	1·92	2·4	15 52·6	17 16·7	- 1 37·8	+1·2465	0·5654	0·0652	+88	+63
318 B. Tauri	5·7	+1·83	- 3·9	+17 1·9	17 1 48·4	+ 6 36·1	+0·5184	0·5702	+0·0514	+70	+ 8
m Tauri	5·0	1·82	4·9	18 32·4	6 11·3	+10 49·7	-0·8619	0·5725	0·0440	-17	-72
111 Tauri	5·1	1·70	5·5	17 18·6	13 35·6	- 6 1·9	+0·7076	0·5765	0·0312	+90	+21
115 Tauri	5·3	1·68	5·8	17 53·7	14 46·7	- 4 53·2	+0·1315	0·5771	0·0290	+42	-11
117 Tauri	6·0	1·67	5·7	17 10·4	15 9·4	- 4 31·3	+0·8970	0·5773	0·0284	+90	+34
119 Tauri	4·9	+1·67	- 6·2	+18 32·1	16 56·3	- 2 48·3	-0·4797	0·5782	+0·0251	+ 7	-48
167 H ¹ Tauri	5·5	1·65	5·8	17 0·0	16 58·2	- 2 46·4	+1·1259	0·5782	0·0250	+90	+52
120 Tauri	5·6	1·66	6·3	18 29·0	17 30·2	- 2 15·6	-0·4117	0·5785	0·0241	+11	-43
122 Tauri	5·5	1·62	6·0	16 59·5	19 2·2	- 0 47·0	+1·1808	0·5792	0·0214	+90	+58
130 Tauri	5·6	1·57	6·7	17 42·0	23 27·1	+ 3 28·4	+0·5176	0·5814	+0·0133	+70	+12
19 B. Geminorum	6·2	+1·46	- 8·1	+18 42·0	18 10 26·6	- 9 56·4	-0·4870	0·5862	-0·0075	+ 7	-47

498 ELEMENTS OF OCCULTATIONS, 1922.

AUGUST.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922·0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		Δα	Δδ								
124 H ¹ .Orionis	5·7	+1·44	- 7·9	+17 55·6	18 10 50·4	- 9 33·4	+0·3073	0·5864	-0·0082	+54	+ 0
71 Orionis	5·1	1·45	8·4	19 10·9	10 58·9	- 9 25·3	-0·9887	0·5865	-0·0085	-26	-71
B. D. + 17° 1191	6·5	1·42	7·8	17 12·4	11 39·1	- 8 46·6	+1·0436	0·5868	0·0008	+90	+46
287 B. Orionis	6·2	1·41	7·9	17 21·3	12 44·9	- 7 43·2	+0·8779	0·5872	0·0119	+90	+34
292 B. Orionis	6·5	1·40	8·1	17 47·9	13 44·5	- 6 45·8	+0·4069	0·5877	0·0138	+61	+ 6
B. D. + 17° 1275	6·2	+1·35	- 8·3	+16 59·5	17 47·9	- 2 51·6	+1·1625	0·5891	-0·0217	+90	+56
26 Geminorum	5·2	1·30	8·9	17 43·2	22 26·0	+ 1 36·1	+0·2921	0·5908	0·0307	+53	- 2
74 B. Geminorum	6·2	1·28	9·2	18 16·6	19 028·8	+ 3 34·2	-0·3440	0·5914	0·0347	+15	-39
110 B. Geminorum	6·2	1·21	9·4	17 51·9	6 39·2	+ 9 30·6	-0·1742	0·5933	0·0468	+24	-30
41 H ¹ .Geminorum	6·0	1·20	9·2	16 47·1	6 43·2	+ 9 34·4	+0·9221	0·5933	0·0469	+90	+34
51 Geminorum	5·3	+1·15	- 9·4	+16 17·4	11 8·6	-10 10·3	+1·1963	0·5945	-0·0555	+90	+57
λ Geminorum	3·6	1·13	9·6	16 40·8	13 3·9	- 8 19·4	+0·6894	0·5949	0·0593	+90	+18
162 B. Geminorum	5·7	1·08	10·0	17 15·0	18 37·7	- 2 58·3	-0·2496	0·5961	0·0700	+20	-36
68 Geminorum	5·2	1·07	9·7	15 59·6	19 22·6	- 2 15·2	+0·9688	0·5962	0·0715	+90	+35
f Geminorum	5·3	1·06	10·2	17 51·0	21 44·0	+ 0 08	-1·0809	0·5966	0·0760	-34	-73
1 Cancri	6·0	+0·98	-10·1	+15 59·8	20 4 50·6	+ 6 51·0	+0·1997	0·5975	-0·0893	+47	-13
2 B. Cancri	6·0	0·98	10·2	16 43·6	5 27·2	+ 7 26·2	-0·5888	0·5976	0·0905	+ 1	-62
5 Cancri	5·9	0·97	10·2	+16 40·1	6 39·5	+ 8 35·7	-0·6400	0·5978	0·0927	- 2	-67
<i>NEW MOON.</i>											
13 Virginis	5·9	+1·02	- 5·8	- 0 21·3	24 16 16·0	- 9 48·1	-0·8359	0·5848	-0·1919	-13	-90
η Virginis	4·0	1·02	5·8	0 14·1	16 47·5	- 9 17·7	-1·0552	0·5847	0·1918	-28	-90
38 Virginis	6·1	1·16	4·8	3 7·8	25 6 51·8	+ 4 15·6	-0·8061	0·5828	0·1868	-16	-90
91 G. Virginis	6·5	1·18	5·0	3 48·1	7 2·5	+ 4 26·0	-0·2348	0·5828	0·1866	+21	-48
k Virginis	5·7	1·20	4·6	3 23·6	9 36·0	+ 6 53·8	-1·1165	0·5825	0·1853	-34	-90
JUPITER	-1·3	...	...	- 5 44·9	13 45·7	+10 54·4	+0·4553	0·5754	-0·1800	+62	- 9
Virginis	4·4	+1·26	- 4·5	5 7·5	13 57·7	+11 6·0	+0·2017	0·5820	0·1828	+22	-46
72 Virginis	6·1	1·37	3·7	6 4·1	22 39·8	- 4 31·0	-0·8206	0·5812	0·1764	-14	-90
l Virginis	4·8	1·37	3·6	5 51·3	23 19·4	- 3 52·8	-1·1574	0·5811	0·1759	-39	-90
m Virginis	5·2	1·44	3·7	8 18·7	26 3 25·2	+ 0 4·1	+0·5822	0·5808	0·1723	+71	- 2
575 B. Virginis	6·2	+1·49	- 3·7	- 9 19·2	5 48·1	+ 2 21·8	+1·1846	0·5806	-0·1701	+81	+41
598 B. Virginis	6·1	1·50	2·8	7 40·6	9 7·2	+ 5 33·6	-1·0210	0·5803	0·1669	-28	-90
623 B. Virginis	6·5	1·57	2·6	8 53·0	13 6·8	+ 9 24·5	-0·4693	0·5800	0·1629	+ 6	-65
95 Virginis	5·4	1·57	2·5	8 56·5	14 7·3	+10 22·8	-0·5745	0·5800	0·1618	0	-74
96 Virginis	6·5	1·61	2·6	9 58·0	15 5·4	+11 18·8	+0·2987	0·5799	0·1607	+49	-18
κ Virginis	4·3	+1·63	- 2·3	- 9 54·7	16 45·0	-11 5·2	-0·0211	0·5798	-0·1589	+30	-36
2 Libræ	6·3	1·70	2·3	11 21·5	21 14·2	- 6 45·8	+0·7364	0·5795	0·1537	+79	+ 7
4 G. Libræ	6·5	1·70	2·2	11 19·0	21 46·6	- 6 14·5	+0·6111	0·5795	0·1531	+71	0
6 B. Libræ	6·2	1·74	1·4	11 58·5	27 3 3·9	- 1 8·8	+0·4850	0·5792	0·1466	+60	- 8
22 B. Libræ	6·4	1·85	1·2	12 30·8	7 41·7	+ 3 19·0	+0·3664	0·5790	0·1406	+51	-14
13 Libræ	5·7	+1·86	- 0·4	-11 34·9	10 28·5	+ 5 59·7	-0·9657	0·5788	-0·1368	-28	-90
γ Libræ	4·0	2·15	+ 1·3	14 31·8	4 4·8	- 1 2·0	-0·1462	0·5777	0·1111	+18	-43
190 B. Libræ	6·5	2·19	1·7	14 47·6	7 28·0	+ 2 13·8	-0·2426	0·5775	0·1057	+13	-49
η Libræ	5·5	2·21	1·5	15 25·5	7 44·7	+ 2 30·0	+0·3777	0·5775	0·1053	+48	-13
θ Libræ	4·4	2·29	1·9	16 30·1	11 55·2	+ 6 31·5	+1·0624	0·5772	0·0986	+74	+31
203 B. Libræ	6·2	+2·26	+ 2·7	-14 36·1	13 7·1	+ 7 40·8	-1·0152	0·5770	-0·0967	-35	-90
49 Libræ	5·4	2·28	2·1	16 18·2	14 44·9	+ 9 15·0	+0·5878	0·5769	0·0940	+63	- 1
φ Ophiuchi	4·4	2·48	4·5	16 26·5	29 4 1·2	- 1 57·1	-0·3684	0·5756	0·0717	+ 2	-58
24 Scorpion	5·0	2·56	4·8	17 35·5	8 31·4	+ 2 23·3	+0·5242	0·5750	0·0639	+55	- 5
78 B. Ophiuchi	6·5	2·62	6·2	16 40·9	14 48·6	+ 8 27·0	-0·7949	0·5741	0·0529	-25	-90
90 B. Ophiuchi	6·5	+2·66	+ 5·9	-18 7·6	16 24·4	+ 9 59·5	+0·6376	0·5739	-0·0501	+64	+ 2

ELEMENTS OF OCCULTATIONS, 1922. 499

AUGUST.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.		
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	P	x'	y'	N.	S.
		Δα	Δδ								
29 Ophiuchi	6.4	+2.68	+ 5.9	-18 46.2	29 17 19.2	+10 52.3	+1.2681	0.5737	-0.0485	+72	+6.0
125 B. Ophiuchi	6.2	2.69	6.8	17 30.3	20 7.4	-10 25.5	-0.1887	0.5733	0.0436	+ 9	-4.6
164 B. Ophiuchi	6.0	2.75	7.6	17 40.4	30 1 12.6	- 5 31.0	-0.2107	0.5724	0.0346	+ 7	-4.7
192 B. Ophiuchi	6.3	2.79	7.7	18 22.3	3 16.3	- 3 31.7	+0.4581	0.5720	0.0310	+47	- 8
305 B. Ophiuchi	6.3	2.94	9.8	18 47.2	17 3.8	+ 9 46.8	+0.6413	0.5691	0.0067	+61	+ 2
6 Sagittarii	6.5	+2.92	+10.8	-17 9.1	19 30.9	-11 51.2	-1.1079	0.5685	-0.0024	-52	-9.0
32 G. Sagittarii	5.7	2.95	11.2	17 9.8	22 22.7	- 9 5.3	-1.0969	0.5678	+0.0026	-51	-9.0
64 B. Sagittarii	6.1	3.01	11.2	18 41.0	31 1 47.4	- 5 47.8	+0.5418	0.5669	0.0085	+52	- 4
6 B. Scuti	5.9	3.00	11.8	17 23.9	2 33.7	- 5 3.1	-0.8225	0.5667	0.0098	-30	-9.0
52 G. Sagittarii	6.4	3.02	11.4	18 29.4	2 40.3	- 4 56.8	+0.3432	0.5667	0.0100	+37	-15
17 H. Sagittarii	6.4	+3.03	+11.5	-18 38.9	3 13.6	- 4 24.7	+0.5178	0.5665	+0.0109	+50	- 5
Y Sagit. (var.)	5.4	3.04	11.6	18 53.6	4 24.9	- 3 15.7	+0.7941	0.5662	0.0130	+72	+12
85 B. Sagittarii	6.0	3.05	12.4	17 50.7	7 22.5	- 0 24.2	-0.2792	0.5654	0.0180	+ 2	-5.3
95 B. Sagittarii	5.7	3.08	12.2	18 46.5	8 22.6	+ 0 33.8	+0.7354	0.5651	0.0197	+72	+ 8
100 B. Sagittarii	5.0	+3.07	+12.4	-18 27.2	8 56.4	+ 1 6.5	+0.4023	0.5650	+0.0206	+42	-11

SEPTEMBER.

q Sagittarii	4.0	+3.23	+15.8	-17 59.5	1 7 53.0	- 0 43.4	+0.8164	0.5578	+0.0578	+72	+13
v Sagittarii	4.4	3.19	16.3	16 5.9	7 56.1	- 0 40.4	-1.2268	0.5578	0.0579	-60	-9.0
54 Sagittarii	5.4	+3.26	+17.3	-16 28.1	16 46.6	+ 7 52.5	-0.2572	0.5548	+0.0712	+ 8	-5.0
e Sagittarii	5.2	3.26	17.5	16 18.2	17 37.2	+ 8 41.5	-0.3760	0.5545	0.0724	+ 3	-5.9
283 B. Sagittarii	5.5	3.26	17.6	15 38.8	18 6.9	+ 9 10.2	-1.0522	0.5543	0.0731	-41	-9.0
g Sagittarii	5.1	3.28	18.4	15 41.6	2 0 54.4	- 8 15.7	-0.4731	0.5519	0.0828	- 2	-6.6
16 B. Capricorni	6.2	3.32	19.7	15 1.6	11 48.8	+ 2 17.6	-0.2189	0.5480	0.0973	+14	-4.8
β Capricorni	3.2	+3.32	+19.7	-15 1.4	11 55.6	+ 2 24.3	-0.2111	0.5480	+0.0975	+14	-4.7
31 B. Capricorni	6.4	3.34	19.9	15 59.7	15 38.2	+ 5 59.8	+1.2215	0.5467	0.1022	+74	+4.9
27 G. Capricorni	6.2	3.34	20.1	15 18.8	16 47.0	+ 7 6.4	+0.5939	0.5462	0.1036	+65	- 1
45 B. Capricorni	6.1	3.33	20.6	13 59.1	18 18.6	+ 8 35.1	-0.6990	0.5457	0.1055	-13	-9.0
τ Capricorni	5.2	3.35	20.5	15 13.4	20 46.0	+10 57.8	+0.9196	0.5448	0.1084	+75	+2.0
84 B. Capricorni	6.0	+3.35	+21.3	-12 49.7	3 2 22.7	- 7 36.1	-1.0779	0.5428	+0.1149	-38	-9.0
ν Aquarii	4.5	3.36	22.2	11 40.9	11 43.6	+ 1 27.4	-1.2168	0.5396	0.1250	-51	-9.0
53 B. Aquarii	6.5	3.38	22.0	13 31.2	14 54.0	+ 4 31.9	+1.2058	0.5385	0.1282	+77	+4.5
72 B. Aquarii	6.5	3.37	22.7	11 54.0	21 3.0	+10 29.7	+0.2305	0.5365	0.1340	+43	-2.2
137 B. Capricorni	6.2	3.38	23.0	10 55.3	4 2 44.1	- 7 59.5	-0.0713	0.5347	0.1391	+26	-3.9
c ¹ Capricorni	5.3	+3.37	+23.3	- 9 26.1	5 33.5	- 5 15.2	-1.3161	0.5339	+0.1414	-72	-7.3
c ² Capricorni	6.3	3.38	23.3	9 37.8	6 12.1	- 4 37.8	-1.0097	0.5337	0.1420	-29	-9.0
96 B. Aquarii	6.5	3.38	23.3	10 40.4	9 55.8	- 1 0.8	+0.6766	0.5325	0.1450	+78	+ 3
θ Aquarii	4.3	3.38	23.7	8 9.9	21 53.8	+10 35.9	-0.3089	0.5293	0.1533	+15	-5.3
150 B. Aquarii	6.0	3.38	23.6	9 25.4	21 55.1	+10 37.2	+1.0856	0.5293	0.1533	+81	+3.1
q Aquarii	5.3	+3.38	+23.7	- 8 12.4	23 38.6	-11 42.4	+0.0057	0.5288	+0.1544	+32	-3.4
170 B. Aquarii	6.0	3.38	23.8	7 34.9	5 1 22.9	-10 1.2	-0.4163	0.5284	0.1555	+ 9	-6.1
186 B. Aquarii	6.1	3.39	23.7	6 56.8	5 25.2	- 6 6.0	-0.4874	0.5274	0.1578	+ 6	-6.6
67 Aquarii	6.4	3.38	23.8	7 21.9	11 39.6	- 0 2.5	+0.9705	0.5260	0.1610	+83	+2.2
252 B. Aquarii	5.8	3.37	23.7	5 23.8	17 56.5	+ 6 3.4	-0.1919	0.5248	0.1637	+23	-4.6
197 G. Aquarii	6.3	+3.37	+23.6	- 5 13.2	19 3.2	+ 7 8.2	-0.2052	0.5246	+0.1642	+22	-4.7
263 B. Aquarii	6.1	3.37	23.6	5 7.5	21 17.4	+ 9 18.6	+0.0560	0.5242	0.1650	+37	-3.1
293 B. Aquarii	5.5	3.36	23.4	3 54.9	6 4 43.2	- 7 28.4	-0.0511	0.5231	0.1674	+31	-3.7
316 B. Aquarii	6.5	3.37	23.3	4 20.3	7 11.6	- 5 4.3	+0.8333	0.5227	0.1681	+86	+1.3
13 Piscium	6.4	3.37	23.0	1 30.6	13 25.4	+ 0 58.8	-1.2562	0.5220	0.1695	-49	-9.0
14 Piscium	5.9	+3.37	+22.9	- 1 40.3	14 35.1	+ 2 6.5	-0.8798	0.5219	+0.1696	-16	-9.0

500 ELEMENTS OF OCCULTATIONS, 1922.

SEPTEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922-0		Apparent Declination.	Greenwich Mean Time.	Hour Angle, <i>h</i>	<i>Y</i>	<i>z'</i>	<i>y'</i>	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
60 B. Piscium	6.0	+3.35	+22.2	- 0 19.1	7 1 34.8	-11 12.6	-0.5113	0.5211	+0.1709	+ 6	-0.68
80 B. Piscium	6.3	3.34	21.8	- 0 55.8	7 3.8	- 5 53.0	+1.1057	0.5209	0.1709	+90	+32
98 B. Piscium	6.3	3.34	21.1	+ 1 15.7	13 51.0	+ 0 42.6	-0.1707	0.5210	0.1706	+25	-44
44 Piscium	6.0	3.33	20.7	1 30.8	17 54.7	+ 4 39.2	+0.2405	0.5210	0.1701	+49	-21
155 B. Piscium	6.5	3.30	19.3	2 58.0	8 7 41.1	- 5 57.8	+0.9504	0.5219	0.1672	+90	+21
73 Piscium	6.2	+3.31	+18.2	+ 5 14.6	14 51.8	+ 1 0.4	-0.3847	0.5227	+0.1649	+13	-57
77 Piscium	6.4	3.30	18.2	4 29.9	15 21.8	+ 1 29.6	+0.5248	0.5228	0.1647	+09	- 5
e Piscium	5.6	3.29	17.8	5 14.6	16 43.2	+ 2 48.6	-0.0778	0.5230	0.1642	+30	-38
88 Piscium	6.2	3.31	17.3	6 35.3	20 2.6	+ 6 2.3	-1.0264	0.5235	0.1629	-26	-84
263 B. Piscium	6.4	3.30	16.3	7 33.7	9 3 12.8	-11 0.0	-0.9497	0.5248	0.1595	-21	-83
μ Piscium	5.0	+3.27	+16.5	+ 5 44.8	4 9.8	-10 4.7	+1.2126	0.5249	+0.1591	+90	+45
o Piscium	4.5	3.28	14.9	8 46.2	12 5.2	- 2 23.1	-0.8908	0.5266	0.1547	-17	-82
ξ Arietis	5.5	3.18	11.7	10 15.7	10 8 20.4	- 6 44.0	+0.4577	0.5322	0.1403	+64	- 5
25 Arietis	6.5	3.15	11.5	9 51.4	9 39.8	- 5 27.0	+1.0885	0.5326	0.1392	+90	+36
31 Arietis	5.7	3.19	10.3	12 6.8	14 17.3	- 0 57.9	-0.7607	0.5341	0.1352	- 9	-78
38 Arietis	5.2	+3.16	+ 9.6	+12 7.3	18 28.7	+ 3 5.8	-0.2104	0.5356	+0.1314	+23	-42
147 B. Arietis	5.8	3.08	7.8	12 53.4	11 5 7.8	-10 34.7	+0.2913	0.5396	0.1208	+52	-12
30 B. Tauri	6.4	3.00	4.6	15 10.6	20 24.2	+ 4 13.0	-0.4893	0.5459	0.1034	+ 7	-57
179 B. Tauri	5.9	2.86	2.3	14 57.3	12 10 37.7	- 6 1.1	+1.0912	0.5521	0.0850	+90	+43
180 B. Tauri	6.1	2.91	1.6	17 8.0	10 44.5	- 5 54.5	-1.2533	0.5522	0.0848	-55	-73
193 B. Tauri	6.2	+2.88	+ 1.2	+17 4.7	12 51.9	- 3 51.3	-1.0162	0.5532	+0.0819	-28	-73
48 Tauri	6.3	2.83	1.6	15 12.4	14 24.5	- 2 21.7	+1.1287	0.5539	0.0797	+90	+46
γ Tauri	3.9	2.81	1.2	15 26.4	16 16.8	+ 0 33.0	+1.0225	0.5547	0.0770	+90	+38
δ Tauri	3.9	2.84	0.3	17 21.6	17 43.0	+ 0 50.2	-0.9380	0.5554	0.0750	-22	-74
63 Tauri	5.7	2.82	0.5	16 35.8	17 57.1	+ 1 3.8	-0.0969	0.5555	0.0746	+29	-29
64 Tauri	4.9	+2.83	+ 0.3	+17 15.9	18 15.4	+ 1 21.6	-0.7937	0.5556	+0.0742	-12	-74
68 Tauri	4.3	2.84	0.0	17 45.0	18 53.8	+ 1 58.7	-1.2698	0.5559	0.0733	-61	-74
70 Tauri	6.4	2.79	+ 0.7	15 45.8	18 59.1	+ 2 3.8	+0.8759	0.5559	0.0731	+90	+27
71 Tauri	4.6	2.78	0.7	15 26.6	19 19.5	+ 2 23.6	+1.2465	0.5561	0.0726	+90	+62
75 Tauri	5.2	2.78	0.3	16 11.2	20 17.3	+ 3 19.4	+0.5149	0.5566	0.0712	+70	+ 5
θ^1 Tauri	4.2	+2.77	+ 0.4	+15 47.4	20 21.1	+ 3 23.0	+0.9456	0.5566	+0.0711	+90	+32
θ^2 Tauri	3.6	2.77	0.4	15 42.0	20 23.7	+ 3 25.6	+1.0466	0.5566	0.0711	+90	+40
264 B. Tauri	4.8	2.77	0.2	16 1.5	21 16.0	+ 4 16.3	+0.7567	0.5570	0.0698	+90	+20
85 Tauri	6.0	2.76	+ 0.2	15 41.1	21 52.4	+ 4 51.3	+1.1639	0.5573	0.0689	+90	+52
119 H ¹ Tauri	6.2	2.79	- 0.6	17 51.2	22 37.5	+ 5 34.9	-1.1146	0.5576	0.0678	-37	-73
275 B. Tauri	6.5	+2.75	- 0.1	+16 9.6	22 41.2	+ 5 38.5	+0.7085	0.5576	+0.0677	+90	+17
a Tauri (<i>Ald.</i>)	1.1	2.75	0.4	16 21.2	23 44.1	+ 6 39.3	+0.5709	0.5581	0.0661	+75	+ 9
89 Tauri	5.8	2.73	0.3	15 52.7	13 0 46.1	+ 7 39.3	+1.1486	0.5586	0.0646	+90	+50
318 B. Tauri	5.7	2.64	2.1	17 1.9	9 31.0	- 7 53.5	+0.4148	0.5626	0.0509	+62	+ 2
m Tauri	5.0	2.65	3.3	18 32.4	14 1.1	- 3 32.7	-0.9814	0.5646	0.0437	-25	-72
111 Tauri	5.1	+2.51	- 4.1	+17 18.7	21 37.9	+ 3 48.4	+0.6115	0.5679	+0.0310	+80	+15
115 Tauri	5.3	2.49	4.5	17 53.7	22 51.1	+ 4 59.0	+0.0282	0.5685	0.0289	+36	-17
117 Tauri	6.0	2.47	4.4	17 10.4	23 14.5	+ 5 21.6	+0.8040	0.5686	0.0283	+90	+27
119 Tauri	4.9	2.48	5.0	18 32.2	14 1 4.5	+ 7 7.7	-0.5902	0.5694	0.0251	+ 1	-57
167 H ¹ Tauri	5.5	2.45	4.5	17 0.0	1 6.5	+ 7 9.6	+1.0370	0.5695	0.0250	+90	+44
120 Tauri	5.6	+2.47	- 5.1	+18 29.1	1 39.4	+ 7 41.4	-0.5210	0.5697	+0.0241	+ 5	-51
122 Tauri	5.5	2.42	4.9	16 59.5	3 14.2	+ 9 12.8	+1.0935	0.5703	0.0214	+90	+49
130 Tauri	5.6	2.37	5.8	17 42.0	7 47.0	-10 23.9	+0.4236	0.5723	+0.0134	+62	+ 6
19 B. Geminorum	6.2	2.23	7.6	18 42.0	19 6.8	+ 0 31.6	-0.5889	0.5767	-0.0069	+ 1	-56
124 H ¹ Orionis	5.7	2.21	7.4	17 55.6	19 31.4	+ 0 55.3	+0.2166	0.5768	0.0076	+48	- 4
71 Orionis	5.1	+2.23	- 7.9	+19 10.9	19 40.1	+ 1 3.7	-1.0973	0.5769	-0.0079	-36	-71

ELEMENTS OF OCCULTATIONS, 1922. 501

SEPTEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, <i>H</i>	<i>Y</i>	<i>z'</i>	<i>y'</i>	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
		<i>s</i>	<i>"</i>	<i>o</i>	<i>d</i>	<i>h</i>	<i>m</i>	<i>h</i>	<i>m</i>		
B. D. +17° 1191	6.5	+2.19	- 7.3	+17 12.4	14 20	21.6	+ 1 43.7	+0.9635	0.5771	-0.0092	+90 +40
287 B. Orionis	6.2	2.18	7.5	17 21.3	21 29.4	+ 2 49.1	+0.7961	0.5776	0.0113	+90 +28	
292 B. Orionis	6.5	2.17	7.7	17 47.9	22 31.0	+ 3 48.5	+0.3191	0.5779	0.0131	+54 +1	
B. D. +17° 1275	6.2	2.10	8.0	16 59.5	15 2 41.9	+ 7 50.3	+1.0875	0.5794	0.0208	+90 +49	
26 Geminorum	5.2	2.04	8.8	17 43.2	7 28.8	-11 33.3	+0.2081	0.5810	0.0297	+47 - 7	
74 B. Geminorum	6.2	+2.02	- 9.2	+18 16.6	9 35.3	- 9 31.3	-0.4355	0.5816	-0.0336	+10 -46	
110 B. Geminorum	6.2	1.92	9.7	17 51.9	15 57.2	- 3 23.4	-0.2591	0.5835	0.0454	+19 -35	
41 H ¹ Geminorum	6.0	1.90	9.4	16 47.1	16 1.3	- 3 19.5	+0.8518	0.5836	0.0455	+90 +29	
51 Geminorum	5.3	1.84	9.6	16 17.4	20 34.9	+ 1 4.1	+1.1323	0.5848	0.0540	+90 +50	
λ Geminorum	3.6	1.82	9.9	16 40.8	22 33.6	+ 2 58.4	+0.6200	0.5853	0.0577	+81 +13	
162 B. Geminorum	5.7	+1.75	-10.6	+17 15.0	16 4 17.2	+ 8 29.2	-0.3269	0.5867	-0.0683	+16 -41	
68 Geminorum	5.2	1.72	10.2	15 59.6	5 3.5	+ 9 13.7	+0.9072	0.5868	0.0697	+90 +30	
<i>f</i> Geminorum	5.3	1.71	11.0	17 51.0	7 28.9	+11 33.7	-1.1660	0.5874	0.0741	-43 -73	
1 Cancri	6.0	1.59	10.9	15 59.8	14 47.3	- 5 24.3	+0.1355	0.5888	0.0873	+43 -16	
2 B. Cancri	6.0	1.59	11.2	16 43.6	15 25.0	- 4 48.0	-0.6616	0.5889	0.0884	- 3 -69	
5 Cancri	5.9	+1.58	-11.2	+16 40.1	16 39.2	- 3 36.6	-0.7123	0.5891	-0.0906	- 7 -73	
30 B. Cancri	6.1	1.51	10.9	14 51.5	20 36.0	+ 0 11.4	+0.7517	0.5897	0.0975	+90 +17	
29 Cancri	5.9	1.42	11.1	14 28.0	17 3 53.7	+ 7 12.5	+0.3870	0.5906	0.1100	+59 - 5	
84 B. Cancri	6.4	1.39	11.0	13 31.3	6 1.4	+ 9 15.4	+1.1004	0.5909	0.1136	+90 +41	
90 B. Cancri	6.3	1.39	11.5	15 34.9	6 58.8	+10 10.6	-1.0817	0.5910	0.1152	-33 -75	
A ¹ Cancri	5.5	+1.35	-10.9	+12 57.5	9 55.6	-10 59.2	+1.2078	0.5912	-0.1200	+90 +52	
<i>a</i> Cancri	4.3	1.28	10.9	12 9.4	16 13.6	- 4 55.4	+1.2189	0.5918	0.1299	+90 +52	
209 B. Cancri	6.5	1.23	10.9	11 52.8	20 52.7	- 0 27.0	+0.8731	0.5920	0.1369	+90 +21	
222 B. Cancri	6.3	1.20	10.8	11 49.5	18 0 12.3	+ 2 45.1	+0.4626	0.5921	0.1417	+65 - 4	
ξ Leonis	5.1	1.14	10.8	11 38.6	6 0.1	+ 8 19.8	-0.2012	0.5923	0.1497	+23 -42	
o Leonis	3.8	+1.11	-10.5	+10 14.7	9 48.0	+11 59.1	+0.6074	0.5924	-0.1546	+77 + 3	
83 B. Leonis	5.9	+1.06	10.2	+ 9 18.0	16 5.4	- 5 57.9	+0.5435	0.5924	0.1623	+71 - 1	
<i>NEW MOON.</i>											
598 B. Virginis	6.1	+1.22	- 1.9	- 7 40.6	22 18 34.6	- 7 10.9	-0.9613	0.5905	-0.1695	-24 -90	
623 B. Virginis	6.5	+1.28	- 1.6	- 8 53.0	22 26.6	- 3 27.6	-0.4158	0.5904	-0.1654	+ 9 -61	
95 Virginis	5.4	1.28	1.4	8 56.5	23 25.2	- 2 31.3	-0.5190	0.5904	0.1643	+ 3 -69	
96 Virginis	6.5	1.31	1.5	9 58.0	23 0 21.4	+ 1 37.2	+0.3416	0.5904	0.1633	+51 -16	
κ Virginis	4.3	1.32	1.2	9 54.7	1 57.8	- 0 4.5	+0.0272	0.5903	0.1614	+32 -33	
2 Librae	6.3	1.38	1.1	11 21.5	6 18.3	+ 4 6.3	+0.7746	0.5901	0.1562	+79 + 9	
4 G. Librae	6.5	+1.38	- 1.0	-11 19.0	6 49.6	+ 4 36.4	+0.6515	0.5901	-0.1556	+75 + 2	
6 B. Librae	6.2	1.39	- 0.1	11 58.5	11 56.4	+ 9 31.7	+0.5286	0.5899	0.1490	+64 - 5	
22 B. Librae	6.4	1.48	0.0	12 30.7	16 25.0	-10 9.8	+0.4129	0.5897	0.1429	+55 -11	
13 Librae	5.7	1.49	+ 0.7	11 34.8	19 6.3	+ 7 34.6	-0.8977	0.5895	0.1391	-23 -90	
γ Librae	4.0	1.71	2.4	14 31.8	24 12 7.7	+ 8 48.6	-0.0882	0.5880	0.1129	+21 -40	
190 B. Librae	6.5	+1.75	+ 2.7	-14 47.6	15 24.4	+11 57.9	-0.1829	0.5876	-0.1075	+16 -45	
η Librae	5.5	1.76	2.6	15 25.5	15 40.5	-11 46.5	+0.4280	0.5875	0.1070	+52 -10	
θ Librae	4.4	1.83	3.0	16 30.0	19 43.0	+ 7 53.0	+1.1026	0.5870	0.1002	+74 +35	
203 B. Librae	6.2	1.81	3.7	14 36.0	20 52.7	- 6 46.0	-0.9434	0.5868	0.0983	-30 -90	
49 Librae	5.4	1.82	3.1	16 18.2	22 27.5	- 5 14.7	+0.6356	0.5866	0.0955	+67 + 2	
ϕ Ophiuchi	4.4	+1.99	+ 5.3	-16 26.5	25 11 20.0	+ 7 9.3	-0.3065	0.5842	-0.0728	+ 5 -53	
24 Scorp ⁱⁱ	5.0	2.06	5.6	17 35.4	15 42.6	+11 22.2	+0.5734	0.5833	0.0649	+59 - 2	
78 B. Ophiuchi	6.5	2.12	6.8	16 40.9	21 49.8	- 6 44.1	-0.7282	0.5818	0.0538	-20 -90	
90 B. Ophiuchi	6.5	2.16	6.4	18 7.6	23 23.1	- 5 14.2	+0.6852	0.5814	0.0509	+69 + 4	
125 B. Ophiuchi	6.2	2.19	7.3	17 30.3	26 3 0.5	- 1 44.8	-0.1307	0.5804	0.0443	+12 -42	
164 B. Ophiuchi	6.0	+2.25	+ 8.0	-17 40.4	7 58.4	+ 3 2.3	-0.1532	0.5790	-0.0352	+10 -44	

502 ELEMENTS OF OCCULTATIONS, 1922.

SEPTEMBER.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.			
Name.	Mag.	Reductions from 1922·0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H		Y	x'	y'	N.	S.
		Δα	Δδ			d	h m					
192 B. Ophiuchi	6·3	+2·28	+ 8·0	-18 22·3	26 9 59·3	+ 4 58·8	+0·5074	0·5784	-0·0315	+51	- 6	
305 B. Ophiuchi	6·3	2·44	9·9	18 47·2	23 29·8	- 5 59·7	+0·6874	0·5740	0·0070	+67	+ 5	
6 Sagittarii	6·5	2·43	10·8	17 9·1	27 1 54·3	- 3 40·3	-1·0445	0·5731	-0·0026	-47	-90	
32 G. Sagittarii	5·7	2·46	11·2	17 9·8	4 43·1	- 0 57·4	-1·0346	0·5721	+0·0024	-46	-90	
64 B. Sagittarii	6·1	2·52	11·1	18 41·0	8 4·4	+ 2 16·7	+0·5879	0·5709	0·0083	+56	- 1	
6 B. Scuti	5·9	+2·51	+11·7	-17 23·9	8 50·0	+ 3 0·8	-0·7641	0·5706	+0·0096	-27	-90	
52 G. Sagittarii	6·4	2·53	11·3	18 29·4	8 56·5	+ 3 7·1	+0·3910	0·5705	0·0098	+40	-12	
17 H ¹ . Sagittarii	6·4	2·53	11·3	18 38·9	9 29·2	+ 3 38·6	+0·5639	0·5703	0·0108	+54	- 2	
Y Sagit. (var.)	5·4	2·55	11·4	18 53·6	10 39·5	+ 4 46·5	+0·8376	0·5699	0·0128	+72	+15	
85 B. Sagittarii	6·0	2·56	12·2	17 50·7	13 34·5	+ 7 35·4	-0·2269	0·5687	0·0179	+ 5	-48	
95 B. Sagittarii	5·7	+2·59	+11·9	-18 46·6	14 33·8	+ 8 32·5	+0·7789	0·5683	+0·0196	+72	+11	
100 B. Sagittarii	5·0	2·59	12·2	18 27·2	15 7·2	+ 9 4·7	+0·4486	0·5681	0·0205	+46	- 9	
g Sagittarii	4·0	2·79	15·2	17 59·5	28 13 49·8	+ 7 0·8	+0·8559	0·5587	0·0576	+72	+16	
v Sagittarii	4·4	2·76	15·8	16 5·9	13 52·8	+ 7 3·7	-1·1760	0·5586	0·0577	-54	-90	
54 Sagittarii	5·4	2·85	16·6	16 28·1	22 40·2	- 8 26·5	-0·2145	0·5549	0·0709	+10	-47	
e Sagittarii	5·2	+2·85	+16·8	-16 18·2	23 30·7	- 7 37·6	-0·3331	0·5547	+0·0721	+ 4	-55	
283 B. Sagittarii	5·5	2·85	17·0	15 38·8	29 0 0·2	- 7 9·0	-1·0064	0·5543	0·0728	-37	-90	
g Sagittarii	5·1	2·90	17·7	15 41·7	6 46·3	- 0 36·3	-0·4321	0·5514	0·0824	0	-64	
16 B. Capricorni	6·2	2·98	19·0	15 1·6	17 39·7	+ 9 56·1	-0·1823	0·5469	0·0968	+15	-45	
β Capricorni	3·2	2·98	19·0	15 1·4	17 46·5	+10 2·6	-0·1746	0·5469	0·0970	+16	-45	
31 B. Capricorni	6·4	+3·01	+19·0	-15 59·7	21 29·2	-10 21·8	+1·2536	0·5453	+0·1016	+74	+54	
27 G. Capricorni	6·2	3·01	19·2	15 18·8	22 37·9	- 9 15·3	+0·6272	0·5449	0·1030	+68	+ 1	
45 B. Capricorni	6·1	3·01	19·8	13 59·1	30 0 9·6	- 7 46·5	-0·6634	0·5442	0·1049	-10	-86	
τ Capricorni	5·2	3·04	19·6	15 13·4	2 37·2	- 5 23·6	+0·9513	0·5433	0·1078	+75	+22	
84 B. Capricorni	6·0	3·06	20·7	12 49·7	8 14·3	+ 0 3·0	-1·0445	0·5411	0·1142	-35	-90	
v Aquarii	4·5	+3·10	+21·6	-11 40·9	17 36·7	+ 9 8·0	-1·1866	0·5376	+0·1242	-47	-90	
53 B. Aquarii	6·5	+3·13	+21·2	-13 31·2	20 47·6	-11 47·0	+1·2331	0·5365	+0·1274	+77	+49	

OCTOBER.

72 B. Aquarii	6·5	+3·16	+22·0	-11 54·0	1 2 57·8	- 5 48·1	+0·2568	0·5342	+0·1332	+45	-20
137 B. Capricorni	6·2	3·19	22·4	10 55·3	8 40·3	- 0 15·9	-0·0464	0·5326	0·1382	+27	-37
c ¹ Capricorni	5·3	3·20	22·9	9 26·1	11 30·4	+ 2 29·1	-1·2919	0·5317	0·1406	-61	-85
c ² Capricorni	6·3	3·20	22·9	9 37·8	12 9·1	+ 3 6·6	-0·9857	0·5315	0·1411	-27	-90
96 B. Aquarii	6·5	3·22	22·7	10 40·4	15 53·7	+ 6 44·5	+0·6995	0·5304	0·1441	+79	+ 5
θ Aquarii	4·3	+3·28	+23·5	- 8 9·9	2 3 54·6	- 5 36·0	-0·2891	0·5274	+0·1526	+16	-52
150 B. Aquarii	6·0	3·27	23·2	9 25·4	3 55·8	- 5 34·6	+1·1056	0·5273	0·1526	+81	+33
g Aquarii	5·3	3·28	23·5	8 12·4	5 39·8	- 3 35·8	+0·0252	0·5269	0·1536	+34	-33
170 B. Aquarii	6·0	3·29	23·7	7 35·0	7 24·5	- 2 12·1	-0·3975	0·5266	0·1547	+11	-59
186 B. Aquarii	6·1	3·31	23·7	6 56·8	11 27·7	+ 1 44·0	-0·4695	0·5257	0·1570	+ 7	-65
67 Aquarii	6·4	+3·33	+23·6	- 7 21·9	17 43·4	+ 7 48·8	+0·9876	0·5245	+0·1603	+83	+23
252 B. Aquarii	5·8	3·36	23·9	5 23·8	3 0 1·5	-10 4·1	-0·1766	0·5235	0·1631	+24	-45
197 G. Aquarii	6·3	3·36	23·9	5 13·2	1 8·4	- 8 59·1	-0·1901	0·5233	0·1636	+23	-46
263 B. Aquarii	6·1	3·37	23·9	5 7·5	3 22·9	- 6 48·4	+0·0708	0·5231	0·1645	+38	-30
293 B. Aquarii	5·5	3·40	23·8	3 54·9	10 49·7	+ 0 25·5	-0·0376	0·5222	0·1670	+32	-37
316 B. Aquarii	6·5	+3·42	+23·6	- 4 20·3	13 18·4	+ 2 49·9	+0·8465	0·5220	+0·1677	+86	+13
13 Piscium	6·4	3·44	23·8	1 30·6	19 32·7	+ 8 53·5	-1·2444	0·5216	0·1692	-47	-90
14 Piscium	5·9	3·45	23·7	1 40·3	20 42·5	+10 1·3	-0·8680	0·5215	0·1694	-15	-90
60 B. Piscium	6·0	3·48	23·1	0 19·1	4 7 42·5	- 3 17·4	-0·5008	0·5212	0·1708	+ 7	-67
80 B. Piscium	6·3	3·50	22·7	0 55·8	13 11·3	+ 2 2·0	+1·1158	0·5213	0·1710	+90	+33
98 B. Piscium	6·3	+3·53	+22·3	+ 1 15·7	19 58·1	+ 8 37·2	-0·1611	0·5216	+0·1707	+25	-44

ELEMENTS OF OCCULTATIONS, 1922. 503

OCTOBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle. H	P	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
		s	"	°	d h m	h m				°	'
44 Piscium	6.0	+3.54	+22.0	+ 1 30.8	5 0 1.4	-11 26.6	+0.2499	0.5218	+0.1703	+49	-21
155 B. Piscium	6.5	3.58	20.6	2 58.0	13 45.7	+ 1 54.2	+0.9593	0.5232	0.1677	+90	+22
73 Piscium	6.2	3.62	19.9	5 14.6	20 55.0	+ 8 51.1	-0.3755	0.5244	0.1654	+14	-57
77 Piscium	6.4	3.61	19.8	4 29.9	21 25.0	+ 9 20.2	+0.5338	0.5244	0.1652	+70	- 4
e Piscium	5.6	3.60	19.6	5 14.6	22 46.1	+10 38.9	-0.0686	0.5247	0.1648	+30	-37
88 Piscium	6.2	+3.64	+19.2	+ 6 35.3	6 2 4.8	-10 8.1	-1.0169	0.5253	+0.1634	-25	-84
263 B. Piscium	6.4	3.66	18.3	7 33.8	9 13.4	- 3 11.9	-0.9400	0.5267	0.1602	-20	-83
μ Piscium	5.0	3.64	18.3	5 44.9	10 10.1	- 2 16.9	+1.2223	0.5269	0.1597	+90	+46
o Piscium	4.5	3.68	17.0	8 46.2	18 3.7	+ 5 22.9	-0.8806	0.5287	0.1554	-16	-82
ξ Arietis	5.5	3.68	13.7	10 15.7	7 14 14.4	+ 0 57.4	+0.4707	0.5343	0.1410	+65	- 5
25 Arietis	6.5	+3.66	+13.4	+ 9 51.4	15 33.6	+ 2 14.3	+1.1023	0.5347	+0.1399	+90	+37
31 Arietis	5.7	3.72	12.4	12 6.8	20 10.3	+ 6 42.6	-0.7482	0.5361	0.1359	- 8	-78
38 Arietis	5.2	3.70	11.7	12 7.3	8 0 21.1	+10 45.7	-0.1966	0.5375	0.1320	+23	-41
147 B. Arietis	5.8	3.68	9.7	12 53.4	10 59.4	- 2 55.7	+0.3078	0.5410	0.1213	+53	-11
30 B. Tauri	6.4	3.66	6.5	15 10.6	9 2 16.5	+11 52.7	+0.4724	0.5465	0.1037	+ 8	-56
179 B. Tauri	5.9	+3.56	+ 3.8	+14 57.4	16 33.5	+ 1 42.2	+1.1183	0.5517	+0.0851	+90	+45
180 B. Tauri	6.1	3.62	3.2	17 8.0	16 40.3	+ 1 48.7	-1.2382	0.5518	0.0850	-52	-73
193 B. Tauri	6.2	3.60	2.8	17 4.7	18 48.5	+ 3 52.8	-0.9997	0.5525	0.0820	-26	-73
48 Tauri	6.3	3.54	3.0	15 12.4	20 21.7	+ 5 22.9	+1.1573	0.5531	0.0798	+90	+50
γ Tauri	3.9	3.53	2.6	15 26.5	22 14.9	+ 7 12.5	+1.0512	0.5538	0.0771	+90	+40
δ Tauri	3.9	+3.57	+ 1.8	+17 21.7	23 41.7	+ 8 36.4	-0.9207	0.5544	+0.0751	-20	-73
63 Tauri	5.7	3.55	1.9	16 35.8	23 55.9	+ 8 50.1	-0.0745	0.5543	0.0747	+30	-27
64 Tauri	4.9	3.56	1.7	17 15.9	10 14.4	+ 9 7.9	-0.7754	0.5545	0.0743	-10	-73
68 Tauri	4.3	3.57	1.4	17 45.1	0 53.0	+ 9 45.3	-1.2544	0.5547	0.0733	-56	-73
70 Tauri	6.4	3.52	2.0	15 45.9	0 58.4	+ 9 50.6	+0.9046	0.5547	0.0732	+90	+29
71 Tauri	4.6	+3.51	+ 2.0	+15 26.6	1 19.0	+10 10.4	+1.2777	0.5549	+0.0727	+79	+69
75 Tauri	5.2	3.51	1.6	16 11.2	2 17.3	+11 6.9	+0.5416	0.5552	0.0713	+72	+ 7
θ^1 Tauri	4.2	3.51	1.7	15 47.4	2 21.1	+11 10.5	+0.9751	0.5553	0.0712	+90	+35
θ^2 Tauri	3.6	3.50	1.7	15 42.0	2 23.7	+11 13.0	+1.0768	0.5553	0.0711	+90	+43
264 B. Tauri	4.8	3.51	1.4	16 1.6	3 16.5	-11 56.0	+0.7854	0.5556	0.0698	+90	+22
85 Tauri	6.0	+3.49	+ 1.4	+15 41.2	3 53.2	-11 20.5	+1.1954	0.5558	+0.0689	+90	+55
119 H ¹ . Tauri	6.2	3.54	0.7	17 51.2	4 38.7	-10 36.4	-1.0979	0.5561	0.0678	-35	-73
275 B. Tauri	6.5	3.49	1.2	16 9.7	4 42.5	-10 32.7	+0.7372	0.5561	0.0677	+90	+19
a Tauri (Ald.)	1.1	3.49	0.8	16 21.2	5 45.9	- 9 31.4	+0.5991	0.5565	0.0661	+78	+11
89 Tauri	5.8	3.47	+ 0.8	15 52.7	6 48.6	- 8 30.8	+1.1810	0.5569	0.0646	+90	+54
318 B. Tauri	5.7	+3.41	- 1.2	+17 1.9	15 39.4	+ 0 2.3	+0.4444	0.5599	+0.0509	+64	+ 4
m Tauri	5.0	3.43	2.5	18 32.5	20 13.1	+ 4 26.7	-0.9628	0.5614	0.0436	-24	-72
111 Tauri	5.1	3.30	3.6	17 18.7	11 3 56.9	+11 54.9	+0.6460	0.5640	0.0310	+85	+17
115 Tauri	5.3	3.29	4.0	17 53.7	5 11.3	-10 53.4	+0.0574	0.5643	0.0289	+38	-15
117 Tauri	6.0	3.27	3.9	17 10.4	5 35.2	-10 30.3	+0.8409	0.5644	0.0283	+90	+30
119 Tauri	4.9	+3.28	- 4.6	+18 32.2	7 27.1	- 8 42.2	-0.5668	0.5649	+0.0251	+ 2	-55
167 H ¹ . Tauri	5.5	3.24	4.2	17 0.0	7 29.1	- 8 40.3	+1.0767	0.5651	0.0250	+90	+47
120 Tauri	5.6	3.27	4.7	18 29.1	8 2.6	- 8 7.9	-0.4969	0.5652	0.0241	+ 6	-49
122 Tauri	5.5	3.22	4.6	16 59.5	9 39.0	- 6 34.8	+1.1346	0.5657	0.0214	+90	+53
130 Tauri	5.6	3.18	5.6	17 42.0	14 17.2	- 2 6.1	+0.4588	0.5671	+0.0135	+65	+ 9
19 B. Geminorum	6.2	+3.05	- 7.9	+18 42.0	12 1 51.8	+ 9 4.2	-0.5636	0.5702	-0.0066	+ 2	-53
124 H ¹ . Orionis	5.7	3.03	7.8	17 55.6	2 16.9	+ 9 28.4	+0.2518	0.5703	0.0074	+50	- 2
71 Orionis	5.1	3.05	8.3	19 10.9	2 25.9	+ 9 37.1	-1.0782	0.5705	0.0076	-34	-71
B. D. +17° 119	6.5	3.00	7.6	17 12.4	3 8.4	+10 18.1	+1.0082	0.5705	0.0089	+90	+44
287 B. Orionis	6.2	2.99	7.9	17 21.3	4 17.9	+11 25.2	+0.8390	0.5708	0.0109	+90	+31
292 B. Orionis	6.5	+2.98	- 8.2	+17 47.9	5 20.9	-11 34.0	+0.3563	0.5711	-0.0128	+57	+ 3

504 ELEMENTS OF OCCULTATIONS, 1922.

OCTOBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
		s	"	°	d h m	h m				°	'
B. D. +17° 1275	6.2	+2.91	- 8.6	+16 59.5	12 9 38.2	- 7 25.8	+1.1356	0.5721	-0.0204	+90	+53
26 Geminorum	5.2	2.86	9.6	17 43.2	14 32.7	- 2 41.7	+0.2452	0.5731	0.0291	+49	- 5
74 B. Geminorum	6.2	2.83	10.1	18 16.6	16 42.8	- 0 36.3	-0.4070	0.5736	0.0330	+11	-44
110 B. Geminorum	6.2	2.73	10.8	17 51.9	23 15.6	+ 5 42.6	-0.2276	0.5749	0.0446	+21	-33
41 H ¹ . Geminorum	6.0	2.71	10.4	16 47.1	23 19.9	+ 5 46.7	+0.8994	0.5749	0.0447	+90	+32
51 Geminorum	5.3	+2.64	-10.9	+16 17.4	13 4 1.7	+10 18.5	+1.1850	0.5757	-0.0531	+90	+56
λ Geminorum	3.6	2.61	11.3	16 40.7	6 4.1	-11 43.6	+0.6653	0.5760	0.0567	+87	+16
162 B. Geminorum	5.7	2.54	12.2	17 15.0	11 58.7	- 6 1.7	-0.2956	0.5769	0.0671	+18	-38
68 Geminorum	5.2	2.50	11.8	15 59.5	12 46.5	- 5 15.6	+0.9577	0.5771	0.0685	+90	+34
f Geminorum	5.3	2.49	12.7	17 51.0	15 16.6	- 2 50.8	-1.1478	0.5774	0.0728	-41	-73
1 Cancri	6.0	+2.35	-12.8	+15 59.8	22 49.9	+ 4 26.1	+0.1744	0.5783	-0.0857	+45	-14
2 B. Cancri	6.0	2.35	13.1	16 43.6	23 28.8	+ 5 3.6	-0.6355	0.5784	0.0868	- 2	-67
5 Cancri	5.9	2.33	13.2	16 40.1	14 04.5	+ 6 17.5	-0.6870	0.5785	0.0890	- 5	-71
30 B. Cancri	6.1	2.25	13.0	14 51.5	4 50.6	+10 13.8	+0.8007	0.5790	0.0988	+90	+21
29 Cancri	5.9	2.14	13.4	14 28.0	12 23.7	- 6 29.6	+0.4299	0.5797	0.1080	+62	- 2
84 B. Cancri	6.4	+2.10	-13.2	+13 31.3	14 35.9	- 4 22.2	+1.1548	0.5799	-0.1115	+90	+46
90 B. Cancri	6.3	2.10	14.0	15 34.8	15 35.4	- 3 24.8	-1.0631	0.5799	0.1131	-31	-75
A ¹ Cancri	5.5	2.04	13.2	12 57.5	18 38.5	- 0 28.3	+1.2636	0.5801	0.1178	+88	+61
α Cancri	4.3	1.94	13.3	12 9.4	1 1 9.9	+ 5 48.7	+1.2742	0.5806	0.1276	+87	+62
209 B. Cancri	6.5	1.88	13.4	11 52.7	5 58.9	+10 27.2	+0.9220	0.5809	0.1345	+90	+25
222 B. Cancri	6.3	+1.83	-13.4	+11 49.5	9 25.5	-10 13.7	+0.5043	0.5812	-0.1392	+68	- 1
ξ Leonis	5.1	1.75	13.5	11 38.5	15 25.3	- 4 27.1	-0.1708	0.5815	0.1472	+25	-40
o Leonis	3.8	1.69	13.1	10 14.7	19 20.9	- 0 40.0	+0.6491	0.5817	0.1521	+83	+ 6
83 B. Leonis	5.9	1.61	12.7	9 18.0	1 50.8	+ 5 35.7	+0.5825	0.5821	0.1597	+75	+ 1
89 B. Leonis	6.2	1.61	12.6	8 41.0	2 34.0	+ 6 17.3	+1.0850	0.5822	0.1605	+90	+34
π Leonis	4.9	+1.60	-12.5	+ 8 24.9	3 27.3	+ 7 8.7	+1.2096	0.5822	-0.1615	+90	+47
A Leonis	4.6	1.56	13.0	10 22.6	6 42.6	+10 16.8	-1.2848	0.5824	0.1650	-55	-80
43 Leonis	6.3	1.50	12.0	6 56.2	13 8.0	- 7 31.9	+1.0715	0.5829	0.1713	+90	+32
44 Leonis	5.9	1.48	12.5	9 10.7	14 4.3	- 6 37.7	-1.3253	0.5829	0.1722	-68	-74
48 Leonis	5.2	1.44	11.8	7 21.1	18 7.8	- 2 43.1	-0.2117	0.5832	0.1758	+23	-45
35 Sextantis	6.1	+1.42	-11.2	+ 5 9.3	21 45.2	+ 0 46.4	+1.3300	0.5835	-0.1787	+75	+70
37 Sextantis	6.3	1.40	11.5	6 46.9	22 54.5	+ 1 53.1	-0.4928	0.5836	0.1796	+ 7	-65
56 Leonis	6.1	1.36	11.3	6 35.9	17 3 6.6	+ 5 55.8	-1.0710	0.5840	0.1826	-30	-84
d Leonis	5.0	1.36	10.6	4 2.0	5 2.0	+ 7 47.0	+1.1181	0.5842	0.1838	+90	+35
80 Leonis	6.4	1.27	10.0	4 17.2	15 41.6	- 5 56.8	-1.1234	0.5853	0.1893	-34	-86
83 Leonis	6.3	+1.24	- 9.6	+ 3 26.2	16 6.3	- 5 33.0	-0.3617	0.5854	-0.1895	+15	-56
τ Leonis	5.2	1.27	9.7	3 17.0	16 34.6	- 5 5.8	-0.3005	0.5854	0.1897	+18	-52
89 Leonis	5.7	1.24	9.6	3 29.5	19 17.3	- 2 29.1	-1.0203	0.5857	0.1907	-26	-87
9 B. Virginis	6.2	1.23	- 8.4	+ 0 6.8	18 1 26.8	+ 3 26.7	+1.1271	0.5864	0.1922	+90	+34
NEW MOON.											
η Libræ	5.5	+1.48	+ 3.2	-15 25.5	22 1 47.2	+ 0 8.3	+0.3720	0.5967	-0.1094	+48	-14
θ Libræ	4.4	1.53	3.7	16 30.0	5 43.0	+ 3 55.0	+1.0355	0.5964	0.1025	+74	+29
203 B. Libræ	6.2	1.51	4.2	14 36.0	6 50.7	+ 5 0.1	-0.9858	0.5963	0.1005	-33	-90
49 Libræ	5.4	1.51	3.7	16 18.2	8 22.8	+ 6 28.6	+0.5724	0.5961	0.0977	+62	- 2
φ Ophiuchi	4.4	+1.63	+ 5.8	-16 26.5	20 52.3	- 5 30.5	-0.3651	0.5943	-0.0746	+ 2	-58
24 Scorpil	5.0	1.68	6.2	17 35.4	1 6.8	- 1 25.6	+0.5002	0.5934	0.0666	+53	- 6
78 B. Ophiuchi	6.5	1.72	7.2	16 40.9	7 2.4	+ 4 16.5	-0.7866	0.5920	0.0552	-24	-90
90 B. Ophiuchi	6.5	1.75	6.9	18 7.6	8 32.8	+ 5 43.5	+0.6061	0.5916	0.0523	+61	0
29 Ophiuchi	6.4	1.77	7.0	18 46.2	9 24.6	+ 6 33.3	+1.2191	0.5914	0.0507	+72	+51
125 B. Ophiuchi	6.2	+1.77	+ 7.7	-17 30.3	12 3.4	+ 9 6.2	-0.2001	0.5906	-0.0455	+ 8	-47

