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ACCOUNT OF THE OPERATIONS OF

THE GREAT TRIGONOMETRICAL SURVEY OF INDIA

VOLUME X.

ELECTRO-TELEGRAPHIC LONGITUDE OPERATIONS

EXECUTED DURING THE YEARS 1881-82, 1882-83 AND 1883-84

BY

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AND

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PUBLISHED UNDER THE ORDERS OF

COLONEL H. R. THUILLIER, R.E., SURVEYOR GENERAL OF INDIA.

Dehra Dun:

PRINTED AT THE OFFICE OF THE TRIGONOMETRICAL BRANCH, SURVEY OF INDIA.

B. V. HUGHES.

1887.

Price Ten Rupees Eight Annas.

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PREFACE.

The present volume—the tenth—of the *Account of the Operations of the Great Trigonometrical Survey of India*, describes, in continuation of the ninth volume, the Electro-Telegraphic Operations for the determination of Differential-Longitudes which have been completed by this Survey, up to the end of the field season of 1883-84.

This branch of the Geodetical Operations of the Survey of India is introduced to the reader in a very able and interesting manner by General Walker, R.E., late Surveyor General of India, in his preface to Volume IX, where attention is justly called to the very liberal view that has always been taken by the Government of India of the importance of the purely Scientific Operations of the Great Trigonometrical Survey in contributing to the data for the investigation of the Figure of the Earth and of other interesting problems, although the Survey was primarily instituted for other, that is to say, for geographical purposes. General Walker also gives an account of the ways and means by which the Electro-Telegraphic Longitude Operations were initiated in India and describes briefly the instrumental equipment and method of using it, allotting to the able operators the acknowledgments due to their respective shares in the operations, besides giving other interesting information of a prefatory nature, to which the reader is necessarily referred.

The present volume is divided into two parts, and supplemented by an appendix. Part I contains six introductory chapters in which are described in considerable detail the instrumental equipment and electrical apparatus, the methods of determining the relative personal equation of the observers, the system of observing transits and the adjustments of the instruments; in it is also given an explanation of the Tables in Part II, which contains enough of the computations to enable the reader who feels so inclined to check the results obtained, and to deduce his own conclusions from them. The Appendix contains various papers, descriptive and critical, written by the Officers (Lieut.-Colonels Strahan and Heaviside) who conducted the work; also the details of the triangulation connecting the stations at which the longitude observations were made with the main triangulation of the country, and a comparison in tabular form of the values of the Electro-Telegraphic longitudes with the geodetic values, together with the errors exhibited at the close of each triangular circuit, to which the reader who is interested in the final results, without caring to follow in detail the means by which they are elaborated, is referred. It also contains tables showing the values of the wire intervals of the transit telescopes employed, and information on other minor points connected with the work.

The following are the arcs of longitude of which the details of measurement will be found in this volume, the eastern terminus of the arc being always placed first.

In Season 1881-82.	*In Season 1882-83.*	*In Season 1883-84.*
Fyzabad–Agra.	Jalpaiguri–Fyzabad.	Akyab–Calcutta.
Fyzabad–Jubbulpore.	Jalpaiguri–Calcutta (remeasurement).	Akyab–Chittagong.
Hazaribagh–Fyzabad.	Chittagong–Jalpaiguri.	Prome–Chittagong.
Hazaribagh–Jubbulpore.	Chittagong–Calcutta.	Prome–Akyab.
Calcutta–Hazaribagh.	Calcutta–Fyzabad.	Moulmein–Akyab.
Jalpaiguri–Hazaribagh.	Calcutta–Jubbulpore.	Moulmein–Prome.
Jalpaiguri–Calcutta.	Fyzabad–Jubbulpore (remeasurement).	
	Fyzabad–Agra (remeasurement).	

The remeasurement of three arcs in the season 1882-83 was rendered necessary by a defect in the instruments. The same fault had previously been noticed in 1872-73, the first year the instruments were employed in India, and had been remedied by Mr. Doderet, the Mathematical Instrument Maker to the Madras Government, but, as it appears, not very effectually, and hence the remeasurement of the three arcs in question was rendered imperative. Information on this point will be found partly in Chapter VI of this volume, and more fully in the Appendix, page (22).

It may not be out of place here to say a few words in regard to the ends and objects served by these refined observations. Their chief importance lies in the very valuable data which they in combination with the trigonometrical operations afford for the investigation of the Figure of the Earth: this investigation in return resulting in reciprocal benefit to the Indian Survey. In order that the true Latitudes, Longitudes and Azimuths of the stations of a system of triangulation on the Earth's surface may be computed, it is necessary that the polar and equatorial axes of the Terrestrial spheroid should be correctly known, as they are involved in the formulæ by which such computations are effected. The values of those elements that have since 1830 been used in the calculations of this Survey are those known as "Everest's Constants, 1st Set." Any error in the adopted elements will of course result in an error in the geodetical latitudes and longitudes of the stations which will increase with the distance from the station taken as the origin for the whole system. When Colonel Everest computed his 1st Set of Constants the amount of reliable data available for their determination, though comparatively small, was deemed sufficient to afford elements approximating so nearly to the truth as to enable the Latitudes and Longitudes of places on the extreme limits of India to be determined without any practically appreciable error; and his first set of constants was therefore adopted and has been adhered to in all the subsequent calculations in this Survey. Now that the geodetic operations have been extended over the whole Peninsula, and indeed along the Coast of Burma and as far east as Bankok, it is a matter of considerable interest to ascertain as near as may be the amount of error in the positions of the extreme stations resulting from the adoption of these constants.

The data for such investigations is furnished by

(1) Comparison of observed latitudes with geodetic latitudes;
(2) Comparison of observed longitudes with geodetic longitudes; and
(3) Comparison of observed azimuths with azimuths deduced through the triangulation from the station of origin.

The respective differences shown up by these comparisons are combinations of errors, of which two are gradual, increasing with the distance from the origin, *i.e.*, error in the adopted constants, and error in the initial azimuth at the origin giving the orientation to the whole system; another error which follows no formulated law, is caused by deflection of the plumb-line due to inequalities in the form and density of the Earth's crust, and since this, though it cannot be independently determined, is known to be frequently a very appreciable quantity, while the residual errors due to observation and reduction—also indeterminable—must be exceedingly small, it would not sensibly affect the results if they were ignored and merged in the local attraction and the differences regarded as combinations of errors from but three sources, adopted constants, orientation and local attraction. By largely multiplying the stations of comparison these differences can, by the mathematical process known as the solution of equations of condition by the method of minimum squares, then be resolved into

their component parts without appreciable error in the results. The astronomical observations therefore meet a need of great scientific importance in determining correct measures of the elements of the terrestrial globe; they also determine accurately the orientation of India and so furnish the corrections due to the latitudes and longitudes arising from error both in original constants and orientation: they contribute largely towards the investigation of local attraction, a subject now greatly engaging geodesists and geologists in Europe: they serve to determine with great accuracy the position of India with respect to its distance from Greenwich: and lastly, they furnish considerable and valuable data for the amelioration of existing star tables, that is to say, the latitude and longitude observations afford material for improving the places of about 900 stars, while the azimuth observations contribute data for the very accurate determination of the North Polar Distances of a number of near circumpolar stars. But before the application of the Electric Telegraph to the determining of longitudes the second kind of comparisons could not be made, because the longitudes determined by the old methods were not sufficiently accurate for such a purpose; a case in point being that of Madras which, though the result of many years' careful observations taken with all the refinements of a well equipped observatory, was discovered through these Electro-Telegraphic Operations to be erroneous by about 2½ minutes of arc which had the effect of placing India nearly 3 miles too far from Greenwich and of undeservedly ascribing an error of 10 seconds to the chronometers of all ships arriving at Indian ports from Europe or America. The introduction therefore of these Electro-Telegraphic Longitude Operations into India was a most valuable addition to the geodetic operations of the Indian Survey.

As neither the latitude nor longitude operations are as yet complete the comparisons above mentioned cannot at present be systematically made or final conclusions arrived at, but it may be interesting to consider the effects on the geodetic latitudes and longitudes of places on the extreme limits of the Indian triangulation that would be caused by such errors as may very possibly be discovered to exist in the originally adopted elements of the terrestrial spheroid. From later information Everest computed a second set of values for the elements which he published in his "Account of the Measurement of two Sections of the Meridional Arc of India" in 1847: these, together with six sets derived by other geodesists, will be found at page 130 of Volume II. Now supposing it were proved that the latest determined, that is the last of the sets of constants in that table, were correct, then the substitution of these values for Everest's 1st Set would cause a change of position of the four extreme stations of the triangulation as under:—

Stations	Corrections in Latitude		Corrections in Longitude	
	″	*Feet*	″	*Feet*
Peshâwar	− 2·228 =	225	+ 3·886 =	327
Bankok	+ 2·209 =	223	−12·443 =	1051
Cape Comorin ...	+ 2·041 =	206	− 0·018 =	2
Kurrachee	+ 0·085 =	9	+ 6·174 =	569

The station of origin is Kaliânpur of which the longitude differs very slightly from that of Cape Comorin, so that whichever set of elements be adopted the correction to the longitude of Cape Comorin will of necessity be very small. With this exception the corrections in the above table are quantities well within the detective power of the respective latitude and longitude instruments.

It would have been impossible to carry out Electro-Telegraphic Longitude Operations in India without the hearty co-operation and assistance of the Government Telegraph Department. Colonel Murray, the late Director General of Telegraphs, and Mr. A. J. Cappel, the present holder of that appointment, have always responded most cordially to my applications for the use of the telegraph lines when required for observation; and although this concession on the part of the Telegraph Department frequently caused extra trouble and attendance of subordinates it was always liberally met, and both Colonels Strahan and Heaviside have reported their appreciation of the unvarying courtesy and attention met with from the numerous officers of the Telegraph Department with whom they have had any business relations.

It only remains for me to repeat that the whole of the observations in this volume were taken by Colonels W. M. Campbell (now Major-General), Strahan and Heaviside, and to add that the reductions of the observations and the determination of the several arcs of longitude were also effected conjointly by those Officers, the greater part falling to the share of the two last named. The descriptive chapters in the present volume are borrowed largely from those in Volume IX which are due to General Campbell, and have been merely altered by Colonel Strahan where necessary to suit the equipment as at present used. The tabular arrangement of the numerical details of the observations and the papers contained in the Appendix are due to the last mentioned Officer in connection with Colonel Heaviside. The volume was printed at the Office of the Great Trigonometrical Survey in Dehra Dún under the supervision of Mr. W. H. Cole, M.A.

December, 1887.

C. T. HAIG, COLONEL, R.E.,

Deputy Surveyor General,

In charge Trigonometrical Surveys.