ELEMENTS OF OCCULTATIONS, 1922. 505

OCTOBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922-0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	P	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
		s	"	°	d h m	h m					
164 B. Ophiuchi	6.0	+1.81	+ 8.3	-17 40.4	23 16 51.9	-10 16.2	-0.2248	0.5891	-0.0363	+ 6	-48
192 B. Ophiuchi	6.3	1.84	8.4	18 22.3	18 49.0	- 8 23.5	+0.4254	0.5884	0.0325	+45	-10
305 B. Ophiuchi	6.3	1.96	10.0	18 47.2	24 7 54.3	+ 4 12.6	+0.5966	0.5834	0.0075	+56	0
6 Sagittarii	6.5	1.96	10.8	17 9.1	10 14.4	+ 6 27.6	-1.1120	0.5825	-0.0031	-53	-90
32 G. Sagittarii	5.7	1.98	11.2	17 9.8	12 58.1	+ 9 5.3	-1.1035	0.5812	+0.0020	-52	-90
64 B. Sagittarii	6.1	+2.04	+11.1	-18 41.0	16 13.5	-11 46.4	+0.4952	0.5798	+0.0081	+48	- 6
6 B. Scuti	5.9	2.02	11.6	17 23.9	16 57.7	-11 3.8	-0.8386	0.5794	0.0094	-31	-90
52 G. Sagittarii	6.4	2.04	11.2	18 29.4	17 4.0	-10 57.7	+0.3006	0.5794	0.0096	+33	-17
17 H. Sagittarii	6.4	2.05	11.2	18 38.9	17 35.8	-10 27.1	+0.4710	0.5792	0.0106	+46	- 8
Y Sagit. (var.)	5.4	2.06	11.3	18 53.6	18 44.0	- 9 21.3	+0.7405	0.5786	0.0127	+72	+ 9
85 B. Sagittarii	6.0	+2.07	+12.0	-17 50.7	21 34.1	- 6 37.4	-0.3106	0.5773	+0.0178	0	-54
95 B. Sagittarii	5.7	2.10	11.7	18 46.6	22 31.6	- 5 41.9	+0.6814	0.5768	0.0195	+66	+ 5
100 B. Sagittarii	5.0	2.09	11.9	18 27.2	23 4.0	- 5 10.7	+0.3553	0.5765	0.0205	+39	-14
q Sagittarii	4.0	2.29	14.6	17 59.5	25 21 11.5	- 7 49.8	+0.7518	0.5651	0.0581	+73	+ 9
v Sagittarii	4.4	2.27	15.2	16 5.9	21 14.5	- 7 46.9	-1.2566	0.5650	0.0582	-66	-85
45 Sagittarii	6.0	+2.30	+14.3	-18 27.0	21 15.6	- 7 45.9	+1.2432	0.5650	+0.0582	+72	+55
54 Sagittarii	5.4	2.35	15.8	16 28.1	26 5 50.4	+ 0 31.4	-0.3082	0.5604	0.0715	+ 6	-54
e Sagittarii	5.2	2.36	16.0	16 18.2	6 39.8	+ 1 19.1	-0.4257	0.5599	0.0727	- 1	-62
283 B. Sagittarii	5.5	2.36	16.1	15 38.8	7 8.7	+ 1 47.0	-1.0920	0.5597	0.0734	-44	-90
g Sagittarii	5.1	2.41	16.7	15 41.7	13 46.9	+ 8 11.9	-0.5252	0.5560	0.0830	- 5	-71
16 B. Capricorni	6.2	+2.50	+17.9	-15 1.6	27 0 29.2	- 5 26.9	-0.2790	0.5503	+0.0975	+10	-52
β Capricorni	3.2	2.50	17.9	15 1.4	0 35.9	- 5 20.5	-0.2713	0.5503	0.0976	+11	-51
31 B. Capricorni	6.4	2.55	17.7	15 59.7	4 15.3	- 1 48.2	+1.1447	0.5484	0.1022	+75	+39
27 G. Capricorni	6.2	2.54	18.0	15 18.8	5 23.1	- 0 42.5	+0.5236	0.5478	0.1037	+59	- 5
45 B. Capricorni	6.1	2.55	18.7	13 59.1	6 53.5	+ 0 44.9	-0.7565	0.5471	0.1055	-16	-90
τ Capricorni	5.2	+2.58	+18.4	-15 13.4	9 19.1	+ 3 5.8	+0.8455	0.5458	+0.1084	+75	+14
84 B. Capricorni	6.0	2.62	19.5	12 49.7	14 52.2	+ 8 28.4	-1.1353	0.5431	0.1148	-43	-90
ν Aquarii	4.5	2.69	20.4	11 41.0	0 8.9	- 6 32.3	-1.2766	0.5388	0.1247	-61	-87
53 B. Aquarii	6.5	2.72	19.8	13 31.2	3 18.3	- 3 28.8	+1.1291	0.5374	0.1278	+77	+36
72 B. Aquarii	6.5	2.76	20.6	11 54.1	9 25.9	+ 2 27.6	+0.1598	0.5348	0.1336	+39	-25
137 B. Capricorni	6.2	+2.81	+21.1	-10 55.4	15 6.3	+ 7 57.7	-0.1404	0.5326	+0.1386	+22	-43
e ² Capricorni	6.3	2.83	21.6	9 37.8	18 34.1	+11 19.1	-1.0745	0.5313	0.1414	-34	-90
λ Capricorni	5.5	2.84	20.9	11 43.2	18 41.1	+11 26.0	+1.2377	0.5312	0.1415	+79	+48
96 B. Aquarii	6.5	2.86	21.3	10 40.4	22 17.9	- 9 3.7	+0.6046	0.5300	0.1444	+71	- 1
θ Aquarii	4.3	2.96	22.2	8 10.0	29 10 17.0	+ 2 34.0	-0.3755	0.5263	0.1527	+12	-58
150 B. Aquarii	6.0	+2.96	+21.8	- 9 25.4	10 18.3	+ 2 35.3	+1.0148	0.5262	+0.1527	+81	+25
q Aquarii	5.3	2.97	22.2	8 12.4	12 2.2	+ 4 16.1	-0.0614	0.5258	0.1538	+29	-38
170 B. Aquarii	6.0	2.98	22.4	7 35.0	13 46.7	+ 5 57.6	-0.4820	0.5253	0.1549	+ 6	-66
186 B. Aquarii	6.1	3.03	22.4	6 56.9	17 49.8	+ 9 53.5	-0.5520	0.5243	0.1572	+ 2	-72
67 Aquarii	6.4	3.07	22.3	7 21.9	30 0 5.5	- 8 1.6	+0.9049	0.5230	0.1604	+83	+17
252 B. Aquarii	5.8	+3.11	+22.8	- 5 23.8	6 23.9	- 1 54.1	-0.2527	0.5218	+0.1633	+20	-49
197 G. Aquarii	6.3	3.12	22.8	5 13.3	7 30.9	- 0 49.1	-0.2656	0.5216	0.1637	+19	-50
263 B. Aquarii	6.1	3.14	22.8	5 7.5	9 45.6	+ 1 21.7	-0.0037	0.5213	0.1646	+33	-35
293 B. Aquarii	5.5	3.20	22.8	3 54.9	17 13.0	+ 8 36.4	-0.1068	0.5204	0.1671	+28	-41
316 B. Aquarii	6.5	3.24	22.5	4 20.3	19 42.0	+11 1.0	+0.7776	0.5202	0.1679	+86	+ 9
13 Piscium	6.4	+3.28	+23.0	- 1 30.6	31 1 57.0	- 6 54.7	-1.3052	0.5197	+0.1694	-57	-87
14 Piscium	5.9	3.30	22.9	1 40.3	3 6.9	- 5 46.8	-0.9284	0.5197	0.1696	-19	-90
60 B. Piscium	6.0	3.38	22.6	0 19.1	14 8.1	+ 4 55.6	-0.5525	0.5196	0.1711	+ 4	-72
80 B. Piscium	6.3	+3.41	+22.0	- 0 55.8	19 37.4	+10 15.5	+1.0667	0.5199	+0.1714	+90	+29

506 ELEMENTS OF OCCULTATIONS, 1922.

NOVEMBER.

THE STAR'S				AT CONJUNCTION IN R.A.					Limiting Parallels.		
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	F	x'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
		s	"	'	d	h	m	h	m		
98 B. Piscium	6.3	+3.48	+21.9	+ 1 15.7	1	2 24.7	- 7 8.7	-0.2018	0.5203	+0.1713	+23 -46
44 Piscium	6.0	3.51	21.6	1 30.8		6 28.2	- 3 12.2	+0.2125	0.5207	0.1710	+47 -23
155 B. Piscium	6.5	3.61	20.4	2 58.0		20 12.5	+10 8.5	+0.9349	0.5228	0.1686	+90 +20
73 Piscium	6.2	3.68	20.0	5 14.6	2	3 21.4	- 6 55.0	-0.3897	0.5242	0.1665	+13 -58
77 Piscium	6.4	3.67	19.7	4 29.9		3 51.3	- 6 26.0	+0.5184	0.5243	0.1663	+69 - 5
e Piscium	5.6	+3.68	+19.6	+ 5 14.6		5 12.2	- 5 7.4	-0.0814	0.5246	+0.1658	+30 -38
88 Piscium	6.2	3.73	19.5	6 35.3		8 30.6	- 1 54.9	-1.0240	0.5254	0.1646	-25 -84
263 B. Piscium	6.4	3.79	18.7	7 33.8		15 37.9	+ 5 0.1	-0.9389	0.5272	0.1615	-21 -82
μ Piscium	5.0	3.78	18.3	5 44.9		16 34.5	+ 5 54.9	+1.2196	0.5275	0.1611	+90 +46
o Piscium	4.5	3.86	17.6	8 46.2	3	0 26.2	-10 27.2	-0.8692	0.5297	0.1568	-15 -82
ξ Arietis	5.5	+3.96	+14.3	+10 15.7		20 30.1	+ 9 0.6	+0.5025	0.5364	+0.1428	+68 - 3
25 Arietis	6.5	3.94	13.9	9 51.4		21 48.8	+10 16.9	+1.1340	0.5369	0.1417	+90 +39
31 Arietis	5.7	4.04	13.2	12 6.8	4	2 23.4	- 9 16.8	-0.7056	0.5385	0.1377	- 5 -78
38 Arietis	5.2	4.04	12.4	12 7.3		6 32.3	- 5 15.6	-0.1507	0.5401	0.1339	+26 -38
147 B. Arietis	5.8	4.07	10.4	12 53.4		17 5.3	+ 4 57.7	+0.3649	0.5441	0.1232	+57 - 8
30 B. Tauri	6.4	+4.13	+ 7.2	+15 10.7	5	8 14.0	- 4 22.4	-0.3954	0.5500	+0.1056	+13 -50
179 B. Tauri	5.9	4.11	4.1	14 57.4		22 23.0	+ 9 19.0	+1.1340	0.5553	0.0868	+90 +55
180 B. Tauri	6.1	4.17	3.9	17 8.0		22 29.8	+ 9 25.6	-1.1437	0.5554	0.0867	-39 -73
193 B. Tauri	6.2	4.16	3.4	17 4.7	6	0 36.8	+11 28.5	-0.9035	0.5561	0.0837	-19 -73
48 Tauri	6.3	4.10	3.3	15 12.5		2 9.2	-11 2.1	+1.2509	0.5567	0.0815	+88 +62
γ Tauri	3.9	+4.11	+ 2.9	+15 26.5		4 1.4	- 9 13.6	+1.1470	0.5574	+0.0788	+90 +49
δ Tauri	3.9	4.16	2.3	17 21.7		5 27.4	- 7 50.5	-0.8196	0.5578	0.0767	-13 -73
63 Tauri	5.7	4.13	2.3	16 35.8		5 41.5	- 7 36.9	+0.0253	0.5579	0.0763	+36 -22
64 Tauri	4.9	4.15	2.2	17 15.9		5 59.8	- 7 19.2	-0.6741	0.5581	0.0759	- 4 -69
68 Tauri	4.3	4.16	2.0	17 45.1		6 38.2	- 6 42.0	-1.1515	0.5583	0.0749	-41 -73
70 Tauri	6.4	+4.10	+ 2.2	+15 45.9		6 43.5	- 6 36.9	+1.0038	0.5583	+0.0748	+90 +36
75 Tauri	5.2	4.11	1.9	16 11.2		8 1.7	- 5 21.3	+0.6429	0.5587	0.0729	+84 +13
θ^1 Tauri	4.2	4.10	1.9	15 47.4		8 5.5	- 5 17.7	+1.0757	0.5588	0.0728	+90 +43
θ^2 Tauri	3.6	4.10	1.9	15 42.0		8 8.0	- 5 15.3	+1.1773	0.5588	0.0727	+90 +53
264 B. Tauri	4.8	4.10	1.7	16 1.6		9 0.4	+ 4 24.6	+0.8873	0.5591	0.0714	+90 +29
119 H ¹ . Tauri	6.2	+4.15	+ 1.1	+17 51.2		10 21.9	- 3 5.8	-0.9917	0.5596	+0.0693	-26 -73
275 B. Tauri	6.5	4.10	1.4	16 9.7		10 25.7	- 3 2.1	+0.8408	0.5596	0.0692	+90 +26
a Tauri (Ald.)	1.1	4.10	+ 0.9	16 21.2		11 28.6	- 2 1.3	+0.7040	0.5599	0.0676	+90 +17
318 B. Tauri	5.7	4.06	- 1.2	17 1.9		21 17.6	+ 7 27.9	+0.5598	0.5630	0.0522	+74 +10
m Tauri	5.0	4.11	2.5	18 32.5	7	1 49.6	+11 50.6	-0.8423	0.5644	0.0449	-15 -71
111 Tauri	5.1	+4.01	- 4.0	+17 18.7		9 30.9	- 4 43.8	+0.7737	0.5664	+0.0321	+90 +25
115 Tauri	5.3	4.00	4.4	17 53.7		10 45.0	- 3 32.3	+0.1860	0.5668	0.0300	+46 - 8
117 Tauri	6.0	3.98	4.4	17 10.4		11 8.7	- 3 9.5	+0.9704	0.5669	0.0293	+90 +39
119 Tauri	4.9	4.00	5.0	18 32.2		13 0.2	- 1 21.8	-0.4367	0.5673	0.0262	+10 -45
167 H ¹ . Tauri	5.5	3.96	4.7	17 0.0		13 2.2	- 1 19.9	+1.2082	0.5673	0.0261	+90 +61
120 Tauri	5.6	+4.00	- 5.1	+18 29.1		13 35.6	- 0 47.6	-0.3662	0.5674	+0.0252	+14 -40
122 Tauri	5.5	3.94	5.2	16 59.5		15 11.7	+ 0 45.2	+1.2684	0.5678	0.0224	+79 +71
130 Tauri	5.6	3.92	6.3	17 42.0		19 49.0	+ 5 12.9	+0.5960	0.5689	+0.0144	+78 +16
19 B. Geminorum	6.2	3.84	9.0	18 42.0	8	7 23.3	- 7 36.9	-0.4196	0.5709	-0.0059	+11 -42
124 H ¹ . Orionis	5.7	3.81	8.8	17 55.6		7 48.4	- 7 12.7	+0.3987	0.5710	0.0066	+61 + 6
71 Orionis	5.1	+3.84	- 9.3	+19 10.9		7 57.4	- 7 4.1	-0.9355	0.5710	-0.0069	-22 -71
B.D. +17° 1191	6.5	3.78	8.8	17 12.4		8 39.9	- 6 23.0	+1.1583	0.5711	0.0081	+90 +57
287 B. Orionis	6.2	3.77	9.1	17 21.3		9 49.5	- 5 15.9	+0.9895	0.5713	0.0102	+90 +42
292 B. Orionis	6.5	3.77	9.4	17 47.9		10 52.6	- 4 14.9	+0.5059	0.5714	0.0120	+69 +11
26 Geminorum	5.2	3.66	11.2	17 43.2		20 6.4	+ 4 39.4	+0.4012	0.5726	0.0284	+61 + 4
74 B. Geminorum	6.2	+3.65	-11.7	+18 16.6		22 17.2	+ 6 45.6	-0.2530	0.5727	-0.0323	+20 -33

ELEMENTS OF OCCULTATIONS, 1922. 507

NOVEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	r	r'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
110 B. Geminorum	6.2	+3.56	-12.7	+17 51.8	d h m	h m	-0.0690	0.5732	-0.0439	+31	-24
41 H ¹ . Geminorum	6.0	3.53	12.4	16 47.1	9 4 52.9	-10 52.7	+1.0652	0.5733	0.0440	+90	+45
λ Geminorum	3.6	3.44	13.5	16 40.7	4 57.2	-10 48.6	+0.8339	0.5736	0.0559	+90	+27
162 B. Geminorum	5.7	3.38	14.6	17 15.0	17 44.1	+ 1 31.1	-0.1317	0.5737	0.0662	+27	-29
68 Geminorum	5.2	3.34	14.3	15 59.5	18 32.4	+ 2 17.8	+1.1325	0.5737	0.0676	+90	+49
<i>f</i> Geminorum	5.3	+3.34	-15.3	+17 51.0	21 4.7	+ 4 44.7	-0.9900	0.5738	-0.0719	-26	-73
1 Cancri	6.0	3.19	15.7	15 59.7	10 4 45.1	-11 51.3	+0.3466	0.5737	0.0847	+56	- 5
2 B. Cancri	6.0	3.20	16.0	16 43.5	5 24.7	-11 13.1	-0.4712	0.5737	0.0858	+ 8	-53
5 Cancri	5.9	3.18	16.1	16 40.0	6 42.8	- 9 57.8	-0.5230	0.5736	0.0879	+ 5	-57
30 B. Cancri	6.1	3.09	16.0	14 51.4	10 52.4	- 5 57.1	+0.9816	0.5735	0.0947	+90	+33
29 Cancri	5.9	+2.97	-16.7	+14 27.9	18 35.1	+ 1 29.3	+0.6085	0.5733	-0.1067	+79	+ 8
90 B. Cancri	6.3	2.94	17.4	15 34.8	21 51.2	+ 4 38.4	-0.9025	0.5731	0.1117	-18	-75
209 B. Cancri	6.5	2.68	17.2	11 52.7	11 12 37.2	- 5 6.9	+1.1084	0.5724	0.1327	+90	+39
222 B. Cancri	6.3	2.64	17.3	11 49.4	16 9.9	- 1 41.7	+0.6843	0.5723	0.1373	+88	+ 9
ξ Leonis	5.1	2.54	17.5	11 38.5	22 20.7	+ 4 16.0	-0.0024	0.5720	0.1451	+34	-30
<i>o</i> Leonis	3.8	+2.47	-17.1	+10 14.6	12 2 23.9	+ 8 10.6	+0.8290	0.5719	-0.1499	+90	+17
19 Leonis	6.4	2.44	17.7	11 55.5	5 8.3	+10 49.1	-1.3033	0.5719	0.1530	-61	-77
R Leonis (var.)	4.6	2.44	17.7	11 47.2	5 11.6	+10 52.4	-1.1705	0.5719	0.1531	-40	-79
83 B. Leonis	5.9	2.38	16.8	9 17.9	9 6.7	- 9 20.8	+0.7588	0.5718	0.1574	+90	+11
89 B. Leonis	6.2	2.37	16.7	8 40.9	9 51.4	- 8 37.7	+1.2690	0.5718	0.1581	+90	+55
A Leonis	4.6	+2.31	-17.3	+10 22.5	14 8.6	- 4 29.6	-1.1419	0.5718	-0.1625	-36	-80
43 Leonis	6.3	2.23	16.1	6 56.1	20 47.7	+ 1 55.4	+1.2495	0.5718	0.1688	+90	+50
44 Leonis	5.9	2.21	16.8	9 10.6	21 46.1	+ 2 51.8	-1.1884	0.5718	0.1696	-41	-81
48 Leonis	5.2	2.15	16.0	7 21.1	18 1 58.4	+ 6 55.2	-0.0592	0.5720	0.1731	+31	-36
37 Sextantis	6.3	2.10	15.8	6 46.8	6 55.8	+11 42.1	-0.3492	0.5722	0.1769	+15	-54
56 Leonis	6.1	+2.04	-15.5	+ 6 35.9	11 17.1	- 8 5.7	-0.9412	0.5725	-0.1799	-20	-84
d Leonis	5.0	2.03	14.6	4 2.0	13 16.9	- 6 10.2	+1.2833	0.5726	0.1811	+90	+54
c Leonis	5.1	2.01	15.4	6 31.0	13 21.4	- 6 5.8	-1.2325	0.5726	0.1812	-45	-83
80 Leonis	6.4	1.89	14.1	4 17.1	14 02.0	+ 4 29.8	-1.0079	0.5738	0.1879	-24	-86
83 Leonis	6.3	1.86	13.6	3 26.1	0 46.0	+ 4 54.5	-0.2339	0.5738	0.1869	+22	-48
τ Leonis	5.2	+1.90	-13.7	+ 3 16.9	1 15.3	+ 5 22.7	-0.1723	0.5739	-0.1871	+25	-44
89 Leonis	5.7	1.85	13.7	3 29.4	4 4.0	+ 8 5.5	-0.9074	0.5743	0.1881	-17	-87
9 B. Virginis	6.2	1.81	12.1	0 6.7	10 27.0	- 9 45.2	+1.2671	0.5752	0.1899	+90	+50
β Virginis	3.8	1.84	12.9	2 12.0	11 8.4	- 9 5.3	-0.9533	0.5754	0.1900	-20	-88
27 B. Virginis	6.5	1.77	11.9	+ 0 57.7	14 48.0	- 5 33.5	-0.4103	0.5760	0.1906	+12	-60
13 Virginis	5.9	+1.71	-10.8	- 0 21.4	23 16.6	+ 2 36.9	-0.7126	0.5776	-0.1910	- 5	-90
η Virginis	4.0	1.70	10.8	0 14.2	23 48.7	+ 3 7.9	-0.9346	0.5778	0.1909	-19	-90
38 Virginis	6.1	1.60	8.5	3 7.9	15 14 4.9	- 7 6.8	-0.7602	0.5811	0.1880	- 8	-90
91 G. Virginis	6.5	1.62	8.4	3 48.1	14 15.6	- 6 56.5	-0.1274	0.5812	0.1879	+27	-42
k Virginis	5.7	1.60	8.1	3 23.6	16 49.7	- 4 28.0	-1.0145	0.5819	0.1869	-26	-90
SATURN	1.0	...	...	- 4 5.0	19 12.3	- 2 10.6	-0.7722	0.5786	-0.1843	-10	-90
θ Virginis	4.4	+1.59	- 7.2	5 7.5	21 11.4	- 0 15.8	-0.1061	0.5831	0.1849	+28	-41
72 Virginis	6.1	1.55	6.0	6 4.2	16 54.9	+ 8 3.2	-0.7436	0.5855	0.1797	- 8	-90
l Virginis	4.8	1.54	6.0	5 51.3	6 28.6	+ 8 40.9	-1.0735	0.5857	0.1792	-31	-90
m Virginis	5.2	1.55	- 4.9	8 18.7	10 30.5	-11 26.2	+0.6465	0.5868	0.1762	+77	+ 1
NEW MOON.											
305 B. Ophiuchi	6.3	+1.72	+10.0	-18 47.2	20 17 57.3	- 7 56.3	+0.4449	0.5914	-0.0090	+44	- 9
6 Sagittarii	6.5	1.71	10.6	17 9.1	20 14.1	- 5 44.6	-1.2514	0.5906	-0.0045	-69	-85
32 G. Sagittarii	5.7	1.72	10.9	17 9.8	22 54.0	- 3 10.7	-1.2468	0.5895	+0.0007	-68	-86
64 B. Sagittarii	6.1	+1.76	+11.0	-18 41.0	21 2 4.5	- 0 7.4	+0.3319	0.5881	+0.0068	+36	-16

508 ELEMENTS OF OCCULTATIONS, 1922.

NOVEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922-0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	P	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
6 B. Scuti	5.9	+1.75	+11.3	-17 23.9	21 2 47.7	+ 0 34.3	-0.9898	0.5879	+0.0082	-42	-90
52 G. Sagittarii	6.4	1.76	11.1	18 29.4	2 53.8	+ 0 40.2	+0.1380	0.5878	0.0084	+24	-27
17 H. Sagittarii	6.4	1.77	11.1	18 38.9	3 24.8	+ 1 10.0	+0.3059	0.5876	0.0094	+35	-17
Y Sagit. (var.)	5.4	1.78	11.2	18 53.6	4 31.3	+ 2 14.0	+0.5711	0.5871	0.0115	+54	- 2
85 B. Sagittarii	6.0	1.78	11.7	17 50.7	7 17.0	+ 4 53.6	-0.4734	0.5859	0.0168	- 9	-67
95 B. Sagittarii	5.7	+1.80	+11.5	-18 46.6	8 13.1	+ 5 47.7	+0.5072	0.5854	+0.0186	+50	- 6
100 B. Sagittarii	5.0	1.80	11.7	18 27.2	8 44.7	+ 6 18.0	+0.1837	0.5852	0.0195	+28	-24
187 B. Sagittarii	6.4	1.90	13.1	18 51.4	23 57.2	- 3 2.7	+1.1185	0.5773	0.0472	+72	+37
g Sagittarii	4.0	1.92	14.0	17 59.5	22 6 16.8	+ 3 3.4	+0.5482	0.5737	0.0580	+57	- 3
45 Sagittarii	6.0	1.94	13.8	18 27.0	6 20.7	+ 3 7.2	+1.0340	0.5736	0.0581	+72	+29
54 Sagittarii	5.4	+1.97	+15.0	-16 28.1	14 41.8	+11 10.7	-0.5093	0.5687	+0.0717	- 6	-69
e Sagittarii	5.2	1.98	15.2	16 18.2	15 29.9	+11 57.1	-0.6263	0.5682	0.0729	-12	-82
g Sagittarii	5.1	2.02	15.8	15 41.7	22 25.8	- 5 21.3	-0.7315	0.5640	0.0835	-17	-90
16 B. Capricorni	6.2	2.10	16.8	15 1.6	23 8 52.0	+ 4 43.8	-0.4971	0.5576	0.0982	- 2	-68
β Capricorni	3.2	2.10	16.8	15 1.4	8 58.5	+ 4 50.0	-0.4897	0.5575	0.0983	- 2	-68
31 B. Capricorni	6.4	+2.14	+16.7	-15 59.7	12 32.6	+ 8 17.0	+0.9089	0.5554	+0.1030	+74	+19
27 G. Capricorni	6.2	2.13	16.8	15 18.8	13 38.7	+ 9 20.9	+0.2935	0.5547	0.1045	+43	-18
45 B. Capricorni	6.1	2.14	17.5	13 59.1	15 7.0	+10 46.3	-0.9745	0.5539	0.1063	-31	-90
τ Capricorni	5.2	2.17	17.1	15 13.5	17 29.3	-10 56.0	+0.6095	0.5524	0.1093	+67	0
95 B. Capricorni	5.9	2.24	17.7	14 46.8	24 2 43.4	- 2 0.0	+1.1958	0.5470	0.1201	+76	+44
53 B. Aquarii	6.5	+2.31	+18.3	-13 31.3	11 5.9	+ 6 6.5	+0.8825	0.5424	+0.1288	+76	+17
18 Aquarii	5.5	2.35	18.5	13 12.5	15 6.6	+ 9 59.7	+1.0704	0.5402	0.1328	+77	+31
72 B. Aquarii	6.5	2.35	19.0	11 54.1	17 6.8	+11 56.2	-0.0800	0.5392	0.1340	+25	-39
137 B. Capricorni	6.2	2.40	19.4	10 55.4	22 41.6	- 6 39.4	-0.3790	0.5365	0.1366	+10	-58
c ^a Capricorni	6.3	2.43	19.9	9 37.9	25 2 6.2	- 3 21.1	-1.3065	0.5348	0.1424	-65	-81
λ Capricorni	5.5	+2.44	+19.2	-11 43.3	2 13.0	- 3 14.4	+0.9880	0.5348	+0.1425	+79	+24
96 B. Aquarii	6.5	2.40	19.6	10 40.4	5 46.8	+ 0 12.7	+0.3595	0.5332	0.1454	+53	-15
θ Aquarii	4.3	2.58	20.4	8 10.0	17 37.1	+11 41.8	-0.6131	0.5283	0.1530	- 2	-78
150 B. Aquarii	6.0	2.57	20.0	9 25.4	17 38.4	+11 43.1	+0.7686	0.5283	0.1536	+81	+ 9
q Aquarii	5.3	2.59	20.4	8 12.5	19 21.2	-10 37.1	-0.3007	0.5276	0.1547	+16	-53
170 B. Aquarii	6.0	+2.61	+20.6	- 7 35.0	21 4.7	- 8 56.7	-0.7184	0.5270	+0.1557	- 8	-90
186 B. Aquarii	6.1	2.66	20.6	6 56.9	26 1 5.6	- 5 3.0	-0.7871	0.5256	0.1580	-12	-90
167 G. Aquarii	6.3	2.68	20.2	8 17.8	4 45.4	- 1 29.6	+1.2795	0.5245	0.1599	+82	+53
67 Aquarii	6.4	2.70	20.4	7 22.0	7 18.4	+ 0 58.9	+0.6644	0.5238	0.1612	+80	+ 2
252 B. Aquarii	5.8	2.77	21.0	5 23.9	13 34.5	+ 7 4.0	-0.4847	0.5221	0.1640	+ 7	-66
197 G. Aquarii	6.3	+2.78	+21.0	- 5 13.3	14 41.0	+ 8 8.7	-0.4969	0.5218	+0.1645	+ 6	-67
263 B. Aquarii	6.1	2.81	20.9	5 7.5	16 55.1	+10 18.9	-0.2349	0.5213	0.1653	+21	-48
293 B. Aquarii	5.5	2.88	21.0	3 55.0	27 0 20.9	- 6 28.1	-0.3328	0.5199	0.1678	+16	-55
316 B. Aquarii	6.5	2.92	20.6	4 20.3	2 49.5	- 4 3.8	+0.5595	0.5195	0.1685	+71	- 4
14 Piscium	5.9	3.00	21.2	1 40.4	10 13.7	+ 3 7.7	-1.1440	0.5186	0.1702	-36	-90
60 B. Piscium	6.0	+3.12	+21.0	- 0 19.1	21 14.9	-10 9.9	-0.7585	0.5179	+0.1717	- 8	-90
80 B. Piscium	6.3	3.17	20.3	- 0 55.8	28 2 44.7	- 4 49.5	+0.8635	0.5179	0.1720	+90	+14
98 B. Piscium	6.3	3.26	20.4	+ 1 15.7	9 32.7	+ 1 46.9	-0.3941	0.5182	0.1719	+13	-59
44 Piscium	6.0	3.30	20.1	1 30.8	13 36.8	+ 5 43.9	+0.0249	0.5186	0.1716	+36	-33
155 B. Piscium	6.5	3.45	19.0	2 58.0	29 3 23.6	- 4 52.8	+0.7664	0.5205	0.1693	+90	+ 9
73 Piscium	6.2	+3.56	+18.9	+ 5 14.6	10 33.8	+ 2 4.9	-0.5448	0.5219	+0.1673	+ 5	-70
77 Piscium	6.4	3.55	18.5	4 29.9	11 3.8	+ 2 34.1	+0.3629	0.5220	0.1672	+57	-14
e Piscium	5.6	3.56	18.5	5 14.6	12 25.0	+ 3 52.9	-0.2338	0.5224	0.1667	+22	-48
88 Piscium	6.2	3.62	18.6	6 35.3	15 43.9	+ 7 6.1	-1.1694	0.5232	0.1656	-38	-84
263 B. Piscium	6.4	3.72	17.8	7 33.8	22 52.5	- 9 57.7	-1.0718	0.5252	0.1626	-30	-83
μ Piscium	5.0	+3.70	+17.2	+ 5 44.8	23 49.2	- 9 2.8	+1.0850	0.5254	+0.1622	+90	+32

ELEMENTS OF OCCULTATIONS, 1922. 509

NOVEMBER.

THE STAR'S				AT CONJUNCTION IN R.A.						Limiting Parallels.		
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	x'	y'	N.	S.	
		Δα	Δδ									
o	Piscium	4.5	+3.82	+16.8	+ 8.46.2	30 7 41.9	- 1 23.8	-0.9856	0.5280	+0.1582	-23	-82

DECEMBER.

ξ	Arietis	5.5	+4.02	+13.6	+10 15.7	1 3 46.3	- 5 55.6	+0.4229	0.5357	+0.1446	+62	- 8
25	Arietis	6.5	+4.00	+13.2	+ 9 51.4	5 4.8	- 4 39.5	+1.0551	0.5362	+0.1435	+90	+32
31	Arietis	5.7	4.13	12.8	12 6.8	9 39.0	- 0 13.6	-0.7698	0.5382	0.1396	- 9	-78
38	Arietis	5.2	4.15	12.0	12 7.3	13 47.3	+ 3 47.0	-0.2078	0.5401	0.1359	+23	-42
147	B. Arietis	5.8	4.24	10.0	12 53.4	2 0 17.7	-10 2.3	+0.3283	0.5449	0.1255	+55	-11
30	B. Tauri	6.4	4.38	7.0	15 10.7	15 20.5	+ 4 31.7	-0.3964	0.5520	0.1081	+13	-50
179	B. Tauri	5.9	+4.44	+ 3.7	+14 57.4	3 5 21.3	- 5 55.1	+1.2286	0.5584	+0.0895	+90	+57
180	B. Tauri	6.1	4.50	3.8	17 8.0	5 28.0	- 5 48.6	-1.1098	0.5585	0.0893	-36	-73
193	B. Tauri	6.2	4.50	3.3	17 4.7	7 33.6	- 3 47.2	-0.8663	0.5594	0.0863	-16	-73
48	Tauri	6.3	4.46	2.8	15 12.4	9 4.9	- 2 18.9	+1.2795	0.5601	0.0841	+80	+68
γ	Tauri	3.9	4.47	2.4	15 26.5	10 55.7	- 0 31.8	+1.1801	0.5609	0.0814	+90	+52
δ	Tauri	3.9	+4.53	+ 2.1	+17 21.7	12 20.7	+ 0 50.3	-0.7725	0.5615	+0.0793	-10	-73
63	Tauri	5.7	4.51	2.0	16 35.8	12 34.6	+ 1 3.8	+0.0682	0.5616	0.0790	+39	-19
64	Tauri	4.9	4.53	1.9	17 15.9	12 52.7	+ 1 21.2	-0.6266	0.5617	0.0785	- 1	-65
68	Tauri	4.3	4.55	1.8	17 45.1	13 30.6	+ 1 57.9	-1.0999	0.5620	0.0776	-35	-73
70	Tauri	6.4	4.48	1.7	15 45.9	13 35.8	+ 2 2.9	+1.0432	0.5620	0.0775	+90	+39
75	Tauri	5.2	+4.50	+ 1.5	+16 11.2	14 53.0	+ 3 17.5	+0.6871	0.5626	+0.0755	+90	+15
0 ¹	Tauri	4.2	4.49	1.4	15 47.4	14 56.8	+ 3 21.1	+1.1176	0.5626	0.0754	+90	+46
0 ²	Tauri	3.6	4.49	1.4	15 42.0	14 59.3	+ 3 23.6	+1.2186	0.5627	0.0754	+90	+57
264	B. Tauri	4.8	4.50	1.2	16 1.5	15 51.0	+ 4 13.5	+0.9322	0.5630	0.0741	+90	+31
119	H ¹ . Tauri	6.2	4.55	0.9	17 51.2	17 11.5	+ 5 31.3	-0.9330	0.5635	0.0720	-21	-73
275	B. Tauri	6.5	+4.50	+ 0.9	+16 9.7	17 15.2	+ 5 34.9	+0.8888	0.5636	+0.0719	+90	+29
a	Tauri (Ald.)	1.1	4.51	+ 0.4	16 21.2	18 17.3	+ 6 34.9	+0.7550	0.5640	0.0703	+90	+20
318	B. Tauri	5.7	4.53	- 1.8	17 1.9	4 3 57.9	- 8 4.3	+0.6319	0.5678	0.0548	+83	+14
m	Tauri	5.0	4.61	2.9	18 32.5	8 25.8	- 3 45.6	-0.7521	0.5694	0.0474	- 9	-72
111	Tauri	5.1	4.54	4.8	17 18.7	15 59.8	+ 3 32.5	+0.8692	0.5718	0.0345	+90	+31
115	Tauri	5.3	+4.54	- 5.2	+17 53.7	17 12.6	+ 4 42.8	+0.2876	0.5722	+0.0323	+53	- 3
117	Tauri	6.0	4.52	5.3	17 10.4	17 36.0	+ 5 5.4	+1.0678	0.5723	0.0317	+90	+46
119	Tauri	4.9	4.55	5.7	18 32.2	19 25.6	+ 6 51.2	-0.3266	0.5728	0.0285	+16	-38
120	Tauri	5.6	4.55	5.9	18 29.1	20 0.4	+ 7 24.8	-0.2554	0.5731	0.0275	+20	-33
130	Tauri	5.6	4.50	7.4	17 41.9	5 2 7.5	-10 41.2	+0.7128	0.5747	+0.0166	+90	+23
19	B. Geminorum	6.2	+4.48	-10.2	+18 41.9	13 29.9	+ 0 17.1	-0.2745	0.5769	-0.0040	+19	-32
124	H ¹ . Orionis	5.7	4.45	10.2	17 55.6	13 54.6	+ 0 40.9	+0.5395	0.5770	0.0047	+73	+14
71	Orionis	5.1	4.48	10.6	19 10.9	14 3.4	+ 0 49.4	-0.7863	0.5770	0.0050	-11	-71
287	B. Orionis	6.2	4.42	10.6	17 21.2	15 53.6	+ 2 35.6	+1.1306	0.5773	0.0084	+90	+54
292	B. Orionis	6.5	4.43	10.9	17 47.9	16 55.7	+ 3 35.5	+0.0518	0.5775	0.0103	+86	+20
26	Geminorum	5.2	+4.37	-13.0	+17 43.1	6 2 0.1	-11 39.6	+0.5644	0.5785	-0.0269	+75	+13
74	B. Geminorum	6.2	4.36	13.5	18 16.5	4 8.8	- 9 35.5	-0.0825	0.5786	0.0308	+30	-23
110	B. Geminorum	6.2	4.30	14.8	17 51.8	10 38.1	- 3 20.3	+0.1117	0.5789	0.0427	+41	-13
41	H ¹ . Geminorum	6.0	4.26	14.6	16 47.0	10 42.3	- 3 16.1	+1.2405	0.5789	0.0428	+88	+64
λ	Geminorum	3.6	4.20	16.0	16 40.7	17 24.2	+ 3 11.3	+1.0218	0.5789	0.0548	+90	+40
162	B. Geminorum	5.7	+4.16	-17.2	+17 14.9	23 18.0	+ 8 52.3	+0.0696	0.5787	-0.0653	+39	-18
f	Geminorum	5.3	4.13	17.9	17 50.9	7 2 36.0	-11 56.7	-0.7809	0.5785	0.0711	-11	-73
1	Canceri	6.0	4.00	18.8	15 59.7	10 11.0	+ 4 38.0	+0.5625	0.5779	0.0840	+74	+ 8
2	B. Canceri	6.0	4.01	19.0	16 43.5	10 50.1	- 4 0.3	-0.2524	0.5778	0.0851	+20	-38
3	Canceri	5.7	4.02	19.4	17 31.1	11 48.3	- 3 4.3	-1.1606	0.5778	0.0867	-41	-73
5	Canceri	5.9	+4.00	-19.3	+16 40.0	12 7.4	- 2 45.8	-0.3024	0.5777	-0.0872	+18	-42

510 ELEMENTS OF OCCULTATIONS, 1922.

DECEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$									s	"
30 B. Cancri	6.1	+3.91	-19.4	+14 51.3	7 16 14.7	+ 1 12.6	+1.2048	0.5772	-0.0940	+90	+54
29 Cancri	5.9	3.81	20.4	14 27.9	23 53.7	+ 8 35.2	+0.8425	0.5761	0.1061	+90	+22
90 B. Cancri	6.3	3.79	21.1	15 34.7	8 3 8.6	+11 43.1	-0.6642	0.5756	0.1111	- 3	-71
222 B. Cancri	6.3	3.50	21.8	11 49.4	21 24.9	+ 5 20.5	+0.9419	0.5725	0.1366	+90	+26
ξ Leonis	5.1	3.41	22.2	11 38.4	9 3 36.7	+11 19.3	+0.2577	0.5714	0.1443	+50	-16
o Leonis	3.8	+3.34	-21.9	+10 14.5	7 41.1	- 8 44.8	+1.0952	0.5707	-0.1491	+90	+36
18 Leonis	5.8	3.32	22.6	12 9.8	9 58.8	- 6 32.0	-1.2219	0.5703	0.1516	-46	-78
19 Leonis	6.4	3.31	22.5	11 55.4	10 26.6	- 6 5.2	-1.0458	0.5702	0.1521	-28	-79
R Leonis (var.)	1.6	3.32	22.5	11 47.1	10 29.9	- 6 2.0	-0.9124	0.5702	0.1522	-18	-79
83 B. Leonis	5.9	3.24	21.8	9 17.8	14 26.8	- 2 13.4	+1.0287	0.5696	0.1564	+90	+30
A Leonis	4.6	+3.18	-22.4	+10 22.5	19 31.7	+ 2 40.9	-0.8818	0.5688	-0.1614	-16	-80
44 Leonis	5.9	3.08	22.0	9 10.5	10 3 15.0	+10 8.0	-0.9288	0.5678	0.1684	-19	-81
48 Leonis	5.2	3.02	21.3	7 21.0	7 31.2	- 9 44.7	+0.2093	0.5673	0.1718	+47	-21
37 Sextantis	6.3	2.95	21.1	6 46.7	12 33.7	- 4 52.6	-0.0839	0.5668	0.1754	+30	-38
56 Leonis	6.1	2.89	20.9	6 35.8	17 0.1	- 0 35.4	-0.6831	0.5665	0.1783	- 3	-82
c Leonis	5.1	+2.86	-20.8	+ 6 30.9	19 6.9	+ 1 26.9	-0.9782	0.5664	-0.1795	-22	-84
80 Leonis	6.4	2.73	19.5	4 17.1	11 6 21.2	-11 42.0	-0.7583	0.5661	0.1849	- 8	-86
83 Leonis	6.3	2.69	19.0	3 26.0	6 47.4	-11 16.7	+0.0246	0.5661	0.1851	+36	-33
τ Leonis	5.2	2.73	19.1	3 16.8	7 17.5	-10 47.6	+0.0867	0.5661	0.1852	+40	-29
89 Leonis	5.7	2.68	19.1	3 29.3	10 10.6	- 8 0.4	-0.6596	0.5662	0.1862	- 2	-82
β Virginis	3.8	+2.66	-18.2	+ 2 12.0	17 26.8	- 0 59.3	-0.7127	0.5665	-0.1880	- 5	-88
27 B. Virginis	6.5	2.58	17.2	+ 0 57.6	21 12.9	+ 2 39.0	-0.1665	0.5668	0.1886	+25	-44
13 Virginis	5.9	2.49	16.0	- 0 21.5	12 5 57.3	+11 5.2	-0.4834	0.5678	0.1889	+ 8	-66
7 Virginis	4.0	2.48	16.0	0 14.3	6 30.5	+11 37.2	-0.7094	0.5678	0.1889	- 5	-90
38 Virginis	6.1	2.34	13.4	3 8.0	21 15.5	+ 1 51.4	-0.5540	0.5704	0.1860	+ 4	-72
91 G. Virginis	6.5	+2.37	-13.2	- 3 48.2	21 26.6	+ 2 2.1	+0.0881	0.5704	-0.1860	+39	-30
k Virginis	5.7	2.33	12.9	3 23.7	13 0 6.0	+ 4 35.9	-0.8170	0.5710	0.1850	-12	-90
48 Virginis	6.5	2.31	12.8	3 14.8	1 58.2	+ 6 24.1	-1.3111	0.5714	0.1843	-59	-85
θ Virginis	4.4	2.31	11.9	5 7.6	4 37.0	+ 8 57.3	+0.0976	0.5720	0.1831	+39	-29
SATURN	1.0	...	...	4 58.4	6 45.0	+11 0.8	-0.4463	0.5697	0.1810	+ 9	-63
72 Virginis	6.1	+2.24	-10.3	- 6 4.3	13 33.4	- 6 25.2	-0.5663	0.5744	-0.1781	+ 2	-73
l Virginis	4.8	2.22	10.3	5 51.4	14 14.0	- 5 46.1	-0.9026	0.5746	0.1777	-18	-90
m Virginis	5.2	2.23	8.9	8 18.7	18 24.5	- 1 44.6	+0.8357	0.5758	0.1748	+82	+13
598 B. Virginis	6.1	2.16	8.3	7 40.7	14 0 11.1	+ 3 49.7	-0.8007	0.5774	0.1703	-13	-90
623 B. Virginis	6.5	2.15	7.3	8 53.1	4 12.6	+ 7 42.5	-0.2629	0.5787	0.1667	+17	-50
95 Virginis	5.4	+2.14	- 7.1	- 8 56.6	5 13.4	+ 8 41.2	-0.3726	0.5790	-0.1658	+12	-58
96 Virginis	6.5	2.16	6.7	9 58.1	6 11.7	+ 9 37.3	+0.4978	0.5793	0.1649	+63	- 7
κ Virginis	4.3	2.14	6.3	9 54.8	7 51.5	+11 13.5	+0.1702	0.5798	0.1633	+41	-25
2 Libræ	6.3	2.13	5.5	11 21.6	12 20.4	- 8 27.5	+0.9062	0.5812	0.1587	+79	+18
4 G. Libræ	6.5	2.12	5.4	11 19.1	12 52.5	- 7 56.4	+0.7785	0.5814	0.1581	+79	+ 9
6 B. Libræ	6.2	+2.04	- 4.0	-11 58.5	18 7.4	- 2 53.0	+0.6269	0.5831	-0.1522	+72	0
22 B. Libræ	6.4	2.08	3.6	12 30.8	22 41.6	+ 1 31.1	+0.4864	0.5845	0.1466	+60	- 8
13 Libræ	5.7	2.03	- 3.3	11 34.9	15 1 25.4	+ 4 8.8	-0.8483	0.5854	0.1431	-19	-90
γ Libræ	4.0	1.98	+ 0.2	14 31.8	18 32.2	- 3 22.6	-0.1185	0.5902	0.1184	+20	-42
190 B. Libræ	6.5	1.96	0.7	14 47.6	21 47.7	- 0 14.4	-0.2294	0.5909	0.1132	+14	-49
η Libræ	5.5	+1.97	+ 0.9	-15 25.5	22 3.7	+ 0 1.0	+0.3789	0.5910	-0.1128	+49	-14
NEW MOON.											
54 Sagittarii	5.4	+1.86	+14.3	-16 28.2	20 0 22.4	- 1 20.7	-0.6930	0.5743	+0.0704	-16	-90
e Sagittarii	5.2	1.86	14.4	16 18.2	1 9.7	- 0 35.1	-0.8112	0.5739	0.0717	-24	-90
g Sagittarii	5.1	+1.87	+15.0	-15 41.7	7 59.0	+ 5 59.8	-0.9297	0.5701	+0.0825	-30	-90

ELEMENTS OF OCCULTATIONS, 1922. 511

DECEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, H	Y	z'	y'	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
16 B. Capricorni	6.2	+1.91	+15.8	-15 1.0	20 18 14.1	- 8 6.2	-0.7165	0.5641	+0.0976	-15	-90
β Capricorni	3.2	1.91	15.8	15 1.5	18 20.5	- 8 0.1	-0.7094	0.5640	0.0978	-15	-90
31 B. Capricorni	6.4	1.93	15.8	15 59.8	21 50.6	- 4 37.1	+0.6742	0.5619	0.1026	+71	+ 3
27 G. Capricorni	6.2	1.92	15.9	15 18.8	22 55.5	- 3 34.3	+0.0605	0.5613	0.1041	+29	-31
45 B. Capricorni	6.1	1.93	16.4	13 59.1	21 0 22.2	- 2 10.5	-1.2022	0.5604	0.1060	-52	-90
τ Capricorni	5.2	+1.95	+16.1	-15 13.5	2 41.7	+ 0 4.3	+0.3677	0.5590	+0.1090	+48	-14
95 B. Capricorni	5.9	1.99	16.6	14 46.8	11 45.2	+ 8 49.8	+0.9343	0.5536	0.1201	+76	+20
53 B. Aquarii	6.5	2.04	17.0	13 31.3	19 57.9	- 7 13.5	+0.6101	0.5488	0.1291	+69	0
18 Aquarii	5.5	2.07	17.2	13 12.5	23 54.0	- 3 25.0	+0.7910	0.5465	0.1331	+77	+11
72 B. Aquarii	6.5	2.07	17.6	11 54.1	22 1 51.9	- 1 30.8	-0.3545	0.5454	0.1351	+10	-57
137 B. Capricorni	6.2	+2.11	+17.9	-10 55.4	7 20.4	+ 3 47.3	-0.6589	0.5424	+0.1401	- 6	-84
λ Capricorni	5.5	2.14	17.7	11 43.3	10 48.0	+ 7 8.4	+0.0948	0.5406	0.1431	+78	+ 4
96 B. Aquarii	6.5	2.16	18.0	10 40.5	14 17.9	+10 31.7	+0.0664	0.5387	0.1460	+35	-31
θ Aquarii	4.3	2.27	18.6	8 10.0	23 1 56.3	- 2 11.2	-0.9121	0.5331	0.1544	-20	-90
150 B. Aquarii	6.0	2.25	18.2	9 25.4	1 57.6	- 2 9.9	+0.4611	0.5331	0.1544	+61	- 9
ρ Aquarii	5.3	+2.28	+18.6	- 8 12.5	3 38.8	- 0 31.7	-0.6031	0.5324	+0.1554	- 1	-77
170 B. Aquarii	6.0	2.29	18.8	7 35.0	5 20.7	+ 1 7.1	-1.0199	0.5316	0.1565	-28	-90
186 B. Aquarii	6.1	2.34	18.7	6 56.9	9 18.0	+ 4 57.3	-1.0914	0.5299	0.1588	-33	-90
167 G. Aquarii	6.3	2.36	18.3	8 17.9	12 54.9	+ 8 27.7	+0.9613	0.5285	0.1607	+82	+21
67 Aquarii	6.4	2.38	18.5	7 22.0	15 25.8	+10 54.1	+0.3480	0.5275	0.1619	+54	-16
252 B. Aquarii	5.8	+2.44	+19.0	- 5 23.9	21 37.2	- 7 5.4	-0.7984	0.5253	+0.1647	-11	-90
197 G. Aquarii	6.3	2.45	19.0	5 13.3	22 43.1	- 6 1.5	-0.8111	0.5250	0.1651	-12	-90
263 B. Aquarii	6.1	2.48	18.9	5 7.5	0 55.7	+ 3 52.7	-0.5513	0.5244	0.1660	+ 3	-72
293 B. Aquarii	5.5	2.55	19.0	3 55.0	8 17.2	+ 3 15.9	-0.0510	0.5222	0.1684	- 2	-82
316 B. Aquarii	6.5	2.60	18.6	4 20.3	10 44.4	+ 5 38.8	+0.2282	0.5215	0.1691	+48	-22
60 B. Piscium	6.0	+2.80	+18.9	- 0 19.2	25 5 3.5	- 0 33.6	-1.0754	0.5183	+0.1722	-30	-90
80 B. Piscium	6.3	2.85	18.2	- 0 55.9	10 32.4	+ 4 45.9	+0.5448	0.5178	0.1724	+71	- 5
98 B. Piscium	6.3	2.95	18.4	+ 1 15.6	17 20.1	+11 22.0	-0.7071	0.5175	0.1722	- 5	-89
44 Piscium	6.0	2.99	18.1	1 30.8	21 24.3	- 8 40.8	-0.2861	0.5175	0.1719	+19	-52
155 B. Piscium	6.5	3.17	17.1	2 58.0	26 11 13.0	+ 4 44.3	+0.4664	0.5184	0.1696	+65	- 9
73 Piscium	6.2	+3.29	+17.1	+ 5 14.6	18 25.2	+11 44.1	-0.8368	0.5195	+0.1676	-13	-85
77 Piscium	6.4	3.28	16.7	4 29.9	18 55.3	-11 46.6	+0.0714	0.5195	0.1675	+39	-30
e Piscium	5.6	3.29	16.7	5 14.5	20 17.0	-10 27.3	-0.5237	0.5198	0.1670	+ 6	-68
μ Piscium	5.0	3.47	15.5	5 44.8	27 7 45.5	+ 0 41.3	+0.8104	0.5223	0.1625	+90	+12
o Piscium	4.5	3.60	15.4	8 46.2	15 41.7	+ 8 23.7	-1.2498	0.5246	0.1585	-48	-82
ξ^1 Ceti	4.5	+3.75	+12.9	+ 8 29.1	28 5 56.3	- 1 46.9	+1.2620	0.5296	+0.1497	+90	+53
ξ^2 Arietis	5.5	3.87	12.4	10 15.7	11 56.0	+ 4 2.0	+0.1947	0.5320	0.1453	+46	-20
25 Arietis	6.5	3.85	11.8	9 51.4	13 15.2	+ 5 18.8	+0.8300	0.5326	0.1443	+90	+16
31 Arietis	5.7	4.00	11.8	12 6.8	17 51.6	+ 9 46.8	-0.9872	0.5346	0.1405	-24	-78
85 Ceti	6.3	3.96	10.8	10 24.8	20 49.1	-11 21.1	+1.2856	0.5360	0.1380	+86	+60
38 Arietis	5.2	+4.03	+11.0	+12 7.3	22 1.8	-10 10.7	-0.4165	0.5365	+0.1369	+11	-55
147 B. Arietis	5.8	4.16	9.0	12 53.4	29 8 36.8	+ 0 4.6	+0.1419	0.5417	0.1268	+43	-21
30 B. Tauri	6.4	4.38	6.3	15 10.6	23 44.6	- 9 16.4	-0.5483	0.5495	0.1098	+ 4	-62
179 B. Tauri	5.9	4.50	2.9	14 57.3	30 13 47.6	+ 4 19.1	+1.1072	0.5571	0.0916	+90	+13
180 B. Tauri	6.1	4.57	3.3	17 8.0	13 54.3	+ 4 25.6	-1.2262	0.5571	0.0914	-50	-73
193 B. Tauri	6.2	+4.58	+ 2.8	+17 4.7	16 0.0	+ 6 27.1	-0.9779	0.5582	+0.0885	-24	-73
48 Tauri	6.3	4.54	2.0	15 12.4	17 31.4	+ 7 55.5	+1.1667	0.5591	0.0863	+90	+50
γ Tauri	3.9	4.56	1.6	15 26.4	19 22.2	+ 9 42.6	+1.0718	0.5600	0.0837	+90	+41
δ Tauri	3.9	4.64	1.6	17 21.7	20 47.1	+11 4.6	-0.8721	0.5608	0.0816	-17	-73
63 Tauri	5.7	4.61	1.4	16 35.8	21 1.0	+11 18.1	-0.0331	0.5609	0.0813	+33	-25
64 Tauri	4.9	+4.64	+ 1.4	+17 15.9	21 19.1	+11 35.5	-0.7253	0.5610	+0.0808	- 7	-73

512 ELEMENTS OF OCCULTATIONS, 1922.

DECEMBER.