Page			
(27)	line 8 from top	*for* r, r_2, r_3, &c.	*read* r_1, r_2, r_3, &c.
2	last line	„ c_1	„ c
5	*add* at foot of page. NOTE.—The values of b at Jalpaiguri on March 22, April 4 and 5 are derived from the mean value of C_0 for each date.		
„	at Jalpaiguri for April 4 and 5 in column headed b	*for* + 5·2, + 5·3, + 6·9, + 4·7	*read* + 4·9, + 4·8, + 4·8, + 5·7
7	line 10 from top col. 14	„ + 0·26	„ + 0·21
34	„ 4 from bottom „ 8	„ 7 6 49	„ 7 14 49
„	„ 2 „ „ „	„ 6 55 48	„ 7 3 48
„	„ 4 „ „ 9	„ 7 7 50	„ 7 15 50
„	„ 2 „ „ „	„ 6 56 46	„ 7 4 46
35	„ 4 „ „ „	„ 8 30 56	„ 8 31 53
„	„ 2 „ „ „	„ 8 11 12	„ 8 12 9
36	„ 4 „ „ 8	„ 8 33 19	„ 8 33 22
„	„ 2 „ „ „	„ 8 13 18	„ 8 13 21
62 to 73	in heading of table	„ Reduction of d to t_E by Relative Rate Correction R_1	„ Reduction of d to t_E by Relative Rate Correction R
73	line 4 from bottom „ 11	„ 1 8·761	„ 1 8·752
„	„ 3 „ „ „	„ 12 9 48	„ 12 11 8
80	last line „ 18	„ + 31·048	„ + 31·052

153 to 164 The values of *a* at Jalpaiguri for 19th March and 6th April were obtained from *Table II* by combining the first value of a_1 with the mean of the last two values for each date respectively; for the 22nd March and 4th April, by rejecting the first value of a_1 and taking the mean of the last two; and for the 5th April, by rejecting the first value of a_1 and combining the second value with the mean of the third and fourth.

„ The value of c at Jalpaiguri for 5th April is the mean obtained from *Table I* by giving half weight to the second value.

ELECTRO-TELEGRAPHIC LONGITUDES

PART I.

DESCRIPTION OF THE INSTRUMENTAL EQUIPMENT

AND OF

THE OPERATIONS GENERALLY

WITH

DETAILS OF THE SYSTEM OF OBSERVING

AND OF

REDUCING THE OBSERVATIONS

DURING

1881-82, 1882-83 AND 1883-84.

CHAPTER I.

DESCRIPTION OF THE INSTRUMENTAL EQUIPMENT.

1.

Equipment.

The Instrumental Equipment was the same with some trifling exceptions as that described in Volume IX of the *Account of the Operations of the Great Trigonometrical Survey of India*, but for the sake of convenience the description as there given is now repeated with the necessary alterations.

2.

The Transit Telescopes.

The Transit Telescopes are by Messrs. T. Cooke and Sons, of York, sister instruments of nearly identical dimensions: they are marked No. 1, and No. 2. One of these is shown in Plate I in position for the observation of the reflection of the wires in the mercury trough. The focal length is slightly over 5 feet, and diameter of object glass the whole of which is effective is 5 inches. There are two wire diaphragms, one of which carries a single vertical, and a pair of horizontal wires—about 1′ apart—crossing the centre of the field; and the other a set of 25 vertical wires, arranged in groups of 5 each, for the observation of transits. The latter diaphragm is worked by a micrometer screw, and the former may be called fixed, although there is provision for adjusting its position as required. The 25 vertical wires were conveniently named *A*, *B*, &c., to *Y*, the central one being *M*: their mean distance apart is about $36''{\cdot}6 = 2{\cdot}44$ equatorial seconds, and the groups are separated by double intervals. The micrometer head (which is hidden in Plate I by the lamp stand) is comprised of two plates, one graduated to show revolutions, and the other

to indicate divisions, of which there are one hundred in the revolution: the two plates are connected by a set of toothed wheels. The value of a revolution was found to be almost identical in the two instruments, *viz.*, $1^R = 33''{\cdot}75$. The micrometer head is protected by a cap, which, being screwed on after setting to a particular reading, insures it against being accidentally moved, and there is a small window of talc through which the setting can be inspected, lest it should have been disturbed in applying the cap, which is not an unlikely contingency. This setting is of great importance, as upon it the collimation of the telescope depends. A screw (which is also hidden in Plate I) is provided for moving the eye-piece rapidly across the vertical wires during observations, so that the star may be kept close to the centre of the field. The set of eye-pieces comprises direct eye-pieces of various powers, with prisms for oblique use, and a Bohnenberger eye-piece, *A*, Plate I, for use with the mercury trough. The latter eye-piece has been invariably used for all work, including star transits, its shape being convenient for the observation, in a sitting posture, of stars close to the zenith.

Two kinds of wire illumination are provided:—1*st*, the ordinary dark wires in a bright field; and 2*nd*, bright wires in a dark field, the arrangement being as follows:—A lamp is placed opposite one end of the transit axis, which is perforated and fitted with a lens, whence that end is designated the "Illuminated Pivot", a term constantly used to define the position of the instrument. When observing, a second lamp, though not required, is always placed opposite the other end of the axis to neutralise any effects of heating on the instrumental adjustment; see Plate I. In the centre of the axis there is a light plate, revolving on an axis at right angles to both telescopic (optical) and transit axes, (cut out in the centre so as not to interfere with rays from the object glass) and capable of being moved through an angle of 45°, by a rod passing along inside the tube of the telescope with a handle projecting close to the eye-piece. In the centre of the opening in this plate, and therefore at the intersection of the optical and transit axes of the telescope, a small black glass reflector is placed at the end of a fine supporting arm. When the plate is inclined at 45° to the transit axis, the light from the illuminating lamp is reflected directly on to the wires by this small reflector, and the result is a bright field with dark wires. When the plate is turned so that its plane coincides with the transit axis, the light of the illuminating lamp is intercepted by a set of four prisms which are attached to the plate, and reflected towards the eye-piece, between the telescope tube and an inner tube provided for the purpose; these four sets of rays converge slightly, so as to strike upon four prisms which are attached to the frame carrying the wire diaphragm, two on each side of the telescope, slightly above the plane of the wires. The latter prisms again reflect the light at right angles, so that the rays are brought nearly into the plane of the wires which thus become illuminated by the light from the prisms on each side, the field remaining dark. Both kinds of illumination are fairly satisfactory.

There are two setting circles, *B*, *B*, attached to the tube of the telescope, one on each side near the eye-end, each $7\frac{1}{2}$ inches in diameter: they are graduated to 20 minutes, with verniers reading to 1 minute, and each is provided with a coarse level. These circles are not permanently fixed to the telescope tube, but can be turned round and clamped in any position, which admits of a change of adjustment for setting by declinations direct, or by zenith distances, &c., when the instrument is set up for use at a new station. There is no provision for clamping the telescope when set.

The object glass is fixed in its cell, so as to be pinched at three points only; and the cell, instead of being screwed into the telescope tube, has close contact with it only at three equidistant points where it is attached by screws, an arrangement which admits of the object glass (complete in its cell) being put on in three different positions.

The frame of the telescope consists of three principal pieces, *viz.*, the axis, *C*, the object-half, *D*, and the eye-half, *E*, which pack separately for travelling. The shape of the axis is a central cube of $9\frac{1}{2}$ inches side, supported by conic frusta of $9\frac{3}{4}$ inches axial length, and $9\frac{1}{4}$ inches in diameter at their junction with the cube, tapering to 3 inches diameter, and terminated by enlarged cylindrical shoulders, $3\frac{3}{4}$ inches diameter and $2\frac{1}{4}$ inches wide, into which the steel pivots are fixed, the axis having been shrunk on to them. The pivots are 1·9 inches diameter, perforated by an opening 0·9 inch diameter, and they project 1·9 inches from the axis shoulders. The total length of axis is thus 37·3 inches, while its length from

shoulder to shoulder is 33·5 inches: the thickness of the metal is about 0·37 inch throughout the cube and cones which were cast in one piece, the cube being strengthened by internal ribs. The conical parts were turned both inside and out to ensure as perfect symmetry as possible. The weight of the axis is about 65 lbs. Of the four faces of the cube parallel to the axis, one pair are perforated by openings of $3\frac{1}{4}$ inches diameter, to allow of inter-collimator observations while the transit telescope is in position. These openings can be closed with caps, *F*, Plate I, and they are crossed by spokes which support the illuminating plate already described. In the other pair of faces openings of 6·8 inches diameter are cut for the attachment of the telescope half tubes.

The two halves of the telescope are each attached to the axis by 12 powerful steel bolts, which pass through a flange at the base of each tube, *G*, *G*, Plate I, $\frac{1}{4}$ inch thick and projecting 0·7 inch, and screw into the metal of the cube. Each tube is further steadied by its flange fitting into a sunken annulus cut in the face of the cube. The two half tubes are quite plain, except that about $1\frac{1}{2}$ inches from the base of each, brackets, *H*, *H*, Plate I, are cast upon them to support levels, which for reasons given in Vol. IX have not been used. The object-half is about 2 feet $8\frac{1}{2}$ inches long from its base to the outer surface of the object glass, and weighs (with dew cap but without levels) 32 lbs. The dew cap, *K*, is 6 inches long, increasing the length of the object-half of the telescope to 3 feet $2\frac{1}{2}$ inches, or 3 feet $7\frac{1}{4}$ inches from the (transit) axis of rotation to the end of the dew cap.

The eye-half tube is only 1 foot $10\frac{3}{4}$ inches long from its base to where it is cut off for the attachment, by four brass screws, of the "eye-end", *L*. The eye-end is composed of two concentric tubes to allow of the focussing adjustment which is performed by two opposing screws acting on a stud, *M*; it is 6 inches long measured to the plane of the wires, $3\frac{3}{4}$ inches diameter, and weighs 6 lbs. The weight of the eye-half altogether (without levels) is 40 lbs. The total weight of the telescope proper is thus $65+32+40=137$ lbs.

The pivots rest on nearly semi-cylindrical bearings, *N*, of gun-metal, of the same length and diameter as themselves, but cut away in the lower part so that there is contact only on two arcs of about 60° each. The under surface of these bearings is spherical, fitting exactly the upper surface of the beds, *P*, *P'*, on which they rest, and to which they are loosely attached by a bolt passing through a slotted hole; so that the whole forms a universal joint, which allows the bearings to adjust themselves under the weight of the telescope, and insures the equal bearing of the pivots throughout their length. Again, each of these beds rests on a lower or foundation plate of iron, *Q*, *Q*, which lastly are placed on the masonry piers, *R*, *R*. Each foundation plate *Q* rests on three feet, projecting very slightly below its lower surface. One pivot bed, *P*, has three foot-screws by which the level of the transit axis is adjusted, and the other *P'* has a provision, *S*, for the adjustment in azimuth. The pivots are protected from dust by well fitting caps, *T*, *T*. The weight of each pivot bed with foundation plate is about 40 lbs., thus bringing up the total weight of the telescope complete to $137+80=217$ lbs.

3.

Adjusting Telescope and Collimators.

Each transit telescope is provided with a small, light telescope of 9 or 10 inches focal length, supported by an axis of the same length as that of the large telescope, the object of which is to facilitate the adjustment of the collimators to their proper places before the transit telescope is put in position. This small telescope has a level attached, so that the bearings of the transit telescope can also be approximately levelled before placing the large telescope upon them.

With each transit telescope is an excellent pair of collimators, each having an object glass of $2\frac{1}{2}$ inches diameter and 24 inches focal length. One of each pair is furnished with a powerful micrometer in the eye-piece for measuring horizontal displacements; the other rests on circular bearings on which it can be turned round its optical axis, and it has a good striding level, by applying which during such

rotation the line of collimation can be levelled, and thus the exact horizon of the transit telescope may be determined. This is a matter of some convenience, as it allows of the setting circles being exactly adjusted for the latitude of a new station without delay. A peculiar feature about the collimators is the following arrangement, designed to prevent lateral disturbance owing to change of temperature. The instrument is really supported on only two legs under its axis, while it is merely steadied by a third leg projecting to one side, and attached to the instrument by a hinge allowing of motion in a horizontal plane. Of the two legs under the axis, one rests on its bed in a fixed position, while the other is allowed to move freely in the line of the axis; the foot of the third leg is allowed play on its bed in any direction. Thus when a movement of the feet is rendered necessary, by a change of the dimensions of the instrument relatively to its supporting pillar owing to a change of temperature, it is assumed that it will take place in the line of the axis. If the instrument rested as usual on three feet equally, the direction of such a movement would altogether depend on the friction between the feet and the pillar. The idea is an ingenious one, and the stability of both collimators even under extreme variations of temperature has been found most satisfactory, a result which may fairly be supposed to be due, at all events in part, to this novel construction.

4.

The Chronographs.

The chronographs were made by Messrs Eichens and Hardy of Paris, the latter taking charge of the electrical arrangements: they are exactly alike, marked by the makers *A* and *B* and one is shown in perspective in Plate II, to which all the references in the following description apply.

The instrument may be said to consist of three parts, all supported by a rectangular foundation plate of iron furnished with three foot-screws for levelling:—

1*st*. The clock work, **A**, for driving and regulating;

2*nd*. The revolving drum, **B**, carrying the paper on which the record is impressed:

3*rd*. The table, and carriage, **C**, carrying the recording styles.

The regulator is of a novel construction designed by M. Foucault. It consists of a pair of governor balls, *D*, *D*, connected by a train of toothed wheels with a small fan revolving on a vertical spindle (at the rate of about 30 revolutions per second) inside a fixed cylinder in the circumference of which little windows are cut for the passage of air. An outer cylinder, *E*, with a corresponding set of windows, fits closely over the fixed one, and is connected with the governor balls in such a way by a rod, *F*, *F*, that, as the latter rise owing to an increase of speed, the outer windows come into coincidence with the inner and allow the air to pass through, whereby the resistance offered to the fan is increased and the rate of the machine checked. The two instruments present a curious difference in the action of this regulator, the cause of which could not be traced by the maker himself. In one, *B*, the outer fan-cylinder never rests for an instant, but maintains a constant state of oscillation, while in the other, *A*, it preserves one position pretty steadily for a while, and then shifts to another.

The governor balls revolve on a vertical spindle which rests on a lower cup-bearing just below *Q*—hidden in Plate II by the driving wheels—and works in an upper bearing in the bar, *W*, where a cup with covering cap is provided for oil. The bar *W* screws on to the upright pillars, *X*, *X*.

The connection of the governor with the outer fan-cylinder is effected by the light rod *F* in the following manner:—An upright arm, *G*, is mounted on pivots, which are hidden in Plate II by the drum of the driving weight, and carries counterpoises—also hidden—which press its upper end towards the governor. The upper end is forked, and between the members of the fork the rod *F* is pivoted. Another rod, *H*, is similarly pivoted, and extends to the upright spindle of the governor, where it carries a round headed adjustable pin, *I*, which works in a collar fitting round the spindle, and attached to the governor balls so that it revolves with them, and moves up or down the spindle according as the balls

rise or fall with the increase or decrease of speed. In the middle of *H* at *J* there is an adjustable pin which fits into a hole in the end of a yoke, *K*, thus affording a movable joint at *J*. *K* is itself pivoted on the fixed frame-work, *M*, at its other end, and affords a tie to the rod *H* of such a nature, that so long as the joint at *J* does not rise or fall, the arm *G* must maintain a constant position.

The outer fan-cylinder *E* is hung on a bearing above it—exactly over the vertical spindle of the fan—by an open frame-work, attached to which is a small projecting horizontal tongue, *L*, the position of which is adjustable. The rod *F* rests on *L* and has a small pin which fits loosely in a hole in *L*, and thus provides a movable joint between the two. Now if the governor balls fly out owing to increase of speed, the collar with the pin *I*, and consequently also the pin at *J*, must rise, and the upper end of *G* will be brought forward towards the fan-cylinder carrying with it the rod *F* which thus by its action on *L* causes the cylinder to revolve. *L* can be adjusted until the best position of the windows in the outer cylinder relatively to those in the internal fixed cylinder has been secured.

The rod *H* is continued beyond *G*, and carries at its extremity a counterpoise, *N*, which can be screwed along *H*—through a small range—and clamped wherever desired, thus affording a means of regulating the rate of the instrument, that is to say, its mean rate as distinguished from the uniformity of rate, the regulation of which is effected by the governor and fan. The mean rate will increase as the position of *N* is shifted towards the governor, and *vice versâ*; for the nearer *N* is to the pin *I* the less will be the pressure of the latter upwards against the collar, and therefore the greater must be the rate of revolution of the governor to cause the balls to rise. The collar is fixed to the lower end of a cylinder, which fits round the spindle and runs over it on two sets of friction rollers, *O*, *O*, between which the jointed arms, *Y*, *Y*, are attached, connecting the cylinder with the balls *D*, *D*. On the spindle are clamped two stops, *P*, *P*, to limit the range of the cylinder—and therefore of the balls and collar; and when the instrument is going properly the cylinder must always oscillate between these stops without touching either. This condition is ensured by varying the amount of the driving weight which is composed of separate discs of lead, while the consequent rate of revolution is regulated by the counterpoise *N*.

The motion of the governor is communicated to the fan by a chain of toothed wheels as follows:—At *Q* there is an enlarged toothed surface on the spindle which gears on one side with the last driving wheel, *R*; and on the other with a small toothed wheel, *S*, revolving in a horizontal plane. Just below *S*, on the same axis—to which it is firmly but not rigidly connected—is an exact duplicate of *S* (hidden in Plate II) which runs free of *Q* owing to its lower level, and gears on the other side with *T*, a set of teeth on the spindle of the next toothed wheel, *U*. The teeth *T* are on a lower level than the upper wheel *S*. Lastly the wheel *U* gears with a set of teeth on the spindle of the fan, the lower bearing of which is at *V*. The object of the duplicate wheel *S*, is to save the machinery from a dangerous jar in case of sudden stoppage, such as would occur if the cord of the driving weight were to break. As has been stated a slight relative movement of the two members of *S* round their common axis is allowed for, which is regulated by a stiff spring so as to break the jerk.

The lower bearing *V* of the fan-spindle requires careful adjustment which, however, when once obtained may be looked upon as permanent, unless intentionally disturbed. It consists of a conical cup bearing, with a relieving capstan-headed screw under the point of the spindle, which can be raised or lowered with reference to *V*, while the whole bearing can also be raised or lowered, and clamped by screw nuts. Its position should be such, that vertical shake of the spindle is just perceptible to the touch: the least jam preventing such shake will stop the instrument instantly. When proper adjustment of all the parts has been secured, the great secret to ensure a good rate is oil—plenty of oil on all the bearing surface where there is friction under rapid motion. The lower bearings of all the vertical spindles should be plentifully supplied, and as they are all cup-shaped the supply remains pretty constant: their upper bearings also require occasional touching. But the most important point is the contact between the pin *I* and its collar, where from its situation the oil will not remain long. In nineteen cases out of twenty, when the rate of the instrument decreases, a drop of oil between the pin and the collar is sufficient to set it right again. Occasionally the fan makes a screeching noise, when the rate will at once fall off: this is a sign that a touch of oil is wanted on the *upper* bearing of the fan-spindle.

When packing the instrument for travelling, the system of arms F, G, H, are removed in one piece by loosening one of the pivots on which G works; the yoke K and the fan-cylinder E are also taken off. The bar W is then taken off the upright pillars X, X which allows of the removal of the governor in one piece, after which W is replaced. The driving weight is of course taken off and the cord wound up. The whole of the clock-work is enclosed when the instrument is at work in a light iron-framed cover to keep out dust, which is not shown in Plate II. It is fitted with a glass roof and glass windows at the sides, which latter draw out and allow the hands to be inserted for putting the clock-work together, or taking it to pieces, or for necessary adjustments, and thus the removal of the cover is never necessary. The winding arbor, Z, protrudes through a hole in the cover to admit of the weight being wound up. On the other side—not visible in Plate II—a handle also passes through the cover, and acts by a screw on a clamp fitted round the axis of the wheel R by which the instrument can be stopped. When supported on its usual wooden stand without any hole in the ground for the descent of the driving weight, the instrument will go for about 50 minutes; but the cord is long enough to admit of continuous motion for about 3 hours, if the weight is allowed to descend.

The drum is $11\frac{3}{4}$ inches wide, 3 feet 1·6 inches in circumference and weighs about 45 lbs. Each instrument has three spare drums. The paper used is $11\frac{3}{4}$ inches wide, and about 3 feet $2\frac{1}{4}$ inches long; it is put on with common paste. The direction of revolution is shown by an arrow.

The connection of the drum with the driving clock-work is carried out as follows:—The axis of the last driving wheel R which gears with the governor at Q, and is therefore directly controlled by it, is prolonged through the protecting cover at a, to an outer bearing which is not seen in Plate II, being hidden by the supports of the drum. On a there is an enlarged fixed nut, β, with teeth along the edge of its vertical surface, and there is also a movable nut, γ, with similar teeth, which can be made to gear with β or not at pleasure, by means of a lever (invisible in Plate II) which works on the pin, δ. Rigidly attached to γ is a toothed wheel which gears with the teeth round the edge, ϵ, ϵ, of the drum. When β and γ are dis connected by the lever the drum is cut off from the clock-work, and can be turned as desired by hand. The clamp to stop the clock-work, which was referred to above, acts on the axis a.

The axis, ζ, of the drum is very strongly attached to the cylindrical portion by an interior diaphragm, and is supported on bearings carried by stout uprights, one of which is seen in Plate II at η. The other end of the axis ζ terminates in a toothed wheel (invisible in Plate II) exactly similar to the toothed wheel, θ, with which it is connected by a third similar wheel, κ, so that the drum and θ revolve in the same period. The wheel κ can be drawn out on its axis to disconnect θ at pleasure from the drum. θ is fixed on the end of a long screw-spindle which runs through the table, λ, λ, and is seen projecting at μ.

The carriage C rests on the table λ, λ, and is furnished with a clip projecting downwards and grasping the screw-spindle, μ, so that as θ and μ revolve, the carriage travels along the table from left to right. The clip can be released by the handle, ν, when the carriage may be moved by hand and placed where desired. The carriage rests on three wheels, π, ρ, ρ, and is steadied by three others acting upwards against the sloped under surfaces of the table χ; only one of the latter is visible at σ, the other two being behind the table. Of these wheels the position of π only is adjustable, its axis being carried by an arm with a hinge at one end and a raising or lowering screw at the other, by means of which π can be pressed down with more or less force against the table. Such pressure should be employed as to bring the lower wheels, σ, into close contact with the table, so that there may be no perceptible shake of the carriage when tested by hand. All these wheels have adjustable bearings for their own axes, and if ever the carriage is taken to pieces for cleaning, it is particularly necessary to put it together again carefully without changing the position of similar pieces, or a proper fit will not be obtained.