THE STAR'S					AT CONJUNCTION IN R.A.					Limiting Parallels.	
Name.	Mag.	Reductions from 1922.0		Apparent Declina- tion.	Greenwich Mean Time.	Hour Angle, <i>H</i>	<i>Y</i>	<i>x'</i>	<i>y'</i>	N.	S.
		$\Delta\alpha$	$\Delta\delta$								
68 Tauri	4.3	^s +4.66	["] +1.4	^o +17 45.1	30 21 56.9	- 11 48.0	-1.1958	0.5614	+0.0799	-46	-73
70 Tauri	6.4	4.59	1.0	15 45.8	22 2.2	-11 42.8	+0.9416	0.5614	0.0798	+90	+31
75 Tauri	5.2	4.61	0.8	16 11.2	23 19.2	-10 28.5	+0.5896	0.5621	0.0779	+77	+9
θ^1 Tauri	4.2	4.60	0.7	15 47.4	23 23.0	-10 24.8	+1.0190	0.5621	0.0778	+90	+37
θ^2 Tauri	3.6	4.60	0.6	15 42.0	23 25.5	-10 22.4	+1.1198	0.5621	0.0777	+90	+46
264 B. Tauri	4.8	+4.62	+ 0.5	+16 1.5	31 0 17.2	- 9 32.5	+0.8362	0.5626	+0.0764	+90	+25
85 Tauri	6.0	4.61	0.3	15 41.1	0 53.0	- 8 57.9	+1.2454	0.5629	0.0755	+89	+62
119 H ¹ . Tauri	6.2	4.68	0.5	17 51.2	1 37.4	- 8 14.9	-1.0199	0.5633	0.0744	-28	-73
275 B. Tauri	6.5	4.62	+ 0.2	16 9.6	1 41.1	- 8 11.3	+0.7964	0.5634	0.0743	+90	+22
<i>a</i> Tauri (<i>Ald.</i>)	1.1	4.64	- 0.2	16 21.2	2 43.0	- 7 11.5	+0.6655	0.5638	0.0727	+87	+14
89 Tauri	5.8	+4.63	- 0.4	+15 52.7	3 44.2	- 6 12.5	+1.2470	0.5644	+0.0711	+88	+62
318 B. Tauri	5.7	4.71	2.5	17 1.9	12 21.5	+ 2 7.1	+0.5666	0.5686	0.0574	+75	+10
<i>m</i> Tauri	5.0	+4.83	- 3.4	+18 32.4	16 47.7	+ 6 24.1	-0.8001	0.5708	+0.0500	-12	-72

OCCULTATIONS VISIBLE AT GREENWICH.

* * * The Angles are reckoned from the North Point and Vertex of the Moon's limb towards the East.

Date.	Star's Name.	Mag.	Disappearance.				Reappearance.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Vertex.			N. Point.	Vertex.
Jan. 2	θ Aquarii	4.3	h m	h m	88°	51°	h m	h m	.	.
3	252 B. Aquarii	5.8	3 0	8 13			23 15	4 25	218	214
3	197 G. Aquarii	6.3	23 42	4 51	112	103	0 37	5 46	198	180
6	W.Z.C. 80	7.2	5 10	10 7	81	46				
11	130 Tauri	5.6	1 11	5 49	145	185	1 42	6 21	205	244
13	30 B. Cancri	6.1	11 2	15 31	57	23	11 43	16 11	336	299
14	α Cancri	4.3	4 21	8 47	146	185	5 5	9 31	239	276
15	89 B. Leonis	6.2	4 31	8 53	47	86	5 1	9 23	344	23
15	π Leonis	4.9	5 19	9 41	81	119	6 14	10 36	312	347
17	31 B. Virginis	6.4	9 27	13 40	71	97	10 18	14 31	337	355
18	B.D.—6° 3705	7.0					12 33	16 42	255	259
20	μ Libræ	5.4	13 21	17 22	53	67	14 4	18 4	344	351
22	W.Z.C. 1070	7.1					15 37	19 30	238	247
Feb. 1	W.Z.C. 12	7.3	3 10	6 26	78	48				
2	73 Piscium	6.2	4 46	7 57	105	70	5 43	8 54	217	179
4	38 Arietis	5.2	7 4	10 6	115	77	7 55	10 58	222	182
5	B.D.+14° 565	7.0	2 44	5 43	23	33				
5	30 B. Tauri	6.4	8 8	11 6	6	326	8 23	11 21	338	298
6	63 Tauri	5.7	2 29	5 25	67	93	3 44	6 39	270	279
6	B.D.+16° 602	6.9	4 42	7 37	41	36				
6	B.D.+16° 625	7.0	9 13	12 8	33	353				
7	115 Tauri	5.3	6 16	9 7	62	48	7 22	10 13	297	269
8	292 B. Orionis	6.5	3 19	6 7	73	109	4 26	7 14	285	311
8	W.Z.C. 443	6.8	4 4	6 51	115	145				
9	λ Geminorum	3.6	1 32	4 16	77	117	2 27	5 11	288	328
9	68 Geminorum	5.2	9 14	11 57	132	107	10 14	12 57	254	221
10	84 B. Cancri	6.4	8 28	11 7	131	131	9 32	12 11	262	247
10	A ¹ Cancri	5.5	13 3	15 41	101	62	13 59	16 37	293	253
10	A ² Cancri	5.7	15 2	17 40	177	138	15 18	17 56	214	176
11	h Leonis	5.2	7 14	9 49	159	186	7 56	10 31	237	257
14	W.Z.C. 808	7.1					9 49	12 12	323	349
17	σ Libræ	6.2	10 58	13 9	91	125	12 0	14 11	303	332
21	B.D.—18° 5155	7.0					15 4	16 59	209	241
Mar. 2	W.Z.C. 97	6.7	5 0	6 21	126	92				
5	Lalande 7967	6.9	10 15	11 23	104	64				
8	41 H ¹ Geminorum	6.0	8 20	9 17	126	106	9 24	10 21	254	223
8	51 Geminorum	5.3	13 27	14 23	129	90	14 12	15 8	251	214
10	α Cancri	4.3	6 30	7 19	134	163	7 30	8 20	256	275
11	89 B. Leonis	6.2	6 29	7 14	63	97	7 15	8 0	332	2
11	π Leonis	4.9	7 28	8 13	87	115	8 31	9 16	312	330
13	31 B. Virginis	6.4	9 22	9 59	120	146	10 29	11 6	288	304
15	W.Z.C. 901	6.7					17 11	17 40	254	225
17	θ Libræ	4.4	11 24	11 45	73	107	12 18	12 39	316	346
19	W.Z.C. 1154	7.3					17 17	17 29	273	278

OCCULTATIONS VISIBLE AT GREENWICH.

* * * The Angles are reckoned from the North Point and Vertex of the Moon's limb towards the East.

Date.	Star's Name.	Mag.	Disappearance.				Reappearance.			
			Sidereal		Angle from		Sidereal		Angle from	
			Time.	Time.	N. Point.	Vertex.	Time.	Time.	N. Point.	Vertex.
Apr.	1 α Tauri (Aldeb.)	1.1	h m	h m	140°	179°	h m	h m	199°	236°
	2 318 B. Tauri	5.7	11 53	11 11	80	43	1 0	24 20		
	3 130 Tauri	5.6	9 41	8 55	70	30	10 38	9 53	299	258
	6 84 B. Cancri	6.4	6 47	5 50	120	143	7 58	7 1	268	276
	6 A ¹ Cancri	5.5	11 58	11 0	96	99	12 59	12 2	299	297
	6 A ² Cancri	5.7	14 5	13 7	161	121	14 37	13 39	231	192
	7 h Leonis	5.2	7 17	6 16	144	170	8 14	7 13	251	267
	7 B.D.+9° 2226	6.7	12 19	11 18	118	78				
	10 W.Z.C. 808	7.1	10 46	9 33	76	94				
	13 B.D.—15° 4118	6.9					13 33	12 7	0	18
	16 Y Sagittarii (var.)	5.4	14 47	13 10	73	103	15 56	14 19	291	312
	17 ρ Sagittarii	4.0	19 14	17 32	108	109	20 26	18 44	231	220
	22 293 B. Aquarii	5.5					17 59	15 57	277	315
May	2 W.Z.C. 519	6.7	14 19	11 39	118	80				
	2 68 Geminorum	5.2	14 22	11 42	75	38				
	5 B.A.C. 3529	7.0	14 13	11 21	63	27				
	5 155 B. Leonis	6.5	16 1	13 9	184	145	16 15	13 22	214	175
	6 B.D.+3° 2475	6.9	13 8	10 12	62	40				
	6 76 Leonis	6.0	15 45	12 49	87	50	16 38	13 42	313	275
	7 B.D.—1° 2632	6.8	14 11	11 11	102	80				
	9 W.Z.C. 90	6.7	16 44	13 36	137	112				
	11 θ Libræ	4.4	11 8	7 53	59	95	11 51	8 36	330	3
	12 29 Ophiuchi	6.4	16 25	13 5	91	96	17 42	14 22	280	273
	13 W.Z.C. 1154	7.3					14 7	10 43	285	316
	13 B.D.—19° 4800	7.0					19 30	16 6	299	284
	14 B.D.—19° 5079	7.0					14 50	11 22	275	307
15 B.D.—17° 5746	7.0					18 0	14 28	253	269	
17 W.Z.C. 1431	6.8					19 0	15 20	294	317	
17 72 B. Aquarii	6.5	18 37	14 57	13	38	19 15	15 35	314	335	
19 263 B. Aquarii	6.1	19 5	15 17	31	64	20 1	16 13	290	318	
30 30 B. Cancri	6.1	13 33	9 3	62	22	14 14	9 44	325	286	
31 209 B. Cancri	6.5	14 54	10 19	26	347	15 3	10 28	8	329	
June	1 π Leonis	4.9	12 6	7 28	108	82	13 13	8 35	295	261
	10 B.A.C. 6292	7.0					18 49	13 35	317	313
	11 ρ Sagittarii	4.0	15 37	10 19	43	74	16 28	11 10	311	337
	14 96 B. Aquarii	6.5					17 48	12 18	253	286
29 35 Sextantis	6.1	14 52	8 24	138	102	15 44	9 15	261	223	
July	4 σ Libræ	6.2	17 24	10 35	99	79	18 35	11 46	285	257
	14 W.Z.C. 1601	7.1					22 21	14 52	306	324
	18 147 B. Arietis	5.8	21 7	13 23	3	42	21 28	13 43	321	1
20 318 B. Tauri	5.7	23 5	15 12	64	104	0 1	16 9	276	317	
Aug.	3 W.Z.C. 1154	7.3	18 30	9 43	70	63				
	4 B.D.—18° 5079	7.0	20 0	11 9	49	37				
	6 31 B. Capricorni	6.4	17 24	8 25	124	151	18 19	9 20	216	236

OCCULTATIONS, 1922.

515

OCCULTATIONS VISIBLE AT GREENWICH.

* * * The Angles are reckoned from the North Point and Vertex of the Moon's limb towards the East.

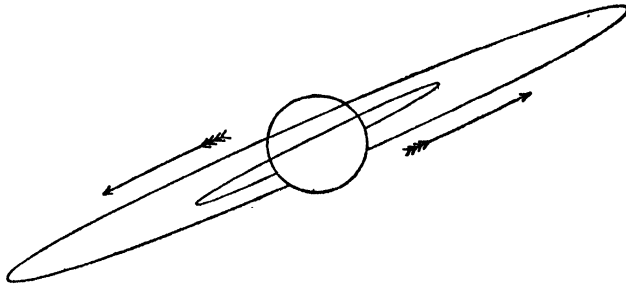
Date.	Star's Name.	Mag.	Disappearance.				Reappearance.			
			Sidereal Time.	Mean Time.	Angle from		Sidereal Time.	Mean Time.	Angle from	
					N. Point.	Vertex.			N. Point.	Vertex.
Aug. 6	W.Z.C. 1370	6.8	h m	h m	°	°	h m	h m	°	°
6	τ Capricorni	5.2	23 0	14 0	111	88	1 7	16 8	224	189
7	53 B. Aquarii	6.5	0 9	15 9	101	70	16 59	7 57	211	245
9	B.D.—6° 6087	7.0	16 15	7 13	128	165	19 23	10 13	292	323
16	θ ¹ Tauri	4.2	21 8	11 30	120	156	21 48	12 10	217	255
16	75 Tauri	5.2	21 20	11 42	18	55	21 45	12 7	320	358
16	W.Z.C. 299	6.6	21 20	11 42	18	55	22 10	12 32	260	299
16	264 B. Tauri	4.8	21 55	12 17	85	124	22 52	13 14	252	292
16	W.Z.C. 305	6.7	21 55	12 17	85	124	22 55	13 17	239	279
16	275 B. Tauri	6.5	23 20	13 41	89	129	0 22	14 43	247	286
16	α Tauri (Aldeb.)	1.1	0 29	14 50	73	112	1 38	15 59	262	296
17	111 Tauri	5.1	21 54	12 11	57	93	22 41	12 59	289	327
17	117 Tauri	6.0	23 21	13 38	113	153	0 11	14 28	231	272
18	W.Z.C. 443	6.8	23 21	13 38	113	153	23 25	13 38	314	351
26	575 B. Virginis	6.2	16 38	6 21	156	130	17 22	7 5	239	207
29	W.Z.C. 1069	6.7	17 35	7 6	132	122	17 22	7 5	239	207
31	95 B. Sagittarii	5.7	18 47	8 10	41	38	19 43	9 6	310	297
31	B.A.C. 6292	7.0	19 15	8 38	90	82	19 43	9 6	310	297
Sept. 1	ρ Sagittarii	4.0	17 42	7 2	56	71	18 54	8 13	291	295
4	W.Z.C. 1460	6.8	19 20	8 28	64	86	18 54	8 13	291	295
4	96 B. Aquarii	6.5	20 18	9 25	6	21	20 53	10 0	316	326
5	67 Aquarii	6.4	21 50	10 53	89	98	23 6	12 9	224	219
8	77 Piscium	6.4	2 38	15 29	47	28	3 51	16 41	269	240
10	25 Arietis	6.5	2 38	15 29	47	28	20 7	8 51	223	262
12	179 B. Tauri	5.9	2 38	15 29	47	28	21 12	9 47	211	248
15	41 H ¹ Geminorum	6.0	2 23	14 46	147	187	2 58	15 21	213	252
18	83 B. Leonis	5.9	2 23	14 46	147	187	3 16	15 27	301	339
23	2 Libræ	6.3	19 0	6 53	64	28	3 16	15 27	301	339
Oct. 3	316 B. Aquarii	6.5	2 32	13 44	114	84	3 20	14 32	202	168
7	W.Z.C. 138	7.3	2 32	13 44	114	84	3 40	14 36	214	196
7	ξ Arietis	5.5	3 13	14 9	43	31	4 24	15 20	279	254
7	W.Z.C. 141	6.7	3 13	14 9	43	31	5 35	16 31	238	204
8	W.Z.C. 187	6.6	3 13	14 9	43	31	2 54	13 46	232	235
10	318 B. Tauri	5.7	4 21	15 5	57	66	5 35	16 19	289	278
11	130 Tauri	5.6	2 24	13 5	49	87	3 25	14 5	298	329
13	68 Geminorum	5.2	1 5	11 38	171	210	1 15	11 48	193	232
15	o Leonis	3.8	8 7	18 31	114	134	9 19	19 43	283	287
25	B.D.—18° 5079	7.0	20 58	6 45	69	48	9 19	19 43	283	287
27	W.Z.C. 1370	6.8	22 56	8 35	108	86	9 19	19 43	283	287
27	τ Capricorni	5.2	0 6	9 44	98	68	1 6	10 44	227	192
Nov. 4	147 B. Arietis	5.8	9 2	18 7	13	334	9 24	18 29	328	289
6	θ ¹ Tauri	4.2	21 39	6 39	134	172	22 11	7 10	204	243
6	75 Tauri	5.2	21 42	6 41	32	70	22 19	7 18	306	346
6	W.Z.C. 299	6.6	21 42	6 41	32	70	22 39	7 38	250	290

OCCULTATIONS VISIBLE AT GREENWICH.

. The Angles are reckoned from the North Point and Vertex of the Moon's limb towards the East.

Date.	Star's Name.	Mag.	Disappearance.				Reappearance.			
			Sidercal Time.	Mean Time.	Angle from		Sidercal Time.	Mean Time.	Angle from	
					N. Point.	Vertex.			N. Point.	Vertex.
			h m	h m	°	°	h m	h m	°	°
Nov. 6	264 B. Tauri	4.8	22 25	7 24	95	135	23 22	8 21	240	280
6	W.Z.C. 305	6.7					23 24	8 23	226	266
6	275 B. Tauri	6.5	23 56	8 55	101	141	0 57	9 56	233	270
6	α Tauri (Aldeb.)	1.1	1 9	10 8	85	122	2 21	11 20	250	279
7	111 Tauri	5.1	23 1	7 56	83	122	23 59	8 54	261	302
8	287 B. Orionis	6.2	23 38	8 29	148	186	0 5	8 56	206	245
8	292 B. Orionis	6.5	0 37	9 28	43	83	1 21	10 12	310	351
8	W.Z.C. 443	6.8					2 9	11 0	259	299
8	W.Z.C. 457	7.2					7 28	16 18	313	297
8	W.Z.C. 456	7.8					7 29	16 19	311	295
9	λ Geminorum	3.6	1 32	10 19	132	172	2 17	11 4	230	271
10	29 Cancri	5.9	9 49	18 30	92	72	10 58	19 40	234	202
11	222 B. Cancri	6.3	6 26	15 4	128	160	7 32	16 10	262	284
22	45 Sagittarii	6.0	23 2	6 58	144	113	23 29	7 25	192	158
22	ρ Sagittarii	4.0	23 5	7 1	20	348	23 39	7 35	319	285
26	67 Aquarii	6.4	23 34	7 14	43	33	0 47	8 27	268	247
27	W.Z.C. 1574	7.0	2 15	9 51	78	51				
28	B.D.— 0° 37	7.0	2 15	9 47	103	81				
29	77 Piscium	6.4	4 21	11 49	18	346	5 6	12 34	301	265
30	W.Z.C. 111	7.3	1 29	8 53	120	123				
Dec. 1	25 Arietis	6.5	20 4	3 25	98	136	20 57	4 18	226	265
3	Lalande 7967	6.9	1 26	8 38	22	56				
3	75 Tauri	5.2	8 9	15 20	105	67	9 12	16 23	247	207
3	275 B. Tauri	6.5	10 48	17 59	131	92	11 28	18 39	223	186
3	α Tauri (Aldeb.)	1.1	11 41	18 52	89	53				
4	111 Tauri	5.1	9 36	16 43	149	109	10 11	17 18	213	172
5	Lalande 11713	6.6					5 23	12 27	329	341
5	124 H ¹ Orionis	5.7	6 27	13 31	89	84	7 45	14 49	277	253
5	292 B. Orionis	6.5	10 21	17 24	90	51	11 23	18 26	283	242
5	W.Z.C. 443	6.8					12 0	19 4	249	209
6	W.B. VII. 66	6.6					8 30	15 29	247	227
7	1 Cancri	6.0	1 42	8 39	76	115	2 37	9 34	292	332
8	W.Z.C. 617	6.8					6 4	12 56	316	348
12	W.Z.C. 821	7.8					9 55	16 30	265	292
13	<i>m</i> Virginis	5.2	10 49	17 20	133	160	11 52	18 24	272	290
14	6 B. Libræ	6.2	10 13	16 41	96	131	11 14	17 42	304	333
25	80 B. Piscium	6.3	5 30	11 15	66	28				
26	155 B. Piscium	6.5	6 19	12 0	50	12				
27	μ Piscium	5.0	1 41	7 19	96	93	2 53	8 31	216	199
28	W.Z.C. 138	7.3	6 39	12 12	65	27				
28	W.Z.C. 141	6.7	8 18	13 52	28	349				
28	25 Arietis	6.5	8 28	14 1	129	90	9 5	14 38	207	169
29	W.Z.C. 187	6.6	5 48	11 17	86	55				
31	318 B. Tauri	5.7	7 8	12 29	86	56	8 21	13 42	267	229

South



North

APPARENT ORBITS OF THE SATELLITES OF MARS AT DATE OF OPPOSITION, JUNE 10, 1922, AS SEEN IN AN INVERTING TELESCOPE.

Date.	PHOBOS.		Date.	DEIMOS.	
	Position Angle of Apsis.	Apparent Distance at Apsis.		Position Angle of Apsis.	Apparent Distance at Apsis.
May 21	119.4°	24.9"	May 21	116.7°	62.3"
June 10	121.7	28.1	June 10	119.0	70.2
June 30	124.0	27.7	June 30	121.4	69.3

GREENWICH MEAN TIME OF GREATEST ELONGATION.

PHOBOS.				DEIMOS.			
d	h	d	h	d	h	d	h
May 4	22.7 E.	May 29	12.0 E.	June 23	1.2 E.	Apr. 30	15.1 E.
6	1.5 W.	30	14.8 W.	24	4.0 W.	May 2	12.5 W.
7	4.3 E.	31	17.5 E.	25	6.8 E.	4	10.0 E.
8	7.0 W.	June 1	20.3 W.	26	9.5 W.	6	7.4 W.
9	9.8 E.	2	23.1 E.	27	12.3 E.	8	4.9 E.
10	12.6 W.	4	1.9 W.	28	15.1 W.	10	2.3 W.
11	15.4 E.	5	4.7 E.	29	17.9 E.	11	23.8 E.
12	18.2 W.	6	7.5 W.	30	20.7 W.	13	21.2 W.
13	21.0 E.	7	10.2 E.	July 1	23.4 E.	15	18.6 E.
14	23.8 W.	8	13.0 W.	3	2.2 W.	17	16.1 W.
16	2.6 E.	9	15.8 E.	4	5.0 E.	19	13.5 E.
17	5.3 W.	10	18.6 W.	5	7.8 W.	21	10.9 W.
18	8.1 E.	11	21.4 E.	6	10.6 E.	23	8.4 E.
19	10.9 W.	13	0.1 W.	7	13.4 W.	25	5.8 W.
20	13.7 E.	14	2.9 E.	8	16.2 E.	27	3.2 E.
21	16.5 W.	15	5.7 W.	9	19.0 W.	29	0.6 W.
22	19.3 E.	16	8.5 E.	10	21.7 E.	30	22.0 E.
23	22.1 W.	17	11.3 W.	12	0.5 W.	June 1	19.4 W.
25	0.8 E.	18	14.0 E.	13	3.3 E.	3	16.8 E.
26	3.6 W.	19	16.8 W.	14	6.1 W.	5	14.3 W.
27	6.4 E.	20	19.6 E.	15	8.9 E.	7	11.7 E.
28	9.2 W.	21	22.4 W.	16	11.7 W.	9	9.1 W.
						11	6.5 E.
						13	3.9 W.
						15	1.3 E.
						16	22.7 W.
						18	20.1 E.
						20	17.5 W.
						22	14.9 E.
						24	12.3 W.
						26	9.7 E.
						28	7.1 W.
						30	4.6 E.
						July 2	2.0 W.
						3	23.4 E.
						5	20.8 W.
						7	18.2 E.
						9	15.7 W.
						11	13.1 E.
						13	10.6 W.
						15	8.0 E.
						17	5.5 W.
						19	2.9 E.
						21	0.4 W.

For Phobos every seventh eastern and western elongation is given, and for Deimos every third; the intermediate ones may be found by adding multiples of the period of the satellite.

Sidereal period of Phobos, 7^h 39^m 13^s.85.

Sidereal period of Deimos, 30^h 17^m 54^s.87.

518 SATELLITES OF JUPITER, 1922.

MEAN SYNODIC PERIODS OF THE SATELLITES.

$$V. \text{ } 0^d \text{ } 11^h \text{ } 57^m \text{ } 27^s.6 = 0^d.498236$$

$$\begin{array}{l} \text{I. } \begin{array}{l} d \text{ } h \text{ } m \text{ } s \\ 1 \text{ } 18 \text{ } 28 \text{ } 35.94619 \end{array} = 1.7698604883 \\ \text{II. } \begin{array}{l} d \text{ } h \text{ } m \text{ } s \\ 3 \text{ } 13 \text{ } 17 \text{ } 53.73665 \end{array} = 3.5540941742 \end{array}$$

$$\begin{array}{l} \text{III. } \begin{array}{l} d \text{ } h \text{ } m \text{ } s \\ 7 \text{ } 3 \text{ } 59 \text{ } 35.85660 \end{array} = 7.1663872292 \\ \text{IV. } \begin{array}{l} d \text{ } h \text{ } m \text{ } s \\ 16 \text{ } 18 \text{ } 5 \text{ } 6.91878 \end{array} = 16.7535523007 \end{array}$$

MEAN TIME OF EVERY TWENTIETH GREATEST ELONGATION.

SATELLITE V.

		d h				d h				d h									
Jan.		11	22.9	E.	Apr.	11	14.8	E.	Jan.	11	17.0	W.	Apr.	11	8.8	W.			
		21	22.1	E.			21	13.9		E.		21		16.1	W.		21	7.9	W.
		31	21.2	E.		May	1	13.0		E.		31		15.2	W.	May	1	7.0	W.
Feb.		10	20.3	E.		11	12.1	E.	Feb.		10	14.3	W.		11	6.1	W.		
		20	19.4	E.		21	11.2	E.			20	13.4	W.		21	5.2	W.		
Mar.		2	18.4	E.		31	10.3	E.	Mar.		2	12.5	W.		31	4.4	W.		
		12	17.5	E.	June	10	9.5	E.			12	11.6	W.	June	10	3.5	W.		
	22	16.6	E.		20	8.6	E.		22	10.6	W.		20	2.7	W.				
Apr.		1	15.7	E.		30	7.8	E.	Apr.		1	9.7	W.		30	1.8	W.		

MEAN TIME OF SUPERIOR GEOCENTRIC CONJUNCTION.

SATELLITE I. (Io).

			d h m						d h m						d h m				
Jan.		0	17	22.3	Feb.	8	15	33.1	Mar.	19	13	14.1	Apr.	27	10	45.8			
		2	11	50.8			10	10		0.1		21		7	40.1		29	5	12.1
		4	6	19.2			12	4		27.1		23		2	6.0		30	23	38.4
		6	0	47.5			13	22		53.9		24		20	31.9	May	2	18	4.8
		7	19	15.7			15	17		20.7		26		14	57.8		4	12	31.3
		9	13	43.9			17	11		47.5		28		9	23.7		6	6	57.9
		11	8	12.0			19	6		14.1		30		3	49.6		8	1	24.5
	13	2	40.1		21	0	40.7		31	22	15.5		9	19	51.1				
	14	21	8.1		22	19	7.3	Apr.	2	16	41.4		11	14	17.8				
	16	15	36.0		24	13	33.9		4	11	7.2		13	8	44.6				
	18	10	3.9		26	8	0.3		6	5	33.1		15	3	11.5				
	20	4	31.7		28	2	26.7		7	23	59.0		16	21	38.4				
	21	22	59.4	Mar.	1	20	53.0		9	18	24.9		18	16	5.3				
	23	17	27.1		3	15	19.4		11	12	50.9		20	10	32.4				
	25	11	54.7		5	9	45.6		13	7	16.8		22	4	59.5				
	27	6	22.3		7	4	11.8		15	1	42.8		23	23	26.7				
	29	0	49.7		8	22	37.9		16	20	8.9		25	17	54.0				
	30	19	17.1		10	17	4.0		18	14	34.9		27	12	21.3				
Feb.		1	13	44.4		12	11	30.1		20	9	1.0		29	6	48.7			
		3	8	11.7		14	5	56.2		22	3	27.1		31	1	16.2			
		5	2	38.9		16	0	22.2		23	21	53.3	June	1	19	43.7			
		6	21	6.0		17	18	48.2		25	16	19.5		3	14	11.4			

SATELLITES OF JUPITER, 1922. 519

MEAN TIME OF SUPERIOR GEOCENTRIC CONJUNCTION.

SATELLITE I. (Io)—*continued.*

June			July			Aug.			Nov.		
d	h	m	d	h	m	d	h	m	d	h	m
5	8	39.1	16	1	34.2	25	18	56.4	22	8	11.6
7	3	6.8	17	20	3.4	27	13	26.5	24	2	41.8
8	21	34.6	19	14	32.7	29	7	56.6	25	21	11.8
10	16	2.5	21	9	2.0	31	2	26.8	27	15	42.0
12	10	30.5	23	3	31.3	Sept. 1	20	56.9	29	10	12.0
14	4	58.6	24	22	0.7	3	15	27.1	Dec. 1	4	42.1
15	23	26.7	26	16	30.2	5	9	57.3	2	23	12.0
17	17	54.9	28	10	59.6	7	4	27.5	4	17	42.1
19	12	23.1	30	5	29.2	8	22	57.7	6	12	12.0
21	6	51.4	31	23	58.7	10	17	27.9	8	6	42.0
23	1	19.8	Aug. 2	18	28.3	12	11	58.2	10	1	11.8
24	19	48.2	4	12	57.9	14	6	28.5	11	19	41.7
26	14	16.7	6	7	27.7	16	0	58.7	13	14	11.5
28	8	45.3	8	1	57.4	17	19	29.1	15	8	41.4
30	3	13.9	9	20	27.2	19	13	59.4	17	3	11.1
July 1	21	42.6	11	14	56.9	21	8	29.8	18	21	40.8
3	16	11.4	13	9	26.8	23	3	0.0	20	16	10.5
5	10	40.2	15	3	56.6	24	21	30.4	22	10	40.2
7	5	9.0	16	22	26.5	26	16	0.8	24	5	9.8
8	23	38.0	18	16	56.4				25	23	39.4
10	18	7.0	20	11	26.4	Nov. 17	0	41.1	27	18	8.9
12	12	36.0	22	5	56.4	18	19	11.2	29	12	38.4
14	7	5.1	24	0	26.4	20	13	41.5	31	7	7.8

SATELLITE II. (EUROPA).

Jan.			Feb.			Apr.			June		
d	h	m	d	h	m	d	h	m	d	h	m
2	7	25.4	24	14	5.6	18	19	12.8	11	1	4.2
5	20	44.1	28	3	15.5	22	8	21.6	14	14	19.4
9	10	1.5	Mar. 3	16	25.9	25	21	30.0	18	3	35.4
12	23	19.3	7	5	35.0	29	10	39.4	21	16	51.7
16	12	35.7	10	18	44.5	May 2	23	48.4	25	6	8.7
20	1	52.5	14	7	52.8	6	12	58.7	28	19	25.9
23	15	7.8	17	21	1.7	10	2	8.6	July 2	8	43.8
27	4	23.5	21	10	9.5	13	15	19.8	5	22	1.9
30	17	37.8	24	23	18.0	17	4	30.7	9	11	20.6
Feb. 3	6	52.4	28	12	25.4	20	17	42.7	13	0	39.5
6	20	5.5	Apr. 1	1	33.6	24	6	54.7	16	13	58.9
10	9	19.0	4	14	40.9	27	20	7.8	20	3	18.6
13	22	31.0	8	3	49.1	31	9	20.8	23	16	38.7
17	11	43.3	11	16	56.6	June 3	22	34.9	27	5	59.0
21	0	54.3	15	6	5.0	7	11	49.1	30	19	19.7

520 SATELLITES OF JUPITER, 1922.

MEAN TIME OF SUPERIOR GEOCENTRIC CONJUNCTION.

SATELLITE II. (EUROPA)—*continued.*

Aug.	d	h	m	Aug.	d	h	m	Nov.	d	h	m	Dec.	d	h	m
	3	8	40.7	31	19	36.9		18	2	15.1		16	13	18.9	
	6	22	1.9	Sept.	4	8	59.7		21	15	38.5		20	2	41.1
	10	11	23.4		7	22	22.7		25	5	1.8		23	16	3.1
	14	0	45.2		11	11	45.8		28	18	25.0		27	5	24.9
	17	14	7.1		15	1	9.1	Dec.	2	7	48.1		30	18	46.4
	21	3	29.3		18	14	32.4		5	21	11.0				
	24	16	51.6		22	3	55.8		9	10	33.8				
	28	6	14.1		25	17	19.4		12	23	56.5				

SATELLITE III. (GANYMEDE).

Jan.	d	h	m	Mar.	d	h	m	June	d	h	m	Sept.	d	h	m
	0	4	4.3	26	23	21.2		20	17	11.3		14	19	34.1	
	7	8	3.6	Apr.	3	2	37.5		27	21	5.8		21	23	59.0
	14	11	58.7		10	5	53.8	July	5	1	5.1				
	21	15	49.9		17	9	10.6		12	5	7.6	Nov.	18	11	36.6
	28	19	36.5		24	12	29.0		19	9	13.7		25	16	2.0
Feb.	4	23	19.3	May	1	15	50.3		26	13	22.5	Dec.	2	20	26.8
	12	2	57.0		8	19	15.0	Aug.	2	17	34.1		10	0	49.6
	19	6	30.1		15	22	44.1		9	21	48.8		17	5	10.6
	26	9	58.6		23	2	17.0		17	2	5.8		24	9	29.1
Mar.	5	13	23.0		30	5	54.3		24	6	25.9		31	13	45.4
	12	16	44.6	June	6	9	35.5		31	10	47.2				
	19	20	3.4		13	13	21.1	Sept.	7	15	10.2				

SATELLITE IV. (CALLISTO).

Jan.	d	h	m	Mar.	d	h	m	June	d	h	m	Sept.	d	h	m
	7	11	10.6	31	17	54.0		22	23	5.0		14	23	4.8	
	24	4	41.5	Apr.	17	8	5.5	July	9	17	1.2				
Feb.	9	21	14.4	May	3	22	38.5		26	11	43.1	Nov.	21	9	15.6
	26	12	50.3		20	13	52.9	Aug.	12	7	3.2	Dec.	8	5	33.9
Mar.	15	3	37.5	June	6	6	1.1		29	2	52.8		25	1	31.7

SATELLITES OF JUPITER, 1922. 521

JANUARY.

MEAN TIME.

Day.	h m	Day.	h m	Day.	h m	Day.	h m
0	III. E. f. 0 26.4	7	II. Sh. f. *14 32	15	I. Tr. c. *17 13	23	II. Em. *16 24
	III. Im. 2 57		II. Tr. f. *16 53		I. Sh. f. *18 12		I. Em. *18 32
	III. Em. 5 12		I. E. c. *16 56.2		I. Tr. f. 19 24		
	II. Sh. c. 9 22		I. Em. 20 21			24	I. Sh. c. *12 22
	II. Tr. c. 11 48			16	II. E. c. 8 46.7		I. Tr. c. *13 33
	II. Sh. f. 12 0	8	I. Sh. c. *14 7		I. E. c. *13 17.2		I. Sh. f. *14 34
	II. Tr. f. *14 20		I. Tr. c. *15 21		II. Em. *13 52		I. Tr. f. *15 44
	I. E. c. *15 3.3		I. Sh. f. *16 19		I. Em. *16 42		III. Sh. c. 23 42
	I. Em. *18 28		I. Tr. f. *17 31				
1	I. Sh. c. 12 13	9	II. E. c. 6 11.2	17	I. Sh. c. 10 28	25	III. Sh. f. 2 12
	I. Tr. c. 13 27		II. Em. 11 19		I. Tr. c. 11 41		III. Tr. c. 4 41
	I. Sh. f. *14 26		I. E. c. 11 24.4		I. Sh. f. 12 41		II. Sh. c. 6 18
	I. Tr. f. *15 38		I. Em. *14 50		I. Tr. f. *13 52		III. Tr. f. 6 42
					III. Sh. c. 19 44		II. Tr. c. 8 40
					III. Sh. f. 22 15		II. Sh. f. 8 54
2	II. E. c. 3 35.9	10	I. Sh. c. 8 35	18	III. Tr. c. 0 50		I. E. c. 9 38.3
	II. Em. 8 43		I. Tr. c. 9 49		III. Tr. f. 2 54		II. Tr. f. 11 9
	I. E. c. 9 31.5		I. Sh. f. 10 47		II. Sh. c. 3 45		I. Em. *13 0
	I. Em. 12 57		I. Tr. f. 12 0		II. Tr. c. 6 10	26	I. Sh. c. 6 50
			III. Sh. c. *15 46		II. Sh. f. 6 21		I. Tr. c. 8 1
3	I. Sh. c. 6 42		III. Sh. f. *18 19		I. E. c. 7 45.4		I. Sh. f. 9 2
	I. Tr. c. 7 55		III. Tr. c. 20 55		II. Tr. f. 8 40		I. Tr. f. 10 11
	I. Sh. f. 8 54		III. Tr. f. 23 3		I. Em. 11 9		
	I. Tr. f. 10 6						
	III. Sh. c. 11 48	11	II. Sh. c. 1 12	19	I. Sh. c. 4 57	27	II. E. c. 0 40.5
	III. Sh. f. *14 22		II. Tr. c. 3 39		I. Tr. c. 6 9		I. E. c. 4 6.5
	III. Tr. c. *16 54		II. Sh. f. 3 49		I. Sh. f. 7 9		II. Em. 5 40
	III. Tr. f. *19 6		I. E. c. 5 52.6		I. Tr. f. 8 20		I. Em. 7 28
	II. Sh. c. 22 39		II. Tr. f. 6 9		II. E. c. 22 48.8	28	I. Sh. c. 1 18
			I. Em. 9 18				I. Tr. c. 2 29
4	II. Tr. c. 1 6	12	I. Sh. c. 3 3	20	I. E. c. 2 13.7		I. Sh. f. 3 31
	II. Sh. f. 1 16		I. Tr. c. 4 17		II. Em. 3 9		I. Tr. f. 4 39
	II. Tr. f. 3 37		I. Sh. f. 5 16		I. Em. 5 37		III. E. c. *13 39.3
	I. E. c. 3 59.7		I. Tr. f. 6 28		I. Sh. c. 23 25		III. E. f. *16 11.0
	I. Em. 7 25		II. E. c. 19 29.3				III. Im. *18 36
							II. Sh. c. 19 34
5	I. Sh. c. 1 10	13	I. E. c. 0 20.8	21	I. Tr. c. 0 37		III. Em. 20 37
	I. Tr. c. 2 24		II. Em. 0 36		I. Sh. f. 1 37		II. Tr. c. 21 53
	I. Sh. f. 3 22		I. Em. 3 46		I. Tr. f. 2 48		II. Sh. f. 22 10
	I. Tr. f. 4 35		I. Sh. c. 21 32		III. E. c. 9 41.9		I. E. c. 22 34.7
	II. E. c. *16 53.9		I. Tr. c. 22 45		III. E. f. 12 14.7		
	II. Em. 22 1		I. Sh. f. 23 44		III. Im. *14 48		
	I. E. c. 22 27.9				III. Em. *16 52	29	II. Tr. f. 0 22
					II. Sh. c. *17 1		I. Em. 1 55
6	I. Em. 1 53	14	I. Tr. f. 0 56		II. Tr. c. 19 25		I. Sh. c. 19 47
	I. Sh. c. 19 38		III. E. c. 5 44.5		II. Sh. f. 19 38		I. Tr. c. 20 56
	I. Tr. c. 20 52		III. E. f. 8 18.5		I. E. c. 20 41.9		I. Sh. f. 21 59
	I. Sh. f. 21 51		III. Im. 10 55		II. Tr. f. 21 55		I. Tr. f. 23 7
	I. Tr. f. 23 3		III. Em. *13 3				
			II. Sh. c. *14 28	22	I. Em. 0 5	30	II. E. c. *13 57.9
			II. Tr. c. *16 55		I. Sh. c. *17 53		I. E. c. *17 2.9
			II. Sh. f. *17 5		I. Tr. c. *19 5		II. Em. *18 54
7	III. E. c. 1 47.4		I. E. c. *18 49.0		I. Sh. f. 20 6		I. Em. 20 22
	III. E. f. 4 22.5		II. Tr. f. 19 25		I. Tr. f. 21 16		
	III. Im. 6 58		I. Em. 22 14				
	III. Em. 9 10	15	I. Sh. c. 16 0	23	II. E. c. 11 22.2	31	I. Sh. c. *14 15
	I. Sh. c. 11 55				I. E. c. *15 10.1		I. Tr. c. *15 24
	II. Tr. c. *14 23						I. Sh. f. *16 28
							-I. Tr. f. *17 34

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - - Em.

Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

522 SATELLITES OF JUPITER, 1922.

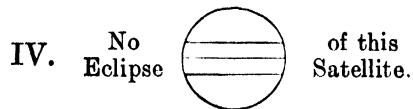
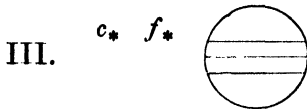
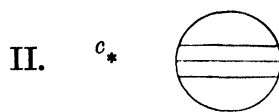
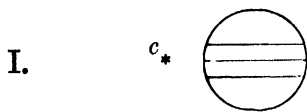
JANUARY.

MEAN TIME.

Configurations at 16^h 0^m for an inverting Telescope.

Day.	West.	East.
0	● 1 4' 2' ○ 3	
1	4' 2' 1. ○ 3	
2	4' ○ 1. 2 3	
3	4' 1. 3 ○ 2	
4	4' 3. 2' ○ 1	
5	4' 3' 1. 2 ○	
6	4' 3' 4' ○ 1. 2	
7	2' ○ 1. ○ 4' 3	
8	2' ○ 4. 3	1 ○
9	○ 1. 2 3. 4	
10	1. ○ 3. 2' 4	
11	3. 2' ○ 1 4'	
12	3. 1. 2' ○ 4'	
13	3' ○ 1. 2 4'	
14	1. 2' 3' 4'	
15	2' 1. 4' 3	
16	4' ○ 2 3. ● 1	
17	4' 1. ○ 3. 2'	
18	4' 3. 2' ○ 1	
19	4' 3. 1. 2' ○	
20	4' 3' ○ 1. 2	
21	4' 1. ○ 2' ● 3	
22	4' 2' ○ 1. 3	
23	● 1 4' ○ 3. ● 2	
24	1. ○ 4' 3. 2'	
25	3. 2' ○ 1 4'	
26	3. 2. 1' ○ 4'	
27	3' ○ 1. 2 4'	
28	● 3 1. ○ 2' 4'	
29	2' ○ 1. 3 4'	
30	● 2 1. ○ 3' 4'	
31	○ 2. 3' 4' 1 ○	

Phases of the Eclipses of the Satellites for an inverting Telescope.



SATELLITES OF JUPITER, 1922. 523

FEBRUARY.

MEAN TIME.

Day.	h m	Day.	h m	Day.	h m	Day.	h m
1	III. Sh. c. 3 39 III. Sh. f. 6 8 III. Tr. c. 8 27 II. Sh. c. 8 51 III. Tr. f. 10 25 II. Tr. c. 11 6 II. Sh. f. 11 27 I. E. c. 11 31 ² II. Tr. f. *13 35 I. Em. *14 50	8	III. Sh. c. 7 36 III. Sh. f. 10 5 II. Sh. c. *11 24 III. Tr. c. *12 8 I. E. c. *13 24 ¹ II. Tr. c. *13 31 II. Sh. f. *13 59 III. Tr. f. *14 4 II. Tr. f. *15 59 I. Em. *16 38	15	III. Sh. c. *11 34 II. Sh. c. *13 56 III. Sh. f. *14 2 I. E. c. *15 17 ⁰ III. Tr. c. *15 45 II. Tr. c. *15 54 II. Sh. f. *16 32 III. Tr. f. *17 39 II. Tr. f. *18 21 I. Em. *18 26	22	III. Sh. c. *15 32 II. Sh. c. *16 29 I. E. c. *17 10 ⁰ III. Sh. f. *17 59 II. Tr. c. *18 14 II. Sh. f. 19 5 III. Tr. c. 19 18 I. Em. 20 12 II. Tr. f. 20 42 III. Tr. f. 21 9
2	I. Sh. c. 8 43 I. Tr. c. 9 51 I. Sh. f. 10 56 I. Tr. f. *12 2	9	I. Sh. c. 10 37 I. Tr. c. *11 40 I. Sh. f. *12 49 I. Tr. f. *13 51	16	I. Sh. c. *12 30 I. Tr. c. *13 28 I. Sh. f. *14 43 I. Tr. f. *15 39	23	I. Sh. c. *14 24 I. Tr. c. *15 16 I. Sh. f. *16 36 I. Tr. f. *17 26
3	II. E. c. 3 16 ³ I. E. c. 5 59 ⁴ II. Em. 8 8 I. Em. 9 17	10	II. E. c. 5 52 ² I. E. c. 7 52 ³ II. Em. 10 34 I. Em. 11 5	17	II. E. c. 8 28 ² I. E. c. 9 45 ³ I. Em. *12 53 II. Em. *12 58	24	II. E. c. *11 4 ³ I. E. c. *11 38 ³ I. Em. *14 39 II. Em. *15 21
4	I. Sh. c. 3 12 I. Tr. c. 4 19 I. Sh. f. 5 24 I. Tr. f. 6 29 III. E. c. *17 37 ⁵ III. E. f. 20 8 ¹ II. Sh. c. 22 7 III. Im. 22 20	11	I. Sh. c. 5 5 I. Tr. c. 6 8 I. Sh. f. 7 18 I. Tr. f. 8 18 III. E. c. 21 35 ²	18	I. Sh. c. 6 59 I. Tr. c. 7 55 I. Sh. f. 9 11 I. Tr. f. 10 6	25	I. Sh. c. 8 52 I. Tr. c. 9 42 I. Sh. f. *11 5 I. Tr. f. *11 53
5	III. Em. 0 18 II. Tr. c. 0 19 I. E. c. 0 27 ⁶ II. Sh. f. 0 43 II. Tr. f. 2 47 I. Em. 3 44 I. Sh. c. 21 40 I. Tr. c. 22 46 I. Sh. f. 23 53	12	III. E. f. 0 4 ⁸ II. Sh. c. 0 40 III. Im. 1 59 I. E. c. 2 20 ⁵ II. Tr. c. 2 43 II. Sh. f. 3 16 III. Em. 3 55 II. Tr. f. 5 11 I. Em. 5 32 I. Sh. c. 23 34	19	III. E. c. 1 33 ¹ II. Sh. c. 3 13 III. E. f. 4 1 ⁶ I. E. c. 4 13 ⁵ II. Tr. c. 5 4 III. Im. 5 33 II. Sh. f. 5 48 I. Em. 7 19 III. Em. 7 27 II. Tr. f. 7 32	26	III. E. c. 5 30 ⁵ II. Sh. c. 5 46 I. E. c. 6 6 ⁶ II. Tr. c. 7 23 III. E. f. 7 57 ⁹ II. Sh. f. 8 21 III. Im. 9 2 I. Em. 9 5 II. Tr. f. 9 51 III. Em. *10 55
6	I. Tr. f. 0 56 II. E. c. *16 33 ⁸ I. E. c. *18 55 ⁸ II. Em. 21 21 I. Em. 22 11	13	I. Tr. c. 0 35 I. Sh. f. 1 46 I. Tr. f. 2 45 II. E. c. 19 9 ⁷ I. E. c. 20 48 ⁷ II. Em. 23 46 I. Em. 23 59	20	I. Sh. c. 1 27 I. Tr. c. 2 22 I. Sh. f. 3 40 I. Tr. f. 4 33 II. E. c. 21 45 ⁸ I. E. c. 22 41 ⁸	27	I. Sh. c. 3 21 I. Tr. c. 4 9 I. Sh. f. 5 33 I. Tr. f. 6 19
7	I. Sh. c. *16 9 I. Tr. c. *17 13 I. Sh. f. *18 21 I. Tr. f. 19 24	14	I. Sh. c. *18 2 I. Tr. c. 19 2 I. Sh. f. 20 15 I. Tr. f. 21 12	21	I. Em. 1 46 II. Em. 2 10 I. Sh. c. 19 56 I. Tr. c. 20 49 I. Sh. f. 22 8 I. Tr. f. 22 59	28	II. E. c. 0 22 ⁰ I. E. c. 0 34 ⁸ I. Em. 3 32 II. Em. 4 31 I. Sh. c. 21 49 I. Tr. c. 22 35

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion Em.

Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

524 SATELLITES OF JUPITER, 1922.

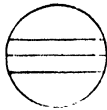
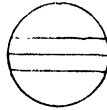
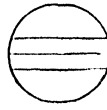
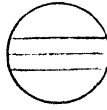
FEBRUARY.

MEAN TIME.

Configurations at 14^h 45^m for an inverting Telescope.

Day.	West.	East.
1		3 ² . ² . ¹ ○ ● . 1
2		3. 4. 2 1. ○
3	4. 3	○ . 1 ²
4	4.	1. 3 ○ 2.
5	4.	2. ○ 1. 3
6	4	. 1 ² ○ . 3
7	4	○ 1. 3 ²
8	● 1 2. ○	4 ○
9		3. 2 1. 4 ○
10	3	○ . 1 ² 4
11		. 3 1. ○ 2. 4
12		2. ○ . 3 1. 4
13		. 1 ² ○ . 3 4
14		○ 1. 2 3. 4
15		. 1 ² ○ . 4
16	1. ○	3. 2 ○ 4.
17		. 3 ○ . 2 4.
18		3 1. 4. ○ 2.
19		4. 2. ○ . 3 1.
20	4.	. 2 1. ○ . 3
21	4.	○ 1. 2 3.
22	4	. 1 ○ . 2 3.
23	4	. 4 3. 1 ○ .
24	4 3.	○ 1 ● . 2
25		. 4 3. 1. ○ 2.
26		2. ○ 4 3 1.
27		. 2 1. ○ . 4 3
28		○ 1. 2 3. 4

Phases of the Eclipses of the Satellites for an inverting Telescope.

I.	c* 	II.	c* 
III.	c* f* 	IV.	No Eclipse  of this Satellite

SATELLITES OF JUPITER, 1922. 525

MARCH.

MEAN TIME.

Day.	h m	Day.	h m	Day.	h m	Day.	h m
1	I. Sh. f. 0 2 I. Tr. f. 0 46 II. Sh. c. 19 2 I. E. c. 19 3 ¹ III. Sh. c. 19 31 II. Tr. c. 20 32 II. Sh. f. 21 37 III. Sh. f. 21 56 I. Em. 21 58 III. Tr. c. 22 46 II. Tr. f. 23 0	8	II. Sh. c. 21 35 II. Tr. c. 22 49 III. Sh. c. 23 29 I. Em. 23 43	16	II. Tr. f. 3 32 III. Tr. c. 5 30 III. Sh. f. 5 51 III. Tr. f. 7 21 I. Sh. c. 20 5 I. Tr. c. 20 32 I. Sh. f. 22 18 I. Tr. f. 22 42	24	I. Sh. f. 0 12 I. Tr. f. 0 27 I. E. c. 19 11 ⁴ II. E. c. 21 29 ⁸ I. Em. 21 37
2	III. Tr. f. 0 36 I. Sh. c. *16 18 I. Tr. c. *17 2 I. Sh. f. 18 30 I. Tr. f. 19 12	9	II. Sh. f. 0 10 II. Tr. f. 1 17 III. Sh. f. 1 54 III. Tr. c. 2 10 III. Tr. f. 4 0 I. Sh. c. 18 11 I. Tr. c. 18 47 I. Sh. f. 20 24 I. Tr. f. 20 58	17	I. E. c. *17 18 ⁰ II. E. c. 18 53 ³ I. Em. 19 53 II. Em. 22 17	25	II. Em. 0 33 I. Sh. c. *16 28 I. Tr. c. *16 42 I. Sh. f. 18 40 I. Tr. f. 18 53
3	I. E. c. *13 31 ⁴ II. E. c. *13 40 ⁶ I. Em. *16 24 II. Em. *17 41	10	I. E. c. *15 24 ⁶ II. E. c. *16 16 ⁹ I. Em. 18 9 II. Em. 20 0	18	I. Sh. c. *14 34 I. Tr. c. *14 58 I. Sh. f. *16 46 I. Tr. f. *17 9	26	I. E. c. *13 39 ⁸ II. Sh. c. *15 59 I. Em. *16 3 II. Tr. c. *16 25 II. Sh. f. 18 33 II. Tr. f. 18 54 III. E. c. 21 22 ⁵
4	I. Sh. c. *10 46 I. Tr. c. *11 28 I. Sh. f. *12 59 I. Tr. f. *13 39	11	I. Sh. c. *12 40 I. Tr. c. *13 13 I. Sh. f. *14 53 I. Tr. f. *15 24	19	I. E. c. *11 46 ³ II. Sh. c. *13 25 II. Tr. c. *14 11 I. Em. *14 19 II. Sh. f. *16 0 II. Tr. f. *16 39 III. E. c. *17 23 ⁷ III. Em. 21 0	27	III. Em. 0 18 I. Sh. c. *10 56 I. Tr. c. *11 8 I. Sh. f. *13 9 I. Tr. f. *13 19
5	I. E. c. 7 59 ⁷ II. Sh. c. 8 19 III. E. c. 9 27 ⁹ II. Tr. c. *9 41 I. Em. *10 51 II. Sh. f. *10 54 III. E. f. *11 54 ² II. Tr. f. *12 9 III. Im. *12 27 III. Em. *14 19	12	I. E. c. *9 53 ⁰ II. Sh. c. *10 52 II. Tr. c. *11 57 I. Em. *12 35 III. E. c. *13 25 ⁷ II. Sh. f. *13 27 II. Tr. f. *14 25 III. Em. *17 40	20	I. Sh. c. *9 2 I. Tr. c. *9 24 I. Sh. f. *11 15 I. Tr. f. *11 35	28	I. E. c. *8 8 ² I. Em. *10 29 II. E. c. *10 47 ⁷ II. Em. *13 41
6	I. Sh. c. 5 14 I. Tr. c. 5 55 I. Sh. f. 7 27 I. Tr. f. 8 5	13	I. Sh. c. 7 8 I. Tr. c. 7 40 I. Sh. f. *9 21 I. Tr. f. *9 50	21	I. E. c. 6 14 ⁷ II. E. c. 8 11 ¹ I. Em. *8 45 II. Em. *11 25	29	I. Sh. c. 5 25 I. Tr. c. 5 34 I. Sh. f. 7 38 I. Tr. f. *7 45
7	I. E. c. 2 28 ⁰ II. E. c. 2 58 ² I. Em. 5 17 II. Em. 6 50 I. Sh. c. 23 43	14	I. E. c. 4 21 ³ II. E. c. 5 34 ⁶ I. Em. 7 1 II. Em. *9 8	22	I. Sh. c. 3 31 I. Tr. c. 3 50 I. Sh. f. 5 43 I. Tr. f. 6 1	30	I. E. c. 2 36 ⁶ I. Em. 4 55 II. Sh. c. 5 15 II. Tr. c. 5 32 II. Sh. f. *7 50 II. Tr. f. *8 0 III. Sh. c. *11 23 III. Tr. c. *12 3 III. Sh. f. *13 45 III. Tr. f. *13 57 I. Sh. c. 23 53
8	I. Tr. c. 0 21 I. Sh. f. 1 56 I. Tr. f. 2 31 I. E. c. 20 56 ³	15	I. Sh. c. 1 37 I. Tr. c. 2 6 I. Sh. f. 3 49 I. Tr. f. 4 16 I. E. c. 22 49 ⁶	23	I. E. c. 0 43 ⁰ II. Sh. c. 2 42 I. Em. 3 11 II. Tr. c. 3 18 II. Sh. f. 5 16 II. Tr. f. 5 47 III. Sh. c. 7 25 III. Tr. c. *8 47 III. Sh. f. *9 48 III. Tr. f. *10 40 I. Sh. c. 21 59 I. Tr. c. 22 16	31	I. Tr. c. 0 0 I. Sh. f. 2 6 I. Tr. f. 2 11 I. E. c. 21 5 ⁰ I. Em. 23 21

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - Em.

Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

526 SATELLITES OF JUPITER, 1922.

MARCH.

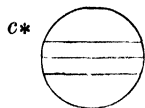
MEAN TIME.

Configurations at 13^h 15^m for an inverting Telescope.

Day.	West.				East.		
1				○	2 [·] 3 [·]		4 [·]
2				○	1 [·]		4 [·]
3			3 [·]	○	2 [·] 1 [·]		4 [·]
4	1 [·] ○		3 [·]	○		2 [·]	4 [·]
5	● 3			○	2 [·]	1 [·]	4 [·]
6			2 [·] 1 [·]	○	4 [·]		3 [·]
7			4 [·]	○	2 [·] 1 [·]		3 [·]
8			4 [·]	○	2 [·] 3 [·]		
9			4 [·]	○	2 [·] 3 [·]		1 [·]
10			4 [·] 3 [·]	○	2 [·] 1 [·]		
11			4 [·] 3 [·]	○		2 [·]	1 ○ [·]
12			4 [·]	○	3 [·] 1 [·]		2 ○ [·]
13			4 [·] 2 [·] 1 [·]	○			3 [·]
14			4 [·]	○	2 [·] 1 [·]		3 [·]
15				○	4 [·] 2 [·] 3 [·]		
16				○	2 [·] 3 [·]		1 [·] 4 [·]
17			3 [·]	○	2 [·] 1 [·]		4 [·]
18			3 [·]	○	1 [·]	2 [·]	4 [·]
19	● 1			○	3 [·] 2 [·]		4 [·]
20				○	2 [·] 1 [·]		3 [·] 4 [·]
21				○	2 [·] 1 [·]		3 [·] 4 [·]
22				○	1 [·]	2 [·] 3 [·] 4 [·]	
23				○	2 [·] 3 [·] 4 [·]		1 [·]
24			3 [·] 4 [·]	○	2 [·] 1 [·]		
25			4 [·] 3 [·]	○		1 [·] 2 [·]	
26			4 [·]	○	3 [·]	1 2 [·]	
27	1 ○		4 [·]	○		2 [·] 3 [·]	
28			4 [·]	○	1 [·]		3 [·] ● 2
29			4 [·]	○	1 [·]	2 [·] 3 [·]	
30	3 ○		4 [·]	○	2 [·]		1 [·]
31			3 [·]	○	2 [·] 1 [·]		4 [·]

Phases of the Eclipses of the Satellites for an inverting Telescope.

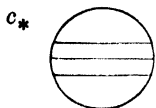
I.



II.



III.



IV.

No Eclipse



of this Satellite.

SATELLITES OF JUPITER, 1922. 527

APRIL.

MEAN TIME.

Day.	h m	Day.	h m	Day.	h m	Day.	h m	
1	II. E. c. 0 6.4 II. Em. 2 49 I. Sh. c. 18 22 I. Tr. c. 18 26 I. Sh. f. 20 35 I. Tr. f. 20 37	9	I. Im. 17 20 I. E. f. 19 39.1 II. Tr. c. 20 51 II. Sh. c. 21 6 II. Tr. f. 23 21 II. Sh. f. 23 40	17	II. Sh. f. 2 14 III. Im. * 8 9 III. E. f. *11 37.8 I. Tr. c. 16 20 I. Sh. c. 16 39 I. Tr. f. 18 32 I. Sh. f. 18 52	24	I. Sh. f. 20 46	
2	I. E. c. *15 33.4 I. Em. 17 47 II. Sh. c. 18 32 II. Tr. c. 18 38 II. Sh. f. 21 7 II. Tr. f. 21 7	10	III. Im. 4 54 III. E. f. * 7 40.6 I. Tr. c. *14 36 I. Sh. c. *14 45 I. Tr. f. 16 47 I. Sh. f. 16 57	18	I. Im. *13 30 I. E. f. 16 1.4 II. Im. 17 56 II. E. f. 21 13.5	25	I. Im. *15 14 I. E. f. 17 55.5 II. Im. 20 13 II. E. f. 23 49.8	
3	III. E. c. 1 21.0 III. E. f. 3 43.0 I. Sh. c. *12 50 I. Tr. c. *12 52 I. Tr. f. *15 3 I. Sh. f. *15 3	11	I. Im. *11 46 I. E. f. *14 7.5 II. Im. *15 41 II. E. f. 18 37.2	19	I. Tr. c. *10 47 I. Sh. c. *11 8 I. Tr. f. *12 58 I. Sh. f. *13 20	26	I. Tr. c. *12 32 I. Sh. c. *13 3 I. Tr. f. *14 43 I. Sh. f. *15 15	
4	I. E. c. *10 1.8 I. E. f. *12 13.8 II. E. c. *13 24.3 II. E. f. *16 0.9	12	I. Tr. c. * 9 2 I. Sh. c. * 9 14 I. Tr. f. *11 13 I. Sh. f. *11 26	20	I. Im. * 7 56 I. E. f. *10 29.9 II. Tr. c. *12 12 II. Sh. c. *12 57 II. Tr. f. *14 43 II. Sh. f. *15 31 III. Tr. c. 21 51 III. Sh. c. 23 20 III. Tr. f. 23 54	27	I. Im. * 9 40 I. E. f. *12 24.0 II. Tr. c. *14 28 II. Sh. c. 15 32 II. Tr. f. 16 59 II. Sh. f. 18 5	
5	I. Tr. c. * 7 18 I. Sh. c. * 7 19 I. Tr. f. * 9 29 I. Sh. f. * 9 32	13	I. Im. 6 12 I. E. f. * 8 36.0 II. Tr. c. * 9 58 II. Sh. c. *10 23 II. Tr. f. *12 28 II. Sh. f. *12 57 III. Tr. c. 18 34 III. Sh. c. 19 21 III. Tr. f. 20 34 III. Sh. f. 21 41	21	III. Sh. f. 1 39 I. Tr. c. 5 13 I. Sh. c. 5 37 I. Tr. f. * 7 24 I. Sh. f. * 7 49	28	III. Tr. c. 1 10 III. Tr. f. 3 16 III. Sh. c. 3 19 III. Sh. f. 5 36 I. Tr. c. 6 58 I. Sh. c. * 7 31 I. Tr. f. * 9 9 I. Sh. f. * 9 43	
6	I. Im. 4 28 I. E. f. 6 42.2 II. Tr. c. * 7 45 II. Sh. c. * 7 49 II. Tr. f. *10 14 II. Sh. f. *10 23 III. Tr. c. *15 18 III. Sh. c. *15 22 III. Tr. f. 17 15 III. Sh. f. 17 43	14	I. Tr. c. 3 28 I. Sh. c. 3 42 I. Tr. f. 5 39 I. Sh. f. 5 55	22	I. Im. 2 22 I. E. f. 4 58.4 II. Im. 7 5 II. E. f. *10 32.0 I. Tr. c. 23 39	29	I. Im. 4 7 I. E. f. 6 52.6 II. Im. * 9 22 II. E. f. *13 8.3	
7	I. Tr. c. 1 44 I. Sh. c. 1 48 I. Tr. f. 3 55 I. Sh. f. 4 0 I. Im. 22 54	15	I. Im. 0 38 I. E. f. 3 4.5 II. Im. 4 49 II. E. f. * 7 55.7 I. Tr. c. 21 54 I. Sh. c. 22 11	23	I. Sh. c. 0 5 I. Tr. f. 1 50 I. Sh. f. 2 18 I. Im. 20 48 I. E. f. 23 26.9	30	I. Im. 1 24 I. Sh. c. 2 0 I. Tr. f. 3 36 I. Sh. f. 4 12 I. Im. 22 33	
8	I. E. f. 1 10.6 II. Im. 2 33 II. E. f. 5 19.4 I. Tr. c. 20 10 I. Sh. c. 20 16 I. Tr. f. 22 21 I. Sh. f. 22 29	16	I. Tr. f. 0 5 I. Sh. f. 0 23 I. Im. 19 4 I. E. f. 21 32.9 II. Tr. c. 23 5 II. Sh. c. 23 40	24	II. Tr. c. 1 20 II. Sh. c. 2 15 II. Tr. f. 3 51 II. Sh. f. 4 48 III. Im. *11 26 III. E. f. 15 35.0 I. Tr. c. 18 5 I. Sh. c. 18 34 I. Tr. f. 20 17			

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c. *
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - Em.

Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

528 SATELLITES OF JUPITER, 1922.

APRIL.

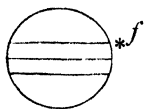
MEAN TIME.

Configurations at 11^h 45^m for an inverting Telescope.

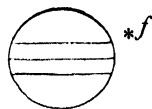
Day.	West.	East.
1	·3	○ 1. ·2 ⁴
2		·3 ·1 ○ 2 [·] ·4
3		2 [·] 1 ○ ·3 ·4
4		·○ 2 [·] ·3 ·4 ● ·1
5		1 [·] ○ ·2 3 [·] 4 [·]
6		2 [·] ○ 3 [·] ·1 4 [·]
7		3 [·] ·2 ¹ · ○ 4 [·]
8	·3	○ 4 [·] 1 [·] 2 [·]
9		·3 4 [·] 1 [·] ○ 2 [·]
10	4 [·]	2 [·] ○ 1 [·] 3 [·]
11	4 [·]	·2 ○ 1 [·] ·3
12	4 [·]	1 [·] ○ ·2 3 [·]
13	2 [·] ○ ·4	○ ·3 [·] 1 [·]
14	·4	·2 3 [·] 1 [·] ○
15	·4 3 [·]	○ ·2 ·1
16		·3 ·4 ·1 ○ 2 [·]
17		·2 [·] ○ ·3 [·] 1 [·] 4 [·]
18		·2 ·○ 1 [·] ·4 3 [·]
19		○ ·2 3 [·] ·4 1 ○
20		2 ○ ·1 3 [·] ·4
21		·2 3 [·] 1 [·] ○ 4 [·]
22	3 [·]	○ ·2 ·1 4 [·]
23	·3 ·1	○ 2 [·] 4 [·]
24	·● 3	2 [·] ○ 1 [·] 4 [·]
25		·2 ·1 4 [·] ○ ·3
26	4 [·]	1 ○ ·2 3 [·]
27	4 [·]	○ 2 [·] 3 [·] ● ·1
28	4 [·]	2 [·] 3 [·] 1 [·] ○
29	4 [·] 3 [·]	○ ·1 ● ·2
30	·4 ·3 1 [·]	○ 2 [·]

Phases of the Eclipses of the Satellites for an inverting Telescope.

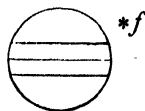
I.



II.

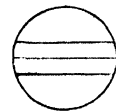


III.



IV.

No Eclipse



of this Satellite.

530 SATELLITES OF JUPITER, 1922.

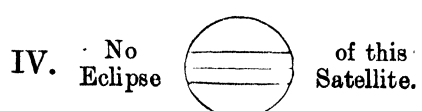
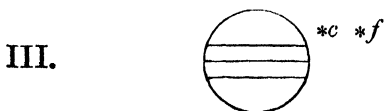
MAY.

MEAN TIME.

Configurations at 10^h 45^m for an inverting Telescope.

Day.	West.				East.			
1		4		2, 3	○	1		
2			4	2, 1	○		3	
3				4	○	1, 2	3	
4					○	1, 2, 4	3	
5	1. ○			2, 3	○		4	
6.			3		○	2, 1		4
7			3	1	○	2		4
8				3, 2	○	1		4
9				2, 1	○	3		4
10					○	1, 2	3, 4	
11					○	1, 2, 4	3	
12				2	○			1. ○
13			3, 4		○	2, 1		
14.		4	3	1	○		2	
15	2. ○	4		3	○	1		
16		4		2, 1	○	3		
17		4			○	1, 2	3	
18			4		○	1	2, 3	
19				4, 2	○	1, 3		
20			3		○	2, 4		● . 1
21			3	1	○		4, 2	
22				3	○	1	4	2. ○
23				2, 1	○	3		4
24					○	2, 1	3	4
25					○	1	2, 3	4
26				2	○	1, 3		4
27				3, 2	○	1		4
28	1. ○		3		○	4	2	
29				3, 4	○	2, 1		
30			4	2, 1	○			● . 3
31		4			○	1	3	● . 2

Phases of the Eclipses of the Satellites for an inverting Telescope.



SATELLITES OF JUPITER, 1922. 531

JUNE.

MEAN TIME.

Day.	h m	Day.	h m	Day.	h m	Day.	h m
1	I. Sh. f. 0 48 I. Im. 18 38 I. E. f. 21 56.3	9	II. Tr. c. 4 40 II. Sh. c. 7 3 II. Tr. f. 7 15 II. Sh. f. * 9 34 I. Tr. c. 17 50 I. Sh. c. 19 1 I. Tr. f. 20 1 I. Sh. f. 21 11 III. Tr. c. 22 21	16	II. Sh. f. 12 10 I. Tr. c. 19 42 I. Sh. c. 20 56 I. Tr. f. 21 54 I. Sh. f. 23 6	24	I. Sh. f. 1 1 III. Tr. c. 6 0 III. Tr. f. * 8 27 III. Sh. c. * 11 13 III. Sh. f. 13 22 I. Im. 18 42 I. E. f. 22 9.6
2	II. Tr. c. 2 13 II. Sh. c. 4 27 II. Tr. f. 4 47 II. Sh. f. 6 59 I. Tr. c. 15 58 I. Sh. c. 17 6 I. Tr. f. 18 10 III. Tr. c. 18 38 I. Sh. f. 19 16 III. Tr. f. 20 59 III. Sh. c. 23 15	10	III. Tr. f. 0 45 III. Sh. c. 3 15 III. Sh. f. 5 25 I. Im. 14 56 I. E. f. 18 19.8 II. Im. 23 46	17	III. Tr. c. 2 9 III. Tr. f. 4 34 III. Sh. c. 7 14 III. Sh. f. * 9 23 I. Im. 16 49 I. E. f. 20 14.7	25	II. Im. 4 50 II. E. f. * 9 56.4 I. Tr. c. 16 4 I. Sh. c. 17 19 I. Tr. f. 18 16 I. Sh. f. 19 29
3	III. Sh. f. 1 26 I. Im. 13 5 I. E. f. 16 25.0 II. Im. 21 16	11	II. E. f. 4 45.0 I. Tr. c. 12 18 I. Sh. c. 13 29 I. Tr. f. 14 29 I. Sh. f. 15 40	18	II. Im. 2 17 II. E. f. 7 20.8 I. Tr. c. 14 10 I. Sh. c. 15 24 I. Tr. f. 16 22 I. Sh. f. 17 35	26	I. Im. 13 10 I. E. f. 16 38.3 II. Tr. c. 22 59
4	II. E. f. 2 9.1 I. Tr. c. * 10 26 I. Sh. c. * 11 34 I. Tr. f. * 12 38 I. Sh. f. 13 45	12	I. Im. * 9 24 I. E. f. 12 48.5 II. Tr. c. 17 55 II. Sh. c. 20 21 II. Tr. f. 20 30 II. Sh. f. 22 52	19	I. Im. * 11 17 I. E. f. 14 43.4 II. Tr. c. 20 26 II. Sh. c. 22 57 II. Tr. f. 23 2	27	II. Sh. c. 1 33 II. Tr. f. 1 35 II. Sh. f. 4 4 I. Tr. c. * 10 32 I. Sh. c. 11 48 I. Tr. f. 12 44 I. Sh. f. 13 58 III. Im. 19 51 III. Em. 22 21
5	I. Im. 7 33 I. E. f. * 10 53.7 II. Tr. c. 15 26 II. Sh. c. 17 45 II. Tr. f. 18 1 II. Sh. f. 20 16	13	I. Tr. c. 6 46 I. Sh. c. 7 58 I. Tr. f. * 8 57 I. Sh. f. * 10 9 III. Im. * 12 8 III. Em. 14 34 III. E. c. 17 10.6 III. E. f. 19 22.2	20	II. Sh. f. 1 28 I. Tr. c. * 8 39 I. Sh. c. * 9 53 I. Tr. f. * 10 50 I. Sh. f. 12 3 III. Im. 15 57 III. Em. 18 25 III. E. c. 21 10.1 III. E. f. 23 20.6	28	III. E. c. 1 9.5 III. E. f. 3 19.0 I. Im. 7 39 I. E. f. * 11 7.1 II. Im. 18 7 II. E. f. 23 14.1
6	I. Tr. c. 4 54 I. Sh. c. 6 3 I. Tr. f. 7 5 I. Sh. f. * 8 14 III. Im. * 8 23 III. Em. * 10 48 III. E. c. 13 11.6 III. E. f. 15 24.2	14	I. Im. 3 52 I. E. f. 7 17.2 II. Im. 13 1 III. E. f. 18 2.8	21	I. Im. 5 45 I. E. f. * 9 12.1 II. Im. 15 33 II. E. f. 20 38.4	29	I. Tr. c. 5 1 I. Sh. c. 6 17 I. Tr. f. 7 13 I. Sh. f. * 8 27
7	I. Im. 2 1 I. E. f. 5 22.4 II. Im. * 10 31 II. E. f. 15 26.9 I. Tr. c. 23 22	15	I. Tr. c. 1 14 I. Sh. c. 2 27 I. Tr. f. 3 25 I. Sh. f. 4 37 I. Im. 22 20	22	I. Tr. c. 3 7 I. Sh. c. 4 22 I. Tr. f. 5 19 I. Sh. f. 6 32	30	I. Im. 2 8 I. E. f. 5 35.8 II. Tr. c. 12 17 II. Sh. c. 14 51 II. Tr. f. 14 53 II. Sh. f. 17 22 I. Tr. c. 23 30
8	I. Sh. c. 0 32 I. Tr. f. 1 33 I. Sh. f. 2 42 I. Im. 20 28 I. E. f. 23 51.1	16	I. E. f. 1 45.9 II. Tr. c. 7 10 II. Sh. c. * 9 39 II. Tr. f. * 9 46	23	I. Im. 0 13 I. E. f. 3 40.8 II. Tr. c. * 9 43 II. Sh. c. 12 15 II. Tr. f. 12 18 II. Sh. f. 14 46 I. Tr. c. 21 35 I. Sh. c. 22 50 I. Tr. f. 23 47		

Eclipse commences - - - E. c.
,, finishes - - - E. f.

Transit commences - - - Tr. c.
,, finishes - - - Tr. f.

Occultation, immersion - - Im.
,, emersion - - - Em.

Shadow commences - - - Sh. c.
,, finishes - - - Sh. f.

532 SATELLITES OF JUPITER, 1922.

JUNE.

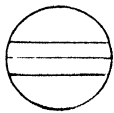
MEAN TIME.

Configurations at 10^h 0^m for an inverting Telescope.

Day.	West.			East.		
1	4'		·1	○	2'	3'
2	·4		2'	○	¹ ·3'	
3	·4		3 ^{·2} ·1	○		
4		⁴ ·3		1○	·2	
5			·3 ·4	○	2'	● ·1
6			2'	1' ○	·4	● ·3
7				○ ²	·1	⁴ ·3
8			1'	○	2'	3' ·4
9				2' ○	¹ ·3'	·4
10			² ·3' ·1	○		·4
11			3'	○ 1'	·2	·4'
12	· ● 1		·3	○	2'	·4'
13			2'	¹ ·3	○ ³	·4'
14				² ·4	○	·1 ·3
15			4' 1'	○	·2	3'
16		4'		○	·1 3'	
17		4'	·2	¹ ·3	○	
18		4'	3'	○	1'·2	
19		·4	·3	·1 ○	2'	
20	1 · ○	·4	2' ·3	○		
21		·4	² ·3	○	·1	·3
22			¹ ·4	○	·2	·3
23				○	⁴ ·1	3'
24			·2 ·1	3' ○		·4
25			3'	○	² ·3'	·4
26			·3	·1 ○	2'	·4
27			² ·3	1' ○		·4
28			·2	○	·3	·4' ● ·1
29			1'	○	·2	³ ·4
30				○	2' ·1	4' 3'

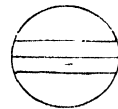
Phases of the Eclipses of the Satellites for an inverting Telescope.

I.



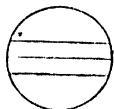
*f

II.



*f

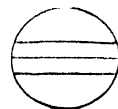
III.



*c *f

IV.

No Eclipse



of this Satellite.

SATELLITES OF JUPITER, 1922. 533

JULY.

MEAN TIME.

Day.	h m	Day.	h m	Day.	h m	Day.	h m				
1	I. Sh. c. 0 45 I. Tr. f. 1 41 I. Sh. f. 2 56 III. Tr. c. * 9 56 III. Tr. f. 12 24 III. Sh. c. 15 12 III. Sh. f. 17 20 I. Im. 20 36	8	III. Sh. f. 21 18 I. Im. 22 32	16	I. Tr. c. 21 50 I. Sh. c. 23 4	25	I. E. f. 0 18 [·] 4 II. Tr. c. 9 32 II. Sh. c. 11 59 II. Tr. f. 12 9 II. Sh. f. 14 29 I. Tr. c. 18 16 I. Sh. c. 19 27 I. Tr. f. 20 28 I. Sh. f. 21 37				
2	I. E. f. 0 4 [·] 6 II. Im. 7 25 II. E. f. 12 31 [·] 9 I. Tr. c. 17 58 I. Sh. c. 19 14 I. Tr. f. 20 10 I. Sh. f. 21 24	9	I. E. f. 1 59 [·] 6 II. Im. * 10 2 II. E. f. 15 7 [·] 3 I. Tr. c. 19 54 I. Sh. c. 21 9 I. Tr. f. 22 5 I. Sh. f. 23 19	17	I. Tr. f. 0 2 I. Sh. f. 1 14 I. Im. 18 57 I. E. f. 22 23 [·] 3	18	II. Tr. c. 6 51 II. Sh. c. * 9 23 II. Tr. f. * 9 28 II. Sh. f. 11 52 I. Tr. c. 16 19 I. Sh. c. 17 33 I. Tr. f. 18 31 I. Sh. f. 19 42	26	III. Im. 12 7 III. Em. 14 38 I. Im. 15 24 III. E. c. 17 8 [·] 4 I. E. f. 18 47 [·] 2 III. E. f. 19 14 [·] 0		
3	I. Im. 15 5 I. E. f. 18 33 [·] 3	10	I. Im. 17 1 I. E. f. 20 28 [·] 3	19	III. Im. * 7 58 III. Em. 10 29 III. E. c. 13 9 [·] 2 I. Im. 13 26 III. E. f. 15 15 [·] 8 I. E. f. 16 52 [·] 1	19	III. Im. * 7 58 III. Em. 10 29 III. E. c. 13 9 [·] 2 I. Im. 13 26 III. E. f. 15 15 [·] 8 I. E. f. 16 52 [·] 1	27	II. Im. 4 40 II. E. f. 9 34 [·] 9 I. Tr. c. 12 46 I. Sh. c. 13 56 I. Tr. f. 14 57 I. Sh. f. 16 6		
4	II. Tr. c. 1 35 II. Sh. c. 4 9 II. Tr. f. 4 11 II. Sh. f. 6 40 I. Tr. c. 12 27 I. Sh. c. 13 43 I. Tr. f. 14 39 I. Sh. f. 15 53 III. Im. 23 50	11	II. Tr. c. 4 12 II. Sh. c. 6 46 II. Tr. f. 6 48 II. Sh. f. * 9 16 I. Tr. c. 14 23 I. Sh. c. 15 38 I. Tr. f. 16 34 I. Sh. f. 17 48	20	II. Im. 2 0 II. E. f. 7 0 [·] 0 I. Tr. c. 10 49 I. Sh. c. 12 1 I. Tr. f. 13 0 I. Sh. f. 14 11	20	II. Im. 2 0 II. E. f. 7 0 [·] 0 I. Tr. c. 10 49 I. Sh. c. 12 1 I. Tr. f. 13 0 I. Sh. f. 14 11	28	I. Im. 9 53 I. E. f. 13 15 [·] 9 II. Tr. c. 22 54	29	II. Sh. c. 1 18 II. Tr. f. 1 30 II. Sh. f. 3 47 I. Tr. c. 7 15 I. Sh. c. * 8 25 I. Tr. f. 9 27 I. Sh. f. 10 35
5	III. Em. 2 20 III. E. c. 5 9 [·] 8 III. E. f. 7 18 [·] 3 I. Im. * 9 34 I. E. f. 13 2 [·] 1 II. Im. 20 43	12	III. Im. 3 52 III. Em. 6 23 III. E. c. * 9 9 [·] 5 III. E. f. 11 17 [·] 0 I. Im. 11 30 I. E. f. 14 57 [·] 1 II. Im. 23 21	21	I. Im. 7 55 I. E. f. 11 20 [·] 8 II. Tr. c. 20 12 II. Sh. c. 22 41 II. Tr. f. 22 48	21	I. Im. 7 55 I. E. f. 11 20 [·] 8 II. Tr. c. 20 12 II. Sh. c. 22 41 II. Tr. f. 22 48	30	III. Tr. c. 2 18 I. Im. 4 23 III. Tr. f. 4 47 III. Sh. c. 7 10 I. E. f. 7 44 [·] 7 III. Sh. f. 9 14 II. Im. 18 1 II. E. f. 22 52 [·] 3	31	I. Tr. c. 1 45 I. Sh. c. 2 53 I. Tr. f. 3 56 I. Sh. f. 5 3 I. Im. 22 52
6	II. E. f. 1 49 [·] 5 I. Tr. c. 6 56 I. Sh. c. 8 12 I. Tr. f. * 9 8 I. Sh. f. * 10 22	13	II. E. f. 4 24 [·] 8 I. Tr. c. * 8 52 I. Sh. c. * 10 7 I. Tr. f. 11 4 I. Sh. f. 12 16	22	II. Sh. f. 1 11 I. Tr. c. 5 18 I. Sh. c. 6 30 I. Tr. f. 7 29 I. Sh. f. * 8 40 III. Tr. c. 22 7	22	II. Sh. f. 1 11 I. Tr. c. 5 18 I. Sh. c. 6 30 I. Tr. f. 7 29 I. Sh. f. * 8 40 III. Tr. c. 22 7				
7	I. Im. 4 3 I. E. f. 7 30 [·] 8 II. Tr. c. 14 53 II. Sh. c. 17 28 II. Tr. f. 17 29 II. Sh. f. 19 58	14	I. Im. 5 59 I. E. f. * 9 25 [·] 8 II. Tr. c. 17 32 II. Sh. c. 20 4 II. Tr. f. 20 8 II. Sh. f. 22 34	23	III. Tr. f. 0 36 I. Im. 2 25 III. Sh. c. 3 11 III. Sh. f. 5 15 I. E. f. 5 49 [·] 6 II. Im. 15 20 II. E. f. 20 17 [·] 5 I. Tr. c. 23 47	23	III. Tr. f. 0 36 I. Im. 2 25 III. Sh. c. 3 11 III. Sh. f. 5 15 I. E. f. 5 49 [·] 6 II. Im. 15 20 II. E. f. 20 17 [·] 5 I. Tr. c. 23 47				
8	I. Tr. c. 1 25 I. Sh. c. 2 40 I. Tr. f. 3 37 I. Sh. f. 4 50 III. Tr. c. 13 56 III. Tr. f. 16 25 III. Sh. c. 19 12	15	I. Tr. c. 3 21 I. Sh. c. 4 35 I. Tr. f. 5 33 I. Sh. f. 6 45 III. Tr. c. 18 0 III. Tr. f. 20 29 III. Sh. c. 23 11	24	I. Sh. c. 0 59 I. Tr. f. 1 59 I. Sh. f. 3 9 I. Im. 20 54	24	I. Sh. c. 0 59 I. Tr. f. 1 59 I. Sh. f. 3 9 I. Im. 20 54				
		16	I. Im. 0 28 III. Sh. f. 1 17 I. E. f. 3 54 [·] 6 II. Im. 12 40 II. E. f. 17 42 [·] 4								

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - Em.

Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

534 SATELLITES OF JUPITER, 1922.

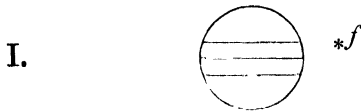
JULY.

MEAN TIME.

Configurations at 9^h 0^m for an inverting Telescope.

Day.	<i>West.</i>				<i>East.</i>				
1			2.	1.	3.	○			
2			3.	4.	○	1.		● . 2	
3		4.	3.		1.	○	2.		
4		4.		3.	2.	○	1.		
5		4.		2.	○	1.	3.		
6	1. ○	4.			○	2.	3.		
7		4.			○	2.	3.		
8			4.	2.	1.	○	3.		
9			3.		4.	○	2.	1.	
10			3.		1.	○	4.	2.	
11			3.	2.	○	1.	4.		
12			2.	1.	○	3.		4.	
13					○	2.	3.	4.	
14					○	2.	3.	4.	
15			2.	1.	○	3.	4.		
16			3.	2.	○	1.	4.		
17			3.	1.	○	4.	2.		
18	2. ○		3.	4.	○	1.			
19	● 3		4.	2.	1.	○			
20		4.			○	1.	2.	3.	
21	● 1	4.			○	2.	3.		
22		4.		2.	1.	○	3.		
23		4.		3.	2.	○	1.		
24		4.	3.		1.	○	2.		
25			3.	4.	2.	○	1.		
26			2.	1.	○	3.			
27					○	1.	3.	2.	
28					○	1.	2.	3.	4.
29	1. ○			2.	○	3.	4.		
30				2.	3.	○	1.	4.	
31			3.	1.	○	2.	4.		

Phases of the Eclipses of the Satellites for an inverting Telescope.



SATELLITES OF JUPITER, 1922. 535

AUGUST.

MEAN TIME.

Day.	h m	Day.	h m	Day.	h m	Day.	h m
1	I. E. f. 2 13.4 II. Tr. c. 12 15 II. Sh. c. 14 36 II. Tr. f. 14 51 II. Sh. f. 17 5 I. Tr. c. 20 14 I. Sh. c. 21 22 I. Tr. f. 22 26 I. Sh. f. 23 32	8	I. Sh. c. 23 17	17	I. E. f. 0 32.2 III. Im. 0 51 III. Em. 3 21 III. E. o. 5 6.5 III. E. f. 7 9.2 II. Im. 12 49 II. E. f. 17 18.7 I. Tr. o. 18 41 I. Sh. c. 19 40 I. Tr. f. 20 53 I. Sh. f. 21 50	24	II. E. f. 19 53.1 I. Tr. c. 20 40 I. Sh. c. 21 34 I. Tr. f. 22 52 I. Sh. f. 23 44
2	III. Im. 16 19 I. Im. 17 22 III. Em. 18 50 I. E. f. 20 42.2 III. E. c. 21 7.5 III. E. f. 23 12.2	9	I. Tr. f. 0 24 I. Sh. f. 1 27 I. Im. 19 21 III. Im. 20 34 I. E. f. 22 37.2 III. Em. 23 4	18	I. Im. 15 50 I. E. f. 19 0.9	25	I. Im. 17 50 I. E. f. 20 55.9
3	II. Im. 7 22 II. E. f. 12 9.7 I. Tr. c. 14 44 I. Sh. c. 15 51 I. Tr. f. 16 55 I. Sh. f. 18 1	10	III. E. c. 1 7.0 III. E. f. 3 10.7 II. Im. 10 5 II. E. f. 14 44.3 I. Tr. c. 16 42 I. Sh. c. 17 45 I. Tr. f. 18 54 I. Sh. f. 19 55	19	II. Tr. o. 7 8 II. Sh. c. 9 9 II. Tr. f. 9 44 II. Sh. f. 11 38 I. Tr. c. 13 11 I. Sh. c. 14 9 I. Tr. f. 15 23 I. Sh. f. 16 18	26	II. Tr. c. 9 55 II. Sh. c. 11 46 II. Tr. f. 12 31 II. Sh. f. 14 15 I. Tr. c. 15 10 I. Sh. c. 16 3 I. Tr. f. 17 22 I. Sh. f. 18 13
4	I. Im. 11 51 I. E. f. 15 10.9	11	I. Im. 13 50 I. E. f. 17 5.9	20	I. Im. 10 20 I. E. f. 13 29.7 III. Tr. c. 15 4 III. Tr. f. 17 32 III. Sh. c. 19 7 III. Sh. f. 21 9	27	I. Im. 12 20 I. E. f. 15 24.6 III. Tr. c. 19 24 III. Tr. f. 21 51 III. Sh. c. 23 6
5	II. Tr. c. 1 37 II. Sh. c. 3 55 II. Tr. f. 4 13 II. Sh. f. 6 24 I. Tr. c. 9 13 I. Sh. c. 10 19 I. Tr. f. 11 25 I. Sh. f. 12 29	12	II. Tr. c. 4 22 II. Sh. c. 6 32 II. Tr. f. 6 58 II. Sh. f. 9 1 I. Tr. c. 11 12 I. Sh. c. 12 14 I. Tr. f. 13 23 I. Sh. f. 14 24	21	II. Im. 2 11 II. E. f. 6 35.9 I. Tr. c. * 7 41 I. Sh. c. 8 37 I. Tr. f. 9 52 I. Sh. f. 10 47	28	III. Sh. f. 1 7 II. Im. 4 57 II. E. f. 9 10.2 I. Tr. c. 9 40 I. Sh. c. 10 32 I. Tr. f. 11 52 I. Sh. f. 12 42
6	I. Im. 6 21 III. Tr. c. 6 31 III. Tr. f. 9 0 I. E. f. 9 39.7 III. Sh. c. 11 10 III. Sh. f. 13 12 II. Im. 20 44	13	I. Im. 8 20 III. Tr. c. 10 47 I. E. f. 11 34.7 III. Tr. f. 13 15 III. Sh. c. 15 9 III. Sh. f. 17 11 II. Im. 23 27	22	I. Im. 4 50 I. E. f. 7 58.4 II. Tr. c. 20 31 II. Sh. c. 22 27 II. Tr. f. 23 7	29	I. Im. 6 50 I. E. f. 9 53.3 II. Tr. c. 23 19
7	II. E. f. 1 27.0 I. Tr. c. 3 43 I. Sh. c. 4 48 I. Tr. f. 5 54 I. Sh. f. 6 58	14	II. E. f. 4 1.5 I. Tr. c. 5 42 I. Sh. c. 6 43 I. Tr. f. * 7 53 I. Sh. f. 8 53	23	II. Sh. f. 0 56 I. Tr. c. 2 11 I. Sh. c. 3 6 I. Tr. f. 4 22 I. Sh. f. 5 16 I. Im. 23 20	30	II. Sh. c. 1 4 II. Tr. f. 1 55 II. Sh. f. 3 33 I. Tr. c. 4 10 I. Sh. c. 5 0 I. Tr. f. 6 22 I. Sh. f. * 7 10
8	I. Im. 0 51 I. E. f. 4 8.4 II. Tr. c. 14 59 II. Sh. c. 17 13 II. Tr. f. 17 35 II. Sh. f. 19 42 I. Tr. c. 22 12	15	I. Im. 2 50 I. E. f. 6 3.4 II. Tr. c. 17 45 II. Sh. c. 19 50 II. Tr. f. 20 21 II. Sh. f. 22 19	24	I. E. f. 2 27.2 III. Im. 5 12 III. Em. 7 40 III. E. c. 9 6.5 III. E. f. 11 8.4 II. Im. 15 34	31	I. Im. 1 20 I. E. f. 4 22.1 III. Im. 9 34 III. Em. 12 1 III. E. c. 13 6.1 III. E. f. 15 7.1 II. Im. 18 19 II. E. f. 22 27.2 I. Tr. c. 22 40 I. Sh. c. 23 29
16	I. Tr. c. 0 11 I. Sh. c. 1 11 I. Tr. f. 2 23 I. Sh. f. 3 21 I. Im. 21 20	16	I. Tr. c. 0 11 I. Sh. c. 1 11 I. Tr. f. 2 23 I. Sh. f. 3 21 I. Im. 21 20				

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - Em.

Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

536 SATELLITES OF JUPITER, 1922.

AUGUST.

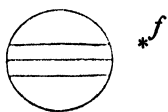
MEAN TIME.

Configurations at 7^h 45^m for an inverting Telescope.

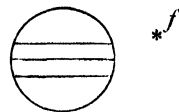
Day.	West.	East.
1	.3	○ 2' .1 4'
2	2' 1.3	○ 4'
3	● 2	○ 1' .3 4'
4		○ 4' .1 2' .3
5	4'	2' ○ 1' 3'
6	3.○ 4'	○ ● 1
7	4' 3'	1' ○ .2
8	.4 .3	○ 1' 2'
9	.4 2' .3 1'	○
10	.4	○ 2' 1' 3'
11		.4 .1 ○ .2 .3
12		2. ○ 1' 3'
13		.2 3' ○ 1' 4'
14	1.○ 3'	○ .2 4'
15	.3	○ 1' 2' 4
16		.3 2' 1' ○ 4
17		.2 ○ .3 .1 4'
18		.1 ○ .2 .3 4'
19		○ 1' 4' 3' 2 ○
20		.2 .1 ○ 4' 3'
21		3' 4' ○ .2 1 ○
22		.3 4' ○ 2' ● .1
23	4' .3 2' 1'	○
24	4'	.2 ○ 3' .1
25	.4 1'	○ .2 .3
26	.4	○ 2' 1' 3'
27	.4 2' .1	○ 3'
28		.4 3' ○ 1' ● .2
29	● 1 3'	○ .4 2'
30	3 2' 1'	○ .4
31		.2 ○ 3' .1 4

Phases of the Eclipses of the Satellites for an inverting Telescope.

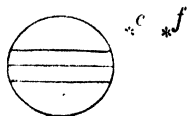
I.



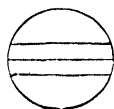
II.



III.



IV. No Eclipse



of this Satellite.

SATELLITES OF JUPITER, 1922. 537

SEPTEMBER.

MEAN TIME.

Day.	h m	Day.	h m	Day.	h m	Day.	h m
1	I. Tr. f. 0 52 I. Sh. f. 1 39 I. Im. 19 50 I. E. f. 22 50·8	8	I. Sh. c. 1 23 I. Tr. f. 2 52 I. Sh. f. 3 33 I. Im. 21 51	15	II. E. f. 3 35·1 I. Tr. f. 4 52 I. Sh. f. 5 27 I. Im. 23 52	22	I. Tr. f. 6 53 I. Sh. f. 7 22
2	II. Tr. c. 12 43 II. Sh. c. 14 23 II. Tr. f. 15 19 II. Sh. f. 16 52 I. Tr. c. 17 10 I. Sh. c. 17 57 I. Tr. f. 19 22 I. Sh. f. 20 7	9	I. E. f. 0 45·6 II. Tr. c. 15 32 II. Sh. c. 17 0 II. Tr. f. 18 8 I. Tr. c. 19 10 II. Sh. f. 19 29 I. Sh. c. 19 52 I. Tr. f. 21 22 I. Sh. f. 22 2	16	I. E. f. 2 40·4 II. Tr. c. 18 22 II. Sh. c. 19 37 II. Tr. f. 20 57 I. Tr. c. 21 11 I. Sh. c. 21 46 II. Sh. f. 22 5 I. Tr. f. 23 22 I. Sh. f. 23 56	23	I. Im. 1 54 I. E. f. 4 35·1 II. Tr. c. 21 13 II. Sh. c. 22 14 I. Tr. c. 23 11 I. Sh. c. 23 40 II. Tr. f. 23 47
3	I. Im. 14 21 I. E. f. 17 19·5 III. Tr. c. 23 47	10	I. Im. 16 22 I. E. f. 19 14·4	17	I. Im. 18 23 I. E. f. 21 9·1	24	II. Sh. f. 0 42 I. Tr. f. 1 23 I. Sh. f. 1 50 I. Im. 20 24 I. E. f. 23 3·9
4	III. Tr. f. 2 12 III. Sh. c. 3 5 III. Sh. f. 5 5 II. Im. 7 42 I. Tr. c. 11 40 II. E. f. 11 44·2 I. Sh. c. 12 26 I. Tr. f. 13 52 I. Sh. f. 14 37	11	III. Tr. c. 4 10 III. Tr. f. * 6 34 III. Sh. c. 7 4 III. Sh. f. 9 3 II. Im. 10 29 I. Tr. c. 13 40 II. E. f. 14 18·2 I. Sh. c. 14 20 I. Tr. f. 15 52 I. Sh. f. 16 30	18	III. Tr. c. 8 36 III. Tr. f. 10 58 III. Sh. c. 11 3 III. Sh. f. 13 2 II. Im. 13 16 I. Tr. c. 15 41 I. Sh. c. 16 14 II. E. f. 16 52·0 I. Tr. f. 17 52 I. Sh. f. 18 24	25	III. Tr. c. 13 2 III. Sh. c. 15 2 III. Tr. f. 15 22 II. Im. 16 3 III. Sh. f. 17 0 I. Tr. c. 17 41 I. Sh. c. 18 9 II. E. f. 19 25·7 I. Tr. f. 19 53 I. Sh. f. 20 19
5	I. Im. 8 51 I. E. f. 11 48·2	12	I. Im. 10 52 I. E. f. 13 43·0	19	I. Im. 12 53 I. E. f. 15 37·8	26	I. Im. 14 54 I. E. f. 17 32·5
6	II. Tr. c. 2 7 II. Sh. c. 3 41 II. Tr. f. 4 43 II. Sh. f. 6 10 I. Tr. c. 6 10 I. Sh. c. 6 55 I. Tr. f. 8 22 I. Sh. f. 9 5	13	II. Tr. c. 4 57 II. Sh. c. 6 18 II. Tr. f. 7 32 I. Tr. c. 8 10 II. Sh. f. 8 47 I. Sh. c. 8 49 I. Tr. f. 10 22 I. Sh. f. 10 59	20	II. Tr. c. 7 47 II. Sh. c. 8 55 I. Tr. c. 10 11 II. Tr. f. 10 22 I. Sh. c. 10 43 II. Sh. f. 11 23 I. Tr. f. 12 22 I. Sh. f. 12 53	27	II. Tr. c. 10 38 II. Sh. c. 11 32 I. Tr. c. 12 12 I. Sh. c. 12 37 II. Tr. f. 13 12 II. Sh. f. 14 0 I. Tr. f. 14 23 I. Sh. f. 14 47
7	I. Im. 3 21 I. E. f. 6 17·0 III. Im. 13 57 III. Em. 16 23 III. E. c. 17 5·5 III. E. f. 19 5·6 II. Im. 21 6	14	I. Im. 5 22 I. E. f. 8 11·8 III. Im. 18 22 III. Em. 20 46 III. E. c. 21 4·4 III. E. f. 23 3·7 II. Im. 23 52	21	I. Im. 7 23 I. E. f. 10 6·5 III. Im. 22 48	22	II. Im. 2 39 III. E. f. 3 1·6 I. Tr. c. 4 41 I. Sh. c. 5 12 II. E. f. 6 8·9
8	I. Tr. c. 0 40 II. E. f. 1 1·2	15	I. Tr. c. 2 41 I. Sh. c. 3 17				

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - Em.

Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

538 SATELLITES OF JUPITER, 1922.

SEPTEMBER.

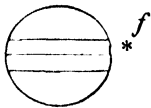
MEAN TIME.

Configurations at 6^h 30^m for an inverting Telescope.

Day.	West.			East.		
1			1 [•] ○	2 [•] 3		4
2			○	2 [•] 1	3 [•]	4
3			2 [•] 1 [•] ○	3 [•]		4 [•]
4			3 [•] 2 [•] ○	1 [•]		4 [•]
5			3 [•] 1 [•] ○	2 [•] 4 [•]		
6			3 [•] 2 [•] ○			1 ○
7			4 [•] 3 [•] ○	1 [•]		
8			4 [•] 1 [•] ○	2 [•] 3		
9			4 [•]	○	1 [•] 2 [•]	3
10			4 [•]	2 [•] 1 [•] ○	3 [•]	
11	3 ○	4	2 [•] ○	1 [•]		
12		4	3 [•] 1 [•] ○	2 [•]		
13	2 ○		4 [•] 3 [•] ○	1 [•]		
14	• ● 1		2 [•] 3 [•] ○			
15			1 [•] ○	4 [•] 2 [•] 3		
16			○	1 [•] 2 [•] 4 [•] 3		
17			2 [•] 1 [•] ○	3 [•]		4
18			2 [•] 3 ○	1 [•]		4
19			3 [•] 1 [•] ○	2 [•]		4 [•]
20			3 [•] 2 ○	1 [•]		4 [•]
21			2 [•] 3 [•] ○	1 [•]		4 [•]
22	1 ○		○	2 [•] 3 [•] 4 [•]		
23			4 [•] ○	1 [•] 2 [•] 3		
24			4 [•] 2 [•] ○	3 [•]		
25			4 [•] 2 [•] ○	3 [•] 1 [•]		
26			4 [•] 3 [•] 1 [•] ○	2 [•]		
27			4 [•] 3 [•] ○	2 [•] 1 [•]		

Phases of the Eclipses of the Satellites for an inverting Telescope.

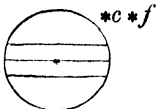
I.



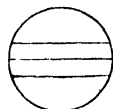
II.



III.



IV. No Eclipse



of this Satellite.

SATELLITES OF JUPITER, 1922. 539

NOVEMBER.

MEAN TIME.

JUPITER BEING NEAR THE SUN,
 THE PHENOMENA OF THE SATELLITES OF JUPITER
 ARE NOT GIVEN FROM SEPTEMBER 27 UNTIL NOVEMBER 17.

Day.	h m	Day.	h m	Day.	h m	Day.	h m
17	I. Em. 1 47 I. Sh. c. 20 22 I. Tr. c. 20 47 I. Sh. f. 22 31 I. Tr. f. 22 57	21	I. Sh. f. 11 28 I. Tr. f. 11 57 II. E. c. 13 27.8 II. Em. 16 52 III. Sh. c. 22 48	25	II. E. c. 2 44.5 II. Em. 6 15 III. E. c. 12 51.5 III. E. f. 14 43.3 III. Im. 15 2 III. Em. 17 2 I. E. c. 19 33.0 I. Em. 22 17	29	III. Sh. c. 2 45 III. Sh. f. 4 36 III. Tr. c. 5 8 III. Tr. f. 7 6 I. E. c. 8 29.9 I. Em. 11 17
18	II. E. c. 0 11.0 II. Em. 3 28 III. E. c. 8 53.3 III. Em. 12 38 I. E. c. 17 39.0 I. Em. 20 17	22	III. Sh. f. 0 40 III. Tr. c. 0 43 III. Tr. f. 2 44 I. E. c. 6 36.0 I. Em. 9 17	26	I. Sh. c. 16 44 I. Tr. c. 17 17 I. Sh. f. *18 53 I. Tr. f. 19 27 II. Sh. c. 21 43 II. Tr. c. 22 52	30	I. Sh. c. 5 40 I. Tr. c. 6 17 I. Sh. f. 7 50 I. Tr. f. 8 27 II. Sh. c. 11 1 II. Tr. c. 12 16 II. Sh. f. 13 26 II. Tr. f. 14 42
19	I. Sh. c. 14 50 I. Tr. c. 15 17 I. Sh. f. 17 0 I. Tr. f. 17 27 II. Sh. c. 19 7 II. Tr. c. 20 2 II. Sh. f. 21 33 II. Tr. f. 22 29	23	I. Sh. c. 3 47 I. Tr. c. 4 17 I. Sh. f. 5 56 I. Tr. f. 6 27 II. Sh. c. 8 25 II. Tr. c. 9 27 II. Sh. f. 10 50 II. Tr. f. 11 54	27	II. Sh. f. 0 8 II. Tr. f. 1 18 I. E. c. 14 1.5 I. Em. 16 47		
20	I. E. c. 12 7.6 I. Em. 14 47	24	I. E. c. 1 4.6 I. Em. 3 47 I. Sh. c. 22 15 I. Tr. c. 22 47	28	I. Sh. c. 11 12 I. Tr. c. 11 47 I. Sh. f. 13 21 I. Tr. f. 13 57 II. E. c. 16 1.3 II. Em. 19 38		
21	I. Sh. c. 9 18 I. Tr. c. 9 47	25	I. Sh. f. 0 25 I. Tr. f. 0 57				

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - Em.

Shadow commences - - - Sh. c
 „ finishes - - - Sh. f.

540 SATELLITES OF JUPITER, 1922.

NOVEMBER.

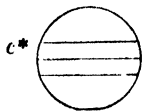
MEAN TIME.

Configurations at 18^h 30^m for an inverting Telescope.

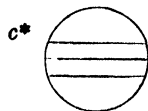
Day.	<i>West.</i>	<i>East.</i>
17	'4	'3 '2 ○ '1
18	● 1 '4	○ '3 '2
19	'4	'1 ○ '2 '3
20	'2 '4	○ '1 3
21	'1	○ '2 '4 3
22	'3	○ '1 '2 '4
23	'3	'2 '1 ○ '4
24	'3 '2	○ '1 '4
25	'1	○ '3 '2 '4
26	1. ○	○ '2 '3 '4
27	'2	○ '1 '3 '4
28	● 2	'1 ○ '3 '4
29	'3	○ '1 '2 4
30	'3 '4	'2 ○

Phases of the Eclipses of the Satellites for an inverting Telescope.

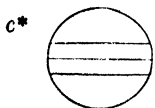
I.



II.

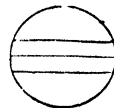


III.



IV.

No Eclipse



of this Satellite.

SATELLITES OF JUPITER, 1922. 541

DECEMBER.

MEAN TIME.

Day.	h m	Day.	h m	Day.	h m	Day.	h m
1	I. E. c. 2 58.5 I. Em. 5 47	9	I. Sh. f. 4 11 I. Tr. f. 4 56 II. E. c. 7 51.6 II. Em. 11 46 III. E. c. 20 48.5 III. E. f. 22 39.2 I. E. c. 23 20.6 III. Im. 23 53	17	III. E. c. 0 46.4 I. E. c. 1 14.2 III. E. f. 2 36.6 III. Im. 4 15 I. Em. 4 16 III. Em. 6 6 I. Sh. c. 22 24 I. Tr. c. 23 15	24	III. Em. 10 23
2	I. Sh. c. 0 9 I. Tr. c. 0 47 I. Sh. f. 2 18 I. Tr. f. 2 57 II. E. c. 5 18.0 II. Em. 9 1 III. E. c. 16 50.4 III. E. f. *18 41.5 III. Im. 19 28 III. Em. 21 25 I. E. c. 21 26.8	10	III. Em. 1 47 I. Em. 2 17 I. Sh. c. 20 30 I. Tr. c. 21 16 I. Sh. f. 22 40 I. Tr. f. 23 26	18	I. Sh. f. 0 33 I. Tr. f. 1 24 II. Sh. c. 5 30 II. Tr. c. 7 16 II. Sh. f. 7 54 II. Tr. f. 9 38 I. E. c. 19 42.7 I. Em. 22 46	25	I. Sh. c. 0 17 I. Tr. c. 1 13 I. Sh. f. 2 26 I. Tr. f. 3 22 II. Sh. c. 8 5 II. Tr. c. 10 1 II. Sh. f. 10 29 II. Tr. f. 12 23 I. E. c. 21 36.2
3	I. Em. 0 17 I. Sh. c. *18 37 I. Tr. c. 19 17 I. Sh. f. 20 46 I. Tr. f. 21 26	11	II. Sh. c. 2 54 II. Tr. c. 4 29 II. Sh. f. 5 19 II. Tr. f. 6 53 I. E. c. *17 49.1 I. Em. 20 47	19	I. Sh. c. *16 52 I. Tr. c. *17 45 I. Sh. f. *19 1 I. Tr. f. 19 54 II. E. c. 23 42.0	26	I. Em. 0 44 I. Sh. c. *18 45 I. Tr. c. 19 43 I. Sh. f. 20 54 I. Tr. f. 21 52
4	II. Sh. c. 0 19 II. Tr. c. 1 41 II. Sh. f. 2 44 II. Tr. f. 4 6 I. E. c. 15 55.3 I. Em. *18 47	12	I. Sh. c. 14 59 I. Tr. c. 15 46 I. Sh. f. *17 8 I. Tr. f. *17 55 II. E. c. 21 8.3	20	II. Em. 3 52 I. E. c. 14 11.0 III. Sh. c. 14 39 III. Sh. f. 16 28 I. Em. *17 16 III. Tr. c. *18 17 III. Tr. f. 20 6	27	II. E. c. 2 15.7 II. Em. 6 36 I. E. c. 16 4.5 III. Sh. c. *18 37 I. Em. *19 14 III. Sh. f. 20 25 III. Tr. c. 22 37
5	I. Sh. c. 13 5 I. Tr. c. 13 47 I. Sh. f. 15 15 I. Tr. f. 15 56 II. E. c. *18 34.8 II. Em. 22 23	13	II. Em. 1 8 III. Sh. c. 10 41 I. E. c. 12 17.4 III. Sh. f. 12 31 III. Tr. c. 13 56 I. Em. 15 17 III. Tr. f. 15 48	21	I. Sh. c. 11 20 I. Tr. c. 12 14 I. Sh. f. 13 29 I. Tr. f. 14 23 II. Sh. c. *18 47 II. Tr. c. 20 39 II. Sh. f. 21 11 II. Tr. f. 23 1	28	III. Tr. f. 0 22 I. Sh. c. 13 14 I. Tr. c. 14 12 I. Sh. f. 15 23 I. Tr. f. *16 21 II. Sh. c. 21 22 II. Tr. c. 23 24 II. Sh. f. 23 46
6	III. Sh. c. 6 43 III. Sh. f. 8 33 III. Tr. c. 9 32 I. E. c. 10 23.7 III. Tr. f. 11 27 I. Em. 13 17	14	I. Sh. c. 9 27 I. Tr. c. 10 15 I. Sh. f. 11 36 I. Tr. f. 12 25 II. Sh. c. 16 12 II. Tr. c. *17 52 II. Sh. f. *18 36 II. Tr. f. 20 16	22	I. E. c. 8 39.5 I. Em. 11 45	29	II. Tr. f. 2 45 I. E. c. 10 33.0 I. Em. 13 43
7	I. Sh. c. 7 34 I. Tr. c. 8 16 I. Sh. f. 9 43 I. Tr. f. 10 26 II. Sh. c. 13 36 II. Tr. c. 15 5 II. Sh. f. 16 1 II. Tr. f. *17 29	15	I. E. c. 6 45.9 I. Em. 9 47	23	I. Sh. c. 5 49 I. Tr. c. 6 44 I. Sh. f. 7 58 I. Tr. f. 8 53 II. E. c. 12 58.8 II. Em. *17 14	30	I. Sh. c. 7 42 I. Tr. c. 8 42 I. Sh. f. 9 51 I. Tr. f. 10 51 II. E. c. 15 32.5 II. Em. 19 57
8	I. E. c. 4 52.2 I. Em. 7 47	16	I. Sh. c. 3 55 I. Tr. c. 4 45 I. Sh. f. 6 5 I. Tr. f. 6 55 II. E. c. 10 25.2 II. Em. 14 30	24	I. E. c. 3 7.8 III. E. c. 4 43.9 I. Em. 6 15 III. E. f. 6 33.5 III. Im. 8 35	31	I. E. c. 5 1.3 I. Em. 8 13 III. E. c. 8 41.3 III. E. f. 10 30.4 III. Im. 12 53 III. Em. 14 38
9	I. Sh. c. 2 2 I. Tr. c. 2 46						

Eclipse commences - - - E. c.
 „ finishes - - - E. f.

Transit commences - - - Tr. c.
 „ finishes - - - Tr. f.

Occultation, immersion - - Im.
 „ emersion - - Em.

Shadow commences - - - Sh. c.
 „ finishes - - - Sh. f.

542 SATELLITES OF JUPITER, 1922.

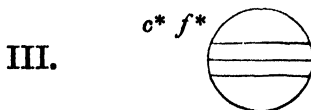
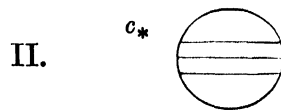
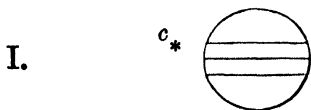
DECEMBER.

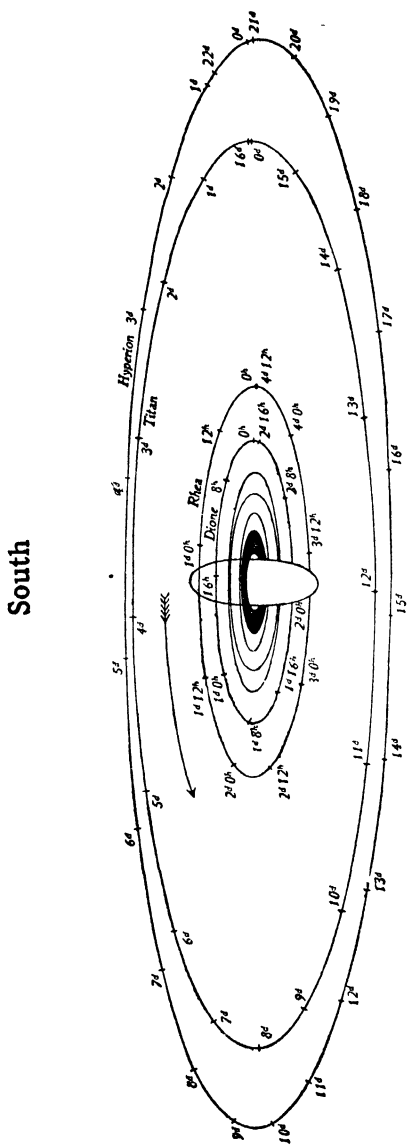
MEAN TIME.

Configurations at 18^h 0^m for an inverting Telescope.

Day.	West.	East.
1	4' .3 .2	○ 1'
2	4' .3	○ 1' 2'
3	4'	○ 1' 2' .3
4	4'	○ 3' ● 1
5	4'	○ 3'
6	4'	○ 3' 1' 2'
7	3' 1' 4 2'	○
8	3' 2'	○ 1' 4
9	1' 3'	○ 2' 4'
10		○ 1' 2' 3' 4'
11	2'	○ 3' 4'
12		○ 3' 4'
13		○ 3' 1' 2' 4'
14	3' 1'	○ 4' 2○
15	3' 2'	○ 1' 4'
16	3' 4'	○ 2'
17	4'	○ 1' 2' 3'
18	4' 2' 1'	○ 3'
19	4' 2'	○ 3' 1○
20	4'	○ 1' 2'
21	4' 3' 1'	○ 2'
22	4' 3' 2'	○ 1'
23	4' 3' 1'	○ 2'
24	4'	○ 3' 2'
25	2' 1'	○ 4' 3'
26	2'	○ 1' 3' 4'
27	● 1	○ 3' 2' 4'
28	3' 1'	○ 2' 4'
29	3' 2'	○ 1' 4'
30	● 2 3' 1'	○ 4'
31		○ 3' 1' 2' 4'
32		○ 4' 3'

Phases of the Eclipses of the Satellites for an inverting Telescope.