The carriage bears the recording apparatus shewn in Plate II. A slab of wood, a, is attached to the metal plate, b, and is connected with the carriage by hinges at, c, c. A screw (invisible in Plate II) below a provides a raising or lowering adjustment to regulate the pressure of the pens on the paper. On a are mounted two pairs of electro-magnets, d, d; e, e, with adjustments for changing their position, and each pair has an armature, f, f, carried by arms, g, g, the ranges of which are regulated by suitable screw-studs on the upright bar, h. A spring acts against each armature pressing it away from the core

of its magnet. The armature arms are pivoted on an upright arm similar to *h*, which cannot be seen in Plate II, being hidden by the coils *d*, *d* beyond which they extend over the drum, carrying the two pens, *i*, *j*, at their extremities. The arms are jointed, and have other means for adjusting the pens as desired. The pens themselves are specially made for chronographic recorders, so as to carry a large supply of ink.

From the ends of the coils of each electro-magnet two silk covered spiral wires, *k*, *k*, *k*, *k*, are carried down to binding screws on the stand of the chronograph at *l*, whence other wires, *m*, *m*, *n*, *n*, are led away to the batteries, &c.; so that one pair *m*, *m* completes the clock circuit, and the other *n*, *n* that in which the observer's key is placed. The effect of a signal by break of either circuit is therefore to demagnetize the coils in that circuit and release the armature, which is then jerked away by the spring provided for that purpose, causing the pen to make an outward jerk, *i.e.*, away from the other pen.

The pens can be adjusted to trace parallel lines as near together as desired, or actually coincident—the latter being generally the best—the signal jerks being made outwards; but they cannot follow each other at a much less distance than half an inch, representing about $1\frac{1}{2}$ seconds of time. This difference is called the "Pen Equation", and is always applied as a correction in the reductions.

5.

The Electrical Arrangements of the Chronographs.

The Electrical Apparatus is collected on a board called the "Commutator board", and consists of (1) a commutator by means of which the various changes in the connections are made as required from time to time; (2) a translating relay which is used for the transmission of clock or other signals through the line to the far station; (3) a receiving relay required for receiving the signals from the distant station and passing them on to the chronograph, if for record thereon, or to the sounder, if for conversation; (4) a talking key, and (5) a sounder for purposes of conversation and conventional signals in connection with the work. The commutator board is conveniently placed close alongside of the chronograph on the same stand, and the local batteries are arranged on shelves below it. The exact way in which these instruments are used will be more fully explained in Chapter III.

CHAPTER II.

OBSERVATORY ARRANGEMENTS, AND PREPARATIONS FOR OBSERVING AT A STATION.

1.

Observatory Accommodation.

The observers always carry about with them portable observatories, consisting of canvas roof and walls on a wooden frame-work with shutters and curtains to admit of a meridional aperture from the ground upwards. These observatories are sufficiently large to hold the transit telescope only; the chronograph, clock, &c., are otherwise provided for by building proper shelter, if suitable accommodation in existing buildings is not available as it generally is. A small room of about 8 × 10 feet is all that is absolutely required for this purpose, though more space is convenient. This room should be as close as possible to the observatory tent—say within 10 yards—because the observer is constantly called on to visit one from the other. For the protection of the clock from changes of temperature the shelter should be as substantial as may be.

2.

Buildings for Instruments.

The necessary preparations for observing at a station—assuming the existence of a clock room—are confined to building pillars for the transit telescope and its collimators, and one for the clock to be hung against when it is not convenient to hang it against a wall of the room. All these pillars are founded 2 or 3 feet below the ground level, according to the nature of the soil; and the excavations for the foundations are made slightly larger in plan than necessary for the pillars, so that when these are built there is no contact above their base, and insulation from ordinary tremors is ensured. The vacant space thus left round the pillars is afterwards filled in with dry sand.

3.

The Transit Pillars and Observatory Fittings.

The transit pillars (Plate I) are about 24 × 18 inches in horizontal section from their base to about 3 feet 2 inches above the ground, above which they are only $13\frac{1}{2} \times 13\frac{1}{2}$ inches, the inner face being all in one plane, thus leaving a ledge round the other three sides: the small upper portion is about 2 feet high, making the total height of these pillars 5 feet 2 inches. They are 2 feet 4 inches apart, and are always built of brick, and capped with slabs of stone which are carried about with the apparatus: the foundation plates of the instrument rest on the upper surface of these slabs, which is polished so as to allow the plates to be moved about in making the first rough adjustments. After these adjustments have been approximately secured, it has been found advisable to put a disc of paper soaked in beeswax under each foot of the bed plates, to prevent accidental movement on the smooth surface of the stone. No very great accuracy is required in the levelling of the stone caps when building, because the universal motion provided in the pivot beds allows them to adapt themselves to considerable variations in that respect. When the soil is yielding it may be advisable to base both pillars on one foundation, so as to distribute the pressure, but on firm soil the pillars may more conveniently be quite disconnected. The foundation pits are always connected by a narrower excavation about 18 inches deep, which contains an insulating layer of dry sand of at least a foot in depth, on which the mercury trough is placed in position for observation. The trough requires to be carefully covered to keep out sand and dust, and is further protected by a wooden platform—on which the observer's feet rest when observing zenith stars—with an aperture over the trough, which can be opened or closed at pleasure. Even with the greatest care to protect the mercury frequent filterings are necessary which however is not of much consequence, as the operation is always performed by native assistants who seem to take considerable pleasure in it.

A pair of perforated iron staples are built into the masonry of the upper, or smaller, portion of each transit pillar, on each of its north and south faces, for the purpose of supporting upright iron bars passed through the perforations, which are left just clear of the brick-work. These bars rise about 3 feet above the pillars, and carry a moveable table to support the lamp which illuminates the Bohnenberger eye-piece when mercury observations are being taken, (Plate I). Only one pair of upright rods, one on each pillar, is necessary at the same time—or indeed at any time—but it is a convenience for the observer always to have the instrument in the same relative position to himself when making mercury observations, to ensure which he, and therefore the lamp and its supports, must change positions from the north to the south side of the instrument, or *vice versâ*, when the latter is reversed on its bearings. Similar staples let into the outer (east and west) faces of the pillars support stands for the axis lamps, both of which should always be kept in position during observation to cancel as far as possible any effects of unequal heating.

The equipment of the observatory tent is completed with a set of steps on which the observer stands for mercury observations, (Plate I), two or three stools on which he sits while taking transits, and a light wooden frame, by means of which four men can lift and reverse the telescope on its bearings whenever desired with the greatest ease, and generally with hardly appreciable disturbance of azimuthal adjustment. A table and chair for an observatory assistant, who acts as recorder, are also provided.

4.

The Collimator Pillars.

The collimator pillars are about 30 × 18 inches in plan, founded generally from 2 to 3 feet below the ground surface, and insulated as in the case of the transit pillars. Their height is such as to bring the axes of the collimators and that of the transit telescope as nearly as possible into the

same horizontal plane. They are built about 3 inches to the west of the meridian of the transit telescope and generally about 15 feet distant from it. This interval of 3 inches from the meridian is introduced, in order that the steadying foot of the collimator may not fall inconveniently near the edge of the pillar. Light and easily moveable frames are provided to cover the collimators and protect them from the weather.

5.

The Clock Pillar.

The clock pillar is founded and insulated like the others. The lower portion is generally about 36 × 24 inches up to within a few inches of the ground level, where it is decreased to 24 × 24, leaving a ledge 12 inches wide in front, and carried up at these dimensions for about 6 feet 8 inches. The ledge is convenient for supporting the clock when about to be bolted to blocks of wood, which are built into the pillar for the purpose. It is very important that this pillar should have weight or rigidity sufficient to withstand the oscillation of the pendulum without vibration, which would have an immediate effect on the clock rate.

All the pillars should if possible be built some little time before they are required to allow for settlement and thorough drying, and great care should always be bestowed on the 'bond' of the brickwork.

6.

Chronograph Stand.

A wooden stand is carried about for the chronograph, which also accommodates the commutator board and the batteries for the clock, pen, and relay circuits. The line battery is generally in the Telegraph Office; but occasionally accommodation for it must be provided, which however gives no trouble as, if convenient, it may be placed outside the building in packing cases.

7.

Arrangement of Wires.

The most convenient arrangement of the numerous connecting wires required, has been found to be as follows:—In the observatory tent, where only two wires are necessary, they are brought down through the roof to the outer face of one of the pillars, then round the pillar to its inner face, where they are finally fixed, leaving sufficient free end for convenient attachment to the observer's key, or tappet, to carry which when not in actual use a small shelf is affixed to the inner face of the pillar. Or as is sometimes more convenient, only one wire need be introduced through the roof in this way, while the other may be led back under the surface of the ground as shewn in Plate I. In this case neither wire need necessarily be covered, except the ends of one just inside the observatory and clock room, and this plan therefore is a good one in case of economy of covered wire being advisable. In the clock room all wires—including those to the clock, to the observatory, to line and to earth—are carried over head and collected in one bundle before they are brought down to the commutator board through a convenient hole, in which they are first passed as a bundle and then separated and brought up to their respective binding screws. Should the line wire be brought directly into the clock room the necessity of having a lightning discharger must not be overlooked, and in this case an efficient earth-plate must also be provided. When

the observatory is close to the Telegraph Office, the line wire and earth connections can be made through the office commutator, and neither earth-plate nor lightning discharger are specially required. As a rule it is most convenient to make all local, *i.e.*, observatory and clock room circuits of metal throughout, avoiding the necessity of an earth-plate for them.

8.

Batteries.

The "Menotti" battery, which is the form adopted by the Indian Telegraph Department, is used for all purposes, and has the advantages of great constancy while it is easily kept in order. It is not so compact or portable as some other forms; but this is of small consequence in India, as it can be obtained by giving a few days notice at any Telegraph Office and need not therefore be included in the portable equipment. The number of cells required for local purposes in each observatory may be put at about sixteen. A special line battery is only required when the observatory is some distance from the Telegraph Office, which can generally be avoided, and its strength depends on the length and condition of the line in use. Ten cells are considered sufficient for every hundred miles between the stations.

CHAPTER III.

SYSTEM OF WORKING DURING SEASONS 1881-82, 1882-83 AND 1883-84, AND THE PROGRAMME OF OPERATIONS.

1.

The System on which the Observations were taken.

There are various ways in which an equipment, such as that described in the preceding pages may be employed in obtaining the difference of longitude of two stations connected by a telegraph line:—(1). Each clock may graduate the chronograph at its own station, and the observers (first one and then the other) may, by means of their tappets, send a number of signals at arbitrary times to be recorded on both chronographs. The differences of the two clocks are thereby known, and if the error of each is determined by the corresponding observer by local transits, the true difference of time and therefore of longitude is obtained: (2). The observations of transits at one station (each alternately) may be transmitted through the line, so that those taken at both stations are recorded on the same chronograph in terms of the same clock: (3). The signals of one clock (each alternately) may be transmitted, so that a record of the same clock time is obtained on both chronographs, while at the same time transits are recorded locally at each station; and (4). At both stations (each alternately) the two clocks may be made to work the two pens, thereby giving what is called a "Direct Comparison of Clocks"; their errors being determined before or after the comparison by local transits (or preferably both before and after), the difference of longitude follows at once. Of these methods the first two being inconvenient in some respects have not been adopted. The other two have been employed on all arcs contained in this volume with the exception of the last four where the third method only was used. The alternation of the clocks is necessary to eliminate the quantity represented by ρ which is the retardation of the electric current along the line-wire and through the relays. The elimination is not complete, but the residual must necessarily be a very small quantity. In the Appendix will be found some remarks on this subject.

2.

Programme of Each Night's Work.

The programme was always laid out by sidereal time, so that the same stars were observed night after night, a point of considerable importance both as regards convenience in the observatory and advantage in reducing the work, especially with reference to clock rates. Six complete nights' work has been usually considered sufficient, though this number has been often exceeded according to the observers' opinion of the trustworthiness of their work. Reversal of pivots has been always adhered to on systems which differed at different times and which will be described in detail in the separate accounts of each year's work. Two pairs of circumpolar stars for determining the deviation of the telescopes were included in each night's programme and always observed when possible.

3.

The Electrical Arrangements of the Observatories.

The electrical arrangements for securing the chronographic record and communicating between the stations, are as follows:—Each pen magnet is placed in a short circuit, with a weak battery, which can be connected at pleasure by means of the commutator, (1) with the clock, (2) with the observer's tappet, and (3) with the armature circuit of the receiving relay which is in connection with the line wire. In the first case the pen records the local time and is called the "Clock Pen"; in the second it is used for transits or other observations and is known as the "Observer's Pen"; and in the third it records any signals transmitted from the distant station and repeated by the receiving relay. In the last case the signals are generally those of the distant clock, used either for the comparison of clocks or for the observation of transits. A second relay is employed for the transmission of signals through the line by "translation", *i.e.*, the relay coils are placed with a weak battery in a local circuit, into which the clock, or the observer's tappet, can be introduced as required by means of the commutator, and the armature of the relay is in circuit with the line battery and line and thus passes on the signals to the distant station.

4.

Retardation of Signals.

It is thus evident that the retardation of a signal, passing, say, from one clock to the distant chronograph, is composed of three parts:—(1) due to the translating relay, (2) due to the line, and (3) due to the receiving relay, including the pen action, at the distant station. A similar return signal is affected in the same way by different retardations but of like nature, because the two translating relays are of the same pattern and similarly adjusted; while the same is true of the receiving relays, and of the pen actions. The line wire of course remains the same in both cases, but there are no means of determining whether the rate of signal remains constant in both directions, which fortunately is a matter of no practical importance on land lines from the present point of view, however interesting it may be as connected with the science of electricity. The relays used were all of the ordinary polarized pattern, those for translation being of much smaller resistance than those for receiving line signals.

5.

The Pen Equation.

A point in the management of the chronograph which requires attention, is the distance between the pens in the line of their (apparent) motion, which cannot be conveniently made much less than half an inch, or about the equivalent of 1·5 seconds of time. This difference is called the "Pen Equation," and it has always been deduced and applied as a correction to the readings. To guard against errors in the assumed value of the equation a systematic change of pen duties has always been observed: for instance, in the middle of every set of transits the clock and observer's pens are changed, so that for one half of the observations the equation is positive, while for the other half it is negative; and similarly when comparing clocks the pens are exchanged between the local and distant clocks during each comparison. The value of the pen equation is determined each night by two distinct methods, one value results from the reduction of the clock comparisons, and the other by actual measurement of the distance between the corresponding seconds on the chronograph sheets, when both pens are actuated at the same time by one and the same clock.

It is necessary to bear in mind that the actual pen equation is the absolute linear distance between the pens, and as this has to be converted into seconds of time before being applied as a correction to the observations, the conversion must therefore be dependent on the rate of the chronograph. Hence, when transcribing the chronographic record, that rate must be carefully watched with a view to applying a special correction to the pen equation, in cases where the variations of the rate exceed certain limits.

6.

The Commutator Board.

A simple outline plan of the commutator board is given in Plate III on a scale of about one third real size, while symbols for the clock, idiometer, observer's tappet, chronograph recording pens and the several batteries, &c., are added, in order that the various wire circuits may be traced. On the commutator board, *C*, *C*, is the commutator itself, *R*, *R*, the translating relay, *S*, *S*, the sounder, *D*, *D*, the talking key, and *E*, *E*, a bar which is used as an "earth"; *F* is the receiving relay, and *G* a tell-tale relay which is so arranged as to cause the sounder to work while the clock beats are being sent to the distant station, a stoppage of the transmission of the signals being thus at once notified by the cessation of the sounder's action. Permanent wire connections between the different instruments on the board are shown by double lines; and those wires which are only temporarily attached at each station are indicated by single lines.

The commutator *C*, *C*, and the switches *M*, *N*, are each composed of plates of brass which are mounted on blocks of ebonite so as to be perfectly insulated from each other: the separate plates are shaded. The circular indentations, with numbers for reference, indicate holes between the plates which can be filled at pleasure by the insertion of pegs, so as to bring two plates into connection. The letters on the several plates indicate the parts of the apparatus with which they are connected, either permanently, or by wires attached temporarily to binding screws provided for the purpose, all of which can be traced in Plate III. Thus the plates marked A_C, B_C, and R_C are connected by wires to the copper poles of the batteries for *A* and *B* pens and the translating relay respectively; while A_Z, B_Z, and R_Z are similarly connected with the zinc poles of these batteries. *K* is connected with a wire which passing through the break-circuit apparatus of the clock is carried to the earth *E*, *E*. *I* is similarly connected with the star-frame of the idiometer; while a second wire attached to the wire-frame of the same instrument is carried to the earth. *O* is intended for the observer's tappet—or signalling key—and can be

connected with the one used at the transit telescope, or at the idiometer, as required, by means of the switch *N*. The line wire is attached to *L*. The plates similarly lettered, *viz.*, three marked B_Z and two marked A_Z, are connected by bars passing underneath the ebonite mounting. The plate marked R_C which is inconveniently placed for the attachment of a temporary wire, is permanently connected to the binding screw marked R_C. The two plates without any marks are simply dummies through which other plates can be connected. The long plate marked *E'* is connected with the earth *E*, *E*, and the latter is furnished with a number of binding screws for attaching several wires. The latter plate is called the 'earth' because it is introduced as a convenient means of completing the commutator local circuits which are all purely metallic. For the purpose of line signalling a real earth-plate is required, and *E*, *E* is connected therewith as shown.

The following are the ordinary combinations effected by the commutator in the course of observations, the connections of which can be readily traced by reference to Plate III. The pegs used for completing the various circuits are numbered consecutively throughout the commutator and the switches *M*, *N*.

No. I. The clock recording time by pen *A*, ... Pegs 6, 4, 8.
„ „ „ *B*, ... „ 2, 10.

„ II. Determination of pen equation, clock time being recorded simultaneously by both pens on the chronograph, Pegs 2, 14, 8.

„ III. Observation of transits with local clock—
Observer, pen *A*: clock, pen *B*, ... Pegs 25, 20, 17, 8: 2, 10.
„ *B*: „ *A*, ... „ 25, 15, 10 : 6, 4, 8.

„ IV. Observation with the idiometer—
Observer, pen *A*: clock, pen *B*, ... Pegs 26, 20, 17, 8: 2, 10.
„ *B*: „ *A*, ... „ 26, 15, 10 : 6, 4, 8.

„ V. Clock comparisons, both clocks recording time on the chronograph—
Local clock, pen *A*: distant clock, pen *B*, ... Pegs 6, 4, 8: 23, 22, 19, 10.
„ *B*: „ *A*, ... „ 2, 10 : 23, 22, 18, 8.

„ VI. Transmitting clock signals for use at the distant station, Pegs 1, 9.

„ VII. Observing transits and transmitting clock signals to distant station—
Observer, pen *A*: clock, pen *B*, ... Pegs 25, 20, 17, 8: 1, 12, 10.
„ *B*: „ *A*, ... „ 25, 15, 10 : 1, 13, 8.

„ VIII. Observing transits with clock time received from the distant station—
Observer, pen *A*: distant clock, pen *B*, ... Pegs 25, 20, 17, 8: 23, 22, 19, 10.
„ *B*: „ *A*, ... „ 25, 15, 10 : 23, 22, 18, 8.

„ IX. For talking or interchanging conventional signals, Pegs 23, 24.

It will be noticed that in all of the combinations given above the different circuits combined are brought into one simple circuit, so that a break of circuit at any point entirely stops the current in the whole. There is no branching of circuits, which should always be carefully avoided.

The commutator affords the means of measuring the retardation due to the local instruments, by causing the clock time to be simultaneously recorded on the chronograph by both pens, one worked by

the clock direct and the other through the translating tell-tale and receiving relays, which is done thus:—

A pen direct: *B* pen through relays,	...	...	Pegs 1, 13, 8: 23, 22, 19, 10.
B „ : *A* „	...	...	„ 1, 12, 10: 23, 22, 18, 8.

If the retardations of the receiving relays and of the chronograph pens could be looked upon as respectively equal at the two stations, it is evident that the above experiment would give an exact measurement of the retardation of a transmitted signal recorded on the distant chronograph, only excepting the retardation of the line wire. Unfortunately such equality cannot safely be reckoned upon; but the experiment should prove a useful guide in testing the condition of the adjustments of the local relays.

7.

Relations with the Officers of the Telegraph Department.

Throughout the operations all the Officers of the Telegraph Department whose co-operation has in any way been required, have continually shown the greatest courtesy and readiness to give every assistance in their power. In many instances the prosecution of the longitude observations has unavoidably caused considerable trouble in the several Telegraph Offices involved; but this has invariably been cheerfully undertaken, and the relations of the officers of the two departments have always been most cordial.

8.

Arcs measured during Seasons 1881-82, 1882-83 and 1883-84.

Diagrams illustrating the arcs measured each season will be found in the detailed account of the operations of each season. It may be remarked here in passing that the system hitherto in force of so selecting the stations for longitude observations as to form triangular circuits, has been adhered to as being the only really reliable means of gauging the accuracy of the results. It will be noticed that several of the arcs were measured in 1880-81 and again in 1881-82. This was done in consequence of the serious magnitude of the circuit errors supposed to have been caused by imperfections in the transit telescopes, more especially in No. 2. In consequence of these imperfections both telescopes were carefully examined and strengthened in the workshops of the Mathematical Instrument Department in Calcutta in the summer of 1882 and for a time gave improved results. Symptoms of the old weakness however having again occurred at the close of the season 1883-84, they were then returned to the original makers for various alterations and improvements.

9.

Reduction of the Observations.

An abstract of the observations and the reduction of the results are given for each season separately in tabular form. Full explanation of these tables, and of the methods employed in carrying out the reductions contained therein will be found in Chapter V. All these reductions were made under the superintendence of Lieut.-Colonel (now Major-General) W. M. Campbell and Majors G. Strahan and W. J. Heaviside.

The object held in view in drawing up the tables, was to afford all the data necessary for any reader who might wish to examine the reductions and re-produce the results arrived at. No attempt has been made to assign probable errors to the final values of difference of longitude obtained, because these are not required until the work of combining all the results is undertaken; and any mathematician who may in the future approach that task with a view to investigations of the figure of the earth and local attractions, will probably prefer to compute the theoretical errors for himself, ample data for doing which will be found in the tabular details.

The geodetic elements of the several stations of observation are given in the Appendix, at the end of the tabular matter; and in the case of stations connected with the Principal Triangulation of the Great Trigonometrical Survey of India by special minor triangulation, an abstract of the latter is furnished. A table is added in which the geodetic and the electro-telegraphic values of the several differences of longitude measured are collated for comparison.

CHAPTER IV.

PERSONAL EQUATION.

1.

Method of Determination.