MEAN SYNODIC PERIODS.

	d	h
I.	0	22.6
II.	1	8.9
III.	1	21.3
IV.	2	17.7
V.	4	12.5
VI.	15	23.3
VII.	21	7.6
VIII.	79	22.1
IX.	523	15.6

North

- NAMES OF THE SATELLITES.**
- I. Mimas.
 - II. Enceladus.
 - III. Tethys.
 - IV. Dione.
 - V. Rhea.
 - VI. Titan.
 - VII. Hyperion.
 - VIII. Iapetus.
 - IX. Phœbe.

APPARENT ORBITS OF THE SEVEN INNER SATELLITES OF SATURN, AT DATE OF OPPOSITION, MARCH 25, 1922, AS SEEN IN AN INVERTING TELESCOPE, AND ELONGATED IN THE RATIO OF THREE TO ONE IN THE DIRECTION OF THEIR MINOR AXES.

544 SATELLITES OF SATURN, 1922.

MIMAS.

Greenwich Mean Time of Eastern Elongation.

	d	h		d	h		d	h		d	h		d	h				
Jan.	1	10.5	Feb.	10	0.4	Mar.	21	14.2	Apr.	30	4.0	June	8	18.0	July	18	8.1	
	2	9.1		10	23.0		22	12.8		May	1		2.6	9		16.6	19	6.7
	3	7.7		11	21.6		23	11.4			2		1.2	10		15.2	20	5.4
	4	6.4		12	20.2		24	10.0		2	23.8		11	13.8		21	4.0	
	5	5.0		13	18.8		25	8.6		3	22.5		12	12.4		22	2.6	
	6	3.6		14	17.4		26	7.2		4	21.1		13	11.0		23	1.3	
	7	2.2		15	16.0		27	5.9		5	19.7		14	9.6		23	23.9	
	8	0.8		16	14.7		28	4.5		6	18.3		15	8.3		Dec.	1	2.1
	8	23.4		17	13.3		29	3.1		7	16.9		16	6.9			2	0.7
	9	22.0		18	11.9		30	1.7		8	15.5		17	5.6		2	23.3	
	10	20.7		19	10.5		31	0.3		9	14.2		18	4.2		3	21.9	
	11	19.3		20	9.1		31	22.9		10	12.8		19	2.8		4	20.5	
	12	17.9		21	7.7		Apr.	1		21.5	11		11.4	20		1.4	5	19.1
	13	16.5		22	6.4			2		20.1	12		10.0	21		0.0	6	17.7
14	15.1	23	5.0	3	18.8	13	8.6	21	22.6	7	16.3							
15	13.7	24	3.6	4	17.4	14	7.3	22	21.3	8	15.0							
16	12.4	25	2.2	5	16.0	15	5.9	23	19.9	9	13.6							
17	11.0	26	0.8	6	14.6	16	4.5	24	18.5	10	12.2							
18	9.6	26	23.4	7	13.2	17	3.1	25	17.2	11	10.8							
19	8.2	27	22.0	8	11.8	18	1.7	26	15.8	12	9.5							
20	6.8	28	20.6	9	10.5	19	0.3	27	14.4	13	8.1							
21	5.5	Mar.	1	19.3	10	9.1	19	23.0	28	13.0	14	6.7						
22	4.1		2	17.9	11	7.7	20	21.6	29	11.6	15	5.4						
23	2.7	3	16.5	12	6.3	21	20.2	30	10.3	16	4.0							
24	1.3	4	15.1	13	4.9	22	18.8	July	1	8.9	17	2.6						
24	23.9	5	13.7	14	3.5	23	17.4		2	7.5	18	1.2						
25	22.5	6	12.3	15	2.1	24	16.1	3	6.2	18	23.8							
26	21.1	7	11.0	16	0.8	25	14.7	4	4.8	19	22.4							
27	19.8	8	9.6	16	23.4	26	13.3	5	3.4	20	21.1							
28	18.4	9	8.2	17	22.0	27	11.9	6	2.0	21	19.7							
29	17.0	10	6.8	18	20.6	28	10.5	7	0.6	22	18.4							
30	15.6	11	5.4	19	19.2	29	9.2	7	23.2	23	17.0							
31	14.2	12	4.0	20	17.8	30	7.8	8	21.8	24	15.6							
Feb.	1	12.8	13	2.6	21	16.4	31	6.4	9	20.5	25	14.2						
	2	11.4	14	1.2	22	15.1	June	1	5.0	10	19.1	26	12.8					
	3	10.1	14	23.8	23	13.7		2	3.6	11	17.8	27	11.4					
	4	8.7	15	22.5	24	12.3	3	2.3	12	16.4	28	10.0						
	5	7.3	16	21.1	25	10.9	4	0.9	13	15.0	29	8.6						
	6	5.9	17	19.7	26	9.5	4	23.5	14	13.6	30	7.3						
	7	4.5	18	18.3	27	8.1	5	22.1	15	12.2	31	5.9						
	8	3.1	19	16.9	28	6.8	6	20.7	16	10.9	32	4.5						
	9	1.7	20	15.5	29	5.4	7	19.4	17	9.5								

SATELLITES OF SATURN, 1922. 545

ENCELADUS.

Greenwich Mean Time of Eastern Elongation.

	d	h		d	h		d	h		d	h		d	h			
Jan.	1	17.3	Feb.	10	10.8	Mar.	22	4.2	Apr.	30	21.7	June	9	15.4	July	19	9.3
	3	2.1		11	19.7		23	13.1	May	2	6.6		11	0.3		20	18.2
	4	11.0		13	4.6		24	22.0		3	15.5		12	9.2		22	3.1
	5	19.9		14	13.5		26	6.9		5	0.4		13	18.0		23	12.0
	7	4.8		15	22.3		27	15.8		6	9.2		15	2.9		24	20.9
	8	13.7		17	7.2		29	0.6		7	18.1		16	11.8		26	5.8
	9	22.6		18	16.1		30	9.5		9	3.0		17	20.7		27	14.6
	11	7.4		20	1.0		31	18.4		10	11.9		19	5.6		28	23.5
	12	16.3		21	9.8	Apr.	2	3.3		11	20.8		20	14.5		30	8.4
	14	1.2		22	18.7		3	12.1		13	5.6		21	23.4		31	17.3
	15	10.1		24	3.6		4	21.0		14	14.5		23	8.3			
	16	19.0		25	12.5		6	5.9		15	23.4		24	17.2			
	18	3.9		26	21.4		7	14.8		17	8.3		26	2.1	Dec.	10	7.5
	19	12.7		28	6.2		8	23.6		18	17.2		27	11.0		11	16.4
	20	21.6	Mar.	1	15.1		10	8.5		20	2.1		28	19.9		13	1.3
	22	6.5		2	24.0		11	17.4		21	11.0		30	4.8		14	10.2
	23	15.4		4	8.9		13	2.3		22	19.8	July	1	13.6		15	19.1
	25	0.3		5	17.7		14	11.2		24	4.7		2	22.5		17	4.0
	26	9.1		7	2.6		15	20.0		25	13.6		4	7.4		18	12.8
	27	18.0		8	11.5		17	4.9		26	22.5		5	16.3		19	21.7
	29	2.9		9	20.4		18	13.8		28	7.4		7	1.2		21	6.6
	30	11.8		11	5.2		19	22.7		29	16.3		8	10.1		22	15.5
	31	20.7		12	14.1		21	7.6		31	1.2		9	19.0		24	0.4
Feb.	2	5.5		13	23.0		22	16.4	June	1	10.1		11	3.9		25	9.3
	3	14.4		15	7.9		24	1.3		2	18.9		12	12.8		26	18.2
	4	23.3		16	16.7		25	10.2		4	3.8		13	21.7		28	3.1
	6	8.2		18	1.6		26	19.1		5	12.7		15	6.6		29	12.0
	7	17.1		19	10.5		28	4.0		6	21.6		16	15.5		30	20.8
	9	1.9		20	19.4		29	12.8		8	6.5		18	0.4		32	5.7

TETHYS.

Greenwich Mean Time of Eastern Elongation.

	d	h		d	h		d	h		d	h		d	h			
Jan.	1	0.6	Jan.	19	21.6	Feb.	7	18.6	Feb.	26	15.6	Mar.	17	12.5	Apr.	5	9.4
	2	21.9		21	18.9		9	15.9		28	12.9		19	9.8		7	6.7
	4	19.2		23	16.2		11	13.2	Mar.	2	10.2		21	7.0		9	4.0
	6	16.5		25	13.5		13	10.5		4	7.4		23	4.3		11	1.3
	8	13.8		27	10.8		15	7.8		6	4.7		25	1.6		12	22.6
	10	11.1		29	8.1		17	5.1		8	2.0		26	22.9		14	19.8
	12	8.4		31	5.4		19	2.4		9	23.3		28	20.2		16	17.1
	14	5.7	Feb.	2	2.7		20	23.7		11	20.6		30	17.5		18	14.4
	16	3.0		4	0.0		22	21.0		13	17.9	Apr.	1	14.8		20	11.7
	18	0.3		5	21.3		24	18.3		15	15.2		3	12.1		22	9.0

546 SATELLITES OF SATURN, 1922.

TETHYS—*continued.*

Greenwich Mean Time of Eastern Elongation.

Apr.	d	h	May	d	h	June	d	h	June	d	h	July	d	h	Dec.	d	h	
	24	6.3		15	0.6		4	19.0		25	13.5		16	8.0		12	13.1	
	26	3.6		16	21.9		6	16.3		27	10.8		18	5.4		14	10.4	
	28	0.9		18	19.2		8	13.6		29	8.1		20	2.7		16	7.8	
	29	22.2		20	16.5		10	11.0		July	1	5.4		22	0.0		18	5.1
May	1	19.5		22	13.8		12	8.3			3	2.8		23	21.3		20	2.4
	3	16.8		24	11.2		14	5.6			5	0.1		25	18.6		21	23.7
	5	14.1		26	8.5		16	2.9			6	21.4		27	16.0		23	21.0
	7	11.4		28	5.8		18	0.2			8	18.7		29	13.3		25	18.4
	9	8.7		30	3.1		19	21.5			10	16.1					27	15.7
	11	6.0	June	1	0.4		21	18.8			12	13.4					29	13.0
	13	3.3		2	21.7		23	16.2			14	10.7	Dec.	10	15.8		31	10.3

DIONE.

Greenwich Mean Time of Eastern Elongation.

Jan.	d	h	Feb.	d	h	Mar.	d	h	May	d	h	June	d	h	July	d	h	
	1	6.7		11	7.9		24	8.7		4	9.6		14	10.9		25	12.6	
	4	0.4		14	1.6		27	2.4		7	3.3		17	4.6		28	6.3	
	6	18.1		16	19.2		29	20.0		9	20.9		19	22.3		31	0.0	
	9	11.8		19	12.9	Apr.	1	13.7		12	14.6		22	16.0				
	12	5.5		22	6.5		4	7.3		15	8.3		25	9.7				
	14	23.2		25	0.2		7	1.0		18	2.0		28	3.4		Dec.	9	11.3
	17	16.8		27	17.9		9	18.6		20	19.6		30	21.1			12	5.0
	20	10.5	Mar.	2	11.5		12	12.3		23	13.3	July	3	14.8			14	22.8
	23	4.2		5	5.2		15	6.0		26	7.0		6	8.5			17	16.5
	25	21.9		7	22.8		17	23.6		29	0.7		9	2.2			20	10.2
	28	15.6		10	16.5		20	17.3		31	18.4		11	20.0			23	3.9
	31	9.2		13	10.1		23	10.9	June	3	12.1		14	13.7			25	21.6
Feb.	3	2.9		16	3.8		26	4.6		6	5.8		17	7.4			28	15.3
	5	20.6		18	21.4		28	22.3		8	23.5		20	1.1			31	9.0
	8	14.2		21	15.1	May	1	15.9		11	17.2		22	18.8			34	2.7

RHEA.

Greenwich Mean Time of Eastern Elongation.

Jan.	d	h	Feb.	d	h	Mar.	d	h	May	d	h	June	d	h	July	d	h	
	3	21.2		13	12.8		26	3.8		5	18.9		15	10.6		26	3.0	
	8	9.6		18	1.1		30	16.1		10	7.3		19	23.0		30	15.5	
	12	22.1		22	13.5	Apr.	4	4.5		14	19.6		24	11.5				
	17	10.5		27	1.8		8	16.8		19	8.0		29	0.0				
	21	22.9	Mar.	3	14.2		13	5.1		23	20.4		July	3	12.5	Dec.	13	8.2
	26	11.3		8	2.5		17	17.5		28	8.9		8	1.0			17	20.7
	30	23.7		12	14.8		22	5.8	June	1	21.3		12	13.5			22	9.2
Feb.	4	12.1		17	3.2		26	18.2		6	9.7		17	2.0			26	21.7
	9	0.4		21	15.5	May	1	6.5		10	22.2		21	14.5			31	10.1

SATELLITES OF SATURN, 1922. 547

TITAN.

Greenwich Mean Time of Greatest Elongation.

d h		d h		d h		d h		d h		d h			
Jan.	1 19.2 E	Feb.	18 14.6 E	Apr.	7 7.6 E	May	25 1.6 E	July	11 22.7 E	Nov.	24 23.8 W		
	9 16.7 W		26 11.4 W		15 3.9 W	June	1 22.2 W		19 20.0 W	Dec.	3 0.9 E		
	17 18.1 E	Mar.	6 12.4 E		23 5.3 E		10 0.2 E		27 22.5 E		11 0.0 W		
	25 15.4 W		14 9.0 W	May	1 1.6 W		17 21.0 W	Aug.	4 20.0 W		19 0.8 E		
Feb.	2 16.5 E		22 10.0 E		9 3.3 E		25 23.3 E		12 22.5 E				
	10 13.6 W		30 6.4 W		16 23.7 W	July	3 20.3 W				26 23.8 W		

HYPERION.

Greenwich Mean Time of Greatest Elongation.

d h		d h		d h		d h		d h		d h			
Jan.	2 16.7 W	Feb.	14 2.5 W	Mar.	28 7.8 W	May	9 12.3 W	June	20 19.9 W				
	14 17.6 E		26 1.6 E	Apr.	9 6.2 E		21 11.6 E	July	2 20.7 E	Dec.	8 17.0 W		
	23 22.4 W	Mar.	7 5.5 W		18 9.8 W		30 15.6 W		12 1.3 W		20 19.7 E		
Feb.	4 22.3 E		19 4.1 E		30 8.5 E	June	11 15.6 E		24 3.0 E		30 3.4 W		

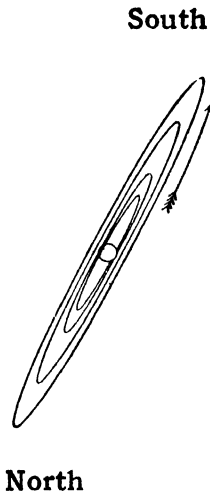
IAPETUS.

Greenwich Mean Time of Conjunction and Greatest Elongation.

d h		d h		d h		d h		d h		d h			
Jan.	3 18.1 S	Feb.	12 3.7 I	Mar.	23 9.5 S	May	1 9.4 I	June	9 21.6 S	Dec.	9 19.7 E		
	24 5.7 E	Mar.	3 2.6 W	Apr.	12 13.4 E		20 8.7 W		30 13.8 E		29 0.6 I		

ELEMENTS FOR DETERMINING THE GEOCENTRIC POSITION,
APPEARANCE, AND MAGNITUDE OF SATURN'S RINGS.

Greenwich Mean Midnight.	<i>a</i>	<i>b</i>	<i>P</i>	<i>B</i>	<i>U</i>	ω	<i>B'</i>	<i>U'</i>	Stellar Mag.
Jan. 7	40°33	+4°74	-3 22'6	+ 6 45'3	60 19'8	42 14'8	+4 8'7	12 49'3	+1.0
15	40°89	4°81	3 22'0	6 45'2	60 24'8	42 14'8	4 15'9	13 3'8	1.0
23	41°45	4°84	3 22'1	6 42'1	60 23'6	42 14'7	4 23'1	13 18'3	0.9
31	41°99	4°83	3 22'9	6 36'0	60 16'2	42 14'7	4 30'2	13 32'8	0.9
Feb. 8	42°48	4°77	3 24'3	6 27'1	60 2'9	42 14'7	4 37'4	13 47'3	0.9
16	42°92	+4°68	-3 26'2	+ 6 15'6	59 44'1	42 14'6	+4 44'5	14 1'7	+0.8
24	43°30	4°55	3 28'6	6 2'0	59 20'5	42 14'6	4 51'7	14 16'2	0.8
Mar. 4	43°60	4°39	3 31'4	5 46'6	58 52'9	42 14'6	4 58'8	14 30'7	0.7
12	43°80	4°20	3 34'5	5 30'0	58 22'3	42 14'5	5 5'9	14 45'2	0.7
20	43°91	3°99	3 37'8	5 12'7	57 49'7	42 14'5	5 13'1	14 59'6	0.7
28	43°92	+3°77	-3 41'2	+ 4 55'4	57 16'3	42 14'4	+5 20'2	15 14'1	+0.7
Apr. 5	43°83	3°54	3 44'5	4 38'6	56 43'2	42 14'4	5 27'3	15 28'6	0.7
13	43°64	3°33	3 47'7	4 22'9	56 11'6	42 14'4	5 34'4	15 43'0	0.8
21	43°36	3°14	3 50'6	4 8'8	55 42'5	42 14'3	5 41'4	15 57'5	0.8
29	43°00	2°96	3 53'1	3 56'8	55 16'9	42 14'3	5 48'5	16 11'9	0.9
May 7	42°57	+2°81	-3 55'2	+ 3 47'2	54 55'6	42 14'3	+5 55'6	16 26'4	+1.0
15	42°09	2°70	3 56'8	3 40'4	54 39'2	42 14'2	6 2'6	16 40'8	1.0
23	41°57	2°62	3 57'9	3 36'5	54 28'0	42 14'2	6 9'7	16 55'3	1.1
31	41°02	2°57	3 58'5	3 35'6	54 22'4	42 14'1	6 16'7	17 9'8	1.1
June 8	40°46	2°56	3 58'4	3 37'8	54 22'6	42 14'1	6 23'7	17 24'2	1.2
16	39°90	+2°59	-3 57'8	+ 3 43'0	54 28'6	42 14'1	+6 30'7	17 38'7	+1.2
24	39°35	2°65	3 56'7	3 51'0	54 40'2	42 14'0	6 37'7	17 53'1	1.2
July 2	38°81	2°73	3 55'0	4 1'8	54 57'2	42 14'0	6 44'7	18 7'6	1.2
10	38°29	2°84	3 52'8	4 15'2	55 19'5	42 14'0	6 51'7	18 22'0	1.2
18	37°81	2°98	3 50'1	4 31'0	55 46'7	42 13'9	6 58'6	18 36'5	1.2
26	37°37	+3°14	-3 46'9	+ 4 48'9	56 18'4	42 13'9	+7 5'6	18 50'9	+1.2
Aug. 3	36°96	3°31	3 43'4	5 8'7	56 54'3	42 13'8	7 12'5	19 5'4	1.2
11	36°60	3°51	3 39'4	5 30'2	57 34'0	42 13'8	7 19'5	19 19'8	1.2
19	36°28	3°72	3 35'0	5 53'1	58 16'9	42 13'8	7 26'4	19 34'3	1.2
27	36°01	3°94	3 30'4	6 17'2	59 2'8	42 13'7	7 33'3	19 48'8	1.2
Sept. 4	35°78	+4°18	-3 25'4	+ 6 42'1	59 51'1	42 13'7	+7 40'2	20 3'2	+1.2
12	35°61	4°42	3 20'2	7 7'6	60 41'4	42 13'7	7 47'1	20 17'7	1.1
20	35°50	4°67	3 14'9	7 33'5	61 33'2	42 13'6	7 54'0	20 32'2	1.1
28	35°43	4°93	3 9'3	7 59'6	62 26'2	42 13'6	8 0'9	20 46'6	1.0
Oct. 6	35°42	5°19	3 3'7	8 25'5	63 19'7	42 13'6	8 7'7	21 1'1	1.0
14	35°46	+5°45	-2 58'0	+ 8 51'0	64 13'3	42 13'5	+8 14'6	21 15'5	+1.0
22	35°56	5°72	2 52'4	9 15'8	65 6'4	42 13'5	8 21'4	21 30'0	1.0
30	35°71	5°99	2 46'8	9 39'7	65 58'5	42 13'4	8 28'2	21 44'4	1.0
Nov. 7	35°91	6°26	2 41'3	10 2'5	66 49'2	42 13'4	8 35'0	21 58'9	1.0
15	36°16	6°53	2 36'0	10 23'9	67 37'8	42 13'4	8 41'8	22 13'4	1.0
23	36°47	+6°79	-2 31'0	+10 43'6	68 23'8	42 13'3	+8 48'6	22 27'8	+1.0
Dec. 1	36°82	7°04	2 26'3	11 1'5	69 6'5	42 13'3	8 55'4	22 42'3	1.0
9	37°22	7°29	2 22'0	11 17'3	69 45'4	42 13'2	9 2'1	22 56'8	1.0
17	37°67	7°52	2 18'1	11 30'9	70 20'0	42 13'2	9 8'9	23 11'2	1.0
25	38°15	7°74	2 14'8	11 42'0	70 49'8	42 13'2	9 15'6	23 25'7	1.0
33	38°66	+7°93	-2 12'1	+11 50'6	71 14'2	42 13'1	+9 22'3	23 40'2	+0.9



APPARENT ORBITS OF THE SATELLITES OF URANUS AT DATE OF OPPOSITION, SEPT. 4, 1922, AS SEEN IN AN INVERTING TELESCOPE.

APPARENT APSIDES.

Date.	Position Angle.	Apparent Distance.			
		Ariel.	Umbriel.	Titania.	Oberon.
May 27	345°·4	13"·1	18"·2	29"·9	40"·0
Sept. 4	345°·6	13·9	19·3	31·7	42 4
Dec. 13	345°·9	13·1	18·2	29·9	39·9

In the above diagram the central circle represents the planet.

550 SATELLITES OF URANUS, 1922.

GREENWICH MEAN TIME OF GREATEST ELONGATION.

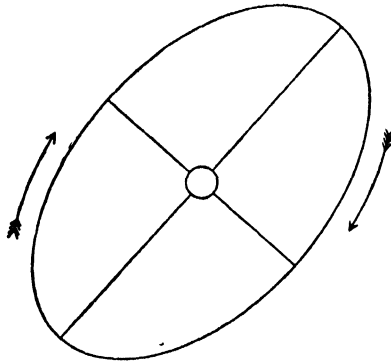
ARIEL.		UMBRIEL.		TITANIA.		OBERON.									
North.	South.	North.	South.	North.	South.	North and South.									
d	h	d	h	d	h	d									
June 1	18·5	June 5	13·2	May 22	4·3	May 24	6·0	May 10	14·8	May 14	23·2	June 16	8·0 N.		
	9	7·9	13	2·7	30	11·2	June 1	12·9	19	7·7	23	16·1	23	1·6 S.	
	16	21·4	20	16·1	June 7	18·1	9	19·8	28	0·6	June 1	9·1	29	19·1 N.	
	24	10·8	28	5·6	16	1·0	18	2·7	June 5	17·5	10	2·0	July 6	12·7 S.	
July 2	0·3	July 5	19·0	24	7·9	26	9·6	14	10·4	18	18·9	13	6·2 N.		
	9	13·8	13	8·5	July 2	14·8	July 4	16·6	23	3·4	27	11·8	19	23·8 S.	
	17	3·2	20	21·9	10	21·7	12	23·5	July 1	20·3	July 6	4·8	26	17·4 N.	
	24	16·7	28	11·4	19	4·6	21	6·4	10	13·2	14	21·7	Aug. 2	11·0 S.	
Aug. 1	6·1	Aug. 5	0·9	27	11·6	29	13·3	19	6·2	23	14·6	23	14·6	9	4·6 N.
	8	19·6	12	14·3	Aug. 4	18·5	Aug. 6	20·2	27	23·1	Aug. 1	7·6	15	22·1 S.	
	16	9·1	20	3·8	13	1·4	15	3·1	Aug. 5	16·1	10	0·5	22	15·7 N.	
	23	22·5	27	17·3	21	8·3	23	10·1	14	9·0	18	17·5	29	9·3 S.	
	31	12·0	Sept. 4	6·7	29	15·3	31	17·0	23	2·0	27	10·5	Sept. 5	2·9 N.	
Sept. 8	1·5	11	20·2	Sept. 6	22·2	Sept. 8	23·9	31	18·9	Sept. 5	3·4	11	20·5 S.		
	15	15·0	19	9·7	15	5·1	17	6·9	Sept. 9	11·9	13	20·4	18	14·1 N.	
	23	4·4	26	23·2	23	12·1	25	13·8	18	4·9	22	13·4	25	7·7 S.	
	30	17·9	Oct. 4	12·7	Oct. 1	19·0	Oct. 3	20·7	26	21·9	Oct. 1	6·3	Oct. 2	1·3 N.	
Oct. 8	7·4	12	2·1	10	1·9	12	3·7	Oct. 5	14·8	9	23·3	8	18·9 S.		
	15	20·9	19	15·6	18	8·9	20	10·6	14	7·8	18	16·3	15	12·5 N.	
	23	10·4	27	5·1	26	15·8	28	17·6	23	0·8	27	9·3	22	6·1 S.	
	30	23·8	Nov. 3	18·6	Nov. 3	22·8	Nov. 6	0·5	31	17·8	Nov. 5	2·2	28	23·7 N.	
Nov. 7	13·3	11	8·1	12	5·7	14	7·4	Nov. 9	10·7	13	19·2	Nov. 4	17·2 S.		
	15	2·8	18	21·6	20	12·6	22	14·4	18	3·7	22	12·2	11	10·8 N.	
	22	16·3	26	11·0	28	19·6	30	21·3	26	20·6	Dec. 1	5·1	18	4·4 S.	
	30	5·8	Dec. 4	0·5	Dec. 7	2·5	Dec. 9	4·2	Dec 5	13·6	9	22·0	24	22·0 N.	

For Ariel every third greatest elongation is given, and for Umbriel every alternate one; the intermediate ones may be found by adding multiples of the period of the satellite.

		d	h
Sidereal period of Ariel	..	2	12·489
Sidereal period of Umbriel	..	4	3·460
Sidereal period of Titania	..	8	16·941
Sidereal period of Oberon	..	13	11·118

SATELLITE OF NEPTUNE, 1922. 551

South



North

APPARENT ORBIT OF THE SATELLITE OF NEPTUNE AT DATE OF OPPOSITION, FEB. 3, 1922, AS SEEN IN AN INVERTING TELESCOPE.

Date.	Position Angle of Apsis.	Apparent Distance at Apsis.
Feb. 2	131.5°	16.8
Apr. 23	130.1	16.3
Oct. 15	134.5	16.0
Dec. 32	134.3	16.7

GREENWICH MEAN TIME OF GREATEST ELONGATION.

Jan.	Mar.	May	Sept.	Nov.
d h E.	d h W.	d h E.	d h E.	d h E.
3 12.0 E.	6 5.6 W.	6 23.0 E.	7 7.4 E.	5 1.2 E.
6 10.5 W.	9 4.2 E.	9 21.5 W.	10 5.9 W.	7 23.7 W.
9 9.0 E.	12 2.7 W.	12 20.0 E.	13 4.4 E.	10 22.2 E.
12 7.6 W.	15 1.3 E.	15 18.5 W.	16 2.9 W.	13 20.7 W.
15 6.1 E.	17 23.8 W.	18 17.0 E.	19 1.4 E.	16 19.2 E.
18 4.7 W.	20 22.4 E.	21 15.5 W.	21 23.8 W.	19 17.7 W.
21 3.2 E.	23 20.9 W.	24 14.0 E.	24 22.3 E.	22 16.3 E.
24 1.8 W.	26 19.5 E.	27 12.5 W.	27 20.8 W.	25 14.8 W.
27 0.3 E.	29 18.0 W.	30 11.0 E.	30 19.3 E.	28 13.3 E.
29 22.9 W.	Apr. 1 16.6 E.	June 2 9.5 W.	Oct. 3 17.8 W.	Dec. 1 11.8 W.
Feb. 1 21.5 E.	4 15.1 W.	5 8.0 E.	6 16.2 E.	4 10.3 E.
4 20.0 W.	7 13.6 E.	8 6.5 W.	9 14.7 W.	7 8.9 W.
7 18.6 E.	10 12.2 W.	11 5.0 E.	12 13.2 E.	10 7.4 E.
10 17.1 W.	13 10.7 E.	14 3.5 W.	15 11.7 W.	13 5.9 W.
13 15.7 E.	16 9.3 W.	17 2.0 E.	18 10.2 E.	16 4.5 E.
16 14.2 W.	19 7.8 E.	20 0.5 W.	21 8.7 W.	19 3.0 W.
19 12.8 E.	22 6.3 W.	22 23.0 E.	24 7.2 E.	22 1.5 E.
22 11.4 W.	25 4.9 E.	25 21.5 W.	27 5.7 W.	25 0.1 W.
25 9.9 E.	28 3.4 W.	28 20.0 E.	30 4.2 E.	27 22.6 E.
28 8.5 W.	May 1 1.9 E.	July 1 18.5 W.	Nov. 2 2.7 W.	30 21.1 W.
Mar. 3 7.0 E.	4 0.4 W.	4 17.0 E.		33 19.7 E.

In the above diagram the central circle represents the planet.
The sidereal period of the satellite of Neptune is 5^d 21^h 0.44.

	d	h	m			d	h	m		
Jan.	2	19	19	♃ ♂ ☾ - - ♃ 3 55' S.	Apr.	6	20	45	♃ ♂ ☾ - - ♃ 4 37' N.	
	3	5		Earth in Perihelion.		7	13		♃ greatest Hel. Lat. S.	
	8	11		♃ ☐ ☉		10	5	35	♃ ♂ ☾ - - ♃ 3 19' N.	
	9	13		♃ greatest Hel. Lat. S.		10	20	31	♃ ♂ ☾ - - ♃ 1 15' N.	
	14	16	33	♃ ♂ ☾ - - ♃ 4 28' N.		14	13		♃ in ♃	
	17	22		♃ Stationary.		15	16	49	♃ ♂ ☾ - - ♃ 5 6' S.	
	18	6	9	♃ ♂ ☾ - - ♃ 2 56' N.		22	8	21	♃ ♂ ☾ - - ♃ 3 14' S.	
	18	23	32	♃ ♂ ☾ - - ♃ 0 49' N.		22	15		♃ in ♃	
	20	20	50	♃ ♂ ☾ - - ♃ 1 34' S.		24	1		♃ Stationary.	
	27	8	15	♃ ♂ ☾ - - ♃ 5 46' S.		24	6		♃ Sup. ♂ ☉	
Feb.	28	14		♃ in ♃	26	13		♃ in ♃		
	29	6	51	♃ ♂ ☾ - - ♃ 3 25' S.	26	21	42	♃ ♂ ☾ - - ♃ 2 49' N.		
	29	11		♃ at greatest elong. 18 22 E.	28	7	22	♃ ♂ ☾ - - ♃ 4 13' N.		
	30	4	30	♃ ♂ ☾ - - ♃ 3 38' S.	May	1	4	♃ in Perihelion.		
	2	4		♃ in Perihelion.	3	23		♃ ☐ ☉		
	2	21		♃ in Aphelion.	4	3	1	♃ ♂ ☾ - - ♃ 4 31' N.		
	3	1		♃ Stationary.	7	11	53	♃ ♂ ☾ - - ♃ 3 21' N.		
	3	8		♃ greatest Hel. Lat. N.	7	15		♃ Stationary.		
	3	16		♃ ♂ ☉	8	1	8	♃ ♂ ☾ - - ♃ 1 26' N.		
	4	10		♃ Stationary.	11	11		♃ greatest Hel. Lat. N.		
Mar.	8	19		♃ Sup. ♂ ☉	13	7	7	♃ ♂ ☾ - - ♃ 6 18' S.		
	11	2	30	♃ ♂ ☾ - - ♃ 4 28' N.	19	17	35	♃ ♂ ☾ - - ♃ 3 1' S.		
	12	11		♃ greatest Hel. Lat. N.	23	7		♃ at greatest elong. 22 37 E.		
	13	22		♃ Inf. ♂ ☉	26	7		♃ in Perihelion.		
	14	13	38	♃ ♂ ☾ - - ♃ 2 55' N.	28	0	2	♃ ♂ ☾ - - ♃ 6 29' N.		
	15	7	36	♃ ♂ ☾ - - ♃ 0 42' N.	28	10	39	♃ ♂ ☾ - - ♃ 6 30' N.		
	18	6	28	♃ ♂ ☾ - - ♃ 2 59' S.	31	8	53	♃ ♂ ☾ - - ♃ 4 19' N.		
	19	16		♃ ☐ ☉	June	3	17	14	♃ ♂ ☾ - - ♃ 3 8' N.	
	24	4	49	♃ ♂ ♃ - - ♃ 0 46' S.	3	21		♃ in ♃		
	24	13	2	♃ ♂ ☾ - - ♃ 1 46' S.	4	0		♃ Stationary.		
Apr.	25	8		♃ greatest Hel. Lat. S.	4	5	48	♃ ♂ ☾ - - ♃ 1 16' N.		
	26	0		♃ Stationary.	4	11		♃ ☐ ☉		
	26	13	40	♃ ♂ ☾ - - ♃ 3 27' S.	5	10		♃ Stationary.		
	26	19	55	♃ ♂ ☾ - - ♃ 3 57' S.	6	8		♃ Stationary.		
	28	11		♃ ♂ ☉	9	4	54	♃ ♂ ☾ - - ♃ 7 44' S.		
	7	22		♃ in ♃	10	2		♃ ♂ ☉		
	10	12	30	♃ ♂ ☾ - - ♃ 4 34' N.	14	3		♃ in Aphelion.		
	12	7		♃ at greatest elong. 27 32 W.	16	2	3	♃ ♂ ☾ - - ♃ 2 46' S.		
	13	21	51	♃ ♂ ☾ - - ♃ 3 6' N.	17	3		♃ greatest Hel. Lat. N.		
	14	14	43	♃ ♂ ☾ - - ♃ 0 54' N.	17	21		♃ Inf. ♂ ☉		
May	18	4		♃ in Aphelion.	18	16		♃ Stationary.		
	18	14	25	♃ ♂ ☾ - - ♃ 4 7' S.	21	17	27	♃ enters Sign ♊, Solstice.		
	20	21	49	♃ enters Sign ♋, Equinox.	22	22		♃ ☐ ☉		
	25	5		♃ ♂ ☉	23	23	38	♃ ♂ ☾ - - ♃ 0 23' N.		
	25	14	21	♃ ♂ ♃ - - ♃ 1 34' S.	27	9	32	♃ ♂ ☾ - - ♃ 6 3' N.		
	25	22	57	♃ ♂ ☾ - - ♃ 3 21' S.	27	16	17	♃ ♂ ☾ - - ♃ 4 5' N.		
	26	0	5	♃ ♂ ☾ - - ♃ 4 54' S.	29	13		♃ Stationary.		
	28	1	12	♃ eclipsed, vis. at Greenh.	30	20	23	♃ ♂ ♃ - - ♃ 1 45' N.		
	29	2	54	♃ ♂ ☾ - - ♃ 0 7' N.	30	23	24	♃ ♂ ☾ - - ♃ 2 43' N.		
	Apr.	4	2	♃ ♂ ☉	July	1	12	32	♃ ♂ ☾ - - ♃ 0 48' N.	
4	8		♃ in Aphelion.							

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE SUN.

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Noon.	P	B ₀	L ₀	Noon.	P	B ₀	L ₀		
Jan.	1	+ 2°10	- 3°13	181°78	July	5	- 0°98	+ 3°39	259°99
	6	- 0°34	3°70	115°93		10	+ 1°29	3°91	193°81
	11	2°75	4°24	50°08		15	3°54	4°41	127°65
	16	5°12	4°74	344°24		20	5°75	4°87	61°49
	21	7°43	5°21	278°41		25	7°90	5°30	355°34
Feb.	26	- 9°66	- 5°64	212°58	Aug.	30	+ 9°98	+ 5°70	289°20
	31	11°79	6°02	146°75		4	11°97	6°05	223°08
	5	13°81	6°35	80°91		9	13°87	6°36	156°97
	10	15°70	6°64	15°08		14	15°66	6°63	90°87
	15	17°46	6°87	309°24		19	17°34	6°85	24°78
Mar.	20	- 19°08	- 7°05	243°39	Sept.	24	+ 18°90	+ 7°03	318°71
	25	20°55	7°17	177°54		29	20°33	7°15	252°65
	2	21°86	7°24	111°68		3	21°63	7°23	186°60
	7	23°02	7°25	45°81		8	22°78	7°25	120°57
	12	24°02	7°20	339°92		13	23°79	7°22	54°55
Apr.	17	- 24°85	- 7°10	274°01	Oct.	18	+ 24°64	+ 7°14	348°54
	22	25°50	6°95	208°09		23	25°33	7°00	282°55
	27	25°98	6°75	142°16		28	25°86	6°82	216°56
	1	26°29	6°50	76°20		3	26°22	6°58	150°58
	6	26°42	6°20	10°23		8	26°40	6°29	84°62
May	11	- 26°36	- 5°85	304°23	Nov.	13	+ 26°39	+ 5°96	18°66
	16	26°12	5°46	238°21		18	26°20	5°58	312°70
	21	25°69	5°04	172°17		23	25°82	5°15	246°76
	26	25°08	4°58	106°11		28	25°25	4°69	180°82
	1	24°29	4°08	40°04		2	24°48	4°19	114°89
June	6	- 23°32	- 3°56	333°95	Dec.	7	+ 23°51	+ 3°66	48°97
	11	22°17	3°02	267°84		12	22°34	3°10	343°05
	16	20°85	2°46	201°71		17	20°98	2°51	277°14
	21	19°37	1°88	135°57		22	19°44	1°90	211°23
	26	17°74	1°29	69°41		27	17°72	1°28	145°33
July	31	- 15°96	- 0°69	3°25	Dec.	2	+ 15°84	+ 0°65	79°44
	5	14°06	- 0°08	297°08		7	13°81	+ 0°01	13°55
	10	12°05	+ 0°52	230°90		12	11°66	- 0°63	307°66
	15	9°94	1°12	164°72		17	9°40	1°27	241°79
	20	7°76	1°71	98°53		22	7°05	1°90	175°93
Aug.	25	- 5°53	+ 2°29	32°35	Dec.	27	+ 4°65	- 2°51	110°07
	30	- 3°26	+ 2°85	326°17		32	+ 2°22	- 3°10	44°21

MEAN EQUATOR, ORBIT, AND MEAN LONGITUDE.

Noon.	Mean Equator.			Orbit.		Mean Longitude. (	Mean Solar Days.	Motion in Mean Longitude.
	<i>i</i>	Δ	Ω'	Γ'	Ω			
Jan. 0	24 56'4	12 54'6	+0 51'7	149 27'5	193 41'7	302 47'8	0.1	1 19'06
10	24 56'6	12 24'6	0 49'7	150 34'3	193 10'0	74 33'6	0.2	2 38'12
20	24 56'8	11 54'7	0 47'8	151 41'2	192 38'2	206 19'4	0.3	3 57'18
30	24 57'0	11 24'7	0 45'8	152 48'0	192 6'4	338 5'3	0.4	5 16'23
Feb. 9	24 57'2	10 54'7	0 43'8	153 54'8	191 34'6	109 51'1	0.5	6 35'29
							0.6	7 54'35
19	24 57'3	10 24'8	+0 41'8	155 1'7	191 2'9	241 37'0	0.7	9 13'41
Mar. 1	24 57'5	9 54'8	0 39'8	156 8'5	190 31'1	13 22'8	0.8	10 32'47
11	24 57'6	9 24'8	0 37'8	157 15'4	189 59'3	145 8'6	0.9	11 51'53
21	24 57'7	8 54'9	0 35'9	158 22'2	189 27'5	276 54'5	1.0	13 10'58
31	24 57'9	8 24'9	0 33'9	159 29'0	188 55'8	48 40'3	2.0	26 21'17
							3.0	39 31'75
Apr. 10	24 58'0	7 55'0	+0 31'9	160 35'9	188 24'0	180 26'2	4.0	52 42'33
20	24 58'1	7 25'0	0 29'9	161 42'7	187 52'2	312 12'0	5.0	65 52'92
30	24 58'2	6 55'0	0 27'9	162 49'6	187 20'5	83 57'8	6.0	79 3'50
May 10	24 58'3	6 25'1	0 25'9	163 56'4	186 48'7	215 43'7	7.0	92 14'09
20	24 58'4	5 55'2	0 23'9	165 3'3	186 16'9	347 29'5	8.0	105 24'67
							9.0	118 35'25
30	24 58'5	5 25'2	+0 21'9	166 10'1	185 45'1	119 15'3	10.0	131 45'84
June 9	24 58'5	4 55'3	0 19'8	167 17'0	185 13'4	251 1'2		
19	24 58'6	4 25'3	0 17'8	168 23'8	184 41'6	22 47'0		
29	24 58'7	3 55'4	0 15'8	169 30'6	184 9'8	154 32'9	Hrs.	
July 9	24 58'7	3 25'5	0 13'8	170 37'5	183 38'0	286 18'7	1	0 32'94
							2	1 5'88
19	24 58'8	2 55'5	+0 11'8	171 44'3	183 6'3	58 4'5	3	1 38'82
29	24 58'8	2 25'6	0 9'8	172 51'2	182 34'5	189 50'4	4	2 11'76
Aug. 8	24 58'8	1 55'7	0 7'8	173 58'0	182 2'7	321 36'2	5	2 44'70
18	24 58'9	1 25'7	0 5'8	175 4'8	181 31'0	93 22'0	6	3 17'65
28	24 58'9	0 55'8	0 3'8	176 11'7	180 59'2	225 7'9	7	3 50'59
							8	4 23'53
Sept. 7	24 58'9	0 25'8	+0 1'7	177 18'5	180 27'4	356 53'7	9	4 56'47
17	24 58'9	359 55'9	-0 0'3	178 25'4	179 55'6	128 39'6	10	5 29'41
27	24 58'9	359 25'9	0 2'3	179 32'2	179 23'9	260 25'4	11	6 2'35
Oct. 7	24 58'9	358 56'0	0 4'3	180 39'1	178 52'1	32 11'2	12	6 35'29
17	24 58'9	358 26'1	0 6'3	181 45'9	178 20'3	163 57'1	13	7 8'23
							14	7 41'17
27	24 58'8	357 56'1	-0 8'3	182 52'7	177 48'5	295 42'9	15	8 14'11
Nov. 6	24 58'8	357 26'2	0 10'4	183 59'6	177 16'8	67 28'7	16	8 47'06
16	24 58'8	356 56'2	0 12'4	185 6'4	176 45'0	199 14'6	17	9 20'00
26	24 58'7	356 26'3	0 14'4	186 13'3	176 13'2	331 0'4	18	9 52'94
Dec. 6	24 58'6	355 56'4	0 16'4	187 20'1	175 41'5	102 46'3	19	10 25'88
							20	10 58'82
16	24 58'6	355 26'4	-0 18'4	188 26'9	175 9'7	234 32'1	21	11 31'76
26	24 58'5	354 56'5	0 20'4	189 33'8	174 37'9	6 17'9	22	12 4'70
36	24 58'4	354 26'6	-0 22'4	190 40'6	174 6'1	138 3'8	23	12 37'64

Daily motion of Γ' +6''.684
 Daily motion of Ω -3''.177

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Mid-night.	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		0	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when Observable.				
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.	"	
Jan.	1	+0.25	-5.10	+0.01	-0.03	311.84	+1.55	340.24				
	2	-1.10	4.14	+0.01	0.03	324.01	1.55	337.57	I.		S.	
	3	2.50	3.01	0.00	0.03	336.19	1.55	335.84	I.		S.	
	4	3.88	1.74	0.00	0.03	348.36	1.55	335.08	I.		S.	
	5	5.15	0.38	0.00	0.03	0.52	1.54	335.33	I.		S.	
	6	-6.20	+1.02	0.00	-0.03	12.67	+1.54	336.65	I.		S.	
	7	6.95	2.40	0.00	0.02	24.82	1.54	339.08	I.		S.	
	8	7.30	3.70	0.00	0.02	36.97	1.53	342.64	I.		S.	
	9	7.18	4.85	0.00	0.02	49.10	1.53	347.29	I.		S.	
	10	6.56	5.75	0.00	0.02	61.23	1.52	352.89	I.		S.	
	11	-5.44	+6.34	0.00	-0.02	73.36	+1.51	359.16	I.		S.	
	12	3.92	6.52	0.00	0.02	85.48	1.50	5.63	I.		S.	
	13	2.11	6.27	0.00	0.02	97.61	1.50	11.79	II.		S.	
	14	-0.19	5.58	0.00	0.02	109.73	1.49	17.10	II.		S.	
	15	+1.67	4.51	0.00	0.02	121.86	1.48	21.18	II.		S.	
	16	+3.31	+3.14	0.00	-0.02	133.99	+1.47	23.81	II.		S.	
	17	4.65	+1.58	0.00	0.02	146.13	1.46	24.90	II.		S.	
	18	5.63	-0.04	0.00	0.02	158.27	1.45	24.49	II.		S.	
	19	6.24	1.62	0.00	0.02	170.42	1.44	22.69	II.		S.	
	20	6.52	3.07	0.00	0.03	182.58	1.44	19.67	II.		S.	
	21	+6.51	-4.33	0.00	-0.03	194.75	+1.43	15.64	II.		S.	
	22	6.26	5.34	0.00	0.03	206.92	1.43	10.82	II.		S.	
	23	5.79	6.06	0.00	0.03	219.10	1.43	5.49				
	24	5.14	6.48	0.00	0.03	231.28	1.42	359.96				
	25	4.34	6.60	0.00	0.03	243.46	1.42	354.51				
	26	+3.39	-6.41	0.00	-0.03	255.65	+1.41	349.42				
	27	2.30	5.93	0.00	0.03	267.84	1.41	344.91				
	28	+1.09	5.20	0.00	0.03	280.04	1.40	341.13				
	29	-0.23	4.25	0.00	0.03	292.23	1.39	338.21				
	30	1.62	3.11	0.00	0.03	304.41	1.38	336.21				
31	-3.03	-1.85	0.00	-0.03	316.60	+1.36	335.18					
Feb.	1	4.41	-0.50	0.00	0.03	328.78	1.35	335.15	I.		S.	
	2	5.69	+0.89	-0.01	0.03	340.96	1.33	336.15	I.		S.	
	3	6.77	2.26	0.01	0.03	353.13	1.32	338.20	I.		S.	
	4	7.57	3.56	0.01	0.02	5.29	1.30	341.31	I.		S.	
	5	-8.01	+4.71	-0.01	-0.02	17.45	+1.28	345.46	I.		S.	
	6	7.99	5.66	0.01	0.02	29.60	1.26	350.56	I.		S.	
	7	7.47	6.32	0.01	0.02	41.75	1.24	356.42	I.		S.	
	8	6.44	6.62	0.01	0.02	53.89	1.22	2.72	I.		S.	0.93
	9	4.93	6.51	0.01	0.02	66.03	1.19	9.01	I.		S.	0.07
	10	-3.07	+5.95	-0.01	-0.02	78.16	+1.17	14.77	I.		S.	0.23
	11	-0.99	4.97	0.01	0.02	90.29	1.14	19.51	I.	0.04	S.	
	12	+1.11	3.62	0.01	0.02	102.42	1.12	22.88	II.		S.	
	13	3.06	2.03	-0.01	0.02	114.55	1.09	24.66	II.		S.	
	14	4.71	+0.32	0.00	0.02	126.69	1.07	24.80	II.		S.	
	15	+5.99	-1.38	0.00	-0.02	138.83	+1.04	23.40	II.		S.	
	16	+6.84	-2.94	0.00	-0.02	150.98	+1.02	20.64	II.		S.	

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Mid-night.	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when Observable.			
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	S	Dec.	
Feb. 16	+6°84	-2°94	0°00	-0°02	150°98	+1°02	20°64	II.		S.	"
17	7°28	4°28	0°00	0°02	163°14	1°00	16°75	II.		S.	
18	7°33	5°36	0°00	0°02	175°31	0°98	12°02	II.		S.	
19	7°04	6°14	0°00	0°02	187°48	0°97	6°74	II.		S.	
20	6°46	6°60	0°00	0°02	199°66	0°95	1°22	II.		S.	
21	+5°66	-6°74	0°00	-0°02	211°84	+0°94	355°74	II.		N.	
22	4°67	6°58	0°00	0°02	224°03	0°92	350°58				
23	3°53	6°13	0°00	0°02	236°22	0°91	345°94				
24	2°28	5°41	-0°01	0°02	248°42	0°89	341°98				
25	+0°96	4°47	0°01	0°02	260°62	0°87	338°84				
26	-0°42	-3°34	-0°01	-0°02	272°82	+0°86	336°61				
27	1°81	2°06	0°01	0°02	285°03	0°84	335°33				
28	3°18	-0°69	0°01	0°02	297°23	0°82	335°05				
Mar. 1	4°48	+0°72	0°01	0°02	309°43	0°79	335°80				
2	5°66	2°11	0°01	0°02	321°62	0°77	337°59				
3	-6°67	+3°43	-0°01	-0°02	333°81	+0°75	340°41	I.		S.	
4	7°42	4°61	0°01	0°02	346°00	0°72	344°22	I.		S.	
5	7°85	5°59	0°01	0°02	358°18	0°70	348°94	I.		S.	
6	7°91	6°31	0°01	0°02	10°36	0°67	354°42	I.		S.	
7	7°53	6°71	0°01	0°02	22°53	0°64	0°40	I.		S.	0°40
8	-6°71	+6°73	-0°01	-0°02	34°69	+0°61	6°52	I.		N.	0°84
9	5°44	6°33	0°01	0°02	46°85	0°57	12°38	I.		N.	
10	3°81	5°51	0°01	0°02	59°00	0°54	17°51	I.		N.	
11	-1°91	4°29	0°01	0°02	71°15	0°50	21°49	I.		N.	
12	+0°11	2°76	0°01	0°02	83°29	0°47	24°03	I.		S.	0°00
13	+2°09	+1°03	-0°01	-0°02	95°44	+0°43	24°94	II.		S.	
14	3°89	-0°76	0°01	0°02	107°59	0°40	24°20	II.		S.	
15	5°37	2°46	0°01	0°02	119°74	0°36	21°91	II.		S.	
16	6°45	3°96	0°01	0°02	131°89	0°33	18°30	II.		S.	
17	7°11	5°18	0°01	0°02	144°06	0°30	13°67	II.		S.	
18	+7°33	-6°07	-0°01	-0°02	156°22	+0°28	8°37	II.		S.	
19	7°15	6°63	0°01	0°02	168°40	0°25	2°75	II.		S.	0°12
20	6°62	6°84	0°01	0°02	180°58	0°23	357°15	II.		N.	
21	5°79	6°73	0°01	0°02	192°77	0°21	351°83	II.		N.	
22	4°73	6°33	0°01	0°02	204°97	0°19	347°02	II.		N.	
23	+3°50	-5°66	-0°01	-0°02	217°17	+0°17	342°89				
24	2°16	4°75	0°01	0°02	229°38	0°15	339°54				
25	+0°77	3°64	0°01	0°02	241°59	0°13	337°07				
26	-0°62	2°37	0°01	0°02	253°80	0°11	335°55				
27	1°96	-1°00	0°01	0°02	266°02	0°09	335°02				
28	-3°22	+0°42	-0°01	-0°02	278°24	+0°06	335°52				
29	4°36	1°84	0°02	0°02	290°46	0°04	337°07				
30	5°34	3°20	0°02	0°02	302°67	+0°02	339°67				
31	6°12	4°42	0°02	0°02	314°89	-0°01	343°27				
Apr. 1	6°67	5°45	0°02	0°02	327°10	0°03	347°78	I.		S.	
2	-6°95	+6°22	-0°02	-0°02	339°30	-0°06	353°04	I.		S.	
3	-6°94	+6°69	-0°02	-0°02	351°50	-0°09	358°81	I.		S.	

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Mid-night.	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when Observable.				
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	S	Dec.		
Apr.	1	-6.67	+5.45	-0.02	-0.02	327.10	-0.03	347.78	I.		S.	"
	2	6.95	6.22	0.02	0.02	339.30	0.06	353.04	I.		S.	
	3	6.94	6.69	0.02	0.02	351.50	0.09	358.81	I.		S.	
	4	6.60	6.80	0.02	0.02	3.70	0.12	4.78	I.		N.	
	5	5.92	6.53	0.02	0.02	15.89	0.15	10.58	I.		N.	
	6	-4.92	+5.86	-0.02	-0.02	28.07	-0.19	15.81	I.		N.	
	7	3.63	4.81	0.01	0.02	40.25	0.22	20.11	I.		N.	
	8	2.10	3.42	0.01	0.02	52.42	0.26	23.17	I.		N.	
	9	-0.42	1.79	0.01	0.02	64.58	0.29	24.75	I.		N.	
	10	+1.30	+0.02	0.01	0.02	76.75	0.33	24.74	I.		N.	
	11	+2.93	-1.73	-0.01	-0.02	88.91	-0.37	23.13	II.	0.06	S.	0.02
	12	4.37	3.35	0.01	0.02	101.07	0.40	20.04	II.		S.	
	13	5.51	4.72	0.01	0.02	113.24	0.44	15.71	II.		S.	
	14	6.28	5.77	0.01	0.02	125.41	0.47	10.50	II.		S.	
	15	6.63	6.46	0.01	0.02	137.58	0.50	4.80	II.		S.	0.05
	16	+6.57	-6.79	-0.01	-0.02	149.77	-0.52	359.00	II.		N.	
	17	6.12	6.78	0.01	0.02	161.95	0.54	353.44	II.		N.	
	18	5.34	6.44	0.01	0.02	174.15	0.57	348.37	II.		N.	
	19	4.29	5.83	0.01	0.02	186.35	0.59	343.97	II.		N.	
	20	3.04	4.98	0.01	0.02	198.56	0.60	340.38	II.		N.	
	21	+1.68	-3.92	-0.01	-0.02	210.78	-0.62	337.66	II.		N.	
	22	+0.28	2.69	0.01	0.02	223.00	0.64	335.87				
	23	-1.09	-1.35	0.01	0.02	235.22	0.66	335.06				
	24	2.35	+0.06	0.01	0.02	247.45	0.67	335.27				
	25	3.47	1.49	0.01	0.02	259.68	0.69	336.54				
	26	-4.39	+2.86	-0.01	-0.02	271.91	-0.71	338.88				
	27	5.08	4.12	0.01	0.02	284.15	0.73	342.27				
	28	5.54	5.20	0.02	0.02	296.38	0.75	346.63				
	29	5.75	6.02	0.02	0.02	308.61	0.77	351.79				
	30	5.72	6.55	0.02	0.02	320.84	0.79	357.51				
May	1	-5.45	+6.73	-0.02	-0.02	333.07	-0.81	3.47	I.		N.	
	2	4.97	6.53	0.01	0.02	345.29	0.83	9.29	I.		N.	
	3	4.29	5.96	0.01	0.02	357.50	0.86	14.60	I.		N.	
	4	3.43	5.02	0.01	0.02	9.70	0.88	19.06	I.		N.	
	5	2.40	3.76	0.01	0.02	21.90	0.91	22.40	I.		N.	
	6	-1.24	+2.25	-0.01	-0.02	34.10	-0.94	24.40	I.		N.	
	7	+0.02	+0.59	0.01	0.02	46.29	0.97	24.94	I.		N.	
	8	1.32	-1.11	0.01	0.02	58.47	1.00	23.95	I.		N.	
	9	2.59	2.74	0.01	0.02	70.65	1.03	21.47	I.		N.	
	10	3.75	4.17	-0.01	0.02	82.83	1.06	17.65	I.	0.06	N.	1.22
	11	+4.70	-5.33	0.00	-0.02	95.01	-1.09	12.75	II.		N.	0.08
	12	5.36	6.15	0.00	0.02	107.19	1.12	7.15	II.		N.	0.09
	13	5.68	6.60	0.00	0.02	119.37	1.14	1.25	II.		N.	1.22
	14	5.63	6.69	0.00	0.02	131.56	1.16	355.44	II.		N.	
	15	5.21	6.44	0.00	0.02	143.75	1.18	350.06	II.		N.	
	16	+4.45	-5.90	0.00	-0.02	155.95	-1.19	345.33	II.		N.	
	17	+3.41	-5.10	-0.01	-0.02	168.15	-1.21	341.41	II.		N.	