The relative personal equation of the observers has always been determined by the observation of 'divided transits', in which both observers use the same telescope, one taking the transit of a star over the first ten wires and the other completing the observation of the same star over the last ten wires, whence, by reduction to the central wire, a value of personal equation is at once obtained. This method repeated with numerous stars—the observers alternating their order of observation—affords an excellent value of their relative personal equation. It has long been known that the value of personal equation may be influenced by very slight causes, prominent among which may be reckoned the direction of a star's motion across the field, whether from left to right or right to left, and its apparent velocity. Two distinct equations have consequently been recognized in these observations. If an observer using a diagonal eye-piece seats himself at a telescope with his face to the north, stars will cross the field of view apparently from right to left; if on the other hand he places himself facing south, stars will cross apparently from left to right and in general with faster motion (owing to their lower declination) than in the former case. The term 'aspect' is used in this volume to indicate the direction of the observer's face and therefore of the star's motion, but it does not necessarily agree always with the position of the star with reference to the zenith, because a star very near the zenith may be observed equally conveniently under either aspect. In determining the personal equation therefore an approximately equal number of stars were observed under both aspects, and two separate equations obtained to be applied to transits of stars of N. and S. aspect respectively.

2.

Consequent Precautions.

In consequence of this twofold equation, it is evident that each star should be observed at both stations under the same aspect, and in the case of stations differing but little in latitude no difficulty

arises; but if the difference of latitude is great, a star which is considerably south of the zenith at one station may be considerably north at the other. It becomes necessary therefore to avoid using any stars within certain limits of declination, whenever the latitudes of the two stations of observation differ by more than 3° or 4°; for supposing the stations to be $m°$ apart in latitude, and $n°$ to be the limit (which may be considered as about 2°) within which each observer can conveniently observe a star with a false aspect—*i.e.*, as north when it is really south of the zenith, and *vice versâ*—there will be a zone of $m° - 2n°$ of declination within which no stars can be used. Certain stars close to the zenith were always taken under both aspects, the observer recording the first ten wires in one position and the last ten in the opposite, the object being twofold, *viz.*, (1) to determine the *absolute* equation of each observer for north as compared with south stars—known as his 'N—S equation'—whereby his observations of the two groups might be made comparable; and (2) to ensure the observation of every star under the same aspect at both stations, where the difference of latitude is small.

3.

Employment of the Idiometer.

A full description of this instrument, designed by Lieut.-Colonel W. M. Campbell, for the purpose of measuring the absolute personal equation of an observer, will be found in Volume IX, Chapter V, Section 9. It was supposed that its employment would act as a check on abnormal variations of personality, and that the results deduced by it might be incorporated with those obtained by the usual method of divided transits. This expectation has not been fulfilled, and for some as yet unexplained reason great discrepancies exist between the two systems, though the variation of idiometer results from night to night is so small as to beget considerable confidence in the stability of the observer's personal equation, which may be seen by reference to the abstract of the idiometer observations in the Appendix. The actual equations employed in the longitude observations are deduced solely by the method of divided transits.

4.

Personal Equation in transcribing the Chronographic Records.

The chronographic record is transcribed—that is converted into a numerical record—with the aid of a glass scale of diverging lines, by which the position of a star's transit-signal between two second-signals of the clock can be measured in tenths of a second, while hundredths may be readily estimated by eye. It is evident that there is some room for the effect of a personal equation in this operation, which was guarded against throughout the measurements contained in this volume by the records of both stations being always transcribed by the same person, so as to eliminate any constant equation of reading.

5.

Final Remarks.

The remarks in this and the preceding chapters apply to the operations of each of the three seasons contained in this volume. As the work proceeded, small changes in matters of detail suggested themselves; and to render these clear it will be more convenient to the reader from this point to give a separate account of the work of each season, showing how the experience of each contributed to improvements in the following one.

CHAPTER V.

DETAILED DESCRIPTION OF THE METHODS OF OBSERVING AND OF REDUCING THE RESULTS, WITH FULL EXPLANATION OF THE TABLES.

1.

Instrumental Constants.

Wire Intervals. The whole system of transit wires—twenty-five in number—is attached to the micrometer slide, by means of which the central wire of the system can be placed in a position of no collimation error, or, as is generally more convenient, in a position for which that error has been determined. The usual practice was to observe the transit of each star over the fifteen central wires, but it was a very common occurrence to miss one or more wires; and the custom was frequently varied purposely, for instance, when it was desirable to observe two stars of nearly the same right ascension, the first fifteen of the twenty-five wires were used for the first and the last fifteen for the second star. The combination of these circumstances, *viz.*, the readily adjustable collimation error of the central wire and the frequent variation in the groups of wires over which transits were observed, led to the system of reducing the observation on each wire to the central wire, in preference to using the mean of the wires. For this purpose the equatorial intervals between each wire and the central wire must be known with accuracy; these were carefully determined in seconds from observations of transits of slow moving stars. These equatorial intervals being known, the computation of time intervals for every star observed, and the reduction thereby of the observations to the central wire, can be rapidly effected. This method has the great advantage of showing at a glance the accordance of individual wire observations in each transit, and leads to the detection of mistakes—such as observations of wrong stars, or mis-readings of the chronographic record—at an early stage of the reductions. The stability of the wire intervals was found to be satisfactory.

Telescope Micrometer. The determination of collimation and level errors being made by means of the telescope micrometer, the value of its screw was required; and it was considered desirable to ascertain the regularity of the screw thread by testing this value at different parts of its length. With this object the micrometer head was first set to zero and the time of transit of a slow moving polar star over any one wire noted; then without moving the telescope the micrometer was set on to 100 and the time of transit over the same wire again noted; thence to 200, 300 and in succession up to 3,200, a range which embraces a little more than the whole breadth of the wire system. In the Appendix will be found an abstract of the results in tabular form, the last column of the table containing the value of one revolution of the micrometer head at the particular part of the screw specified in the first column.

This process was only carried out in the case of Telescope No. 2. From the numbers in the last column additional values of the wire intervals were obtained, by measuring them with the micrometer, with the help of the single fixed wire with which each of the twenty-five moveable wires was made to coincide successively. The finally adopted values of wire intervals for both telescopes, for each season, are given in tabular form in the Appendix. The screw of Telescope No. 1 was not examined in the same way, but its value was determined by measuring with it the wire intervals, the values of which had been previously ascertained from transits of circumpolar stars. An abstract of the measurement of the value and of the micrometer screw is also given in the Appendix.

Collimator Micrometer. Owing to the system adopted for measuring the collimation error of the transit telescope, the value of the screw of the collimator micrometer was required in terms of the telescope micrometer: this was readily obtained by directing the transit telescope on the collimator, and measuring with the collimator micrometer the known intervals between the wires of the telescope; or by measuring the distance between the two vertical wires of the collimator, first by means of its own micrometer, and then by that of the telescope.

The foregoing instrumental constants being known, the first operation in actual observations is the determination of the collimation correction for the central wire, which was carried out as described in the next section.

2.

Determination of Collimation.

The collimation of the telescope was always tested in the usual way by reference to a pair of collimators approximately horizontal; but as it was considered a point of importance to make all the observations entering into the process of a similar nature, *viz.*, the intersection of a pair of crossed wires by a vertical wire, the means of doing this were provided for in the construction of the collimators. One collimator, N, always placed to the north of the transit telescope, is provided with a fixed pair of crossed wires, while the other, S, placed to the south, possesses a similar fixed cross and also two vertical wires moveable by a micrometer. The cross of N was always placed as nearly as possible in the meridian and that of S slightly to one side, so that the observer looking through S saw the two crosses separated by a convenient distance, A, which he measured by the micrometer of S. Proceeding to the transit telescope he then observed the cross wires of N and S on the central transit wire, obtaining a mean micrometer reading of each. The reading of S so found, corrected by A converted into terms of the telescope micrometer, affords the reading of a supposititious point exactly opposite the cross of N collimator; this latter reading being combined with the observed reading of N, the mean of the two gives the reading of the telescope micrometer when the central transit wire is exactly collimated. This last reading was named C_0. No attempt was ever made to observe star transits with the micrometer set at C_0, in order to avoid the necessity of a collimation correction, but a convenient round number—called C_s—was always adopted and generally used throughout the observations at a station. It is thus evident that the collimation error of the central transit wire at any time was the difference between C_0 and C_s, which difference is called c_1, the sign given being plus or minus, according as the position C_s caused the transit of a star earlier or later than would have been the case if the position had been C_0, so that c_1 becomes a correction as regards the effect on star transits. A specimen of the form in which collimation and level observations were taken is given in the Appendix.

By an oversight on the maker's part the motion of the micrometer screw varies in the eye-tubes of the two telescopes; in some the micrometer readings increase as the wires are moved eastwards when the illuminated pivot is in the eastern Y, and in others the reverse holds; so that for some eye-tubes $c_1 = C_0 - C_s$ and in others $c_1 = C_s - C_0$. The sign is always reversed by change of pivots. Two determinations of collimation error were generally made every night and the mean of the two adopted for

the correction-constant for collimation for the night; such at least was the normal arrangement, but owing to various causes it could not be universally adhered to. In making these observations several readings of the collimators were taken with the telescope, and the precaution was followed of causing the telescope to oscillate or wholly revolve after each reading, varying the direction of its rotation.

3.

Diurnal Aberration.

The effect of the diurnal aberration on the time of a star's transit was not lost sight of, although for all the arcs measured—or indeed for any ever likely to be measured—that effect is inappreciable when the observations taken at both stations are combined. The correction for diurnal aberration is a constant quantity for each station, and as it must, like that for collimation, be multiplied by the secant of each star's declination to obtain the correction in time for that star's observed transit, the two corrections may be combined. The correction used for aberration was $-0^s{\cdot}0207 \times$ the cosine of the latitude, and this, converted into terms of the micrometer and applied to c_1, gave c, which was used as the correction-constant for collimation and aberration combined for each night.

4.

Determination of Level Error.

The dislevelment of the instrument was always obtained by the use of a mercury trough. Supposing the telescope to be perfectly levelled, then the central wire if collimated, will exactly coincide with its reflection from the mercury when the telescope is directed towards the nadir; and if the levelling be disturbed by a certain angular quantity, the wire must be moved by the micrometer through a space representing the same angle, in order to regain coincidence with its reflection. This coincidence was always observed several times; the mean micrometer reading being called M, it is evident that the dislevelment is the difference between M and C_0 (the reading of no collimation error); this difference is called b, and is the level correction-constant for combination with the constant for each star to correct the time of transit for dislevelment. The sign of b is governed by the same considerations which apply to c_1 as already explained. As a rule two determinations of dislevelment were made each night, and their mean used to obtain b for all the star observations of the same night; but occasionally three values of b were obtained, in which case the means of the first and second, and of the second and third, were used for the stars observed during the corresponding intervals. It may be remarked that no reading of the mercury trough for determination of dislevelment is of any value without a corresponding determination of collimation error, unless the line of collimation may be looked upon as practically constant, *i.e.*, constant within the limits of observation error. The assumption of such constancy was considered justifiable, and therefore it was not deemed necessary that the times of determining the collimation and level errors should be very closely the same.

An abstract of collimation and level determinations is given in *Table I* for each season, the arrangement of which will be readily followed with the help of the foregoing explanation, while to facilitate reference, a recapitulatory explanation of the symbols employed is given immediately preceding the table.

5.

Table II.—Deduction of Deviation Correction from Star Observations.