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Mid-night.	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when Observable.					
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.			
May	17	+3.41	-5.10	-0.01	-0.02	168.15	-1.21	341.41	II.		N.	"	
	18	2.17	4.09	0.01	0.02	180.37	1.22	338.39	II.		N.		
	19	+0.81	2.91	0.01	0.02	192.58	1.23	336.30	II.		N.		
	20	-0.58	1.61	0.01	0.02	204.81	1.24	335.19	II.		N.		
	21	1.91	-0.24	0.01	0.01	217.04	1.25	335.09	II.		N.		
	22	-3.09	+1.16	-0.01	-0.01	229.27	-1.26	336.03					
	23	4.07	2.53	0.01	0.01	241.51	1.26	338.04					
	24	4.77	3.80	0.01	0.01	253.76	1.27	341.12					
	25	5.18	4.91	0.01	0.01	266.00	1.28	345.24					
	26	5.28	5.78	0.01	0.01	278.25	1.29	350.26					
	27	-5.08	+6.36	-0.01	-0.01	290.49	-1.30	355.95					
	28	4.64	6.59	0.01	0.01	302.74	1.31	1.99					
	29	3.99	6.45	0.01	0.01	314.98	1.32	7.98					
	30	3.21	5.93	0.01	0.01	327.22	1.34	13.50	I.		N.		
	31	2.34	5.04	0.01	0.01	339.45	1.35	18.19	I.		N.		
	June	1	-1.43	+3.85	-0.01	-0.01	351.68	-1.36	21.78	I.		N.	
		2	-0.49	2.41	-0.01	0.01	3.90	1.38	24.07	I.		N.	
		3	+0.45	+0.83	0.00	0.01	16.11	1.39	24.95	I.		N.	
		4	1.38	-0.80	0.00	0.01	28.31	1.41	24.38	I.		N.	
		5	2.28	2.38	0.00	0.01	40.51	1.43	22.38	I.		N.	
		6	+3.13	-3.81	0.00	-0.01	52.71	-1.45	19.05	I.		N.	
		7	3.89	5.00	0.00	0.01	64.90	1.46	14.59	I.		N.	
		8	4.48	5.88	0.00	0.01	77.09	1.48	9.26	I.		N.	
		9	4.86	6.41	0.00	0.01	89.28	1.50	3.45	II.		N.	
		10	4.98	6.58	0.00	0.01	101.47	1.51	357.55	II.		N.	
		11	+4.78	-6.41	0.00	-0.01	113.66	-1.52	351.94	II.		N.	
		12	4.27	5.92	0.00	0.01	125.85	1.52	346.90	II.		N.	
		13	3.46	5.17	0.00	0.01	138.05	1.53	342.64	II.		N.	
		14	2.39	4.19	0.00	0.01	150.26	1.53	339.27	II.		N.	
		15	+1.13	3.05	0.00	0.01	162.47	1.53	336.86	II.		N.	
		16	-0.24	-1.78	0.00	-0.01	174.69	-1.53	335.44	II.		N.	
17		1.63	-0.44	0.00	0.01	186.91	1.53	335.01	II.		N.		
18		2.95	+0.94	0.00	0.01	199.14	1.53	335.60	II.		N.		
19		4.09	2.28	0.00	0.01	211.37	1.53	337.24	II.		N.		
20		4.97	3.55	0.00	0.01	223.61	1.53	339.94	II.		N.		
21		-5.53	+4.67	0.00	-0.01	235.85	-1.52	343.69					
22		5.72	5.58	-0.01	0.01	248.10	1.52	348.42					
23		5.52	6.22	-0.01	0.01	260.35	1.52	353.95					
24		4.96	6.52	0.00	0.01	272.61	1.51	0.00					
25		4.10	6.44	0.00	0.01	284.86	1.51	6.18					
26		-3.03	+5.96	0.00	-0.01	297.11	-1.51	12.01					
27		1.85	5.10	0.00	0.01	309.36	1.51	17.08					
28		-0.65	3.92	0.00	0.01	321.60	1.51	21.05	I.		N.		
29		+0.49	2.49	0.00	0.01	333.84	1.50	23.68	I.		N.		
30		1.53	+0.91	0.00	0.01	346.08	1.51	24.88	I.		N.		
July		1	+2.44	-0.71	0.00	-0.01	358.30	-1.51	24.62	I.		N.	
	2	+3.22	-2.28	0.00	-0.01	10.52	-1.51	22.95	I.		N.		

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Mid-night.	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		0	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when Observable.				
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	S	Dec.		
July	1	+2.44	-0.71	0.00	-0.01	358.30	-1.51	24.62	I.		N.	"
	2	3.22	2.28	0.00	0.01	10.52	1.51	22.95	I.		N.	
	3	3.87	3.69	+0.01	0.01	22.73	1.51	19.97	I.		N.	
	4	4.38	4.88	0.01	0.01	34.94	1.52	15.85	I.		N.	
	5	4.75	5.77	0.01	0.01	47.14	1.52	10.83	I.		N.	
	6	+4.96	-6.34	+0.01	-0.01	59.34	-1.52	5.23	I.		N.	
	7	4.98	6.56	0.01	0.01	71.53	1.52	359.40	I.		N.	
	8	4.77	6.44	0.01	0.01	83.72	1.52	353.70	I.	0.04	N.	
	9	4.31	6.00	0.01	0.01	95.92	1.52	348.46	II.		N.	
	10	3.61	5.28	0.01	0.01	108.11	1.51	343.92	II.		N.	
	11	+2.66	-4.32	+0.01	-0.01	120.30	-1.51	340.24	II.		N.	
	12	1.50	3.19	0.01	0.01	132.50	1.50	337.51	II.		N.	
	13	+0.18	1.93	+0.01	0.01	144.71	1.49	335.77	II.		N.	
	14	-1.22	-0.59	0.00	0.01	156.92	1.48	335.03	II.		N.	
	15	2.62	+0.78	0.00	0.01	169.13	1.46	335.30	II.		N.	
	16	-3.94	+2.12	0.00	-0.01	181.35	-1.45	336.59	II.		N.	
	17	5.07	3.39	0.00	0.01	193.58	1.44	338.91	II.		N.	
	18	5.93	4.52	0.00	0.01	205.81	1.42	342.24	II.		N.	
	19	6.44	5.47	0.00	0.01	218.04	1.41	346.56	II.		N.	
	20	6.53	6.17	0.00	0.01	230.29	1.39	351.75				
	21	-6.17	+6.55	0.00	-0.01	242.53	-1.38	357.61				
	22	5.39	6.56	0.00	0.01	254.78	1.36	3.80				
	23	4.24	6.16	0.00	0.01	267.03	1.35	9.89				
	24	2.82	5.36	0.00	0.01	279.29	1.33	15.39				
	25	-1.25	4.20	0.00	0.01	291.54	1.32	19.88				
	26	+0.32	+2.75	+0.01	-0.01	303.79	-1.30	23.04				
	27	1.80	+1.12	0.01	0.01	316.03	1.29	24.70				
	28	3.10	-0.56	0.01	0.01	328.27	1.28	24.82	I.		N.	
	29	4.17	2.19	0.01	0.01	340.50	1.26	23.45	I.		N.	
	30	4.99	3.65	0.01	0.01	352.73	1.25	20.72	I.		N.	
Aug.	31	+5.56	-4.87	+0.01	-0.01	4.95	-1.24	16.82	I.		N.	
	1	5.89	5.80	0.02	0.01	17.16	1.23	12.01	I.		N.	
	2	6.00	6.40	0.02	0.01	29.36	1.22	6.58	I.		N.	
	3	5.88	6.65	0.02	0.01	41.56	1.21	0.85	I.		N.	
	4	5.55	6.57	0.02	0.01	53.76	1.19	355.17	I.		N.	0.26
	5	+5.01	-6.16	+0.02	-0.01	65.95	-1.18	349.84	I.		N.	0.03
	6	4.27	5.47	0.02	0.01	78.14	1.16	345.12	I.		N.	0.23
	7	3.32	4.54	0.01	0.01	90.33	1.15	341.20	II.	0.06	N.	
	8	2.20	3.41	0.01	0.01	102.52	1.13	338.19	II.		N.	
	9	+0.92	2.14	0.01	0.01	114.71	1.11	336.16	II.		N.	
	10	-0.46	-0.78	+0.01	-0.01	126.90	-1.09	335.14	II.		N.	
	11	1.88	+0.60	0.01	0.01	139.09	1.07	335.12	II.		N.	
	12	3.29	1.96	0.01	-0.01	151.29	1.04	336.11	II.		N.	
	13	4.61	3.25	0.01	0.00	163.50	1.02	338.11	II.		N.	
	14	5.75	4.41	0.01	0.00	175.71	1.00	341.08	II.		N.	
	15	-6.62	+5.40	+0.01	0.00	187.93	-0.98	345.00	II.		N.	
	16	-7.14	+6.15	+0.01	0.00	200.15	-0.95	349.80	II.		N.	

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Mid. night.	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when Observable.			
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	S	Dec.	"
Aug. 16	-7.14	+6.15	+0.01	0.00	200.15	-0.95	349.80	II.		N.	
17	7.25	6.61	0.01	0.00	212.37	0.93	355.31	II.		N.	
18	6.91	6.73	0.01	0.00	224.61	0.91	1.29	II.		N.	
19	6.10	6.46	0.01	0.00	236.84	0.88	7.39				
20	4.87	5.78	0.01	0.00	249.08	0.86	13.16				
21	-3.29	+4.71	+0.01	0.00	261.33	-0.84	18.14				
22	-1.50	3.30	0.01	0.00	273.57	0.81	21.94				
23	+0.38	+1.65	0.01	0.00	285.82	0.78	24.26				
24	2.19	-0.12	0.01	0.00	298.06	0.76	24.95				
25	3.81	1.85	0.02	0.00	310.30	0.74	24.03				
26	+5.16	-3.44	+0.02	0.00	322.53	-0.71	21.62	I.		N.	
27	6.17	4.77	0.02	0.00	334.75	0.69	17.92	I.		N.	
28	6.84	5.79	0.02	0.00	346.97	0.67	13.22	I.		N.	
29	7.16	6.46	0.02	0.00	359.18	0.64	7.84	I.		N.	
30	7.14	6.77	0.02	0.00	11.39	0.62	2.13	I.		N.	
Sept. 31	+6.83	-6.73	+0.02	0.00	23.58	-0.60	356.43	I.		S.	0.00
1	6.26	6.36	0.02	0.00	35.78	0.58	351.03	I.		S.	
2	5.40	5.71	0.02	0.00	47.97	0.56	346.19	I.		S.	
3	4.46	4.80	0.02	0.00	60.15	0.53	342.09	I.		S.	
4	3.30	3.69	0.02	0.00	72.33	0.51	338.87	I.		S.	
5	+2.02	-2.43	+0.02	0.00	84.51	-0.48	336.59	I.	0.16	S.	0.02
6	+0.65	-1.07	0.02	0.00	96.69	0.45	335.30	II.		N.	1.17
7	-0.77	+0.33	0.02	0.00	108.86	0.43	335.03	II.		N.	
8	2.19	1.72	0.01	0.00	121.04	0.40	335.76	II.		N.	
9	3.56	3.05	0.01	0.00	133.23	0.37	337.50	II.		N.	
10	-4.82	+4.25	+0.01	0.00	145.41	-0.34	340.20	II.		N.	
11	5.90	5.27	0.01	0.00	157.60	0.32	343.83	II.		N.	
12	6.75	6.08	0.01	0.00	169.79	0.29	348.31	II.		N.	
13	7.30	6.61	0.01	0.00	181.99	0.26	353.50	II.		N.	
14	7.48	6.83	0.01	0.00	194.20	0.24	359.19	II.		N.	
15	-7.25	+6.69	+0.01	0.00	206.41	-0.21	5.11	II.		N.	
16	6.58	6.16	0.01	0.00	218.63	0.18	10.89	II.		S.	
17	5.49	5.25	0.01	0.00	230.85	0.15	16.13				
18	4.01	3.97	0.01	0.00	243.07	0.12	20.42				
19	2.23	2.39	0.01	0.00	255.30	0.10	23.41				
20	-0.28	+0.63	+0.02	0.00	267.53	-0.07	24.85				
21	+1.70	-1.18	0.02	0.00	279.76	0.04	24.62				
22	3.57	2.90	0.02	0.00	291.99	-0.01	22.75				
23	5.19	4.39	0.02	0.00	304.22	+0.02	19.40				
24	6.46	5.56	0.02	0.00	316.44	0.05	14.86				
25	+7.32	-6.35	+0.02	0.00	328.65	+0.07	9.50	I.		N.	
26	7.75	6.77	0.02	0.00	340.86	0.10	3.70	I.		N.	
27	7.77	6.81	0.02	0.00	353.06	0.13	357.85	I.		S.	
28	7.40	6.51	0.02	0.00	5.25	0.16	352.29	I.		S.	
29	6.71	5.90	0.02	0.00	17.44	0.18	347.28	I.		S.	
Oct. 30	+5.74	-5.04	+0.02	0.00	29.62	+0.21	342.99	I.		S.	
1	+4.58	-3.97	+0.02	0.00	41.80	+0.24	339.56	I.		S.	

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Mid-night.	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		0	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when Observable.				
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.	"	
Oct.	1	+4.58	-3.97	+0.02	0.00	41.80	+0.24	339.56	I.		S.	
	2	3.28	2.73	0.02	0.00	53.97	0.27	337.06	I.		S.	
	3	1.89	-1.39	0.02	0.00	66.14	0.29	335.53	I.		S.	
	4	+0.47	+0.01	0.02	0.00	78.30	0.32	335.00	I.		S.	
	5	-0.93	1.41	0.01	0.00	90.46	0.35	335.49	I.	0.00	S.	0.45
	6	-2.27	+2.76	+0.01	0.00	102.62	+0.38	336.99	II.		N.	0.23
	7	3.52	3.99	0.01	0.00	114.79	0.41	339.47	II.		N.	
	8	4.63	5.06	0.01	0.00	126.95	0.43	342.89	II.		N.	
	9	5.56	5.91	0.01	0.00	139.12	0.46	347.17	II.		N.	
	10	6.29	6.50	0.01	0.00	151.29	0.48	352.16	II.		N.	0.87
	11	-6.77	+6.78	+0.01	0.00	163.46	+0.50	357.66	II.		S.	0.12
	12	6.96	6.73	0.01	0.00	175.64	0.53	3.42	II.		S.	
	13	6.83	6.33	0.01	0.00	187.83	0.55	9.12	II.		S.	
	14	6.35	5.56	0.01	0.00	200.02	0.58	14.40	II.		S.	
	15	5.50	4.45	0.01	0.00	212.21	0.60	18.92	II.		S.	
	16	-4.30	+3.03	+0.01	0.00	224.42	+0.63	22.35	II.		S.	
	17	2.78	+1.38	0.01	0.00	236.62	0.65	24.42				
	18	-1.03	-0.39	0.02	0.00	248.84	0.68	24.93				
	19	+0.86	2.15	0.02	0.00	261.05	0.70	23.80				
	20	2.73	3.75	0.02	0.00	273.27	0.73	21.07				
	21	+4.45	-5.07	+0.02	0.00	285.48	+0.76	16.94				
	22	5.88	6.03	0.02	0.00	297.69	0.78	11.73				
	23	6.92	6.59	0.02	0.00	309.90	0.81	5.87				
	24	7.50	6.75	0.02	0.00	322.10	0.83	359.81	I.		S.	
	25	7.61	6.54	0.02	0.00	334.29	0.86	353.97	I.		S.	
	26	+7.29	-6.00	+0.02	0.00	346.48	+0.88	348.65	I.		S.	
	27	6.59	5.19	0.02	0.00	358.66	0.91	344.07	I.		S.	
	28	5.57	4.16	0.02	0.00	10.83	0.93	340.37	I.		S.	
	29	4.34	2.96	0.02	0.00	23.00	0.96	337.61	I.		S.	
	30	2.97	1.65	0.02	0.00	35.16	0.98	335.83	I.		S.	
Nov.	31	+1.54	-0.28	+0.01	0.00	47.32	+1.00	335.04	I.		S.	
	1	+0.13	+1.10	0.01	0.00	59.48	1.03	335.26	I.		S.	
	2	-1.21	2.45	0.01	0.00	71.63	1.05	336.50	I.		S.	
	3	2.42	3.69	0.01	0.00	83.77	1.07	338.75	I.		S.	
	4	3.48	4.79	0.01	+0.01	95.92	1.09	341.96	II.	0.11	S.	
	5	-4.35	+5.67	+0.01	+0.01	108.06	+1.11	346.08	II.		S.	0.31
	6	5.02	6.30	0.01	0.01	120.21	1.13	350.96	II.		S.	0.20
	7	5.49	6.63	0.01	0.01	132.35	1.14	356.40	II.		S.	0.98
	8	5.75	6.63	0.01	+0.01	144.50	1.16	2.13	II.		S.	
	9	5.80	6.29	0.01	0.00	156.66	1.17	7.82	II.		S.	
	10	-5.62	+5.61	+0.01	0.00	168.82	+1.18	13.15	II.		S.	
	11	5.22	4.60	0.01	0.00	180.98	1.20	17.79	II.		S.	
	12	4.57	3.31	0.01	0.00	193.16	1.21	21.45	II.		S.	
	13	3.66	1.79	0.01	0.00	205.33	1.22	23.89	II.		S.	
	14	2.50	+0.13	0.01	0.00	217.52	1.24	24.93	II.		S.	
	15	-1.12	-1.55	+0.01	0.00	229.71	+1.26	24.45				
16	+0.43	-3.15	+0.01	0.00	241.90	+1.27	22.42					

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF THE MOON.

Mid-night.	The Earth's Selenographic—		Physical Libration.		The Sun's Selenographic—		C	Illuminated Limbs at Transit at Greenwich, with Corrections to Defective Limbs when Observable.		
	Long.	Lat.	Long.	Lat.	Colong.	Lat.		R.A.	s	Dec.
Nov. 16	+0°43	-3°15	+0°01	0°00	241°90	+1°27	22°42			
17	2°03	4°54	0°01	0°00	254°10	1°29	18°92			
18	3°58	5°61	0°01	+0°01	266°30	1°30	14°15			
19	4°93	6°31	0°01	0°01	278°50	1°32	8°48			
20	5°96	6°60	0°01	0°01	290°70	1°34	2°34			
21	+6°58	-6°49	+0°01	+0°01	302°89	+1°35	356°22			
22	6°76	6°03	0°01	0°01	315°08	1°37	350°52	I.		S.
23	6°49	5°27	0°01	0°01	327°27	1°39	345°54	I.		S.
24	5°82	4°27	0°01	0°01	339°45	1°40	341°45	I.		S.
25	4°83	3°10	0°01	0°01	351°62	1°42	338°35	I.		S.
26	+3°59	-1°82	+0°01	+0°01	378	+1°43	336°25	I.		S.
27	2°21	-0°47	0°01	0°01	15°94	1°44	335°17	I.		S.
28	+0°78	+0°89	+0°01	0°01	28°09	1°46	335°10	I.		S.
29	-0°61	2°22	0°00	0°01	40°24	1°47	336°04	I.		S.
30	1°87	3°46	0°00	0°01	52°38	1°48	337°98	I.		S.
Dec. 1	-2°95	+4°56	0°00	+0°01	64°52	+1°49	340°92	I.		S.
2	3°79	5°47	0°00	0°01	76°66	1°50	344°80	I.		S.
3	4°39	6°13	0°00	0°01	88°79	1°51	349°52	I.		S.
4	4°73	6°49	0°00	0°01	100°92	1°51	354°91	II.		S.
5	4°83	6°53	0°00	0°01	113°05	1°51	0°69	II.		S.
6	-4°73	+6°22	0°00	+0°01	125°18	+1°51	6°52	II.		S.
7	4°46	5°57	0°00	0°01	137°32	1°51	12°03	II.		S.
8	4°05	4°60	0°00	0°01	149°46	1°51	16°87	II.		S.
9	3°51	3°35	0°00	0°01	161°60	1°51	20°75	II.		S.
10	2°85	1°89	0°00	0°01	173°75	1°51	23°45	II.		S.
11	-2°07	+0°30	0°00	+0°01	185°91	+1°50	24°81	II.		S.
12	1°17	-1°32	0°00	0°01	198°08	1°50	24°74	II.		S.
13	-0°14	2°86	0°00	0°01	210°25	1°50	23°22	II.		S.
14	+0°99	4°23	+0°01	0°01	222°43	1°50	20°29			
15	2°17	5°34	0°01	0°01	234°61	1°51	16°08			
16	+3°31	-6°11	+0°01	+0°01	246°80	+1°51	10°82			
17	4°32	6°49	0°01	0°01	258°99	1°51	4°89			
18	5°09	6°47	0°01	0°01	271°18	1°52	358°71			
19	5°55	6°09	0°01	0°01	283°37	1°52	352°75			
20	5°63	5°38	+0°01	0°01	295°55	1°52	347°38			
21	+5°32	-4°41	0°00	+0°01	307°74	+1°53	342°86			
22	4°65	3°25	0°00	0°01	319°92	1°53	339°33	I.		S.
23	3°66	1°97	0°00	0°01	332°09	1°53	336°84	I.		S.
24	2°44	-0°61	0°00	0°01	344°26	1°53	335°41	I.		S.
25	+1°07	+0°75	0°00	0°01	356°42	1°53	335°01	I.		S.
26	-0°34	+2°08	0°00	+0°01	8°58	+1°53	335°63	I.		S.
27	1°71	3°32	0°00	0°01	20°73	1°53	337°24	I.		S.
28	2°93	4°43	0°00	0°01	32°87	1°53	339°83	I.		S.
29	3°92	5°36	0°00	0°01	45°01	1°53	343°38	I.		S.
30	4°63	6°06	-0°01	0°01	57°15	1°52	347°81	I.		S.
31	-5°02	+6°47	-0°01	+0°01	69°28	+1°51	353°01	I.		S.
32	-5°08	+6°56	-0°01	+0°01	81°41	+1°50	358°74	I.		S.

ILLUMINATED DISC OF MERCURY.

Noon.	<i>k</i>	<i>i</i>	θ	<i>L</i>	Stellar Mag.	Noon.	<i>k</i>	<i>i</i>	θ	<i>L</i>	Stellar Mag.
Jan. 1	0.996	8	29	27.3	-0.8	July 5	0.226	123	166	28.0	+1.2
6	0.984	15	10	30.8	0.8	10	0.348	108	171	38.4	0.7
11	0.959	23	1	36.4	0.9	15	0.492	91	176	49.2	+0.1
16	0.911	35	353	44.6	0.9	20	0.653	72	182	59.8	-0.4
21	0.826	49	348	55.3	0.8	25	0.812	51	189	67.4	1.0
26	0.682	69	342	65.5	-0.6	30	0.932	30	199	67.7	-1.4
31	0.472	93	338	65.4	-0.2	Aug. 4	0.991	11	223	60.5	1.6
Feb. 5	0.234	122	332	44.0	+0.7	9	0.994	9	342	50.6	1.5
10	0.055	153	318	12.3	1.9	14	0.967	21	8	42.1	1.0
15	0.012	168	219	2.6	2.7	19	0.927	31	16	35.9	0.7
20	0.093	145	177	16.7	+1.7	24	0.883	40	20	32.0	-0.4
25	0.224	123	169	30.3	1.1	29	0.838	48	23	29.7	-0.2
Mar. 2	0.352	107	165	35.2	0.7	Sept. 3	0.791	54	24	28.8	0.0
7	0.460	95	162	35.2	0.5	8	0.740	61	26	29.0	+0.1
12	0.547	85	159	33.5	0.4	13	0.683	69	27	30.3	0.2
17	0.619	76	157	31.9	+0.3	18	0.614	77	27	32.4	+0.3
22	0.681	69	154	31.0	0.2	23	0.528	87	28	35.0	0.4
27	0.738	62	152	30.9	+0.1	28	0.419	99	29	36.8	0.6
Apr. 1	0.791	54	150	32.1	-0.1	Oct. 3	0.282	116	30	34.4	0.9
6	0.845	46	149	34.7	0.4	8	0.130	138	34	22.0	1.5
11	0.899	37	148	39.2	-0.7	13	0.015	166	48	3.3	+2.6
16	0.951	26	147	45.9	1.1	18	0.033	159	198	7.5	2.2
21	0.990	11	145	54.8	1.5	23	0.210	125	207	40.2	+0.8
26	0.997	7	344	64.0	1.8	28	0.453	95	208	62.0	-0.1
May 1	0.946	27	338	68.9	1.5	Nov. 2	0.663	71	209	61.5	0.5
6	0.835	48	340	66.1	-1.0	7	0.806	52	208	51.7	-0.7
11	0.693	67	344	57.8	-0.5	12	0.893	38	206	41.9	0.7
16	0.550	84	347	48.5	0.0	17	0.944	27	203	34.5	0.7
21	0.422	99	351	40.2	+0.5	22	0.974	19	199	29.6	0.7
26	0.308	113	354	32.6	0.9	27	0.990	11	192	26.5	0.7
31	0.206	126	357	24.9	+1.3	Dec. 2	0.998	5	176	24.8	-0.8
June 5	0.119	140	1	16.4	1.8	7	1.000	2	77	24.3	0.8
10	0.050	154	8	7.7	2.4	12	0.996	7	29	24.9	0.7
15	0.010	168	34	1.7	3.0	17	0.986	14	17	26.6	0.7
20	0.010	168	126	1.7	3.0	22	0.967	21	9	29.8	0.7
25	0.051	154	153	7.9	+2.3	27	0.936	29	3	34.8	-0.7
30	0.125	139	161	17.6	+1.7	32	0.882	40	358	42.3	-0.7

ILLUMINATED DISC OF VENUS.

Left Column						Right Column							
Noon.	<i>k</i>	<i>i</i>	θ	<i>L</i>	Stellar Mag.	Noon.	<i>k</i>	<i>i</i>	θ	<i>L</i>	Stellar Mag.		
Jan.	1	0.988	12.6	179.2	47.0	—3.4	July	5	0.778	56.2	15.8	70.8	—3.5
	6	0.991	11.0	175.0	46.6	3.4		10	0.762	58.4	17.4	73.3	3.5
	11	0.993	9.4	170.4	46.3	3.4		15	0.746	60.6	18.9	76.0	3.5
	16	0.995	7.8	165.2	46.0	3.4		20	0.728	62.8	20.1	79.0	3.5
	21	0.997	6.2	158.9	45.8	3.5		25	0.711	65.1	21.2	82.2	3.6
	26	0.998	4.7	150.6	45.6	—3.5		30	0.693	67.3	22.0	85.8	—3.6
Feb.	31	0.999	3.2	137.2	45.5	3.5	Aug.	4	0.674	69.6	22.7	89.7	3.6
	5	1.000	2.1	109.8	45.4	3.5		9	0.655	72.0	23.2	94.0	3.7
	10	1.000	1.8	58.8	45.4	3.5		14	0.635	74.3	23.5	98.7	3.7
	15	0.999	2.8	22.4	45.4	3.5		19	0.615	76.7	23.7	103.9	3.7
	20	0.999	4.2	6.3	45.4	—3.5		24	0.594	79.2	23.7	109.6	—3.8
Mar.	25	0.998	5.7	357.8	45.5	3.5	Sept.	29	0.572	81.8	23.5	115.8	3.8
	2	0.996	7.3	352.6	45.7	3.4		3	0.549	84.4	23.2	122.7	3.9
	7	0.994	9.0	348.9	45.9	3.4		8	0.525	87.1	22.7	130.3	3.9
	12	0.991	10.7	346.4	46.2	3.4		13	0.500	90.0	22.1	138.5	4.0
	17	0.988	12.4	344.6	46.5	—3.4		18	0.474	93.0	21.5	147.4	—4.0
Apr.	22	0.985	14.1	343.3	46.8	3.4	Oct.	23	0.446	96.2	20.7	156.9	4.1
	27	0.981	15.8	342.5	47.2	3.4		28	0.416	99.6	19.9	166.8	4.2
	1	0.976	17.6	342.1	47.7	3.4		3	0.385	103.3	19.1	177.0	4.2
	6	0.971	19.5	342.1	48.2	3.4		8	0.351	107.3	18.4	186.6	4.2
	11	0.966	21.3	342.5	48.7	—3.4		13	0.315	111.7	17.8	194.9	—4.3
May	16	0.960	23.2	343.1	49.4	3.4	Nov.	18	0.276	116.6	17.4	200.3	4.3
	21	0.953	25.1	344.1	50.1	3.4		23	0.235	122.0	17.3	200.5	4.3
	26	0.945	27.0	345.4	50.8	3.3		28	0.191	128.2	17.6	192.5	4.3
	1	0.937	29.0	346.9	51.6	3.3		2	0.145	135.3	18.4	172.7	4.2
	6	0.929	30.9	348.7	52.5	—3.3		7	0.099	143.3	20.0	138.4	—4.1
	11	0.920	32.9	350.7	53.4	3.3		12	0.057	152.3	22.7	91.6	3.9
June	16	0.910	35.0	352.9	54.5	3.3		17	0.024	162.3	27.7	42.1	3.5
	21	0.899	37.0	355.3	55.6	3.3		22	0.004	172.8	43.9	7.6	3.1
	26	0.888	39.1	357.7	56.8	3.4		27	0.002	174.5	168.1	4.3	3.0
	31	0.876	41.2	0.2	58.1	—3.4	Dec.	2	0.019	164.2	191.3	34.8	—3.5
	5	0.864	43.3	2.7	59.5	3.4		7	0.051	153.9	196.2	84.8	3.8
	10	0.851	45.4	5.2	61.0	3.4		12	0.092	144.6	198.1	135.4	4.1
	15	0.838	47.5	7.6	62.7	3.4		17	0.138	136.3	198.7	174.6	4.2
20	0.824	49.7	9.9	64.5	3.4	22		0.185	129.0	198.6	198.9	4.3	
	25	0.809	51.8	12.0	66.4	—3.4		27	0.231	122.5	198.0	210.1	—4.4
	30	0.794	54.0	14.0	68.5	—3.4		32	0.274	116.8	197.0	211.9	—4.4

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Midnight.	Light-Time.	Stellar Magnitude.	P	$A_{\oplus} + 180^{\circ}$	D_{\oplus}	$A_{\ominus} - A_{\oplus}$	D_{\ominus}	$\odot \delta$
Jan.	m							
1	14·64	+1·5	36°06	308·17	+18°44	-35°32	+23°96	92°61
3	14·48	1·5	36·20	309·34	18·11	35·52	23·93	93·50
5	14·32	1·5	36·33	310·51	17·78	35·70	23·91	94·39
7	14·16	1·4	36·43	311·66	17·44	35·88	23·87	95·29
9	14·00	1·4	36·53	312·81	17·10	36·05	23·83	96·18
11	13·84	+1·4	36·60	313·94	+16·75	-36·20	+23·79	97·08
13	13·67	1·4	36·66	315·07	16·40	36·35	23·73	97·98
15	13·50	1·4	36·70	316·19	16·04	36·49	23·68	98·88
17	13·34	1·3	36·73	317·31	15·68	36·62	23·61	99·78
19	13·18	1·3	36·75	318·41	15·32	36·74	23·54	100·68
21	13·01	+1·3	36·75	319·50	+14·95	-36·86	+23·46	101·59
23	12·85	1·2	36·73	320·59	14·58	36·96	23·38	102·49
25	12·68	1·2	36·70	321·66	14·20	37·05	23·29	103·40
27	12·51	1·2	36·66	322·73	13·82	37·13	23·19	104·31
29	12·34	1·2	36·60	323·79	13·44	37·20	23·09	105·22
31	12·18	+1·1	36·52	324·83	+13·06	-37·26	+22·98	106·13
Feb.								
2	12·01	1·1	36·44	325·87	12·68	37·32	22·87	107·05
4	11·84	1·1	36·34	326·90	12·30	37·36	22·74	107·97
6	11·67	1·0	36·23	327·92	11·91	37·39	22·62	108·89
8	11·50	1·0	36·10	328·93	11·52	37·41	22·48	109·81
10	11·34	+1·0	35·97	329·92	+11·14	-37·42	+22·34	110·73
12	11·17	0·9	35·82	330·91	10·75	37·42	22·19	111·66
14	11·00	0·9	35·66	331·89	10·37	37·41	22·04	112·58
16	10·83	0·9	35·49	332·86	9·98	37·39	21·88	113·51
18	10·66	0·8	35·31	333·81	9·60	37·36	21·72	114·44
20	10·49	+0·8	35·12	334·76	+9·22	-37·32	+21·54	115·38
22	10·33	0·8	34·93	335·70	8·84	37·27	21·37	116·31
24	10·16	0·7	34·72	336·62	8·46	37·21	21·18	117·25
26	9·99	0·7	34·50	337·53	8·09	37·13	20·99	118·19
28	9·83	0·7	34·28	338·43	7·72	37·04	20·79	119·14
Mar.								
2	9·66	+0·6	34·05	339·32	+7·35	-36·94	+20·59	120·08
4	9·49	0·6	33·81	340·19	6·99	36·83	20·38	121·03
6	9·33	0·5	33·57	341·05	6·64	36·71	20·17	121·98
8	9·17	0·5	33·33	341·90	6·28	36·57	19·95	122·93
10	9·00	0·4	33·08	342·73	5·94	36·41	19·72	123·89
12	8·84	+0·4	32·82	343·55	+5·60	-36·25	+19·48	124·85
14	8·68	0·4	32·56	344·36	5·26	36·07	19·24	125·81
16	8·52	0·3	32·30	345·15	4·94	35·87	19·00	126·77
18	8·36	0·3	32·04	345·93	4·62	35·66	18·75	127·74
20	8·20	0·2	31·78	346·68	4·31	35·43	18·49	128·71
22	8·04	+0·2	31·51	347·42	+4·00	-35·19	+18·23	129·68
24	7·89	0·1	31·25	348·15	3·71	34·92	17·96	130·65
26	7·73	+0·1	30·99	348·85	3·43	34·64	17·68	131·63
28	7·58	0·0	30·73	349·54	3·16	34·34	17·40	132·61
30	7·43	0·0	30·47	350·20	2·89	34·02	17·12	133·60
Apr.								
1	7·28	-0·1	30·22	350·85	+2·64	-33·68	+16·83	134·58

EPIHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Mid-night.	k	Diameter.	i	q	Q	Central Meridian.		Mean Time of Transit of Zero Meridian.			
						Of Date.	Of Intermediate Date.	Of Date.	Of Intermediate Date.		
Jan.	1	0.918	5.31	33.30	0.44	290.28	272.37	262.70	h m	h m	
	3	0.917	5.37	33.57	0.45	290.00	253.02	243.35	18 0.2	18 40.0	
	5	0.915	5.43	33.83	0.46	289.71	233.68	224.02	19 19.7	19 59.5	
	7	0.914	5.49	34.09	0.47	289.42	214.35	204.69	20 39.2	21 18.9	
	9	0.913	5.56	34.34	0.48	289.12	195.03	185.37	21 58.6	22 38.4	
	11	0.912	5.62	34.58	0.50	288.82	175.72	166.06	23 18.1	23 57.8	
	13	0.910	5.69	34.82	0.51	288.51	156.41	146.76	..	0 37.4	
	15	0.909	5.76	35.06	0.52	288.19	137.12	127.47	1 17.1	1 56.8	
	17	0.908	5.83	35.29	0.54	287.86	117.83	108.19	2 36.4	3 16.1	
	19	0.907	5.90	35.51	0.55	287.53	98.55	88.91	3 55.7	4 35.3	
	21	0.906	5.98	35.72	0.56	287.20	79.28	69.65	5 15.0	5 54.6	
	23	0.905	6.05	35.93	0.58	286.86	60.02	50.39	6 34.2	7 13.7	
	25	0.904	6.13	36.13	0.59	286.52	40.77	31.15	7 53.3	8 32.9	
	27	0.903	6.22	36.32	0.60	286.17	21.53	11.91	9 12.4	9 52.0	
	29	0.902	6.30	36.51	0.62	285.81	2.30	352.68	10 31.5	11 11.0	
	31	0.901	6.39	36.68	0.63	285.46	343.07	333.47	11 50.6	12 30.1	
	Feb.	2	0.900	6.48	36.85	0.65	285.10	323.86	314.26	13 9.6	13 49.0
		4	0.899	6.57	37.01	0.66	284.73	304.66	295.06	14 28.5	15 8.0
		6	0.898	6.66	37.16	0.68	284.36	285.47	275.87	15 47.4	16 26.9
8		0.898	6.76	37.30	0.69	283.99	266.28	256.70	17 6.3	17 45.7	
10		0.897	6.86	37.42	0.71	283.62	247.11	237.53	18 25.1	19 4.5	
12		0.896	6.96	37.54	0.72	283.25	227.95	218.37	19 43.9	20 23.3	
14		0.896	7.07	37.65	0.74	282.87	208.79	199.22	21 2.6	21 42.0	
16		0.895	7.18	37.75	0.75	282.49	189.65	180.08	22 21.3	23 0.7	
18		0.895	7.29	37.84	0.77	282.11	170.52	160.96	23 40.0	..	
20		0.894	7.41	37.91	0.78	281.73	151.40	141.84	0 19.3	0 58.6	
Mar.	2	0.894	7.53	37.98	0.80	281.35	132.29	122.74	1 37.9	2 17.2	
	4	0.894	7.66	38.03	0.81	280.97	113.19	103.64	2 56.4	3 35.7	
	6	0.894	7.78	38.06	0.83	280.59	94.10	84.56	4 14.9	4 54.1	
	8	0.894	7.92	38.08	0.84	280.21	75.03	65.49	5 33.3	6 12.5	
	10	0.894	8.05	38.09	0.86	279.84	55.96	46.44	6 51.7	7 30.9	
	12	0.894	8.19	38.08	0.87	279.46	36.91	27.39	8 10.1	8 49.2	
	14	0.894	8.34	38.06	0.89	279.09	17.88	8.36	9 28.3	10 7.5	
	16	0.894	8.49	38.02	0.90	278.72	358.85	349.35	10 46.6	11 25.6	
	18	0.894	8.64	37.96	0.91	278.36	339.84	330.34	12 4.7	12 43.8	
	20	0.894	8.80	37.89	0.93	278.00	320.85	311.35	13 22.8	14 1.8	
Apr.	2	0.895	8.96	37.80	0.94	277.64	301.86	292.38	14 40.9	15 19.9	
	4	0.895	9.13	37.69	0.95	277.29	282.90	273.42	15 58.8	16 37.8	
	6	0.896	9.30	37.56	0.96	276.95	263.94	254.47	17 16.8	17 55.7	
	8	0.896	9.48	37.40	0.97	276.62	245.01	235.55	18 34.6	19 13.5	
	10	0.897	9.67	37.23	0.98	276.29	226.09	216.64	19 52.4	20 31.2	
	12	0.898	9.86	37.03	0.99	275.97	207.19	197.75	21 10.1	21 48.9	
	14	0.899	10.06	36.81	1.00	275.66	188.31	178.87	22 27.7	23 6.5	
	16	0.900	10.26	36.57	1.01	275.36	169.44	160.02	23 45.3	..	
	18	0.902	10.47	36.30	1.02	275.07	150.60	141.19	0 24.0	1 2.7	
	20	0.903	10.69	36.00	1.02	274.79	131.78	122.37	1 41.4	2 20.1	
Apr. 1	0.905	10.69	36.00	1.02	274.79	131.78	122.37	2 58.8	3 37.4		

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Midnight.	Light-Time.	Stellar Magnitude.	P	$A_{\oplus} + 180^{\circ}$	D_{\oplus}	$A_{\odot} - A_{\oplus}$	D_{\odot}	$\odot \delta$
	m							
Apr. 1	7.28	—0.1	30.22	350.85	+2.64	—33.68	+16.83	134.58
3	7.13	0.1	29.98	351.47	2.41	33.31	16.53	135.57
5	6.98	0.2	29.74	352.07	2.18	32.92	16.23	136.57
7	6.84	0.2	29.50	352.64	1.97	32.52	15.92	137.56
9	6.69	0.3	29.28	353.19	1.78	32.08	15.60	138.56
11	6.55	—0.4	29.06	353.71	+1.60	—31.62	+15.28	139.56
13	6.41	0.4	28.85	354.21	1.43	31.13	14.96	140.57
15	6.28	0.5	28.66	354.68	1.28	30.61	14.63	141.58
17	6.14	0.5	28.47	355.12	1.15	30.06	14.29	142.59
19	6.01	0.6	28.30	355.53	1.03	29.49	13.95	143.61
21	5.88	—0.6	28.15	355.91	+0.94	—28.88	+13.61	144.63
23	5.75	0.7	28.00	356.25	0.86	28.23	13.26	145.65
25	5.63	0.8	27.88	356.55	0.80	27.55	12.90	146.67
27	5.50	0.8	27.77	356.82	0.77	26.83	12.54	147.70
29	5.38	0.9	27.68	357.06	0.76	26.08	12.18	148.74
May 1	5.27	—1.0	27.61	357.25	+0.77	—25.28	+11.81	149.77
3	5.16	1.0	27.56	357.40	0.80	24.44	11.43	150.81
5	5.05	1.1	27.52	357.52	0.85	23.56	11.05	151.85
7	4.94	1.2	27.51	357.59	0.93	22.64	10.67	152.90
9	4.84	1.2	27.52	357.62	1.04	21.68	10.28	153.95
11	4.74	—1.3	27.55	357.60	+1.16	—20.67	+9.89	155.00
13	4.65	1.3	27.61	357.54	1.31	19.62	9.49	156.06
15	4.56	1.4	27.69	357.44	1.49	18.52	9.09	157.12
17	4.47	1.5	27.79	357.29	1.69	17.38	8.68	158.19
19	4.39	1.5	27.91	357.10	1.91	16.19	8.28	159.26
21	4.32	—1.6	28.05	356.86	+2.16	—14.95	+7.86	160.33
23	4.24	1.7	28.21	356.58	2.43	13.67	7.45	161.41
25	4.18	1.7	28.40	356.26	2.72	12.35	7.03	162.49
27	4.12	1.8	28.60	355.90	3.03	10.98	6.60	163.57
29	4.06	1.8	28.82	355.51	3.35	9.58	6.17	164.66
31	4.01	—1.9	29.05	355.08	+3.69	—8.14	+5.74	165.75
June 2	3.96	1.9	29.29	354.62	4.05	6.67	5.31	166.84
4	3.92	2.0	29.54	354.13	4.42	5.18	4.87	167.94
6	3.88	2.0	29.81	353.62	4.79	3.65	4.43	169.04
8	3.85	2.1	30.07	353.10	5.17	2.11	3.99	170.15
10	3.83	—2.1	30.34	352.56	+5.54	—0.55	+3.54	171.26
12	3.81	2.1	30.61	352.01	5.92	+1.01	3.09	172.37
14	3.80	2.1	30.87	351.46	6.30	2.59	2.64	173.49
16	3.79	2.1	31.13	350.91	6.67	4.16	2.19	174.61
18	3.79	2.1	31.38	350.37	7.02	5.73	1.73	175.74
20	3.79	—2.0	31.62	349.84	+7.37	+7.29	+1.27	176.87
22	3.80	2.0	31.85	349.33	7.70	8.84	0.81	178.00
24	3.81	2.0	32.07	348.84	8.01	10.37	+0.35	179.14
26	3.83	1.9	32.27	348.38	8.30	11.87	—0.11	180.28
28	3.85	1.9	32.45	347.96	8.56	13.34	0.58	181.42
30	3.88	—1.9	32.61	347.57	+8.80	+14.78	—1.04	182.57
July 2	3.91	—1.8	32.76	347.22	+9.02	+16.18	—1.51	183.72

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Mid-night.	k	Diameter.	i	q	Q	Central Meridian.		Mean Time of Transit of Zero Meridian.	
						Of Date.	Of Intermediate Date.	Of Date.	Of Intermediate Date.
Apr. 1	0.905	10.69	36.00	1.02	274.79	131.78	122.37	h m	h m
3	0.906	10.91	35.67	1.02	274.52	112.98	103.58	2 58.8	3 37.4
5	0.908	11.14	35.31	1.02	274.27	94.20	84.82	4 16.0	4 54.6
7	0.910	11.38	34.93	1.02	274.04	75.44	66.07	5 33.1	6 11.7
9	0.912	11.62	34.51	1.02	273.82	56.71	47.35	6 50.2	7 28.6
11	0.914	11.87	34.06	1.02	273.61	38.00	28.66	8 7.1	8 45.5
13	0.917	12.13	33.58	1.01	273.43	19.33	10.00	9 23.9	10 2.3
15	0.919	12.39	33.05	1.00	273.26	0.67	351.36	10 40.6	11 18.9
17	0.922	12.66	32.50	0.99	273.12	342.05	332.75	11 57.2	12 35.5
19	0.924	12.94	31.90	0.98	273.00	323.46	314.18	13 13.7	13 51.9
21	0.927	13.23	31.26	0.96	272.90	304.90	295.63	14 30.0	15 8.1
23	0.930	13.52	30.58	0.94	272.83	286.37	277.12	15 46.2	16 24.3
25	0.934	13.82	29.86	0.92	272.78	267.88	258.65	17 2.3	17 40.3
27	0.937	14.13	29.09	0.89	272.77	249.42	240.21	18 18.2	18 56.1
29	0.940	14.44	28.27	0.86	272.79	231.00	221.81	19 33.9	20 11.7
May 1	0.944	14.76	27.41	0.83	272.85	212.62	203.45	20 49.5	21 27.2
3	0.948	15.08	26.49	0.79	272.95	194.28	185.12	22 4.9	22 42.6
5	0.951	15.41	25.53	0.75	273.09	175.98	166.84	23 20.2	23 57.7
7	0.955	15.73	24.52	0.71	273.27	157.72	148.60	..	0 35.2
9	0.959	16.06	23.45	0.66	273.51	139.50	130.40	1 12.7	1 50.2
11	0.962	16.40	22.33	0.61	273.81	121.32	112.25	2 27.5	3 4.9
13	0.966	16.73	21.16	0.56	274.17	103.19	94.14	3 42.2	4 19.4
15	0.970	17.06	19.94	0.51	274.61	85.10	76.07	4 56.6	5 33.7
17	0.974	17.39	18.66	0.46	275.14	67.05	58.04	6 10.8	6 47.9
19	0.977	17.71	17.33	0.40	275.78	49.04	40.06	7 24.9	8 1.9
21	0.981	18.02	15.94	0.35	276.55	31.08	22.12	8 38.8	9 15.7
23	0.984	18.33	14.51	0.29	277.49	13.16	4.22	9 52.5	10 29.3
25	0.987	18.62	13.03	0.24	278.64	355.28	346.36	11 6.0	11 42.7
27	0.990	18.90	11.51	0.19	280.09	337.44	328.53	12 19.3	12 55.9
29	0.992	19.16	9.96	0.14	281.99	319.64	310.75	13 32.5	14 9.0
31	0.995	19.41	8.37	0.10	284.57	301.86	292.99	14 45.5	15 22.0
June 2	0.997	19.64	6.77	0.07	288.32	284.12	275.26	15 58.4	16 34.8
4	0.998	19.84	5.18	0.04	294.30	266.40	257.55	17 11.2	17 47.5
6	0.999	20.02	3.66	0.02	305.26	248.70	239.86	18 23.8	19 0.2
8	1.000	20.17	2.41	0.01	329.22	231.02	222.18	19 36.4	20 12.7
10	1.000	20.30	2.08	0.01	14.90	213.35	204.51	20 48.9	21 25.1
12	0.999	20.40	3.01	0.01	50.29	195.68	186.85	22 1.4	22 37.6
14	0.998	20.47	4.48	0.03	66.17	178.02	169.19	23 13.8	23 50.0
16	0.997	20.52	6.11	0.06	74.11	160.35	151.52	..	0 26.2
18	0.995	20.53	7.79	0.10	78.83	142.68	133.84	1 2.5	1 38.7
20	0.993	20.51	9.49	0.14	81.98	124.99	116.14	2 14.9	2 51.2
22	0.990	20.47	11.18	0.19	84.26	107.28	98.42	3 27.4	4 3.7
24	0.987	20.40	12.86	0.26	86.02	89.55	80.68	4 40.0	5 16.4
26	0.984	20.30	14.51	0.32	87.43	71.79	62.90	5 52.7	6 29.1
28	0.980	20.18	16.14	0.40	88.58	54.00	45.09	7 5.6	7 42.0
30	0.976	20.04	17.72	0.48	89.56	36.17	27.24	8 18.5	8 55.1
July 2	0.972	19.88	19.26	0.56	90.40	18.29	9.34	9 31.7	10 8.3
								10 45.0	11 21.7

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Midnight.	Light-Time.	Stellar Magnitude.	P	$A_{\oplus} + 180^{\circ}$	D_{\oplus}	$A_{\odot} - A_{\oplus}$	D_{\odot}	$\odot \delta$
July	m							
2	3.91	-1.8	32.76	347.22	+9.02	+16.18	-1.51	183.72
4	3.95	1.8	32.89	346.91	9.21	17.55	1.98	184.88
6	3.99	1.8	32.99	346.64	9.37	18.87	2.45	186.04
8	4.03	1.7	33.08	346.42	9.50	20.16	2.92	187.20
10	4.08	1.7	33.15	346.25	9.61	21.40	3.39	188.36
12	4.13	-1.6	33.20	346.13	+9.68	+22.59	-3.86	189.53
14	4.18	1.6	33.23	346.06	9.73	23.74	4.33	190.71
16	4.24	1.6	33.24	346.04	9.75	24.85	4.80	191.89
18	4.30	1.5	33.23	346.06	9.75	25.91	5.27	193.07
20	4.36	1.5	33.20	346.14	9.71	26.93	5.74	194.25
22	4.42	-1.4	33.16	346.26	+9.65	+27.90	-6.21	195.44
24	4.49	1.4	33.10	346.43	9.57	28.83	6.68	196.63
26	4.56	1.3	33.01	346.65	9.45	29.72	7.15	197.82
28	4.63	1.3	32.91	346.91	9.32	30.57	7.61	199.02
30	4.70	1.2	32.79	347.22	9.16	31.38	8.08	200.22
Aug.								
1	4.78	-1.2	32.65	347.58	+8.97	+32.15	-8.54	201.42
3	4.85	1.2	32.50	347.97	8.76	32.88	9.00	202.63
5	4.93	1.1	32.32	348.41	8.54	33.58	9.46	203.84
7	5.01	1.1	32.13	348.88	8.29	34.25	9.91	205.05
9	5.09	1.0	31.92	349.39	8.02	34.88	10.36	206.27
11	5.17	-1.0	31.69	349.94	+7.73	+35.49	-10.81	207.49
13	5.25	1.0	31.44	350.52	7.43	36.07	11.26	208.71
15	5.34	0.9	31.17	351.13	7.10	36.63	11.70	209.94
17	5.42	0.9	30.89	351.78	6.76	37.15	12.14	211.17
19	5.51	0.8	30.59	352.46	6.40	37.65	12.58	212.40
21	5.60	-0.8	30.26	353.16	+6.03	+38.13	-13.01	213.63
23	5.68	0.8	29.92	353.90	5.64	38.58	13.43	214.87
25	5.77	0.7	29.56	354.66	5.24	39.02	13.86	216.10
27	5.86	0.7	29.19	355.44	4.83	39.44	14.27	217.34
29	5.95	0.6	28.79	356.26	4.40	39.84	14.68	218.59
31	6.04	-0.6	28.37	357.09	+3.95	+40.22	-15.09	219.83
Sept.								
2	6.13	0.6	27.94	357.95	3.50	40.58	15.49	221.08
4	6.22	0.5	27.49	358.83	3.04	40.93	15.88	222.33
6	6.32	0.5	27.02	359.73	2.56	41.27	16.27	223.58
8	6.41	0.5	26.53	0.65	2.07	41.60	16.65	224.83
10	6.50	-0.4	26.03	1.59	+1.58	+41.91	-17.02	226.09
12	6.60	0.4	25.51	2.55	1.08	42.21	17.39	227.34
14	6.69	0.4	24.97	3.53	0.57	42.49	17.75	228.60
16	6.79	0.4	24.41	4.52	+0.05	42.77	18.10	229.86
18	6.88	0.3	23.84	5.53	-0.48	43.04	18.44	231.12
20	6.98	-0.3	23.25	6.56	-1.01	+43.29	-18.78	232.38
22	7.08	0.3	22.65	7.61	1.55	43.54	19.11	233.64
24	7.18	0.2	22.03	8.67	2.10	43.77	19.42	234.91
26	7.27	0.2	21.39	9.75	2.65	44.00	19.73	236.17
28	7.37	0.2	20.74	10.84	3.20	44.22	20.03	237.44
30	7.47	-0.1	20.08	11.94	-3.76	+44.42	-20.32	238.71

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Mid-night.	k	Diameter.	i	q	Q	Central Meridian.		Mean Time of Transit of Zero Meridian.		
						Of Date.	Of Intermediate Date.	Of Date.	Of Intermediate Date.	
						h	m	h	m	
July	2	0.972	19.88	19.26	0.56	90.40	18.29	9.34	10 45.0	11 21.7
	4	0.968	19.70	20.76	0.64	91.12	0.38	351.40	11 58.5	12 35.3
	6	0.963	19.51	22.21	0.72	91.75	342.42	333.42	13 12.1	13 49.1
	8	0.958	19.30	23.62	0.81	92.30	324.41	315.38	14 26.0	15 3.1
	10	0.953	19.08	24.97	0.89	92.78	306.35	297.30	15 40.1	16 17.3
	12	0.948	18.84	26.27	0.97	93.19	288.24	279.17	16 54.5	17 31.7
	14	0.943	18.60	27.52	1.05	93.55	270.09	260.99	18 9.0	18 46.3
	16	0.938	18.35	28.72	1.13	93.86	251.88	242.76	19 23.7	20 1.2
	18	0.934	18.10	29.87	1.20	94.13	233.62	224.48	20 38.7	21 16.2
	20	0.929	17.84	30.96	1.27	94.35	215.32	206.15	21 53.8	22 31.5
	22	0.924	17.58	32.01	1.34	94.53	196.97	187.77	23 9.2	23 47.0
	24	0.919	17.32	33.00	1.40	94.67	178.56	169.34	..	0 24.8
	26	0.915	17.06	33.95	1.45	94.77	160.11	150.87	1 2.7	1 40.6
	28	0.910	16.80	34.84	1.51	94.84	141.61	132.35	2 18.6	2 56.6
	30	0.906	16.54	35.69	1.55	94.87	123.07	113.78	3 34.7	4 12.8
Aug.	1	0.902	16.28	36.50	1.60	94.87	104.48	95.17	4 51.0	5 29.2
	3	0.898	16.03	37.26	1.64	94.84	85.85	76.52	6 7.5	6 45.8
	5	0.894	15.78	37.97	1.67	94.78	67.18	57.83	7 24.1	8 2.5
	7	0.890	15.53	38.65	1.70	94.70	48.47	39.10	8 40.9	9 19.4
	9	0.887	15.28	39.29	1.73	94.59	29.72	20.34	9 57.9	10 36.5
	11	0.884	15.04	39.89	1.75	94.45	10.94	1.54	11 15.1	11 53.7
	13	0.880	14.81	40.46	1.77	94.29	352.13	342.71	12 32.3	13 11.0
	15	0.877	14.57	40.99	1.79	94.11	333.28	323.84	13 49.8	14 28.5
	17	0.875	14.34	41.49	1.80	93.90	314.39	304.94	15 7.3	15 46.2
	19	0.872	14.12	41.96	1.81	93.67	295.48	286.01	16 25.0	17 3.9
	21	0.869	13.90	42.39	1.82	93.42	276.54	267.06	17 42.9	18 21.8
	23	0.867	13.69	42.80	1.82	93.16	257.57	248.07	19 0.8	19 39.8
	25	0.865	13.48	43.18	1.82	92.87	238.57	229.06	20 18.9	20 58.0
	27	0.863	13.27	43.53	1.82	92.56	219.54	210.02	21 37.1	22 16.2
	29	0.861	13.07	43.85	1.82	92.24	200.49	190.96	22 55.4	23 34.6
	31	0.859	12.88	44.15	1.82	91.90	181.42	171.87	..	0 13.8
Sept.	2	0.857	12.68	44.42	1.81	91.54	162.32	152.76	0 53.0	1 32.3
	4	0.856	12.50	44.68	1.80	91.17	143.20	133.64	2 11.6	2 50.9
	6	0.854	12.31	44.91	1.80	90.78	124.06	114.48	3 30.2	4 9.5
	8	0.853	12.14	45.12	1.79	90.38	104.90	95.32	4 48.9	5 28.3
	10	0.852	11.96	45.31	1.77	89.97	85.72	76.13	6 7.7	6 47.1
	12	0.851	11.79	45.48	1.76	89.55	66.53	56.92	7 26.6	8 6.1
	14	0.850	11.62	45.64	1.75	89.11	47.31	37.70	8 45.6	9 25.1
	16	0.849	11.46	45.77	1.73	88.67	28.08	18.46	10 4.6	10 44.2
	18	0.848	11.30	45.89	1.72	88.21	8.83	359.20	11 23.7	12 3.3
	20	0.847	11.14	46.00	1.70	87.75	349.56	339.92	12 42.9	13 22.5
	22	0.847	10.99	46.08	1.68	87.28	330.27	320.63	14 2.2	14 41.8
	24	0.846	10.84	46.16	1.67	86.80	310.97	301.32	15 21.5	16 1.2
	26	0.846	10.69	46.21	1.65	86.31	291.66	282.00	16 40.9	17 20.6
	28	0.846	10.55	46.26	1.63	85.82	272.33	262.66	18 0.4	18 40.1
	30	0.845	10.41	46.29	1.61	85.32	252.98	243.30	19 19.9	19 59.7

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Midnight.	Light-Time.	Stellar Magnitude.	P	$A_{\oplus} + 180^{\circ}$	D_{\oplus}	$A_{\odot} - A_{\oplus}$	D_{\odot}	$\odot \delta$
	m							
Sept. 30	7.47	-0.1	20.08	11.94	- 3.76	+44.42	-20.32	238.71
Oct. 2	7.57	0.1	19.40	13.06	4.32	44.62	20.60	239.98
4	7.67	0.1	18.70	14.20	4.88	44.81	20.87	241.24
6	7.77	-0.1	18.00	15.34	5.45	45.00	21.13	242.51
8	7.87	0.0	17.28	16.50	6.02	45.17	21.38	243.78
10	7.97	0.0	16.55	17.68	- 6.58	+45.34	-21.62	245.05
12	8.07	0.0	15.81	18.87	7.15	45.49	21.85	246.32
14	8.18	+0.1	15.06	20.07	7.72	45.64	22.07	247.59
16	8.28	0.1	14.30	21.28	8.29	45.78	22.28	248.86
18	8.38	0.1	13.53	22.50	8.86	45.91	22.47	250.13
20	8.49	+0.1	12.75	23.74	- 9.42	+46.03	-22.66	251.40
22	8.59	0.2	11.96	24.99	9.98	46.14	22.83	252.66
24	8.70	0.2	11.16	26.26	10.55	46.24	22.99	253.93
26	8.80	0.2	10.35	27.54	11.10	46.34	23.14	255.20
28	8.91	0.2	9.54	28.83	11.66	46.42	23.28	256.47
30	9.02	+0.3	8.72	30.13	-12.21	+46.49	-23.40	257.73
Nov. 1	9.13	0.3	7.89	31.44	12.75	46.55	23.51	259.00
3	9.23	0.3	7.05	32.77	13.29	46.60	23.61	260.26
5	9.34	0.3	6.21	34.11	13.82	46.63	23.70	261.52
7	9.45	0.4	5.36	35.46	14.34	46.66	23.78	262.79
9	9.56	+0.4	4.51	36.82	-14.86	+46.67	-23.84	264.05
11	9.67	0.4	3.66	38.19	15.37	46.67	23.89	265.31
13	9.78	0.4	2.80	39.57	15.88	46.66	23.93	266.56
15	9.89	0.5	1.94	40.97	16.37	46.64	23.96	267.82
17	10.01	0.5	1.07	42.38	16.85	46.61	23.98	269.07
19	10.12	+0.5	0.20	43.80	-17.33	+46.56	-23.98	270.33
21	10.23	0.5	359.33	45.23	17.80	46.49	23.97	271.58
23	10.35	0.5	358.46	46.68	18.25	46.41	23.95	272.83
25	10.46	0.6	357.58	48.13	18.69	46.32	23.92	274.07
27	10.57	0.6	356.70	49.60	19.12	46.22	23.87	275.32
29	10.69	+0.6	355.83	51.07	-19.54	+46.10	-23.81	276.56
Dec. 1	10.81	0.6	354.95	52.56	19.95	45.97	23.74	277.80
3	10.92	0.7	354.07	54.06	20.34	45.82	23.66	279.04
5	11.04	0.7	353.20	55.56	20.72	45.66	23.57	280.27
7	11.15	0.7	352.32	57.08	21.09	45.48	23.47	281.50
9	11.27	+0.7	351.45	58.60	-21.44	+45.29	-23.36	282.73
11	11.39	0.7	350.58	60.14	21.78	45.09	23.23	283.96
13	11.51	0.8	349.71	61.68	22.10	44.87	23.09	285.19
15	11.63	0.8	348.85	63.23	22.41	44.63	22.95	286.41
17	11.75	0.8	347.99	64.79	22.70	44.38	22.79	287.63
19	11.87	+0.8	347.13	66.36	-22.97	+44.12	-22.62	288.84
21	11.99	0.8	346.28	67.93	23.23	43.85	22.44	290.05
23	12.11	0.9	345.43	69.51	23.47	43.56	22.26	291.26
25	12.23	0.9	344.59	71.10	23.70	43.26	22.06	292.47
27	12.35	0.9	343.76	72.69	23.90	42.95	21.85	293.67
29	12.47	+0.9	342.93	74.29	-24.09	+42.62	-21.64	294.87
31	12.59	+1.0	342.11	75.89	-24.27	+42.28	-21.41	296.07

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF MARS.