In order to determine the azimuthal deviation of the transit telescope from the meridian, two

pairs of circumpolar stars were always observed when possible, one star of each pair being observed at upper culmination, and the other at lower culmination. These were so arranged that one pair culminated near the beginning and the other near the end of the night's work. *Table II* contains the values of deviation corrections deduced from these observations. When a star is designated by a number followed by the symbol R. P. L. or Gr. 72 the reference is to the Radcliffe Polar List in the first case and to the Greenwich Nine-Year Catalogue for 1872 in the second. The first eight columns require no explanation beyond a remark that the same clock was always used for both stars of a pair; on rare occasions, however, when one of them was observed in the middle of a set of transits which were being recorded with the time transmitted from the distant clock, it was more convenient to use that clock for the azimuth star also, although its companion star had been observed with the local clock. The clock employed is noted by the letter in the column headed "Clock in use"; and when both clocks were used for one pair of stars, the observed time by the distant clock is entered in brackets, in column 10, with the corresponding local time below it, the latter being deduced by means of the clock comparisons which were always made. When both stars of a pair were observed with the distant clock no such conversion is required. The quantity A, in column 9, is the azimuth-constant for each star, equal to $m \sin\zeta \sec\delta$—where ζ is the zenith distance, positive when south and negative when north, δ the declination, and m a constant numerical factor for converting divisions of the telescope micrometer into seconds of time: m will be referred to again. This formula gives the sign proper to A under all circumstances, if the declination of a lower culmination be considered the supplement of the actual declination.

The "Observed Time of Transit", in column 10, is the mean of the times observed on all wires after the reduction of each to the central wire. The "Corrections for Collimation and Level", columns 11 and 12, are those obtained by multiplying the corresponding correction-constant given in *Table I*, by the proper constants for each star, *viz.*, $m \sec\delta$ for collimation, and $m \cos\zeta \sec\delta$ for level, the symbols being as above. The stars in *Table II* being all well known, it was not thought necessary to enter their declinations; but the approximate latitudes of the stations are given in order to facilitate the re-computation of the corrections if required. The factor m was introduced because the collimation and level corrections were originally obtained in terms of the micrometer, and it was more convenient to retain that denomination—and employ it for the deviation correction also—than to convert into seconds directly. The values of the telescope micrometers, as determined by observation from time to time*, varied so slightly that the mean value, 1 div. $= 0^s{\cdot}0225$ (equatorial) has always been used for both instruments, therefore $m = 0^s{\cdot}0225$. Column 13 contains the "Correction for Pen Equation, Q," required to reduce the observer's record on the chronograph to that made by the clock; it was daily obtained by observation as explained in Chapter III, Section 5. The "Correction for Clock Rate", column 14, is required for the interval between the transits of the two stars forming a pair; it was always applied to the later observation, and the interval was so small that a very accurate knowledge of the rate was not necessary. Column 15, headed "Seconds of Corrected Time of Transit", contains merely the sum of the quantities in the five preceding columns, the seconds only being entered. The "Right Ascension", in column 16, was computed from the Nautical Almanac in the case of stars taken from it, and by Bessel's Independent Quantities or by Airy's Day Numbers, for other stars. In the latter case the term involving the longitude of the moon was not lost sight of, but it was never used in the reduction of Right Ascension as its effect on the stars employed was found to be inappreciable. When a lower culmination was observed, the computed Right Ascension at the time of observation, increased by twelve hours, is entered.

The "Apparent Clock Corrections", in column 17—being the differences between the two preceding columns—afford the means of computing the deviation correction a_1, as follows:—Let ΔT be the true clock correction, while Δt and Δt_1 are respectively the corrections obtained by the upper and lower culminating stars of a pair; then we have the two equations, $\Delta T = \Delta t - A a_1$, and $\Delta T = \Delta t_1 - A_1 a_1$ (where A and A_1 are the values of the azimuth-constant for the two stars respectively) by combining which ΔT is eliminated, and there remains one equation from which a_1—expressed in terms of micrometer

* *Vide* page 2 of Part II of this volume.

divisions—is deduced, and entered in the next column. The sign of a_1 is positive or negative, according as the plane of rotation of the telescope cuts the horizon to the west or east of the north point; and thus the quantity Aa_1 affords the correction for deviation to be applied to the time of transit of any star for which A is computed by the formula given above. For seasons 1882-83 and 1883-84, *Table II* contains an extra column headed "Arithmetic Mean *a*". This is in general only the mean of the several values of a_1 for each day.

6.

Table III. Direct Comparisons of Clocks.

Tables III and *IV* contain the results of the Direct Comparisons of Clocks. For these comparisons the method adopted was as follows:—The clock at the east station—generally known as E clock—was put in circuit with the translating relay, so that its beats were transmitted to the distant (or west) station for about $1^m\ 15^s$, during which time these signals were received at the west station by the receiving relay and recorded on the chronograph by one pen, while the local (or W) clock time was recorded alongside by the other pen. The procedure was then reversed, a similar set of signals being sent from west to east, and it is evident that a clock difference obtained from the double process must be cleared of the effect of retardation, considered equal in both directions. In order to eliminate the pen equations, a second exchange of signals was repeated exactly as above, except that the pens of the receiving station were made to exchange duties, thus reversing the sign of the equation. Such a set of four simple comparisons was considered a 'full comparison' which was nearly always secured by repetition if necessary. The comparison was transcribed from the chronographic record at the receiving station, by reading the integral second-signals of the distant clock, in terms of those recorded by the local clock, read to the nearest hundredth part of a second, and the results are given in *Table III.*

The headings show the station—E, east, or W, west—at which the comparison was made, and at the head of each column the sign of the pen equation, *Q*, is entered. In the columns are given the decimal parts which must be added to each second recorded by the local clock, in order to obtain its time corresponding to the next later second received from the distant clock, and at the foot of each column the full corresponding mean time* of the signals transcribed is given for each clock. The mean time of the transmitting clock—*i.e.*, the time by E clock for a comparison made at W, and *vice versâ*—is always entered to an integral second, being the mean of the integral seconds transcribed. The corresponding mean time of the clock at the comparing station, is composed of the corresponding time to the next earlier integral second, *plus* the mean of all the decimal portions read off the record which is entered in the upper part of the column. The difference between these mean times is taken out at the foot of the table, and affords an approximate clock difference from which the effects of pen equation and retardation have still to be eliminated, and this is done in *Table IV.* It will be noticed that the number of the clock signals read off for comparison is nearly always twenty, while their mean is entered as an integral second, which is manifestly incorrect as the exact mean must in every such case comprise a half second. This departure from rigorous procedure was permissible for the convenience of computing, because the relative change of clock times during half a second—the difference between the epoch used and the true epoch—is quite inappreciable. Although each comparison extended over about $1^m\ 15^s$, it was considered amply sufficient to use only twenty of the recorded signals, but the possession of the larger number was an advantage in affording a choice of the portion of the minute, and of the part of the chronographic revolution—which occupies a period of two minutes—to be selected for the comparison, with a view to cancelling the effects of any imperfection in the toothed-wheels of the clocks which generate the signals,

* As the expression "mean time" will be constantly used, the reader is warned once for all that mean *solar* time is never referred to. The term "mean time" always indicates the mean of several values of time.

or of any recurring irregularity in the rate of the chronograph. In the decimal readings of each second a regular alternate change of amount is sometimes apparent, which is due to one or both of the clocks having been slightly out of beat. The pen equation Q is always the quantity which should be applied to the time of the distant clock, on the chronographic record, in order to reduce it to that of the local clock.

7.

Table IV. Reduction of Direct Comparisons of Clocks.

The reduction of the results obtained from the direct comparisons of clocks is carried out in this table.

The observed differences are abstracted from *Table III* under the head d, with the direction of signals from which each is derived in the next column, while the corresponding times by east clock are entered to the nearest second in the second column, and the mean of the latter—called t_E—is taken out for each comparison. The next step is to obtain a relative hourly rate correction for the clocks from the successive mean values of d, and the corresponding epochs t_E. This correction—called R—is considered to belong to the mean of the two epochs from which it is derived. R_1 is then interpolated from R for each epoch t_E, and lastly each value of R_1 is employed to correct the values d of the group to which it belongs, so as to clear them from the effect of relative clock-rate. The sign of R or R_1 is always such, that if applied to correct the rate of the west clock, it would cause it to keep time with the east clock. The reduced values of d are entered as d_1, and designated α, β, γ, δ in each group; α and γ being always obtained from signals transmitted from east to west, while β and δ are derived from those in the reverse direction.

It is evident that the quantities d_1 marked α and γ differ by double the pen equation at W station, while β and δ differ by double that at E station, whence the value of each pen equation is deduced. The pen equation is a very constant quantity, only liable to minute accidental variations, except when altered on purpose.

Now as the differences d are obtained by subtracting the time of west clock from that of the east clock, it follows that the retardation of a signal through the line will cause d to appear too great or too small, according as the direction of transmission is from west to east or east to west; and the difference between two values of d obtained from signals in opposite directions, will represent the sum of the two retardations which must be considered equal to each other, as there is no possibility of separating them. The difference between two values of d_1 will give the same quantity cleared of the effect of relative clock-rate.

Hence the formula is arrived at, which is given at the head of the tenth column:—

$$\text{Retardation} = \frac{\beta + \delta}{4} - \frac{\alpha + \gamma}{4}.$$

Again, on the supposition of equal retardation in the two directions, it follows that its effect must be eliminated from the mean of a set of differences derived equally from signals in each direction, and therefore this mean represents an exact difference between the two clock times. The last column contains deduced clock differences, D, interpolated from the means of d for certain epochs, T_E, at which they will be required in the course of subsequent reductions.

It is evident that for this purpose the means of d_1 might equally well be used, as they are in fact identical with the means of d; but the latter are mentioned, because, for the purpose of computing D, the use of R_1 and d_1 is superfluous, these quantities being merely introduced in order to determine the retardation. The values of retardation are not as a rule required for purposes of reduction, but they are of interest, and their accordance *inter se* affords some test of the accuracy of the process of comparing clocks.

8.

Table V. Abstract of Observed Values of Personal Equation.

Table V contains an abstract of the individual values of personal equation observed during the seasons 1881-82, 1882-83 and 1883-84, by the method of divided transits with the same telescope; as described in Chapter IV. The heading of the table shows which transit telescope was in use, and the results are entered in two groups according as the stars observed were of north or south aspect; lastly the observations are entered in three columns under the dates on which they are made, the first giving the number of the star in the British Association Catalogue, the second its declination and the third the difference in seconds of time between the reduced transits by the two observers. The letters C, S and H symbolize respectively the three observers Lieut.-Colonel W. M. Campbell, Major G. Strahan and Major W. J. Heaviside, and the subscripts N and S refer to the aspect of the stars observed. The quantity S—H is obtained by subtracting the time of transit as noted by Major Heaviside from that noted by Major Strahan, and must be added algebraically to Major Heaviside's observations to make them comparable with Major Strahan's. The mean of each group with its probable error is taken out at the foot of the table.

9.

Table VI.—Deduction of the Final Values of the Relative Personal Equation.

In *Table VI* the mean results of *Table V* are abstracted in two divisions, according to the aspect of the stars observed; the dates, telescope used and mean values of the equation with their weights are given. The general means arrived at by using combination weights are entered, and the final values of the equation adopted for use in the reduction of the observations follow the table.

10.