Mid-night.	k	Diameter.	δ	ϑ	Q	Central Meridian.		Mean Time of Transit of Zero Meridian.	
						Of Date.	Of Intermediate Date.	Of Date.	Of Intermediate Date.
Sept. 30	0.845	10.41	46.29	1.61	85.32	252.98	243.30	h m	h m
Oct. 2	0.845	10.27	46.30	1.59	84.82	233.62	223.94	19 19.9	19 59.7
4	0.845	10.14	46.31	1.57	84.31	214.25	204.55	20 39.5	21 19.3
6	0.845	10.01	46.30	1.55	83.81	194.86	185.16	21 59.1	22 39.0
8	0.845	9.88	46.29	1.53	83.30	175.46	165.75	23 18.9	23 58.7
10	0.846	9.75	46.26	1.51	82.79	156.04	146.33	..	0 38.6
12	0.846	9.63	46.22	1.48	82.28	136.61	126.90	1 18.5	1 58.4
14	0.846	9.51	46.17	1.46	81.77	117.17	107.45	2 38.4	3 18.3
16	0.847	9.39	46.11	1.44	81.26	97.72	87.99	3 58.3	4 38.3
18	0.847	9.28	46.04	1.42	80.75	78.25	68.51	5 18.3	5 58.3
20	0.848	9.16	45.96	1.40	80.25	58.77	49.03	6 38.3	7 18.3
22	0.848	9.05	45.88	1.37	79.75	39.28	29.53	7 58.4	8 38.4
24	0.849	8.94	45.78	1.35	79.25	19.77	10.01	9 18.5	9 58.6
26	0.849	8.83	45.68	1.33	78.76	0.25	350.49	10 38.7	11 18.8
28	0.850	8.73	45.57	1.31	78.27	340.72	330.95	11 58.9	12 39.1
30	0.851	8.62	45.45	1.29	77.78	321.18	311.40	13 19.3	13 59.4
Nov. 1	0.852	8.52	45.32	1.26	77.30	301.62	291.84	14 39.6	15 19.8
3	0.852	8.42	45.18	1.24	76.83	282.05	272.27	16 0.0	16 40.2
5	0.853	8.32	45.04	1.22	76.37	262.47	252.68	17 20.5	18 0.7
7	0.854	8.23	44.89	1.20	75.91	242.88	233.08	18 41.0	19 21.3
9	0.855	8.13	44.74	1.18	75.47	223.28	213.47	20 1.6	20 41.9
11	0.856	8.04	44.58	1.16	75.03	203.66	193.85	21 22.2	22 2.5
13	0.857	7.95	44.41	1.14	74.60	184.03	174.21	22 42.9	23 23.2
15	0.858	7.86	44.24	1.11	74.17	164.39	154.57	..	0 3.6
17	0.859	7.77	44.06	1.09	73.76	144.74	134.91	0 44.0	1 24.4
19	0.860	7.69	43.88	1.07	73.36	125.08	115.24	2 4.8	2 45.2
21	0.862	7.60	43.69	1.05	72.97	105.40	95.56	3 25.6	4 6.1
23	0.863	7.52	43.49	1.03	72.58	85.72	75.87	4 46.6	5 27.0
25	0.864	7.44	43.29	1.01	72.21	66.02	56.16	6 7.5	6 48.0
27	0.865	7.36	43.08	0.99	71.85	46.31	36.45	7 28.5	8 9.0
29	0.866	7.28	42.87	0.97	71.50	26.59	16.72	8 49.6	9 30.1
Dec. 1	0.868	7.20	42.65	0.95	71.17	6.86	356.99	10 10.7	10 51.2
3	0.869	7.12	42.43	0.93	70.84	347.12	337.24	11 31.8	12 12.4
5	0.870	7.05	42.21	0.91	70.53	327.37	317.49	12 53.0	13 33.6
7	0.872	6.97	41.98	0.89	70.22	307.61	297.72	14 14.2	14 54.9
9	0.873	6.90	41.75	0.88	69.93	287.84	277.95	15 35.5	16 16.1
11	0.874	6.83	41.51	0.86	69.66	268.06	258.17	16 56.8	17 37.5
13	0.876	6.76	41.27	0.84	69.39	248.27	238.37	18 18.2	18 58.9
15	0.877	6.69	41.02	0.82	69.14	228.47	218.57	19 39.6	20 20.3
17	0.879	6.62	40.77	0.80	68.90	208.67	198.76	21 1.0	21 41.7
19	0.880	6.55	40.52	0.79	68.67	188.86	178.95	22 22.4	23 3.2
21	0.882	6.49	40.26	0.77	68.46	169.04	159.13	23 43.9	..
23	0.883	6.42	40.00	0.75	68.25	149.21	139.30	0 24.7	1 5.5
25	0.885	6.36	39.74	0.73	68.06	129.38	119.46	1 46.2	2 27.0
27	0.886	6.30	39.47	0.72	67.89	109.54	99.62	3 7.8	3 48.6
29	0.888	6.24	39.20	0.70	67.72	89.70	79.78	4 29.4	5 10.2
31	0.889	6.18	38.93	0.69	67.57	69.85	59.93	5 51.0	6 31.8
								7 12.7	7 53.5

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER.

Midnight.	Light-Time.	Stellar Magnitude.	P	$A_{\oplus} + 180^{\circ}$	D_{\oplus}	$A_{\odot} + 180^{\circ}$	D_{\odot}	
	in							
Jan.	1	45.49	-1.6	24.07	61.52	-2.70	51.19	-2.39
	8	44.56	1.6	23.99	62.12	2.75	51.72	2.41
	15	43.62	1.6	23.92	62.58	2.79	52.25	2.43
	22	42.70	1.7	23.87	62.89	2.83	52.78	2.44
	29	41.80	1.7	23.85	63.06	2.87	53.31	2.46
Feb.	5	40.94	-1.8	23.85	63.07	-2.90	53.84	-2.48
	12	40.13	1.8	23.87	62.92	2.92	54.37	2.50
	19	39.39	1.9	23.91	62.63	2.94	54.89	2.51
	26	38.73	1.9	23.97	62.18	2.95	55.42	2.53
Mar.	5	38.17	1.9	24.05	61.61	2.96	55.95	2.54
	12	37.71	-2.0	24.15	60.92	-2.96	56.48	-2.56
	19	37.36	2.0	24.25	60.13	2.95	57.01	2.58
	26	37.13	2.0	24.36	59.28	2.93	57.54	2.59
Apr.	2	37.02	2.0	24.46	58.39	2.91	58.07	2.61
	9	37.04	2.0	24.57	57.49	2.88	58.60	2.62
	16	37.18	-2.0	24.66	56.61	-2.85	59.13	-2.64
	23	37.44	2.0	24.74	55.79	2.81	59.66	2.65
	30	37.81	2.0	24.82	55.05	2.77	60.19	2.66
May	7	38.29	1.9	24.88	54.40	2.73	60.71	2.68
	14	38.87	1.9	24.92	53.88	2.69	61.24	2.69
	21	39.53	-1.9	24.96	53.50	-2.65	61.77	-2.70
	28	40.26	1.8	24.98	53.25	2.61	62.30	2.72
June	4	41.05	1.8	24.99	53.15	2.58	62.83	2.73
	11	41.89	1.7	24.98	53.20	2.55	63.36	2.74
	18	42.76	1.7	24.97	53.39	2.52	63.89	2.76
	25	43.65	-1.6	24.94	53.73	-2.50	64.42	-2.77
July	2	44.55	1.6	24.90	54.20	2.49	64.95	2.78
	9	45.45	1.6	24.85	54.79	2.48	65.48	2.79
	16	46.34	1.5	24.78	55.51	2.47	66.01	2.80
	23	47.21	1.5	24.70	56.33	2.47	66.54	2.82
	30	48.05	-1.4	24.60	57.26	-2.48	67.07	-2.83
Aug.	6	48.85	1.4	24.49	58.28	2.49	67.60	2.84
	13	49.61	1.4	24.36	59.39	2.50	68.13	2.85
	20	50.32	1.3	24.21	60.57	2.51	68.66	2.86
	27	50.97	1.3	24.04	61.82	2.53	69.19	2.87
Sept.	3	51.55	-1.3	23.85	63.13	-2.55	69.72	-2.88
	10	52.07	1.3	23.64	64.49	2.58	70.25	2.89
	17	52.51	1.2	23.42	65.90	2.60	70.78	2.90
	24	52.88	-1.2	23.17	67.35	-2.63	71.31	-2.91

Nov.	20	52.69	-1.2	20.51	79.62	-2.88	75.64	-2.97
	27	52.27	1.3	20.13	81.07	2.92	76.17	2.98
Dec.	4	51.78	1.3	19.74	82.49	2.95	76.70	2.99
	11	51.21	1.3	19.36	83.86	2.98	77.23	2.99
	18	50.56	1.3	18.99	85.17	3.01	77.76	3.00
	25	49.85	-1.4	18.62	86.41	-3.04	78.30	-3.01
	32	49.08	-1.4	18.26	87.58	-3.07	78.83	-3.01

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER.

Midnight.	Equatorial Diameter.	Excess of Equat. Diam. over Polar.	δ	η	Q	Central Meridian.		Correction for Phase.
						System I.	System II.	
Jan. 1	35.97	2.39	10.32	0.29	292.58	245.07	148.82	+0.46
8	36.73	2.44	10.39	0.30	292.36	270.34	120.67	0.47
15	37.52	2.49	10.32	0.30	292.14	295.75	92.67	0.46
22	38.33	2.55	10.11	0.29	291.93	321.30	64.80	0.44
29	39.15	2.60	9.75	0.28	291.71	346.98	37.07	0.41
Feb. 5	39.97	2.66	9.23	0.26	291.48	12.80	9.47	+0.37
12	40.78	2.71	8.56	0.23	291.23	38.73	341.99	0.32
19	41.54	2.76	7.74	0.19	290.93	64.78	314.63	0.26
26	42.25	2.81	6.77	0.15	290.54	90.92	287.36	0.20
Mar. 5	42.87	2.85	5.66	0.10	289.99	117.14	260.17	0.14
12	43.40	2.88	4.45	0.06	289.13	143.42	233.03	+0.09
19	43.81	2.91	3.14	0.03	287.50	169.72	205.91	0.04
26	44.08	2.93	1.77	0.01	283.27	196.01	178.79	+0.01
Apr. 2	44.21	2.94	0.44	0.00	250.73	222.27	151.64	0.00
9	44.19	2.94	1.14	0.01	127.74	248.46	124.42	-0.01
16	44.02	2.92	2.52	0.02	119.42	274.55	97.10	-0.03
23	43.71	2.90	3.86	0.05	117.00	300.51	69.65	0.06
30	43.28	2.88	5.13	0.09	115.86	326.32	42.06	0.11
May 7	42.73	2.84	6.30	0.13	115.18	351.97	14.30	0.17
14	42.10	2.80	7.35	0.17	114.71	17.44	346.36	0.23
21	41.40	2.75	8.27	0.21	114.36	42.73	318.24	-0.30
28	40.65	2.70	9.04	0.25	114.08	67.83	289.94	0.36
June 4	39.87	2.65	9.67	0.28	113.85	92.74	261.45	-0.41
11	39.07	2.60	10.15	0.30	113.64	117.49	232.79	0.45
18	38.27	2.54	10.49	0.32	113.45	142.06	203.96	0.48
25	37.49	2.49	10.68	0.33	113.28	166.48	174.97	-0.50
July 2	36.73	2.44	10.74	0.32	113.10	190.76	145.85	0.50
9	36.00	2.39	10.68	0.31	112.92	214.92	116.60	0.50
16	35.31	2.35	10.49	0.30	112.74	238.96	87.24	0.48
23	34.66	2.30	10.20	0.28	112.55	262.90	57.77	0.45
30	34.06	2.26	9.80	0.25	112.34	286.76	28.23	-0.42
Aug. 6	33.51	2.23	9.31	0.22	112.11	310.55	358.61	0.38
13	32.99	2.19	8.74	0.19	111.86	334.28	328.94	0.33
20	32.52	2.16	8.09	0.16	111.58	357.97	299.22	0.28
27	32.11	2.13	7.37	0.13	111.25	21.63	269.46	0.24
Sept. 3	31.74	2.11	6.59	0.10	110.87	45.26	239.69	-0.19
10	31.43	2.09	5.76	0.08	110.41	68.88	209.91	0.14
17	31.16	2.07	4.88	0.06	109.83	92.50	180.12	0.10
24	30.95	2.06	3.97	0.04	109.09	116.14	150.34	-0.07
..
Nov. 20	31.06	2.06	3.98	0.04	291.89	104.28	63.58	+0.07
27	31.30	2.08	4.90	0.06	291.00	128.38	34.26	0.11
Dec. 4	31.60	2.10	5.78	0.08	290.28	152.57	5.04	0.15
11	31.96	2.12	6.61	0.11	289.65	176.85	335.91	0.19
18	32.37	2.15	7.39	0.14	289.09	201.23	306.88	0.24
25	32.83	2.18	8.11	0.17	288.58	225.72	277.95	+0.29
32	33.34	2.21	8.74	0.20	288.10	250.32	249.14	+0.33

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER.
SYSTEM I.

Transit of Zero Meridian.			Interval between Successive Transits.		Transit of Zero Meridian.			Interval between Successive Transits.						
d	h	m	h	m	d	h	m	h	m					
Jan.	1	15	7.77	9	50.50	Mar.	22	14	4.85					
	3	16	20.30				24	15	16.89					
	5	17	32.81				26	16	28.93					
	7	18	45.30				28	17	40.97					
	9	19	57.78				30	18	53.01					
	11	21	10.24				9	50.48	Apr.	1	20	5.06		
	13	22	22.68							3	21	17.12		
	15	23	35.11							5	22	29.19		
	18	0	47.51							7	23	41.27		
	20	1	59.90							10	0	53.37		
22	3	12.28	12	2	5.48									
24	4	24.63	14	3	17.62									
26	5	36.97	16	4	29.77									
28	6	49.29	18	5	41.94									
30	8	1.59	20	6	54.13									
Feb.	1	9	13.88	9	50.45	22	8	6.34	9	50.44				
	3	10	26.15				24	9			18.58			
	5	11	38.40				26	10			30.84			
	7	12	50.64				28	11			43.12			
	9	14	2.87				30	12			55.43			
	11	15	15.07				9	50.44			May	2	14	7.76
	13	16	27.26									4	15	20.11
	15	17	39.44									6	16	32.49
	17	18	51.61									8	17	44.90
	19	20	3.76									10	18	57.32
21	21	15.89	9	50.42	12	20			9.79					
23	22	28.02				14			21	22.28				
25	23	40.13				16			22	34.79				
28	0	52.23				18			23	47.32				
Mar.	2	2				4.32			9	50.41		21	0	59.89	9	50.52
	4	3				16.40	23	2			12.47			
	6	4				28.48	25	3			25.09			
	8	5				40.54	27	4			37.73			
	10	6				52.60	29	5			50.39			
	12	8				4.65	31	7			3.08			
	14	9	16.70	9	50.41	June	2	8			15.79			
	16	10	28.74				4	9			28.53			
	18	11	40.78				6	10			41.29			
	20	12	52.81				8	11			54.07			

JUPITER, 1922.

577

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER. SYSTEM I.—*continued.*

Transit of Zero Meridian.			Interval between Successive Transits.		Transit of Zero Meridian.			Interval between Successive Transits.			
d	h	m	h	m	d	h	m	h	m		
June	10	13	6.87	9	50.57	Aug.	29	12	38.18	9	50.66
	12	14	19.70			31	13	51.46			
	14	15	32.55			Sept.	2	15	4.74		
	16	16	45.42			4	16	18.02			
	18	17	58.31			6	17	31.31			
	20	19	11.22			8	18	44.59			
	22	20	24.15			10	19	57.88			
	24	21	37.10			12	21	11.17			
	26	22	50.07			14	22	24.45			
	29	0	3.05			16	23	37.74			
July	1	1	16.05	9	50.60	19	0	51.03	9	50.66	
	3	2	29.07			21	2	4.31			
	5	3	42.10			23	3	17.60			
	7	4	55.15			25	4	30.88			
	9	6	8.22			27	5	44.16			
	11	7	21.29			..	..	..
	13	8	34.38			Nov.	20	18			59.42
	15	9	47.49			22	20	12.49			
	17	11	0.61			24	21	25.55			
	19	12	13.74			26	22	38.60			
Aug.	21	13	26.88	9	50.63	28	23	51.64	9	50.60	
	23	14	40.04			Dec.	1	1			4.66
	25	15	53.20			3	2	17.67			
	27	17	6.38			5	3	30.66			
	29	18	19.57			7	4	43.64			
	31	19	32.76			9	5	56.61			
	2	20	45.96			11	7	9.56			
	4	21	59.17			13	8	22.50			
	6	23	12.39			15	9	35.42			
	9	0	25.62			17	10	48.33			
Aug.	11	1	38.85	9	50.65	19	12	1.22	9	50.57	
	13	2	52.09			21	13	14.10			
	15	4	5.33			23	14	26.97			
	17	5	18.58			25	15	39.82			
	19	6	31.84			27	16	52.65			
	21	7	45.10			29	18	5.47			
	23	8	58.36			31	19	18.27			
	25	10	11.63			33	20	31.05			
	27	11	24.91								

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER.
SYSTEM II.

Transit of Zero Meridian.			Interval between Successive Transits.		Transit of Zero Meridian.			Interval between Successive Transits.		
	d	h m	h	m		d	h m	h	m	
Jan.	1	17 48.68	9	55.68	Mar.	23	9 35.10	9	55.58	
	3	19 27.09				25	11 13.01			
	5	21 5.49				27	12 50.93			
	7	22 43.88				29	14 28.85			
	10	0 22.24				31	16 6.78			
	12	2 0.58	9	55.66		Apr.	2	17 44.71	9	55.59
	14	3 38.91					4	19 22.65		
	16	5 17.22					6	21 0.60		
	18	6 55.51					8	22 38.57		
	20	8 33.79					11	0 16.55		
22	10 12.04	9	55.64	May	13	1 54.55	9	55.61		
24	11 50.28				15	3 32.57				
26	13 28.50				17	5 10.61				
28	15 6.70				19	6 48.67				
30	16 44.89				21	8 26.76				
Feb.	1	18 23.06	9		55.63	23	10 4.86	9	55.62	
	3	20 1.21				25	11 42.99			
	5	21 39.34			27	13 21.14				
	7	23 17.46			29	14 59.32				
	10	0 55.56			1	16 37.52				
	12	2 33.65	9	55.61	3	18 15.75	9	55.65		
	14	4 11.72			5	19 54.00				
	16	5 49.78			7	21 32.28				
	18	7 27.82			9	23 10.59				
	20	9 5.85			12	0 48.92				
22	10 43.86	9	55.60	14	2 27.27	9	55.67			
24	12 21.86			16	4 5.66					
26	13 59.85			18	5 44.07					
28	15 37.83			20	7 22.51					
Mar.	2	17 15.80			22	9 0.97				
	4	18 53.76	9	55.59	24	10 39.46	9	55.70		
	6	20 31.71			26	12 17.98				
	8	22 9.65			28	13 56.52				
	10	23 47.58			30	15 35.09				
	13	1 25.51			June	1	17 13.68			
	15	3 3.43	9	55.58		3	18 52.30	9	55.72	
	17	4 41.35				5	20 30.94			
	19	6 19.27				7	22 9.61			
	21	7 57.18				9	23 48.30			

EPHEMERIS FOR PHYSICAL OBSERVATIONS OF JUPITER. SYSTEM II.—*continued.*

Transit of Zero Meridian.			Interval between Successive Transits.		Transit of Zero Meridian.			Interval between Successive Transits.							
d	h	m	h	m	d	h	m	h	m						
June	12	1	27	01	9	55	75	Aug.	31	17	48	59	9	55	84
	14	3	5	74				Sept.	2	19	27	77			
	16	4	44	49					4	21	6	95			
	18	6	23	27					6	22	46	13			
	20	8	2	06					9	0	25	31			
	22	9	40	88	9	55	77		11	2	4	50	9	55	84
	24	11	19	72					13	3	43	68			
	26	12	58	57					15	5	22	87			
	28	14	37	44					17	7	2	06			
	30	16	16	33					19	8	41	24			
July	2	17	55	24	9	55	79		21	10	20	42	9	55	83
	4	19	34	16					23	11	59	61			
	6	21	13	10					25	13	38	79			
	8	22	52	06					27	15	17	96			
	11	0	31	03					29	16	57	14			
	13	2	10	01	9	55	80		..						
	15	3	49	01					..						
	17	5	28	02				Nov.	20	20	10	46	9	55	79
	19	7	7	05					22	21	49	43			
	21	8	46	09					24	23	28	39			
	23	10	25	13	9	55	81		27	1	7	33	9	55	78
	25	12	4	19					29	2	46	26			
	27	13	43	26				Dec.	1	4	25	18			
	29	15	22	34					3	6	4	08			
	31	17	1	43					5	7	42	97			
Aug.	2	18	40	53	9	55	82		7	9	21	85	9	55	76
	4	20	19	64					9	11	0	71			
	6	21	58	75					11	12	39	55			
	8	23	37	87					13	14	18	38			
	11	1	17	00					15	15	57	20			
	13	2	56	14	9	55	83		17	17	36	00	9	55	75
	15	4	35	28					19	19	14	79			
	17	6	14	43					21	20	53	56			
	19	7	53	58					23	22	32	31			
	21	9	32	74					26	0	11	05			
	23	11	11	90	9	55	83		28	1	49	78	9	55	73
	25	12	51	07					30	3	28	48			
	27	14	30	24					32	5	7	18			
	29	16	9	41					34	6	45	85			

TABLES.

For converting INTERVALS of MEAN SOLAR Time into Equivalent INTERVALS of
SIDEREAL Time.

HOURS.			MINUTES.			SECONDS.							
Hours of Mean Time.	Equivalents in Sidereal Time.		Minutes of Mean Time.	Equivalents in Sidereal Time.		Minutes of Mean Time.	Equivalents in Sidereal Time.		Seconds of Mean Time.	Equivalents in Sidereal Time.			
	h	m	s		m	s		m	s		s		
1	1	0	9.8565	1	1	0.1643	31	31	5.0925	1	1.0027	31	31.0849
2	2	0	19.7130	2	2	0.3286	32	32	5.2568	2	2.0055	32	32.0876
3	3	0	29.5694	3	3	0.4928	33	33	5.4211	3	3.0082	33	33.0904
4	4	0	39.4259	4	4	0.6571	34	34	5.5853	4	4.0110	34	34.0931
5	5	0	49.2824	5	5	0.8214	35	35	5.7496	5	5.0137	35	35.0958
6	6	0	59.1388	6	6	0.9857	36	36	5.9139	6	6.0164	36	36.0986
7	7	1	8.9953	7	7	1.1499	37	37	6.0782	7	7.0192	37	37.1013
8	8	1	18.8518	8	8	1.3142	38	38	6.2424	8	8.0219	38	38.1040
9	9	1	28.7083	9	9	1.4785	39	39	6.4067	9	9.0246	39	39.1068
10	10	1	38.5647	10	10	1.6428	40	40	6.5710	10	10.0274	40	40.1095
11	11	1	48.4212	11	11	1.8070	41	41	6.7353	11	11.0301	41	41.1123
12	12	1	58.2777	12	12	1.9713	42	42	6.8995	12	12.0329	42	42.1150
13	13	2	8.1342	13	13	2.1356	43	43	7.0638	13	13.0356	43	43.1177
14	14	2	17.9906	14	14	2.2998	44	44	7.2281	14	14.0383	44	44.1205
15	15	2	27.8471	15	15	2.4641	45	45	7.3924	15	15.0411	45	45.1232
16	16	2	37.7036	16	16	2.6284	46	46	7.5566	16	16.0438	46	46.1259
17	17	2	47.5600	17	17	2.7927	47	47	7.7209	17	17.0465	47	47.1287
18	18	2	57.4165	18	18	2.9569	48	48	7.8852	18	18.0493	48	48.1314
19	19	3	7.2730	19	19	3.1212	49	49	8.0495	19	19.0520	49	49.1342
20	20	3	17.1295	20	20	3.2855	50	50	8.2137	20	20.0548	50	50.1369
21	21	3	26.9859	21	21	3.4498	51	51	8.3780	21	21.0575	51	51.1396
22	22	3	36.8424	22	22	3.6140	52	52	8.5423	22	22.0602	52	52.1424
23	23	3	46.6989	23	23	3.7783	53	53	8.7066	23	23.0630	53	53.1451
24	24	3	56.5554	24	24	3.9426	54	54	8.8708	24	24.0657	54	54.1479
				25	25	4.1069	55	55	9.0351	25	25.0685	55	55.1506
				26	26	4.2711	56	56	9.1994	26	26.0712	56	56.1533
				27	27	4.4354	57	57	9.3637	27	27.0739	57	57.1561
				28	28	4.5997	58	58	9.5279	28	28.0767	58	58.1588
				29	29	4.7640	59	59	9.6922	29	29.0794	59	59.1615
				30	30	4.9282	60	60	9.8565	30	30.0821	60	60.1643

For converting INTERVALS of MEAN SOLAR Time into Equivalent INTERVALS of
SIDEREAL Time.

FRACTIONS OF A SECOND.

Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.	Seconds of Mean Time.	Equivalents in Sidereal Time.
	s		s		s		s		s
0.01	0.01003	0.21	0.21057	0.41	0.41112	0.61	0.61167	0.81	0.81222
0.02	0.02006	0.22	0.22060	0.42	0.42115	0.62	0.62170	0.82	0.82225
0.03	0.03008	0.23	0.23063	0.43	0.43118	0.63	0.63173	0.83	0.83227
0.04	0.04011	0.24	0.24066	0.44	0.44120	0.64	0.64175	0.84	0.84230
0.05	0.05014	0.25	0.25068	0.45	0.45123	0.65	0.65178	0.85	0.85233
0.06	0.06016	0.26	0.26071	0.46	0.46126	0.66	0.66181	0.86	0.86235
0.07	0.07019	0.27	0.27074	0.47	0.47129	0.67	0.67183	0.87	0.87238
0.08	0.08022	0.28	0.28077	0.48	0.48131	0.68	0.68186	0.88	0.88241
0.09	0.09025	0.29	0.29079	0.49	0.49134	0.69	0.69189	0.89	0.89244
0.10	0.10027	0.30	0.30082	0.50	0.50137	0.70	0.70192	0.90	0.90246
0.11	0.11030	0.31	0.31085	0.51	0.51140	0.71	0.71194	0.91	0.91249
0.12	0.12033	0.32	0.32088	0.52	0.52142	0.72	0.72197	0.92	0.92252
0.13	0.13036	0.33	0.33090	0.53	0.53145	0.73	0.73200	0.93	0.93255
0.14	0.14038	0.34	0.34093	0.54	0.54148	0.74	0.74203	0.94	0.94257
0.15	0.15041	0.35	0.35096	0.55	0.55151	0.75	0.75205	0.95	0.95260
0.16	0.16044	0.36	0.36099	0.56	0.56153	0.76	0.76208	0.96	0.96263
0.17	0.17047	0.37	0.37101	0.57	0.57156	0.77	0.77211	0.97	0.97266
0.18	0.18049	0.38	0.38104	0.58	0.58159	0.78	0.78214	0.98	0.98268
0.19	0.19052	0.39	0.39107	0.59	0.59162	0.79	0.79216	0.99	0.99271
0.20	0.20055	0.40	0.40110	0.60	0.60164	0.80	0.80219	1.00	1.00274

Sidereal Time *required* = Sidereal Time at the *preceding* Mean Noon + the Equivalent to the *given* Mean Time.

EXAMPLE.—To convert 2^h 25^m 18^s.96 Mean Time at Greenwich, Jan. 20, 1922, into Sidereal Time.

Sidereal Time at the <i>preceding</i> Mean Noon, viz., January 20 . . .	-	h m s 19 56 19.58
For Mean Intervals {	2 ^h 25 ^m 18 ^s .96	the Table gives the Equivalent Sidereal Intervals {
{	25 0 18 0.96	{
		2 0 19.713 25 4.107 18.049 0.963
The Sum is the Sidereal Time required		22 22 24.1

TABLES.

For converting INTERVALS of SIDEREAL Time into Equivalent INTERVALS of
MEAN SOLAR Time.

HOURS.			MINUTES.						SECONDS.								
Hours of Sidereal Time.	Equivalents in Mean Time.		Minutes of Sidereal Time.	Equivalents in Mean Time.		Minutes of Sidereal Time.	Equivalents in Mean Time.		Seconds of Sidereal Time.	Equivalents in Mean Time.							
	h	m	s	m	s	m	s	m	s	s	s						
1	0	59	50.1704	1	0	59	8362	31	30	54	9214	1	0	9973	31	30	9154
2	1	59	40.3409	2	1	59	6723	32	31	54	7576	2	1	9945	32	31	9126
3	2	59	30.5113	3	2	59	5085	33	32	54	5937	3	2	9918	33	32	9099
4	3	59	20.6818	4	3	59	3447	34	33	54	4299	4	3	9891	34	33	9072
5	4	59	10.8522	5	4	59	1809	35	34	54	2661	5	4	9864	35	34	9045
6	5	59	1.0226	6	5	59	0170	36	35	54	1023	6	5	9836	36	35	9017
7	6	58	51.1931	7	6	58	8532	37	36	53	9384	7	6	9809	37	36	8990
8	7	58	41.3635	8	7	58	6894	38	37	53	7746	8	7	9782	38	37	8963
9	8	58	31.5340	9	8	58	5256	39	38	53	6108	9	8	9754	39	38	8935
10	9	58	21.7044	10	9	58	3617	40	39	53	4470	10	9	9727	40	39	8908
11	10	58	11.8748	11	10	58	1979	41	40	53	2831	11	10	9700	41	40	8881
12	11	58	2.0453	12	11	58	0341	42	41	53	1193	12	11	9672	42	41	8853
13	12	57	52.2157	13	12	57	8703	43	42	52	9555	13	12	9645	43	42	8826
14	13	57	42.3862	14	13	57	7064	44	43	52	7917	14	13	9618	44	43	8799
15	14	57	32.5566	15	14	57	5426	45	44	52	6278	15	14	9591	45	44	8772
16	15	57	22.7270	16	15	57	3788	46	45	52	4640	16	15	9563	46	45	8744
17	16	57	12.8975	17	16	57	2150	47	46	52	3002	17	16	9536	47	46	8717
18	17	57	3.0679	18	17	57	0511	48	47	52	1364	18	17	9509	48	47	8690
19	18	56	53.2384	19	18	56	8873	49	48	51	9725	19	18	9481	49	48	8662
20	19	56	43.4088	20	19	56	7235	50	49	51	8087	20	19	9454	50	49	8635
21	20	56	33.5792	21	20	56	5597	51	50	51	6449	21	20	9427	51	50	8608
22	21	56	23.7497	22	21	56	3958	52	51	51	4810	22	21	9399	52	51	8580
23	22	56	13.9201	23	22	56	2320	53	52	51	3172	23	22	9372	53	52	8553
24	23	56	4.0906	24	23	56	0682	54	53	51	1534	24	23	9345	54	53	8526
				25	24	55	9044	55	54	50	9896	25	24	9318	55	54	8499
				26	25	55	7405	56	55	50	8257	26	25	9290	56	55	8471
				27	26	55	5767	57	56	50	6619	27	26	9263	57	56	8444
				28	27	55	4129	58	57	50	4981	28	27	9236	58	57	8417
				29	28	55	2490	59	58	50	3343	29	28	9208	59	58	8389
				30	29	55	0852	60	59	50	1704	30	29	9181	60	59	8362

For converting INTERVALS of SIDEREAL Time into Equivalent INTERVALS of
MEAN SOLAR Time.

FRACTIONS OF A SECOND.

Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.	Seconds of Sidereal Time.	Equivalents in Mean Time.
	s		s		s		s		s
0.01	0.00997	0.21	0.20943	0.41	0.40888	0.61	0.60833	0.81	0.80779
0.02	0.01995	0.22	0.21940	0.42	0.41885	0.62	0.61831	0.82	0.81776
0.03	0.02992	0.23	0.22937	0.43	0.42883	0.63	0.62828	0.83	0.82773
0.04	0.03989	0.24	0.23934	0.44	0.43880	0.64	0.63825	0.84	0.83771
0.05	0.04986	0.25	0.24932	0.45	0.44877	0.65	0.64823	0.85	0.84768
0.06	0.05984	0.26	0.25929	0.46	0.45874	0.66	0.65820	0.86	0.85765
0.07	0.06981	0.27	0.26926	0.47	0.46872	0.67	0.66817	0.87	0.86762
0.08	0.07978	0.28	0.27924	0.48	0.47869	0.68	0.67814	0.88	0.87760
0.09	0.08975	0.29	0.28921	0.49	0.48866	0.69	0.68812	0.89	0.88757
0.10	0.09973	0.30	0.29918	0.50	0.49864	0.70	0.69809	0.90	0.89754
0.11	0.10970	0.31	0.30915	0.51	0.50861	0.71	0.70806	0.91	0.90752
0.12	0.11967	0.32	0.31913	0.52	0.51858	0.72	0.71803	0.92	0.91749
0.13	0.12965	0.33	0.32910	0.53	0.52855	0.73	0.72801	0.93	0.92746
0.14	0.13962	0.34	0.33907	0.54	0.53853	0.74	0.73798	0.94	0.93743
0.15	0.14959	0.35	0.34904	0.55	0.54850	0.75	0.74795	0.95	0.94741
0.16	0.15956	0.36	0.35902	0.56	0.55847	0.76	0.75793	0.96	0.95738
0.17	0.16954	0.37	0.36899	0.57	0.56844	0.77	0.76790	0.97	0.96735
0.18	0.17951	0.38	0.37896	0.58	0.57842	0.78	0.77787	0.98	0.97732
0.19	0.18948	0.39	0.38894	0.59	0.58839	0.79	0.78784	0.99	0.98730
0.20	0.19945	0.40	0.39891	0.60	0.59836	0.80	0.79782	1.00	0.99727

Mean Solar Time *required* = Mean Time at the *preceding* Sidereal Noon (Mean Time of Transit of the First Point of Aries, page III) + the Equivalent to the *given* Sidereal Time.

EXAMPLE.—To convert 22^h 22^m 23.41 Sidereal Time at Greenwich, Jan. 20, 1922, into Mean Time.

Mean Time at the <i>preceding</i> Sidereal Noon, viz., January 19 For Sidereal Intervals $\left\{ \begin{array}{l} 22^{\text{h}} \text{ } 0^{\text{m}} \text{ } 0^{\text{s}} \\ 22 \text{ } 0 \\ 2 \\ 0.41 \end{array} \right\}$ the Table gives the Equivalent Mean Intervals $\left\{ \begin{array}{l} 4 \text{ } 6 \text{ } 56.41 \\ 21 \text{ } 56 \text{ } 23.750 \\ 21 \text{ } 56 \text{ } 3.96 \\ 1.995 \\ 0.409 \end{array} \right\}$	h m s 4 6 56.41 21 56 23.750 21 56 3.96 1.995 0.409 <hr style="width: 50%; margin: 0 auto;"/> 2 25 18.96
The Sum is the Mean Time required, Jan. 20	

584 DAY OF THE YEAR, &c., 1922.

DAY AND FRACTION OF THE YEAR FROM MEAN NOON OF JAN. 1.

Day of the Month.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*
1	0	·0000	31	·0849	59	·1615	90	·2464	120	·3285	151	·4134
2	1	·0027	32	·0876	60	·1643	91	·2492	121	·3313	152	·4162
3	2	·0055	33	·0904	61	·1670	92	·2519	122	·3340	153	·4189
4	3	·0082	34	·0931	62	·1698	93	·2546	123	·3368	154	·4216
5	4	·0110	35	·0958	63	·1725	94	·2574	124	·3395	155	·4244
6	5	·0137	36	·0986	64	·1752	95	·2601	125	·3422	156	·4271
7	6	·0164	37	·1013	65	·1780	96	·2628	126	·3450	157	·4299
8	7	·0192	38	·1040	66	·1807	97	·2656	127	·3477	158	·4326
9	8	·0219	39	·1068	67	·1834	98	·2683	128	·3504	159	·4353
10	9	·0246	40	·1095	68	·1862	99	·2711	129	·3532	160	·4381
11	10	·0274	41	·1123	69	·1889	100	·2738	130	·3559	161	·4408
12	11	·0301	42	·1150	70	·1917	101	·2765	131	·3587	162	·4435
13	12	·0329	43	·1177	71	·1944	102	·2793	132	·3614	163	·4463
14	13	·0356	44	·1205	72	·1971	103	·2820	133	·3641	164	·4490
15	14	·0383	45	·1232	73	·1999	104	·2847	134	·3669	165	·4518
16	15	·0411	46	·1259	74	·2026	105	·2875	135	·3696	166	·4545
17	16	·0438	47	·1287	75	·2053	106	·2902	136	·3724	167	·4572
18	17	·0465	48	·1314	76	·2081	107	·2930	137	·3751	168	·4600
19	18	·0493	49	·1342	77	·2108	108	·2957	138	·3778	169	·4627
20	19	·0520	50	·1369	78	·2136	109	·2984	139	·3806	170	·4654
21	20	·0548	51	·1396	79	·2163	110	·3012	140	·3833	171	·4682
22	21	·0575	52	·1424	80	·2190	111	·3039	141	·3860	172	·4709
23	22	·0602	53	·1451	81	·2218	112	·3066	142	·3888	173	·4737
24	23	·0630	54	·1478	82	·2245	113	·3094	143	·3915	174	·4764
25	24	·0657	55	·1506	83	·2272	114	·3121	144	·3943	175	·4791
26	25	·0684	56	·1533	84	·2300	115	·3149	145	·3970	176	·4819
27	26	·0712	57	·1561	85	·2327	116	·3176	146	·3997	177	·4846
28	27	·0739	58	·1588	86	·2355	117	·3203	147	·4025	178	·4873
29	28	·0767			87	·2382	118	·3231	148	·4052	179	·4901
30	29	·0794			88	·2409	119	·3258	149	·4079	180	·4928
31	30	·0821			89	·2437			150	·4107		

* Add ·0010 if Fraction of the Year be required from the time when the Sun's Mean Longitude is 280°.

DAY AND FRACTION OF THE YEAR FROM MEAN NOON
OF JAN. 1.

Day of the Month.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*	Day of the Year.	Fraction of the Year.*
1	181	.4956	212	.5804	243	.6653	273	.7474	304	.8323	334	.9145
2	182	.4983	213	.5832	244	.6681	274	.7502	305	.8351	335	.9172
3	183	.5010	214	.5859	245	.6708	275	.7529	306	.8378	336	.9199
4	184	.5038	215	.5887	246	.6735	276	.7557	307	.8405	337	.9227
5	185	.5065	216	.5914	247	.6763	277	.7584	308	.8433	338	.9254
6	186	.5093	217	.5941	248	.6790	278	.7611	309	.8460	339	.9282
7	187	.5120	218	.5969	249	.6817	279	.7639	310	.8488	340	.9309
8	188	.5147	219	.5996	250	.6845	280	.7666	311	.8515	341	.9336
9	189	.5175	220	.6023	251	.6872	281	.7694	312	.8542	342	.9364
10	190	.5202	221	.6051	252	.6900	282	.7721	313	.8570	343	.9391
11	191	.5229	222	.6078	253	.6927	283	.7748	314	.8597	344	.9418
12	192	.5257	223	.6106	254	.6954	284	.7776	315	.8624	345	.9446
13	193	.5284	224	.6133	255	.6982	285	.7803	316	.8652	346	.9473
14	194	.5312	225	.6160	256	.7009	286	.7830	317	.8679	347	.9501
15	195	.5339	226	.6188	257	.7036	287	.7858	318	.8707	348	.9528
16	196	.5366	227	.6215	258	.7064	288	.7885	319	.8734	349	.9555
17	197	.5394	228	.6242	259	.7091	289	.7913	320	.8761	350	.9583
18	198	.5421	229	.6270	260	.7119	290	.7940	321	.8789	351	.9610
19	199	.5448	230	.6297	261	.7146	291	.7967	322	.8816	352	.9637
20	200	.5476	231	.6325	262	.7173	292	.7995	323	.8843	353	.9665
21	201	.5503	232	.6352	263	.7201	293	.8022	324	.8871	354	.9692
22	202	.5531	233	.6379	264	.7228	294	.8049	325	.8898	355	.9720
23	203	.5558	234	.6407	265	.7255	295	.8077	326	.8926	356	.9747
24	204	.5585	235	.6434	266	.7283	296	.8104	327	.8953	357	.9774
25	205	.5613	236	.6461	267	.7310	297	.8132	328	.8980	358	.9802
26	206	.5640	237	.6489	268	.7338	298	.8159	329	.9008	359	.9829
27	207	.5667	238	.6516	269	.7365	299	.8186	330	.9035	360	.9856
28	208	.5695	239	.6544	270	.7392	300	.8214	331	.9062	361	.9884
29	209	.5722	240	.6571	271	.7420	301	.8241	332	.9090	362	.9911
30	210	.5750	241	.6598	272	.7447	302	.8268	333	.9117	363	.9939
31	211	.5777	242	.6626			303	.8296			364	.9966

*Add .0010 if Fraction of the Year be required from the time when the Sun's Mean Longitude is 280°.

Days elapsed at Mean Noon of Jan. 1 of each year of the Table.											Days elapsed at Mean Noon.	
A.D.	0	200	400	600	800	1000	1200	1400	1600	1800	Date.	1922.
	17	17	18	19	20	20	21	22	23	23		
0	21058	94108	67158	40208	13258	86308	59358	32408	05448	78497*		
4	22519	95569	68619	41669	14719	87769	60819	33869	06909	79957	Jan.	1 2423
8	23980	97030	70080	43130	16180	89230	62280	35330	08370	81418		11 056
12	25441	98491	71541	44591	17641	90691	63741	36791	09831	82879		21 066
16	26902	99952	73002	46052	19102	92152	65202	38252	11292	84340		31 076
20	28363	01413	74463	47513	20563	93613	66663	39713	12753	85801		31 086
24	29824	02874	75924	48974	22024	95074	68124	41174	14214	87262	Feb.	10 096
28	31285	04335	77385	50435	23485	96535	69585	42635	15675	88723		20 106
32	32746	05796	78846	51896	24946	97996	71046	44096	17136	90184	Mar.	2 116
36	34207	07257	80307	53357	26407	99457	72507	45557	18597	91645		12 126
40	35668	08718	81768	54818	27868	00918	73968	47018	20058	93106		22 136
44	37129	10179	83229	56279	29329	02379	75429	48479	21519	94567	Apr.	1 146
48	38590	11640	84690	57740	30790	03840	76890	49940	22980	96028		11 156
52	40051	13101	86151	59201	32251	05301	78351	51401	24441	97489		21 166
56	41512	14562	87612	60662	33712	06762	79812	52862	25902	98950		
60	42973	16023	89073	62123	35173	08223	81273	54323	27363	00411	May	1 176
64	44434	17484	90534	63584	36634	09684	82734	55784	28824	01872		11 186
68	45895	18945	91995	65045	38095	11145	84195	57245	30285	03333		21 196
72	47356	20406	93456	66506	39556	12606	85656	58706	31746	04794		31 206
76	48817	21867	94917	67967	41017	14067	87117	60167	33207	06255	June	10 216
80	50278	23328	96378	69428	42478	15528	88578	61628	34668	07716		20 226
84	51739	24789	97839	70889	43939	16989	90039	63089	36129	09177		30 236
88	53200	26250	99300	72350	45400	18450	91500	64550	37590	10638	July	10 246
92	54661	27711	00761	73811	46861	19911	92961	66011	39051	12099		20 256
96	56122	29172	02222	75272	48322	21372	94422	67472	40512	13560		30 266
100	57583	30633	03683	76733	49783	22833	95883	68933	41973*	15021*	Aug.	9 276
104	59044	32094	05144	78194	51244	24294	97344	70394	43433	16481		19 286
108	60505	33555	06605	79655	52705	25755	98805	71855	44894	17942		29 296
112	61966	35016	08066	81116	54166	27216	00266	73316	46355	19403	Sept.	8 306
116	63427	36477	09527	82577	55627	28677	01727	74777	47816	20864		18 316
120	64888	37938	10988	84038	57088	30138	03188	76238	49277	22325		28 326
124	66349	39399	12449	85499	58549	31599	04649	77699	50738	23786		
128	67810	40860	13910	86960	60010	33060	06110	79160	52199	25247	Oct.	8 336
132	69271	42321	15371	88421	61471	34521	07571	80621	53660	26708		18 346
136	70732	43782	16832	89882	62932	35982	09032	82082	55121	28169		28 356
140	72193	45243	18293	91343	64393	37443	10493	83543	56582	29630	Nov.	7 366
144	73654	46704	19754	92804	65854	38904	11954	85004	58043	31091		
148	75115	48165	21215	94265	67315	40365	13415	86465	59504	32552		17 376
152	76576	49626	22676	95726	68776	41826	14876	87926	60965	34013		27 386
156	78037	51087	24137	97187	70237	43287	16337	89387	62426	35474	Dec.	7 396
160	79498	52548	25598	98648	71698	44748	17798	90848	63887	36935		17 406
164	80959	54009	27059	00109	73159	46209	19259	92309	65348	38396		
168	82420	55470	28520	01570	74620	47670	20720	93770	66809	39857		27 416
172	83881	56931	29981	03031	76081	49131	22181	95231	68270	41318		37 426
176	85342	58392	31442	04492	77542	50592	23642	96692	69731	42779		
180	86803	59853	32903	05953	79003	52053	25103	98153	71192	44240		
184	88264	61314	34364	07414	80464	53514	26564	99604	72653	45701	A.D.	1580 2298153
188	89725	62775	35825	08875	81925	54975	28025	01065	74114	47162		1581 8519
192	91186	64236	37286	10336	83386	56436	29486	02526	75575	48623		1582 8884
196	92647	65697	38747	11797	84847	57897	30947	03987	77036	50084		1583 9239
	17	18	19	20	20	21	22	23	23	24		1584 9604

* denotes a common year.

FOR COMPUTING THE GEOCENTRIC CO-ORDINATES OF A PLACE.

ϕ	log. X.	log. Y.	ϕ	log. X.	log. Y.
0	9.9970705	0.0000000	± 40	9.9976745	0.0006040
1	9.9970709	0.0000004	41	9.9976997	0.0006292
2	9.9970723	0.0000018	42	9.9977251	0.0006546
3	9.9970745	0.0000040	43	9.9977506	0.0006801
4	9.9970776	0.0000071	44	9.9977761	0.0007056
5	9.9970816	0.0000111	45	9.9978016	0.0007311
6	9.9970865	0.0000160	46	9.9978272	0.0007567
7	9.9970922	0.0000217	47	9.9978527	0.0007822
8	9.9970988	0.0000283	48	9.9978782	0.0008077
9	9.9971062	0.0000357	49	9.9979036	0.0008331
10	9.9971145	0.0000440	50	9.9979288	0.0008583
11	9.9971237	0.0000532	51	9.9979540	0.0008835
12	9.9971336	0.0000631	52	9.9979789	0.0009084
13	9.9971444	0.0000739	53	9.9980036	0.0009331
14	9.9971560	0.0000855	54	9.9980281	0.0009576
15	9.9971683	0.0000978	55	9.9980523	0.0009818
16	9.9971814	0.0001109	56	9.9980762	0.0010057
17	9.9971953	0.0001248	57	9.9980997	0.0010292
18	9.9972099	0.0001394	58	9.9981229	0.0010524
19	9.9972253	0.0001548	59	9.9981457	0.0010752
20	9.9972413	0.0001708	60	9.9981681	0.0010976
21	9.9972581	0.0001876	61	9.9981901	0.0011196
22	9.9972755	0.0002050	62	9.9982116	0.0011411
23	9.9972935	0.0002230	63	9.9982325	0.0011620
24	9.9973122	0.0002417	64	9.9982530	0.0011825
25	9.9973314	0.0002609	65	9.9982729	0.0012024
26	9.9973512	0.0002807	66	9.9982922	0.0012217
27	9.9973716	0.0003011	67	9.9983110	0.0012405
28	9.9973925	0.0003220	68	9.9983291	0.0012586
29	9.9974139	0.0003434	69	9.9983466	0.0012761
30	9.9974358	0.0003653	70	9.9983634	0.0012929
31	9.9974581	0.0003876	71	9.9983795	0.0013090
32	9.9974808	0.0004103	72	9.9983949	0.0013244
33	9.9975040	0.0004335	73	9.9984096	0.0013391
34	9.9975275	0.0004570	74	9.9984236	0.0013531
35	9.9975513	0.0004808	75	9.9984368	0.0013663
36	9.9975754	0.0005049	76	9.9984492	0.0013787
37	9.9975999	0.0005294	77	9.9984609	0.0013904
38	9.9976245	0.0005540	78	9.9984717	0.0014012
39	9.9976494	0.0005789	79	9.9984817	0.0014112
± 40	9.9976745	0.0006040	± 80	9.9984909	0.0014204

Let ϕ' and ρ be the geocentric latitude and radius of the place, ϕ being the geographical latitude, then:—

$$\begin{aligned} \rho \sin \phi' &= X \sin \phi. \\ \rho \cos \phi' &= Y \cos \phi. \end{aligned}$$

* * * The Longitudes are reckoned from the Meridian of Greenwich.

No.	Place and Altitude.	Longitude.	Latitude.	Reduction to Geocentric Latitude.
		h m s	° ' " S.	
1	ADELAIDE, 141 ft. - - - - -	9 14 20.30 E.	34 55 38.5 S.	+ 10 52.4
2	ALBANY, U.S.A., 220 ft. - - - - -	4 55 6.8 W.	42 39 12.7 N.	- 11 33.1
3	ALGIERS, 1123 ft. - - - - -	0 12 8.38 E.	36 47 50 N.	- 11 6.7
4	ALLEGHENY, 1145 ft. - - - - -	5 20 2.93 W.	40 27 41.6 N.	- 11 26.6
5	AMHERST, U.S.A., (New Obs.), 363 ft. -	4 50 5.93 W.	42 21 56.5 N.	- 11 32.5
6	ANN-ARBOR, Mich., 926 ft. . - - - -	5 34 55.27 W.	42 16 48.7 N.	- 11 32.3
7	AREQUIPA, 8041 ft. - - - - -	4 46 11.73 W.	16 22 28.0 S.	+ 6 15.2
8	ARMAGH, 200 ft. - - - - -	0 26 35.4 W.	54 21 12.7 N.	- 10 59.6
9	ATHENS, 351 ft. - - - - -	1 34 52.92 E.	37 58 19.7 N.	- 11 14.3
10	BAMBERG, 984 ft. - - - - -	0 43 33.57 E.	49 53 6.0 N.	- 11 26.0
11	BERLIN, 154 ft. - - - - -	0 53 34.80 E.	52 30 16.7 N.	- 11 12.5
12	BESANÇON, 1024 ft. - - - - -	0 23 57.1 E.	47 14 59.0 N.	- 11 33.7
13	BIRR CASTLE (Earl of Rosse), 184 ft. -	0 31 40.9 W.	53 54 7 N.	- 11 8.7
14	BOLOGNA, 275 ft. - - - - -	0 45 24.48 E.	44 29 54 N.	- 11 35.5
15	BOMBAY (Colaba), 63 ft. . - - - - -	4 51 15.15 E.	18 53 36.2 N.	- 7 5.1
16	BONN, 203 ft. - - - - -	0 28 23.17 E.	50 43 45.0 N.	- 11 22.3
17	BORDEAUX, 240 ft. - - - - -	0 2 5.51 W.	44 50 7.3 N.	- 11 35.6
18	BRESLAU, 482 ft. - - - - -	1 8 8.72 E.	51 6 55.8 N.	- 11 20.4
19	BRISBANE - - - - -	10 12 6.40 E.	27 28 0.0 S.	+ 9 28.3
20	BRUSSELS (UCCLE), 328 ft. - - - - -	0 17 26.05 E.	50 47 55.5 N.	- 11 21.9
21	BUDA PESTH - - - - -	1 16 13.7 E.	47 28 49 N.	- 11 33.3
22	CAMBRIDGE, 92 ft. - - - - -	0 0 22.75 E.	52 12 51.6 N.	- 11 14.3
23	CAMBRIDGE, U.S.A., Harvard Coll. Obs.,	4 44 31.05 W.	42 22 47.6 N.	- 11 32.5
24	CAPE OF GOOD HOPE, 42 ft. - - [79 ft.	1 13 54.76 E.	33 56 3.5 S.	+ 10 43.6
25	CATANIA, 154 ft. - - - - -	1 0 20.6 E.	37 30 13.3 N.	- 11 11.4
26	CHARKOW, 451 ft. - - - - -	2 24 55.77 E.	50 0 9.6 N.	- 11 25.5
27	CHARLOTTESVILLE, Va., Leander McCor-	5 14 5.22 W.	38 2 1.2 N.	- 11 14.7
28	CHRISTIANIA, 82 ft. - [mick Obs., 820 ft.	0 42 53.50 E.	59 54 44.0 N.	- 10 4.5
29	CINCINNATI, 863 ft. - - - - -	5 37 41.29 W.	39 8 19.5 N.	- 11 20.7
30	CLEVELAND, OHIO, Case Obs., 696 ft. -	5 26 25.82 W.	41 30 14.5 N.	- 11 30.2
31	CLINTON, U.S.A., Hamilton Coll., 906 ft.	5 1 37.45 W.	43 3 17.0 N.	- 11 33.9
32	COIMBRA, 325 ft. - - - - -	0 33 43.1 W.	40 12 24.5 N.	- 11 25.6
33	COPENHAGEN, 46 ft. - - - - -	0 50 18.69 E.	55 41 12.6 N.	- 10 48.6
34	CORDOBA, 1440 ft. - - - - -	4 16 48.22 W.	31 25 15.5 S.	+ 10 18.0
35	CRACOW, 725 ft. - - - - -	1 19 50.27 E.	50 3 51.9 N.	- 11 25.2
36	DEHRA DÛN, 2236 ft. - - - - -	5 12 13.47 E.	30 18 51.8 N.	- 10 5.2
37	DORPAT, 215 ft. - - - - -	1 46 53.22 E.	58 22 46.8 N.	- 10 22.1
38	DUBLIN (DUNSINK), 283 ft. - - - - -	0 25 21.1 W.	53 23 13.1 N.	- 11 6.7
39	DURHAM, 351 ft. - - - - -	0 6 19.75 W.	54 46 6.2 N.	- 10 56.4
40	DÜSSELDORF, 85 ft. - - - - -	0 27 5.0 E.	51 12 25.0 N.	- 11 19.9

* * The Longitudes are reckoned from the Meridian of Greenwich.

No.	Log. ρ .	Authority for Longitude.	Authority for Latitude.
1	9.999524	Tel. Determination by Ellery, Russell and Todd.	Adelaide Astronomical Obs.
2	9.999331	<i>Astronomical Journal</i> , No. 334.	<i>Astronomical Journal</i> , No. 334.
3	9.999478	Albrecht's <i>Compensation</i> .	Triangulation by Trépiéd.
4	9.999387	U.S. Coast and Geodetic Survey.	Zenith Telescope Observations.
5	9.999339	Communicated by Prof. Todd.	Communicated by Prof. Todd.
6	9.999341	Publications of Obs., Vol. I., 1915.	Publications of Obs., Vol. I., 1915.
7	9.999885	<i>Harvard Annals</i> , 1903.	<i>Harvard Annals</i> , 1903.
8	9.999036	Armagh Catalogue of Stars, 1840.	Armagh Catalogue of Stars, 1840.
9	9.999449	Determination by Hartl.	<i>Annals</i> , Vol. VI., 1912.
10	9.999147	Albrecht's <i>Compensation</i> .	Communicated by Dr. Hartwig.
11	9.999082	Albrecht's <i>Compensation</i> .	<i>Beobachtungs-Ergebnisse</i> , Heft 3.
12	9.999214	Telegraphic connection with Paris.	Meridian Observations.
13	9.999067	Ordnance Survey.	Ordnance Survey.
14	9.999284	Albrecht's <i>Compensation</i> .	Determination by Respighi.
15	9.999848	Great Trigonometrical Survey of India.	Great Trigonometrical Survey of India.
16	9.999127	Albrecht's <i>Compensation</i> .	Communicated by Prof. Küstner.
17	9.999275	Telegraphic connection with Paris.	Zenith Distances of Fundamental Stars.
18	9.999116	Albrecht's <i>Compensation</i> .	Geodätisches Institut of Berlin.
19	9.999690	Telegraphic connection with Sydney.	Zenith Telescope Observations.
20	9.999124	<i>Annuaire Astronomique</i> , 1919.	<i>Annuaire Astronomique</i> , 1919.
21	9.999208	Berliner Jahrbuch.	Berliner Jahrbuch.
22	9.999089	Cambridge Observations.	Cambridge Observations.
23	9.999338	U.S. Coast and Geodetic Survey.	<i>Annals of the Observatory</i> , Vol. XVII.
24	9.999547	<i>Annals of Cape Observatory</i> , Vol. I., part 2.	Cape General Catalogue of Stars, 1885.
25	9.999461	Determination by Zona and Ricco.	Determination by Zona.
26	9.999144	Communicated by Prof. Lewitzky.	Communicated by Prof. Lewitzky.
27	9.999448	<i>Publications of Observatory</i> , Vol. I., part 1.	<i>Publications of Observatory</i> , Vol. I., part 1.
28	9.998906	Albrecht's <i>Compensation</i> .	<i>Astron. Nachrichten</i> , No. 3193.
29	9.999420	U.S. Coast and Geodetic Survey.	U.S. Coast and Geodetic Survey.
30	9.999361	Communicated by Prof. Howe.	Communicated by Prof. Howe.
31	9.999321	The American Ephemeris.	The American Ephemeris.
32	9.999394	Ephemerides Astron. de Coimbra, 1889.	Ephemerides Astron. de Coimbra, 1889.
33	9.999004	Albrecht's <i>Compensation</i> .	Communicated by Prof. Strömgren.
34	9.999605	Observatory and U.S. Naval Expeditions.	Meridian Observations of Circumpolar Stars.
35	9.999143	Albrecht's <i>Compensation</i> .	Austrian Gradmessungen-Commission.
36	9.999629	Great Trigonometrical Survey of India.	Great Trigonometrical Survey of India.
37	9.998941	Albrecht's <i>Compensation</i> .	Determination by Schwarz.
38	9.999060	<i>Transactions Royal Irish Academy</i> , 1838.	<i>Transactions Royal Dublin Society</i> , Vol. IV.
39	9.999026	Transport of Chronometers.	Meridian Observations of Circumpolar Stars.
40	9.999114	<i>Astron. Nachrichten</i> , No. 643.	<i>Astron. Nachrichten</i> , No. 643.

OBSERVATORIES.

** The Longitudes are reckoned from the Meridian of Greenwich.

No.	Place and Altitude.	Longitude.	Latitude.	Reduction to Geocentric Latitude.
		h m s		
41	EDINBURGH (Blackford Hill), 441 ft. - -	0 12 44.2 W.	55 55 30.0 N.	-10 46.5
42	EVANSTON, Ill., Dearborn Obs., 574 ft. -	5 50 42.3 W.	42 3 33.4 N.	-11 31.8
43	FLAGSTAFF, ARIZONA, (Mr. Lowell),	7 26 44.58 W.	35 12 30.5 N.	-10 54.7
44	FLORENCE, Arcetri, 604 ft. - - [7250 ft.	0 45 1.30 E.	43 45 14.6 N.	-11 34.9
45	GENEVA, 1335 ft. - - - - -	0 24 36.61 E.	46 11 59.3 N.	-11 35.2
46	GEORGETOWN COLL., D.C., U.S.A., 151 ft.	5 8 18.24 W.	38 54 26.0 N.	-11 19.5
47	GLASGOW, 180 ft. - - - - -	0 17 10.55 W.	55 52 42.1 N.	-10 46.9
48	GLASGOW, U.S.A., Morrison Obs., 748 ft. -	6 11 18.08 W.	39 13 45.6 N.	-11 21.1
49	GOtha, 1083 ft. - - - - -	0 42 50.44 E.	50 56 37.9 N.	-11 21.1
50	GÖTTINGEN, 532 ft. - - - - -	0 39 46.22 E.	51 31 48.2 N.	-11 18.2
51	GREENWICH, 154 ft. - - - - -	0 0 0	51 28 38.1 N.	-11 18.5
52	HAMBURG (Bergedorf), 131 ft. - - - -	0 40 57.74 E.	53 28 46.7 N.	-11 6.1
53	HAVERFORD COLLEGE, Pa. - - - - -	5 1 12.70 W.	40 0 40.1 N.	-11 24.7
54	HEIDELBERG, 1870 ft. - - - - -	0 34 53.13 E.	49 23 54.9 N.	-11 27.8
55	HELSINGFORS, 125 ft. - - - - -	1 39 49.10 E.	60 9 42.3 N.	-10 1.5
56	HELWAN, 390 ft. - - - - -	2 5 22 E.	29 51 33 N.	- 9 59.7
57	HERÉNY (Herr von Gothard), 751 ft. - -	1 6 24.7 E.	47 15 47.4 N.	-11 33.7
58	HONG KONG, 112 ft. - - - - -	7 36 41.86 E.	22 18 13.2 N.	- 8 7.4
59	HYDERABAD, Nizamiah Obs., 1818 ft. -	5 13 48.98 E.	17 25 54.3 N.	- 6 36.6
60	JAMAICA, MONTEGO BAY (Mr. Hall) - -	5 11 29.48 W.	18 24 51 N.	- 6 55.9
61	JENA, 512 ft. - - - - -	0 46 21.25 E.	50 55 34.9 N.	-11 21.3
62	JOHANNESBURG, Union Obs., 5924 ft. - -	1 52 18.0 E.	26 10 55.2 S.	+ 9 9.8
63	KASAN, Engelhardt Observatory, 322 ft.	3 15 16.5 E.	55 50 20.0 N.	-10 47.3
64	KASAN, University Observatory, 259 ft. -	3 16 29.01 E.	55 47 24.3 N.	-10 47.7
65	KEW, 33 ft. - - - - -	0 1 15.1 W.	51 28 6 N.	-11 18.5
66	KIEL, 154 ft. - - - - -	0 40 35.57 E.	54 20 28.5 N.	-10 59.7
67	KIEW, 587 ft. - - - - -	2 2 0.56 E.	50 27 11.8 N.	-11 23.5
68	KODAIKANAL, 7688 ft. - - - - -	5 9 52.0 E.	10 13 50 N.	- 4 2.3
69	KÖNIGSBERG, 72 ft. - - - - -	1 21 58.97 E.	54 42 50.4 N.	-10 56.8
70	KREMSMÜNSTER, 1260 ft. - - - - -	0 56 31.58 E.	48 3 23.1 N.	-11 31.9
71	LA PLATA, 52 ft. - - - - -	3 51 44.8 W.	34 54 30.5 S.	+10 52.2
72	LEIPZIG, 390 ft. - - - - -	0 49 33.93 E.	51 20 5.9 N.	-11 19.2
73	LEYDEN, 20 ft. - - - - -	0 17 56.15 E.	52 9 20.0 N.	-11 14.6
74	LISBON, Tapada, 308 ft. - - - - -	0 36 44.68 W.	38 42 30.5 N.	-11 18.5
75	LIVERPOOL (BIDSTON, BIRKENHEAD), 200ft.	0 12 17.33 W.	53 24 4.8 N.	-11 6.6
76	LORENZO MARQUES, Campos Roderigues	2 10 22.63 E.	25 58 5.5 S.	+ 9 6.6
77	LUND, 112 ft. - - - - [Obs., 195 ft.	0 52 44.97 E.	55 41 51.6 N.	-10 48.5
78	LYONS, 981 ft. - - - - -	0 19 8.52 E.	45 41 40.9 N.	-11 35.5
79	MADISON, Wis., Washburn Obs., 961 ft. -	5 57 37.90 W.	43 4 36.7 N.	-11 33.9
80	MADRAS, 23 ft. - - - - -	5 20 59.62 E.	13 4 8.0 N.	- 5 5.5

OBSERVATORIES.

591

* * * The Longitudes are reckoned from the Meridian of Greenwich.

No.	Log. ρ .	Authority for Longitude.	Authority for Latitude.
41	9.998999	Communicated by Prof. Copeland.	<i>M.N.R.A.S.</i> , January 1907.
42	9.999347	Standard Time comparison by Telegraph.	Meridian Observations.
43	9.999517	Communicated by Mr. P. Lowell.	Communicated by Mr. P. Lowell.
44	9.999303	Albrecht's <i>Compensation</i> .	Commissione Italiana, Milan, 1886.
45	9.999241	Albrecht's <i>Compensation</i> .	Determination by Pidoux.
46	9.999426	<i>Annals of Observatory</i> , No. 1.	<i>The Photochronograph and its applications</i> , 1894.
47	9.998999	<i>M.N.R.A.S.</i> , December 1865.	<i>M.N.R.A.S.</i> , October 1917.
48	9.999418	The American Ephemeris.	The American Ephemeris.
49	9.999121	Albrecht's <i>Compensation</i> .	Communicated by Prof. Harzer.
50	9.999106	Albrecht's <i>Compensation</i> .	Communicated by Prof. Schur.
51	9.999107		Greenwich Observations.
52	9.999057	Albrecht's <i>Compensation</i> .	Observations by Talcott's Method, 1909.
53	9.999398	Communicated by Prof. Collins.	Determination by Sharpless.
54	9.999159	Determination by Becker and Valentiner.	Determination by Becker and Valentiner.
55	9.998901	Albrecht's <i>Compensation</i> .	Determination by Donner.
56	9.999640	Communicated by Mr. Keeling.	Communicated by Mr. Keeling.
57	9.999214	Determination by Von Konkoly and Tetens.	Determination by Von Sterneck.
58	9.999791	Determination by Green, U.S.N.	Determination by Doberck.
59	9.999870	Communicated by Director, 1916.	Communicated by Director, 1916.
60	9.999855	Report on Transit of Venus, 1882.	Report on Transit of Venus, 1882.
61	9.999122	Preussische Landesaufnahme, 1900.	Meridian Observations.
62	9.999717	Observatory Circular, 1916.	Observatory Circular, 1916.
63	9.999001	Communicated by Prof. Dubiago.	Communicated by Prof. Dubiago.
64	9.999001	Bakhuyzen's <i>Compensation</i> .	Observations by Talcott's Method.
65	9.999107	Determination by Balfour Stewart.	Determination by Balfour Stewart.
66	9.999037	Albrecht's <i>Compensation</i> .	Geodätisches Institut of Berlin.
67	9.999133	Albrecht's <i>Compensation</i> .	<i>Annales de l'Observatoire</i> , Tome III.
68	9.999954	Communicated by Director, 1912.	Communicated by Director, 1912.
69	9.999028	Albrecht's <i>Compensation</i> .	<i>Astron. Beobachtungen</i> , Band 38.
70	9.999194	Albrecht's <i>Compensation</i> .	Determination by Tinter.
71	9.999524	Publications of Obs., Vol. V., 1919.	Publications of Obs., Vol. V., 1919.
72	9.999111	Albrecht's <i>Compensation</i> .	Observations with Universal Instrument.
73	9.999090	Albrecht's <i>Compensation</i> .	<i>Annalen der Sternwarte</i> , Band II.
74	9.999431	Determination by Green, U.S.N.	Communicated by Director, July 1911.
75	9.999059	<i>M.N.R.A.S.</i> , November 1894.	<i>M.N.R.A.S.</i> , November 1894.
76	9.999721	Publications of Obs., Vol. II., 1911.	Publications of Obs., Vol. IV., 1912.
77	9.999004	Albrecht's <i>Compensation</i> .	Determination by Engstrom.
78	9.999254	Bakhuyzen's <i>Compensation</i> .	<i>Bulletin Astronomique</i> , Tome XI.
79	9.999320	Communicated by Prof. Comstock.	<i>Publications of Observatory</i> , Vol. VI.
80	9.999926	Great Trigonometrical Survey of India.	Great Trigonometrical Survey of India.

OBSERVATORIES.

* * * The Longitudes are reckoned from the Meridian of Greenwich.

No.	Place and Altitude.	Longitude.	Latitude.	Reduction to Geocentric Latitude.
		h m s		
81	MADRID, 2149 ft. - - - - -	0 14 45.09 W.	40° 24' 30.0" N.	- 11 26.4
82	MARSEILLES, 246 ft. - - - - -	0 21 34.55 E.	43 18 17.5 N.	- 11 34.3
83	MAURITIUS, Royal Alfred Obs., 177 ft. -	3 50 12.6 E.	20 5 39 S.	+ 7 27.8
84	MELBOURNE, 92 ft. - - - - -	9 39 54.15 E.	37 49 53.2 S.	+ 11 13.4
85	MILAN, Brera, 394 ft. - - - - -	0 36 45.88 E.	45 27 59.2 N.	- 11 35.6
86	MONTEVIDEO, Obs. Inst. Meteorológico -	3 44 51.4 W.	34 54 33 S.	+ 10 52.2
87	MONTREAL, McGill College, 187 ft. - -	4 54 18.88 W.	45 30 19.1 N.	- 11 35.6
88	MOSCOW, 466 ft. - - - - -	2 30 17.03 E.	55 45 19.5 N.	- 10 48.0
89	MOUNT HAMILTON, Lick Obs., 4209 ft. -	8 6 34.89 W.	37 20 25.6 N.	- 11 10.4
90	MOUNT WILSON OBS., 5900 ft. - - - -	7 52 14.33 W.	34 12 59.5 N.	- 10 46.2
91	MUNICH, Bogenhausen, 1736 ft. - - -	0 46 26.02 E.	48 8 45.5 N.	- 11 31.7
92	NAPLES, Capo di Monte, 538 ft. - - -	0 57 1.70 E.	40 51 46.3 N.	- 11 28.1
93	NEUCHATEL, 1601 ft. - - - - -	0 27 49.90 E.	46 59 50.6 N.	- 11 34.1
94	NEW HAVEN, Yale University, 131 ft. -	4 51 40.58 W.	41 19 22.3 N.	- 11 29.7
95	NEW YORK, Columbia University - - -	4 55 53.64 W.	40 45 23.1 N.	- 11 27.7
96	NICE, 1240 ft. - - - - -	0 29 12.15 E.	43 43 16.9 N.	- 11 34.9
97	NICOLAIEFF, 180 ft. - - - - -	2 7 53.78 E.	46 58 22.1 N.	- 11 34.2
98	NORTHFIELD, Carleton College, 938 ft. -	6 12 35.81 W.	44 27 41.6 N.	- 11 35.5
99	ODESSA, 180 ft. - - - - -	2 3 2.04 E.	46 28 36.7 N.	- 11 34.9
100	O'GYALLA (Dr. Von Konkoly), 371 ft. -	1 12 45.60 E.	47 52 27.3 N.	- 11 32.4
101	OTTAWA, 276 ft. - - - - -	5 2 51.98 W.	45 23 39.1 N.	- 11 35.6
102	OXFORD, Radcliffe Observatory, 213 ft. -	0 5 2.6 W.	51 45 35.6 N.	- 11 16.9
103	OXFORD, University Observatory, 210 ft.	0 5 0.4 W.	51 45 34.2 N.	- 11 16.9
104	PADUA, 102 ft. - - - - -	0 47 29.15 E.	45 24 1.0 N.	- 11 35.6
105	PAISLEY, Coats Observatory, 107 ft. - -	0 17 43.3 W.	55 50 43.8 N.	- 10 47.2
106	PALERMO, 249 ft. - - - - -	0 53 25.87 E.	38 6 44.5 N.	- 11 15.1
107	PARIS, 194 ft. - - - - -	0 9 20.93 E.	48 50 11.2 N.	- 11 29.7
108	PERTH, Western Australia, 197 ft. - - -	7 43 21.74 E.	31 57 7.4 S.	+ 10 23.8
109	PETROGRAD, Academy of Sciences, 10 ft.-	2 1 13.40 E.	59 56 29.7 N.	- 10 4.2
110	POLA, 105 ft. - - - - -	0 55 23.07 E.	44 51 48.7 N.	- 11 35.7
111	POTSDAM, 318 ft. - - - - -	0 52 15.86 E.	52 22 56.0 N.	- 11 13.3
112	PRAGUE, 646 ft. - - - - -	0 57 40.28 E.	50 5 15.8 N.	- 11 25.1
113	PRINCETON, New Jersey, 213 ft. - - -	4 58 37.61 W.	40 20 57.8 N.	- 11 26.2
114	PULKOWA, 246 ft. - - - - -	2 1 18.57 E.	59 46 18.7 N.	- 10 6.2
115	QUEBEC (Time Ball on Mann's Bastion), [307 ft.]	4 44 49.38 W.	46 48 26.2 N.	- 11 34.4
116	RIO DE JANEIRO, 207 ft. - - - - -	2 52 41.4 W.	22 54 23.7 S.	+ 8 17.7
117	ROME, Capitol, 207 ft. - - - - -	0 49 56.34 E.	41 53 33.6 N.	- 11 31.3
118	ROME, Roman College, 194 ft. - - - -	0 49 55.36 E.	41 53 53.6 N.	- 11 31.3
119	ROME, Vatican - - - - -	0 49 49.28 E.	41 54 4.8 N.	- 11 31.3
120	ROUSDON, Devon, 516 ft. - - - - -	0 11 58.94 W.	50 42 38 N.	- 11 22.3

OBSERVATORIES.

593

** The Longitudes are reckoned from the Meridian of Greenwich.

No.	Log. ρ .	Authority for Longitude.	Authority for Latitude.
81	9.999389	<i>Anuario, 1916.</i>	<i>Anuario, 1916.</i>
82	9.999315	Albrecht's <i>Compensation.</i>	Meridian Observations.
83	9.999829	Communicated by Mr. Meldrum.	Communicated by Mr. Meldrum.
84	9.999452	<i>Astronomical Results, Vol. VII.</i>	<i>Astronomical Results, Vol. VII.</i>
85	9.999260	Albrecht's <i>Compensation.</i>	<i>Publications, No. 51, 1914.</i>
86	9.999524	Communicated by Director, 1919.	Communicated by Director, 1919.
87	9.999259	U.S. Coast and Geodetic Survey.	U.S. Coast and Geodetic Survey.
88	9.999003	Albrecht's <i>Compensation.</i>	Determination by Sternberg.
89	9.999465	U.S. Coast and Geodetic Survey.	Determination by Tucker.
90	9.999540	<i>Contributions from Solar Observatory, No. 9.</i>	<i>Contributions from Solar Observatory, No. 9.</i>
91	9.999192	Albrecht's <i>Compensation.</i>	Communicated by Prof. Seeliger.
92	9.999377	Bakhuyzen's <i>Compensation.</i>	Determination by Fergola.
93	9.999220	Bakhuyzen's <i>Compensation.</i>	Berliner Jahrbuch.
94	9.999366	The American Ephemeris.	The American Ephemeris.
95	9.999380	Triangulation from Rutherford's Observatory.	Triangulation from Rutherford's Observatory.
96	9.999304	Albrecht's <i>Compensation.</i>	<i>Annales de l'Observatoire, Tome II.</i>
97	9.999221	Bakhuyzen's <i>Compensation.</i>	Communicated by Prof. Kortazzi.
98	9.999285	Telegraphic connection with Washington.	<i>Publications of Observatory, No. 1.</i>
99	9.999234	Albrecht's <i>Compensation.</i>	Observations in the Prime Vertical.
100	9.999197	Determination by Von Konkoly.	Determination by Lakits.
101	9.999261	Communicated by Director, 1919.	Communicated by Director, 1919.
102	9.999100	Radcliffe Observations, 1842.	Radcliffe Catalogue of Stars, 1900.
103	9.999100	Ordnance Survey.	Ordnance Survey.
104	9.999261	Albrecht's <i>Compensation.</i>	Determination by Ciscato.
105	9.998999	Communicated by Observatory Committee.	Communicated by Observatory Committee.
106	9.999446	Bakhuyzen's <i>Compensation.</i>	Determination by Zqna.
107	9.999174	Albrecht's <i>Compensation.</i>	Determination by Laugier.
108	9.999593	Government Lands and Survey Office, Perth.	Communicated by Mr. W. E. Cooke.
109	9.998906	Triangulation from Pulkowa.	Triangulation from Pulkowa.
110	9.999275	Austrian Gradmessungs-Commission.	Austrian Gradmessungs-Commission.
111	9.999084	Albrecht's <i>Compensation.</i>	<i>Publications of Observatory, Vol. VI.</i>
112	9.999142	Albrecht's <i>Compensation.</i>	<i>Astron. Beobachtungen, 1888-1891.</i>
113	9.999390	The American Ephemeris.	The American Ephemeris.
114	9.998909	Albrecht's <i>Compensation.</i>	<i>Description de l'Observatoire.</i>
115	9.999225	Triangulation from Montreal.	Triangulation from Montreal.
116	9.999780	Determination by Green, U.S.N.	Determination by Green, U.S.N.
117	9.999350	Albrecht's <i>Compensation.</i>	Determination by Respighi.
118	9.999350	Albrecht's <i>Compensation.</i>	Determination by Millosevich.
119	9.999350	Albrecht's <i>Compensation.</i>	Communicated by Sig. Denza.
120	9.999127	Ordnance Survey.	Ordnance Survey.

OBSERVATORIES.

* * The Longitudes are reckoned from the Meridian of Greenwich.

No.	Place and Altitude.	Longitude.	Latitude.	Reduction to Geocentric Latitude.
		h m s		
121	RUGBY, Temple Obs., 384 ft. - - - -	0 5 2.0 W.	52° 22' 7" N.	-11 13.4
122	SAN FERNANDO, near CADIZ, 101 ft. - -	0 24 49.30 W.	36 27 42.0 N.	-11 4.3
123	SANTIAGO DE CHILE, 1704 ft. - - - -	4 42 46.3 W.	33 26 42.0 S.	+10 39.0
124	SOUTH KENSINGTON, London, S.W. - -	0 0 41.54 W.	51 29 48.0 N.	-11 18.4
125	STOCKHOLM, 144 ft. - - - - - - - -	1 12 13.97 E.	59 20 32.7 N.	-10 11.3
126	STONYHURST, 381 ft. - - - - - - - -	0 9 52.68 W.	53 50 40 N.	-11 3.5
127	STRASBURG, 472 ft. - - - - - - - -	0 31 4.52 E.	48 35 0.3 N.	-11 30.5
128	SUTTON, SURREY (Mr. Doberck), 167 ft. -	0 0 44.53 W.	51 22 19.8 N.	-11 19.0
129	SYDNEY, 144 ft. - - - - - - - - - -	10 4 49.54 E.	33 51 41.1 S.	+10 42.9
130	TACUBAYA, MEXICO, 7619 ft. - - - -	6 36 46.67 W.	19 24 17.9 N.	- 7 14.9
131	TASCHKENT, 1499 ft. - - - - - - - -	4 37 10.82 E.	41 19 31.4 N.	-11 29.7
132	TOKYO - - - - - - - - - - - - - -	9 18 58.02 E.	35 39 17.5 N.	-10 58.3
133	TORONTO, 350 ft. - - - - - - - - - -	5 17 34.65 W.	43 39 35.9 N.	-11 34.8
134	TOULOUSE, 636 ft. - - - - - - - - -	0 5 51.23 E.	43 36 44.0 N.	-11 34.7
135	TRIESTE, 75 ft. - - - - - - - - - -	0 55 3.0 E.	45 38 45.4 N.	-11 35.5
	[197 ft.]			
136	TRIVANDRUM, Maharaja's Observatory,	5 7 59 E.	8 30 32 N.	- 3 22.9
137	TULSE HILL, London (Sir W. Huggins),	0 0 27.7 W.	51 26 47 N.	-11 18.6
138	TURIN, Pino Torinese, 2028 ft. - [174 ft.]	0 31 5.95 E.	45 2 16.3 N.	-11 35.7
139	UPSALA, 69 ft. - - - - - - - - - -	1 10 30.12 E.	59 51 29.4 N.	-10 5.2
140	URBANA, University of Illinois, 774 ft. -	5 52 53.93 W.	40 6 20.2 N.	-11 25.2
141	UTRECHT, 39 ft. - - - - - - - - - -	0 20 30.97 E.	52 5 9.5 N.	-11 15.1
142	VENICE, Istituto di Marina, 49 ft. - - -	0 49 22.12 E.	45 26 10.5 N.	-11 35.6
143	VIENNA, Imperial Observatory, 787 ft. -	1 5 21.35 E.	48 13 55.4 N.	-11 31.5
144	VIENNA, Ottakring (Herr Kuffner),	1 5 10.96 E.	48 12 46.7 N.	-11 31.6
145	WARSAW, 361 ft. - - - - - [935 ft.]	1 24 7.25 E.	52 13 4.6 N.	-11 14.3
146	WASHINGTON, Georgetown Heights, 269 ft.	5 8 15.78 W.	38 55 14.7 N.	-11 19.6
147	WELLINGTON, N.Z., Hector Obs., 416 ft.	11 39 4.27 E.	41 17 3.8 S.	+11 29.5
148	WILHELMSHAVEN, 30 ft. - - - [1099 ft.]	0 32 35.06 E.	53 31 52.2 N.	-11 4.7
149	WILLIAMS BAY, Wis., Yerkes Obs.,	5 54 13.24 W.	42 34 12.6 N.	-11 33.0
150	WINDSOR, N.S.W. (Mr. Tebbutt), 52 ft. -	10 3 20.51 E.	33 36 30.8 S.	+10 40.6
151	ZURICH, 1536 ft. - - - - - - - - - -	0 34 12.26 E.	47 22 38.3 N.	-11 33.5

NOTES:—

Albrecht's Compensation. The reference is to Prof. Albrecht's paper in *Astron. Nachrichten*, No. 399.

Bakhuyzen's Compensation. The reference is to Prof. Bakhuyzen's paper in *Astron. Nachrichten*, No. 3202, the adopted difference of longitude Paris—Greenwich being $9^m 20^s.93$.

. The Longitudes are reckoned from the Meridian of Greenwich.

No.	Log. p.	Authority for Longitude.	Authority for Latitude.
121	9.999084	Ordnance Survey.	Ordnance Survey.
122	9.999486	Telegraphic connection with Madrid.	Transit-Circle Observations.
123	9.999558	Anuario del Observatorio, 1919.	Anuario del Observatorio, 1919.
124	9.999107	Communicated by Sir J. Norman Lockyer.	Communicated by Sir J. Norman Lockyer.
125	9.998919	Communicated by Director, 1913.	Communicated by Director, 1917.
126	9.999049	Chronometrical connection with Liverpool.	Meridian Observations.
127	9.999180	Albrecht's <i>Compensation</i> .	Meridian Observations of Circumpolar Stars.
128	9.999110	Ordnance Survey.	Ordnance Survey.
129	9.999549	Tel. Determination by Ellery, Russell and Todd.	Sydney Astronomical Observatio.118.
130	9.999840	Boletin del Observatorio, No. 4, 1914.	Boletin del Observatorio, No. 4, 1914.
131	9.999366	Communicated by Prof. Gedeonof.	Communicated by Prof. Gedeonof.
132	9.999506	University Calendar, 1892.	University Calendar, 1892.
133	9.999306	Determination by Carpmael.	Determination by Blake.
134	9.999307	Communicated by M. Cosserat.	Determination by Petit.
135	9.999255	Communicated by Dr. F. Anton.	Communicated by Dr. F. Anton.
136	9.999968	Communicated by Director, 1915.	Communicated by Director, 1915.
137	9.999108	Ordnance Survey.	Ordnance Survey.
138	9.999270	<i>Annuario Astronomico</i> , 1917.	<i>Annuario Astronomico</i> , 1917.
139	9.998908	Albrecht's <i>Compensation</i> .	<i>Astron. Nachrichten</i> , No. 2565.
140	9.999396	Communicated by Prof. Joel Stebbins.	Communicated by Prof. Joel Stebbins.
141	9.999092	Triangulation from Leyden.	<i>Astron. Nachrichten</i> , No. 2411.
142	9.999260	Determination by Millosevich.	Determination by Millosevich.
143	9.999189	Albrecht's <i>Compensation</i> .	K. K. Gradmessungs-Bureau.
144	9.999190	Albrecht's <i>Compensation</i> .	<i>Publicationen der Sternwarte</i> , I. und II.
145	9.999089	Albrecht's <i>Compensation</i> .	<i>Astron. Nachrichten</i> , No. 4666 (July 1913).
146	9.999426	U.S. Coast and Geodetic Survey.	<i>Astronomy and Astrophysics</i> , No. 188.
147	9.999366	Transactions of New Zealand Institute, 1914.	Transactions of New Zealand Institute, 1914.
148	9.999057	Albrecht's <i>Compensation</i> .	Zenith Distances of Zenithal Stars.
149	9.999333	Observatory Bulletin, No. 18.	Observatory Bulletin, No. 18.
150	9.999555	Report of Windsor Observatory, 1888.	Observations in the Prime Vertical.
151	9.999211	Bakhuyzen's <i>Compensation</i> .	Communicated by Prof. A. Wolfer.

Directors are requested to notify H.M. *Nautical Almanac* Office if they desire any change made in the information given above concerning their Observatories.

STANDARD TIMES.

The following Standard Times, referred to the Meridian of Greenwich, have been adopted for railway and other purposes:—

h m	
11 30 E.	New Zealand.
11 0 E.	New Caledonia.
10 0 E.	Tasmania, Victoria, New South Wales, Queensland, New Guinea.
9 30 E.	South Australia.
9 0 E.	Japan, Corea.
8 0 E.	Western Australia, Portuguese Timor, British North Borneo, Philippine Islands, Macao, Hong Kong, China (Coast), Formosa.
7 0 E.	Straits Settlements, Federated Malay States, French Indo-China.
6 30 E.	Burma.
5 30 E.	India.
5 0 E.	Chagos Archipelago, Portuguese India.
4 0 E.	Mauritius, Seychelles.
3 0 E.	Somaliland, Madagascar.
2 30 E.	East African Protectorate.
2 0 E.	(East Europe).—Roumania, Bulgaria, Turkey, Greece. Egypt, Portuguese East Africa, South Africa.
1 0 E.	(Mid-Europe).—Germany, Luxembourg, Denmark, Sweden, Norway, Switzerland, Italy, Austria-Hungary, Bosnia, Servia, Malta, Portuguese West Africa, South-west Africa, Nigeria.
0 0	(Greenwich).—Great Britain, Ireland, France, Belgium, Spain, Portugal, Gibraltar, Algeria, Farøe Islands.
1 0 W.	Iceland, Madeira, Portuguese Guinea, Sierra Leone.
2 0 W.	Azores and Cape Verde Islands.
3 0 W.	Eastern Brazil.
4 0 W.	(Atlantic).—Part of Canada, Leeward Islands, Central Brazil, Chile.
5 0 W.	(Eastern).—Parts of Canada and United States, Western Brazil, Peru, Panama, Jamaica, Bahamas.
6 0 W.	(Central).—Parts of Canada and United States, Honduras.
7 0 W.	(Mountain).—Parts of Canada and United States.
8 0 W.	(Pacific).—British Columbia and Part of United States.
9 0 W.	Yukon, Alaska.
10 30 W.	Sandwich Islands.
11 30 W.	Samoa.

The Corrections, according to NEWCOMB, applicable to the Moon's Longitude and Latitude, computed from HANSEN'S Tables.

Day.	JANUARY.		FEBRUARY.		MARCH.		APRIL.		MAY.		JUNE.	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
1	-39.6	+ 1.8	-39.1	+ 3.5	-39.3	+ 3.7	-41.7	+ 2.7	-44.4	+ 0.5	-46.8	- 3.1
2	39.1	2.4	39.4	3.6	39.7	3.6	42.7	2.0	45.2	- 0.5	47.0	3.7
3	38.9	2.8	40.1	3.5	40.3	3.5	43.6	1.2	45.9	- 1.5	47.1	4.2
4	-39.0	+ 3.2	-41.0	+ 3.4	-41.1	+ 3.1	-44.8	+ 0.2	-46.6	- 2.5	-47.1	- 4.3
5	39.4	3.4	42.4	2.9	42.3	2.5	46.1	- 0.8	47.3	3.3	47.0	4.1
6	40.2	3.6	44.0	2.3	43.7	1.8	47.3	1.9	47.9	4.0	46.9	3.7
7	-41.3	+ 3.5	-45.8	+ 1.5	-45.1	+ 0.8	-48.3	- 2.9	-48.3	- 4.3	-46.5	- 2.9
8	42.7	3.3	47.3	+ 0.6	46.8	- 0.1	49.3	3.6	48.5	4.4	46.0	2.1
9	44.2	2.8	48.8	- 0.4	48.2	- 1.2	49.7	4.2	48.4	4.1	45.3	1.2
10	-45.9	+ 2.1	-49.9	- 1.4	-49.4	- 2.2	-49.8	- 4.4	-48.1	- 3.6	-44.4	- 0.4
11	47.3	1.4	50.5	2.4	50.2	3.1	49.6	4.4	47.2	2.9	43.4	+ 0.5
12	48.6	+ 0.4	50.7	3.3	50.6	3.9	48.9	4.0	46.2	2.0	42.3	+ 1.3
13	-49.4	- 0.6	-50.3	- 3.9	-50.6	- 4.2	-47.8	- 3.5	-45.0	- 1.1	-41.3	+ 1.8
14	49.8	1.6	49.4	4.2	50.0	4.4	46.5	2.7	43.8	- 0.3	40.4	2.4
15	49.7	2.5	48.3	4.3	49.0	4.3	45.1	1.8	42.5	+ 0.6	39.8	2.9
16	-49.2	- 3.3	-46.8	- 4.0	-47.6	- 3.9	-43.6	- 0.9	-41.4	+ 1.4	-39.4	+ 3.2
17	48.3	3.8	45.3	3.6	46.2	3.2	42.2	0.0	40.4	1.9	39.3	3.4
18	47.2	4.0	43.9	2.8	44.6	2.4	41.1	+ 0.8	39.6	2.3	39.7	3.4
19	-46.0	- 4.1	-42.6	- 2.1	-43.1	- 1.5	-40.2	+ 1.5	-39.3	+ 2.7	-40.3	+ 3.3
20	44.7	3.9	41.6	1.3	41.8	- 0.7	39.5	2.2	39.3	3.2	41.2	3.2
21	43.6	3.4	40.7	- 0.3	40.8	+ 0.3	39.2	2.7	39.6	3.4	42.4	2.8
22	-42.7	- 2.7	-40.2	+ 0.5	-40.0	+ 1.1	-39.2	+ 3.1	-40.2	+ 3.6	-43.6	+ 2.3
23	41.9	1.8	39.8	1.2	39.6	1.7	39.5	3.4	40.9	3.5	44.9	1.6
24	41.3	1.0	39.5	1.8	39.3	2.3	39.9	3.6	41.9	3.3	46.0	+ 0.8
25	-40.8	- 0.2	-39.4	+ 2.4	-39.2	+ 2.8	-40.5	+ 3.6	-42.7	+ 2.9	-46.9	- 0.1
26	40.4	+ 0.6	39.3	2.9	39.3	3.2	41.0	3.6	43.7	2.3	47.5	1.1
27	40.0	1.3	39.1	3.2	39.4	3.5	41.7	3.3	44.6	1.5	47.8	2.1
28	-39.7	+ 1.9	-39.2	+ 3.5	-39.8	+ 3.7	-42.3	+ 2.9	-45.3	+ 0.7	-47.9	- 2.9
29	39.4	2.4	-39.3	+ 3.7	40.0	3.7	42.9	2.2	45.8	- 0.2	47.8	3.7
30	39.1	2.8			40.5	3.6	43.7	1.4	46.3	- 1.2	47.5	4.1
31	-39.0	+ 3.2			-41.0	+ 3.3	-44.4	+ 0.5	-46.6	- 2.4	-47.1	- 4.3
32	-39.1	+ 3.5			-41.7	+ 2.7			-46.8	- 3.1		

The Corrections, according to NEWCOMB, applicable to the Moon's Longitude and Latitude, computed from HANSEN'S Tables.

Day.	JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.	
	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.	Long.	Lat.
1	-47.1	-4.3	-45.0	-2.7	-41.9	+1.0	-40.2	+2.7	-39.6	+3.6	-40.8	+2.8
2	46.6	4.1	44.1	1.5	41.2	1.8	39.7	3.2	39.9	3.5	41.6	2.4
3	46.1	3.7	43.4	-0.6	40.7	2.4	39.6	3.5	40.3	3.3	42.5	1.8
4	-45.6	-3.0	-42.7	+0.4	-40.2	+3.0	-39.6	+3.6	-40.8	+2.9	-43.2	+1.1
5	45.1	2.2	42.0	1.2	39.9	3.3	39.6	3.7	41.4	2.4	43.9	+0.2
6	44.6	1.3	41.5	1.9	39.7	3.5	39.8	3.5	41.9	1.8	44.5	-0.6
7	-44.0	-0.5	-40.9	+2.5	-39.5	+3.6	-40.1	+3.3	-42.5	+1.0	-45.1	-1.6
8	43.3	+0.4	40.4	3.0	39.5	3.6	40.5	2.8	43.2	+0.1	45.6	2.5
9	42.6	1.2	40.0	3.3	39.5	3.4	40.9	2.3	43.9	-0.8	46.2	3.2
10	-41.8	+1.9	-39.5	+3.4	-39.8	+3.1	-41.4	+1.6	-44.6	-1.8	-46.7	-3.9
11	41.1	2.4	39.4	3.5	40.4	2.7	42.3	+0.8	45.6	2.7	47.1	4.2
12	40.3	2.9	39.3	3.5	41.0	2.0	43.3	-0.1	46.6	3.5	47.7	4.3
13	-39.7	+3.2	-39.6	+3.3	-42.1	+1.3	-44.5	-1.1	-47.5	-4.0	-48.1	-4.0
14	39.3	3.4	40.2	3.0	43.4	+0.4	45.8	2.1	48.4	4.4	48.3	3.5
15	39.3	3.5	41.1	2.5	44.8	-0.5	47.2	3.0	49.3	4.4	48.4	2.8
16	-39.6	+3.4	-42.3	+1.8	-46.4	-1.5	-48.5	-3.8	-49.7	-4.0	-48.3	-1.8
17	40.2	3.2	43.8	1.0	48.0	2.4	49.6	4.2	49.9	3.4	47.8	-0.8
18	41.2	2.8	45.4	+0.2	49.4	3.3	50.4	4.5	49.7	2.7	47.1	+0.1
19	-42.5	+2.3	-46.9	-0.8	-50.4	-3.9	-50.9	-4.4	-49.0	-1.6	-46.1	+1.1
20	43.9	1.7	48.4	1.8	51.0	4.4	50.9	4.0	48.0	-0.8	44.9	1.9
21	45.4	+0.9	49.7	2.7	51.3	4.6	50.4	3.4	46.7	+0.2	43.6	2.5
22	-46.8	0.0	-50.4	-3.5	-50.9	-4.3	-49.4	-2.5	-45.3	+1.1	-42.4	+2.9
23	48.0	-0.9	50.8	4.1	50.2	3.9	48.2	1.6	43.8	1.9	41.4	3.3
24	48.9	1.9	50.7	4.4	49.0	3.1	46.7	-0.6	42.4	2.5	40.5	3.4
25	-49.3	-2.8	-50.0	-4.4	-47.5	-2.2	-45.1	+0.4	-41.2	+2.9	-39.9	+3.4
26	49.6	3.5	49.2	4.2	46.0	1.3	43.4	1.2	40.3	3.2	39.7	3.3
27	49.3	4.1	48.0	3.6	44.5	-0.3	42.0	2.0	39.8	3.4	39.9	3.1
28	-48.8	-4.3	-46.6	-2.8	-43.0	+0.7	-40.9	+2.6	-39.6	+3.5	-40.4	+2.8
29	47.9	4.3	45.3	1.9	41.8	1.5	40.1	3.1	39.8	3.4	41.2	2.3
30	47.0	3.9	44.0	-0.9	40.8	2.3	39.6	3.5	40.2	3.2	42.2	1.8
31	-46.0	-3.3	-42.9	+0.1	-40.2	+2.7	-39.4	+3.5	-40.8	+2.8	-43.3	+1.1
32	-45.0	-2.7	-41.9	+1.0			-39.6	+3.6			-44.3	+0.2

EXPLANATION OF THE ARTICLES

CONTAINED IN

THE NAUTICAL ALMANAC AND ASTRONOMICAL EPHEMERIS FOR THE YEAR 1922.

THE necessarily concise headings in the body of the Almanac in many cases leave the precise meaning of the quantity tabulated in some uncertainty. Very little further explanation is likely to be required by a reader who consults (*a*) the tables of the Sun, Moon, and Planets, and the Star Catalogues quoted in the Preface ; (*b*) the explanation given in foreign almanacs of the matter supplied by them to this Almanac ; (*c*) a section at the end of the Almanac for 1918, which will be here quoted as " Derivation." This section will be reprinted at intervals with changes incorporated.

Ephemeris of Sun and Moon. (Pages 1 to 145.)

" Derivation," Nos. 1 to 25, may be consulted.

Planetary Ephemerides. (Pages 146 to 189.)

In the " Derivation," Nos. 26 to 31, Mars is taken for purposes of illustration. Further statements are necessary as follows :—

Heliocentric places for the planets from Venus to Neptune are to be found in Appendices to the Almanacs for 1915 to 1917.

In the case of Jupiter and Saturn the times of passage over the meridian and the polar semidiameters have been calculated on the assumption, only approximately true, that the extremities of the axes of rotation are the north and south points of the discs.

The transit ephemerides for Mars, Jupiter, and Saturn extend from transit at 20^h to transit at 4^h ; for Uranus and Neptune from transit at 15^h to transit to 4^h ; for Venus the transit is given for every day, the apparent solar day being intended.

Sun's Co-ordinates. (Pages 190 to 197.)

" Derivation," Nos. 32 and 33, may be consulted.

Precession, Nutation, etc. (Pages 198 to 201.)

" Derivation," Nos. 34 to 39, may be consulted.

Stars. (Pages 202 to 431.)

"Derivation," Nos. 40 to 51, may be consulted, and also the explanations of other Almanacs.

The magnitudes have been determined on the assumption that the average magnitude of α Ursæ Minoris, if observed in the Zenith, would be 2.15, and that the light given by a star of magnitude m is r times that given by one of magnitude $m+1$, where $\log r = 0.4$.

The magnitudes of the two stars α Argûs and Sirius are indicated by negative quantities, showing that they are brighter than a star whose magnitude is 0.0.

The Spectra have been taken from a manuscript list forwarded by Professor Pickering. The system of classification is that of *Revised Harvard Photometry* (*Annals of Harvard College Observatory*, vol. 50), from which the following explanation is taken:—

"The nomenclature adopted is that first used in the *Draper Catalogue, H.A.*, vol. 27, modified and extended to satisfy the facts, as the study of the spectrum of the stars developed. Stars of Types I., II., and III., according to the designations of Secchi, are here denoted by the letters A, K, and M. Two well-marked classes between A and K are called F and G. Stars of the Orion or helium type, which contain well-marked helium lines in addition to the Orion lines, are called B. Nearly all the stars can be arranged in a sequence, according to the classes B, A, F, G, K, and M. Peculiar spectra are indicated by Pec. A more detailed study of the spectra showed that many of them fell between these classes. They are indicated by a number following the first class. Thus, B₂A, abridged to B₂, denotes a spectrum nearly like that of class B, but estimated to be two-tenths of the way from B to A. K₅ denotes a star midway between K and M. Stars of the fourth and fifth type are designated by the letters N and O respectively. Class M has been divided into the sub-classes Ma, Mb, Mc, and Md Class O has been divided into the sub-classes Oa, Ob, Oc, Od, and Oe O really precedes B in the sequence, so that Oe₅ denotes Oe₅B. This classification is fully described in Volume 28, p. 146 For stars having a slight peculiarity, the Class followed by the letter p is used instead of Pec."

Bo, Ao are, however, now usually employed for B, A.

At the foot of each page of Apparent Places of Stars are inserted the respective mean places, together with the natural secant and tangent of the mean declination of each star. Additional facility is thus afforded for the reduction of observations.

At the foot of the column on pages 277 to 431 are given quantities designated L_a , L_δ , ω_a , ω_δ to facilitate the calculation of the small parts of the star correction arising from the nutations, dL , $d\omega$, tabulated on pages 198 to 201.

The formulæ for these four quantities are

$$L_a = \sin \alpha \sin \omega \tan \delta \div 15$$

$$L_\delta = \sin \omega \cos \alpha$$

$$\omega_a = -\cos \alpha \tan \delta \div 15$$

$$\omega_\delta = \sin \alpha$$

The formulæ to be used for further correction to the apparent places are

$$\begin{aligned}d\alpha &= dL \times La + d\omega \times \omega\alpha + f' \\d\delta &= dL \times L\delta + d\omega \times \omega\delta.\end{aligned}$$

The numerical values of f' are given on pages 223 to 230.

Moon-culminating Stars. (Pages 432 to 460.)

“Derivation,” No. 52, may be consulted.

The Right Ascension of the Moon’s bright limb and Declination of the centre are given.

The Moon’s age in days is given in the same column with the magnitudes of the stars.

Eclipses. (Pages 461 to 470.)

The explanations of the American Ephemeris and the *Connaissance des Temps* may be consulted.

The Besselian Solar Eclipse Elements have the following geometrical signification:—

The fundamental plane is the plane passing through the centre of the Earth perpendicular to the axis of the Moon’s shadow, *i.e.* to the right line joining the centres of the Sun and Moon. The intersection of the fundamental plane with the Earth’s Equator is taken as the axis of x , and the axis of y is perpendicular to it and directed towards the North, the Earth’s centre being the origin of co-ordinates; so that x and y are the co-ordinates of the point in which the axis of the shadow intersects the fundamental plane. The angle d is the declination of the point in which the axis of the shadow (in the direction Earth, Moon, Sun) intersects the celestial sphere. The angle μ is the Greenwich hour-angle of this same point.

The quantities l_1, l_2 are the radii of the shadow-cones upon the fundamental plane, l_1 corresponding to the penumbra and l_2 to the umbra or shadow. The latter is regarded as positive for an annular, and negative for a total Eclipse.

The values of the log tangents of the semi-angles of the shadow-cones of the penumbra and shadow respectively are also given.

The remaining quantities $x', y',$ and μ' are, respectively, the changes of $x, y,$ and μ in one minute of mean time.

Occultations. (Pages 471 to 516.)

The explanation of the American Ephemeris should be consulted, and also “Derivation,” No. 53.

Jupiter's Satellites. (Pages 518 to 542.)

The explanation of the *Connaissance des Temps* should be consulted.

In the Tables of Configurations the direction of the motion of the satellites is towards the numerals. White circles at the side of the tables denote transits in progress; black circles occultations or eclipses.

Satellites of Mars, Saturn, Uranus, and Neptune. (Pages 517, 543 to 547, and 549 to 551.)

The explanation of the American Ephemeris should be consulted.

Rings of Saturn. (Page 548.)

This page gives the apparent size and orientation of Saturn's Rings and the planetocentric position of the Earth and Sun relatively to the plane of the Rings.

a and b are the axes of the outer ellipse of the outer ring.

P is the angle which the minor axis of the Ring-ellipse makes with the Declination circle passing through the middle point of Saturn; + East, - West.

B is the angular elevation of the Earth above the plane of the Rings, as seen from Saturn; + North, - South.

B' is the angular elevation of the Sun above the plane of the Rings, as seen from Saturn; + North, - South.

U is the Geocentric Longitude of Saturn reckoned on the plane of the Rings from the Ascending Node of the Ring on the Equator.

U' is the Heliocentric Longitude of Saturn, reckoned on the plane of the Rings, from the ascending Node of the Ring on the Ecliptic.

ω is the angular distance in the plane of the Rings from their ascending Node on the Earth's Equator to their Ascending Node on the Ecliptic.

The factor to be multiplied by a and b to obtain the axes of—

The inner ellipse of the outer ring = 0.8801	log factor = 9.9445.
The outer ellipse of the inner ring = 0.8599	log factor = 9.9344
The inner ellipse of the inner ring = 0.6650	log factor = 9.8228.
The inner ellipse of the dusky ring = 0.5486	log factor = 9.7392.

Phenomena. (Pages 552 and 553.)

The conjunction of planet with planet is given only when the difference of declination does not exceed 3° ; that of planet with star when the difference does not exceed $10'$.

In computing the time of greatest brilliancy of Venus it is assumed that the brilliancy varies as $\frac{(r+\Delta+R)(r+\Delta-R)}{r^3\Delta^3}$, where r and R are the radii vectores of Venus and of the Earth respectively, and Δ is the distance of Venus from the Earth.

Physical Ephemeris of the Sun. (Page 554.)

P is the position-angle of the Sun's axis, B_0 the heliographical latitude of the Earth and L_0 the heliographical longitude of the centre of the disc.

Moon's Equator, Orbit, and Mean Longitude. (Page 555.)

The Moon's Equator descends upon the ecliptic at a constant angle at the point where the Moon's Orbit ascends upon the ecliptic.

Ω is the longitude of this point.

Ω' is the right ascension of the Ascending Node of the Moon's Equator upon the Earth's Equator.

i is the inclination of the two equators.

$\Delta + 180^\circ$ is the distance from the Ascending Node of the Moon's Equator upon the Earth's Equator to the Ascending Node of the Moon's Orbit upon the ecliptic.

The mean longitude of the Moon's Perigee Γ' and the Moon's mean longitude are given in a slightly different manner upon page 1.

Physical Ephemeris of the Moon. (Pages 556 to 563.)

"Derivation," No. 54, may be consulted.

C is the position-angle of the northern extremity of the Moon's axis.

Physical Ephemerides of Mercury and Venus. (Pages 564 and 565.)

k the fraction of the whole disc illuminated.

i the angle between Earth and Sun as seen from the planet.

θ the position-angle of the line of cusps.

L the brilliancy of the disc.

Physical Ephemeris of Mars. (Pages 566 to 573.)

P is the position-angle of the axis of rotation, $A\oplus$, $A\odot$, the planetocentric Right Ascension of the Earth and Sun respectively, reckoned in the plane of the planet's Equator from the vernal Equinox of the planet's Northern Hemisphere,

$D\oplus$, $D\odot$ are the planetocentric declinations of the Earth and Sun,

$\odot \delta$ the planetocentric longitude of the Sun in the plane of the planet's orbit,

k the fraction of the whole disc illuminated,

i the angular distance of Earth and Sun as seen from the planet,

q , Q the amount and position-angle of the greatest defect of illumination.

Physical Ephemeris of Jupiter. (Pages 574 to 579.)

The correction for phase is applicable to the central meridian.

Days elapsed of the Julian Period at Mean Noon. (Page 586.)

The Julian Period is a period of 7980 years, the year A.D. 1 corresponding to the year 4714 of the period, or the year 0 (B.C. 1) to the year 4713 of the period. The year 1922, therefore, corresponds to the year 6635 of the Julian Period.

As the year 0 corresponds to the year 4713 of the period, at the commencement of the year 0, there have elapsed 4712 years, or 1,721,058 days of the period. It is on this basis that the Table has been calculated. The Table gives the number of days of the period elapsed at the commencement of each fourth year of our era, from the year 0 to the year 1996. In the construction of the Table it has been assumed that the Gregorian reformation of the Calendar was introduced in the year 1582.

Geocentric Co-ordinates. (Page 587.)

This page contains a Table for computing the geocentric latitude and log. radius of a place on the Earth's surface, the geographical latitude of which is known. The Table is adapted to a compression of $\frac{1}{297.0}$.

Observatories. (Pages 588 to 595.)

These pages contain a list of the *Longitudes and Latitudes of the principal Public and Private Observatories*, together with the Reduction of the Geographical to the Geocentric Latitude and the logarithm of the Earth's Radius for sea level for the position of each Observatory, computed with an assumed compression of one part in 297.0.

Standard Times. (Page 596.)

A list of Standard Times in use at various places is given.

Newcomb's Corrections. (Pages 597 and 598.)

"Derivation" No. 60 may be consulted.

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