Table VII.—Abstract of Observed Values of the Absolute (N—S) *Equations.*

Each observer made a point of transiting a few zenith stars every night under both north and south aspects, in order to obtain a value of the absolute equation—called the 'N—S' equation—peculiar to himself, depending on the aspect of the star observed, or in other words, on the direction of its apparent motion. The results of such observations are given in *Table VII* which is arranged in groups for each station, showing the British Association Catalogue number of the star, and the difference between the two observed times, that obtained under south aspect being always subtracted from the other. The mean of all these differences at each station is adopted as the N—S equation for that set of observations, and its use will be explained hereafter. The general symbol, N—S, indicates a correction to be added to the times of transit of stars observed under south aspect, before they are compared with those derived from stars of north aspect.

11.

Reduction of Star Observations—Explanation of the Terms M_N, $\delta L_N - \rho$ *and* $\delta L_N + \rho$.

In *Tables VIII, IX* and *X*, the star observations are given in abstract, and their reduction is carried out to the determination of the quantities M_N, $\delta L_N - \rho$ and $\delta L_N + \rho$, the meanings of which will now be explained.

The quantity M_N occurs in the case of measurements made on the system of transits taken with

local clocks and combined by clock comparisons, the reduction of which is contained in *Table VIII.* The same stars were always observed at both stations; and the difference of the times of transit corrected for all instrumental errors is taken out, subtracting the time observed at the east, from that at the west, station. The mean of such differences for a group of observations, corrected for clock-rate and reduced, by means of both observers' absolute N—S equation taken from *Table VII*, to stars of north aspect is called M_N. If both clocks were exactly correct and there were no errors of observation it is evident that M_N would disappear. The method of reducing the mean of the differences to stars of north aspect is as follows:—Supposing there are n north stars in a group and s south ones, then the numbers in the last column but one are obtained from the equation

$$\text{Correction} = \frac{s}{n+s}\left\{\overline{S_N - S_S} - \overline{II_N - II_S}\right\}.$$

The quantities $\delta L_N - \rho$ and $\delta L_N + \rho$ are the results, deduced in *Tables IX* and *X* from observations made on the system of taking transits with the same clock marking both chronographs, the same stars being used at both observatories, and all reduced to stars of north aspect as explained in the preceding paragraph. $\delta L_N \mp \rho$ (generally) is the difference between the corrected times of transit of the same star (reduced to N. aspect if necessary) over both meridians, the time at east being always subtracted from that at west station. Here it is evident that if the clock in use were rated to keep true time, and if its beats were recorded at both stations synchronously—and also if there were no errors of observation, and no personal equation—then the difference between the times of transit of the same star at the two stations would be exactly equal to the difference of longitude. But the result actually obtained is affected—in addition to errors of observations—(1) by the rate of the clock used during the interval between the transits at the two stations, and (2) by the retardation of the beats of the clock transmitted through the wire and relays to the distant station. A correction for clock-rate is applied in these tables, but the retardation—which is called ρ—remains for elimination at a later period.

12.

The Sign of ρ.

The correction for ρ changes its sign according to the clock in use. The retardation always causes the times of observations made at the far station, *i.e.*, the station receiving the clock beats through the line, to appear slow as compared with those obtained from the clock at its own station; because the time at the far station is recorded by beats of the clock, which are generated an instant earlier than they are received, the interval being ρ. Therefore whichever clock is in use, ρ has the effect of increasing the time observed at the distant station, and as the difference between the observed times of transit is always obtained in *Tables VIII, IX* and *X* by subtracting east from west time, the correction it requires is $+\rho$ when east clock, and $-\rho$ when west clock, is used. It should be noted that the quantity ρ includes all sources of retardation, those arising from the instruments employed in the observatories to generate the signals transmitted, or to record those received, as well as the simple time of transmission of a signal through the line wire between the stations; and there can be no doubt that the last portion is not only a minute fraction of the whole, but also very constant in amount.

There is no way in which ρ can be determined separately for each clock, *i.e.*, for the transmission of signals in opposite directions through the line, and it is therefore necessary to consider it the same for both. Any variation from such equality is probably very small in proportion to the whole quantity, and as it arises chiefly from irregularities in the action of relays and chronograph pens in the observatories, it must be itself irregular, and liable to elimination in a series of observations.

In the Appendix will be found an investigation of the influence on the deduced longitude, of the varying adjustments of the relays and retardation of signals on the line, from which it appears

that the latter is completely neutralized by sending currents alternately from E. to W. and from W. to E., if at least the velocity be supposed equal in both directions, and that the effect of the former must necessarily be very small.

13.

Explanation of Tables VIII, IX and X.

These tables are arranged in groups, each exhibiting the results of the measurement of one arc.

At the head of each table the names of the stations and their approximate latitudes and longitudes are entered, and below this, the central part of the body of the table is divided in halves—the left hand and right hand portions being assigned to the observations at the east and west station, respectively—outside of these to the left and right are some columns common to both stations.

Beginning from the left hand,

Column 1 contains the astronomical date.

„ 2 contains the British Association Catalogue number of the star observed.

„ 3 contains the star's approximate declination.

Columns 4 and 9 shew the aspect under which the star was observed at each station; N and S meaning that the observer sat facing the north or the south, respectively.

„ 5 and 10 indicate the position of the instrument, and give the correction-constants for each group of observations. The letters *I.P.E.* or *I.P.W.* mean that the illuminated pivot of the transit telescope was east or west, respectively—a position that was never altered during the work of any one night except for some of the arcs measured in season 1883-84. c and b are the correction-constants for collimation (including diurnal aberration) and level, abstracted from *Table I.* a is the deviation correction abstracted from *Table II*, and is generally the mean of the several values of a_1 for each night. c, b and a are expressed in divisions of the micrometer. Q is the correction for pen equation in seconds of time, the sign of which changes after each group.

Columns 6 and 11 contain the mean observed time of transit at each station for each star. The transit of a star was generally observed over fifteen wires, the individual observations were reduced to the central wire, and the mean of all is here given. These reductions are effected by multiplying the known equatorial wire-intervals by the secant of the declination of the star observed, and applying the products to the observed times of individual wires by addition or subtraction as the case may be.

„ 7 and 12. In these columns, under the head of "Total Correction", the sum of the corrections for collimation, level, deviation and pen equation, Q is given. With the data afforded *viz.*, the latitude of the station, the declination of the star, the value of the telescope micrometer (*i.e.*, $1^d = 0^s{\cdot}0225$, as noted at the foot of each page of these tables) and the constants c, b, a and Q, the separate corrections can be computed, and the quantities in columns 7 and 12 checked.

„ 8 and 13 contain the seconds of the corrected times of transit, obtained simply by taking the sum of the quantities in the two preceding columns.

Column 14 contains the difference between the corrected times of transit of each star at the two stations, east time being always subtracted from west.

„ 15 contains the mean of each group in the preceding column.

„ 16 contains a correction required on account of clock-rate, as follows:—The quantity M_N arrived at in *Table VIII* will afterwards be combined with an absolute clock-difference, D, deduced from clock comparisons for an epoch, T_E, by east clock time. The quantity entered in column 14, is the difference between the time shown by east clock at a certain moment, and that by west clock at an instant later than the former by the exact difference

of longitude between the two stations, or by the interval between the transits of the same star at the two stations. It is thus evidently affected by the rate of the west clock during that interval, for which it must be corrected before it can be combined with D. The quantity in column 15 of *Tables IX* and *X* requires a similar correction for the rate of the clock in use, because this quantity is a direct difference between two observed times by the same clock, and is therefore affected by the rate of that clock during the interval between the observations. The corrections for rate used in these tables are deduced in *Table XI.* After the sixteenth column the arrangement of the tables under notice, *viz.*, *Tables VIII, IX* and *X* becomes different, and the remaining columns must be separately explained. The seventeenth column of *Table VIII* contains a correction for the observer's personal equation by which all the stars contained in it are reduced to the condition of stars of north aspect, as explained in Section 11 of this chapter. The eighteenth column contains the quantity denoted by M_N, the sum of the quantities in the three preceding columns, they are the finally corrected mean differences of the two clock times of the transits of a group of stars (all reduced to north aspect) observed at both stations. The epoch to which M_N is considered to belong is the mean time of transit of the stars observed, which is taken out for each group by the east clock, and entered in column 6 as T_E. The reduction carried on in *Table VIII* is continued in *Table XII*, columns 4, 5, 6 and 7, where the difference of longitude is arrived at.

The quantities in the seventeenth column of *Tables IX* and *X* are obtained in a similar manner to those in the seventeenth column of *Table VIII*, but as the relative proportion of north to south stars in the three tables is not always the same, the figures do not necessarily correspond. The last column of each table contains the sum of the quantities in the three preceding columns, entered under the head of $\delta L_N - \rho$ or $\delta L_N + \rho$, according as it is deduced from observations with east or west clock, respectively, and each such quantity is a supposititious apparent difference of longitude, as deduced from the observation of all stars, when considered to have been observed on north aspect only. Corrections are still required for the relative personal equation of the observers, and for the retardation of the clock signals between the stations, which are applied in *Table XII*, where the final values of the difference of longitude ΔL and of retardation ρ, are deduced.

14.

Table XI. Deduction of Clock-Rate Corrections from the Observations of Transits.

Clock-rate corrections for the intervals between nights of observation were found by comparing the corrected transits of the same stars on successive days, and are entered in *Table XI* under the head α. In doing this the effect of change in the right ascensions of the stars observed was not lost sight of, but this effect—as computed by Bessel's Independent Quantities—was found in all cases to be quite inappreciable. For all the arcs measured each observer obtained a value of the rate-corrections, α, for each clock, and from the means of these quantities, hourly rate-corrections, β, are interpolated for each night of observation. The correction to be applied to the difference of observed times of transits, is simply the quantity β for the night, multiplied by the difference of longitude in decimals of an hour, and these products are shewn in *Table XI.*

15.

Table XII. Deduction of the Difference of Longitude, ΔL, and the Retardation of Signals, ρ.

The final results are arrived at in this table. Those obtained by both methods, *viz.*, by observa-

tions of transits with local clocks combined by clock comparisons, and by observations of transits at both stations with the same clock, are arranged in parallel columns for the reader's convenience in comparing them.

Column 1 contains the astronomical date, and column 2 which is occasionally divided into two parts, gives the instrumental position common to both methods.

Columns 3 and 5 are abstracted for each date direct from *Table IV.*

Column 4 is taken from *Table VIII*, and column 6 contains the algebraic sum of 4 and 5. The mean value for each instrumental position (*I.P.W.* and *I.P.E.*) follows and below this the general mean.

Columns 7 and 8 are the results obtained by the method of transits at both stations with the same clock, and are abstracted for each date from *Tables IX* and *X*, respectively. Means for each instrumental position and a general mean follow as before. These general means thus obtained are, it must be remembered, not yet corrected for the relative personal equation of the observers. What has been accomplished thus far is that all the stars taken by each observer have by means of his own absolute N—S equation been reduced to what they would have been if all observed on north aspect. It should be noticed that these values are symbolized by δL_N until the relative personal equation $H_N - S_N$ has been applied, when the symbol is changed to ΔL_N. Below this δL_S is obtained from δL_N by applying the difference of the two observers' absolute N—S equation with its proper sign in order to reduce all the observations to south aspect, and thence follows, by applying the relative personal equation for south stars, the value of ΔL_S. Half the sum of ΔL_N and ΔL_S is then entered as the final difference (ΔL) of longitude (each method being shown separately), and half the difference of the values given by the two clocks is ρ, the retardation of signals.

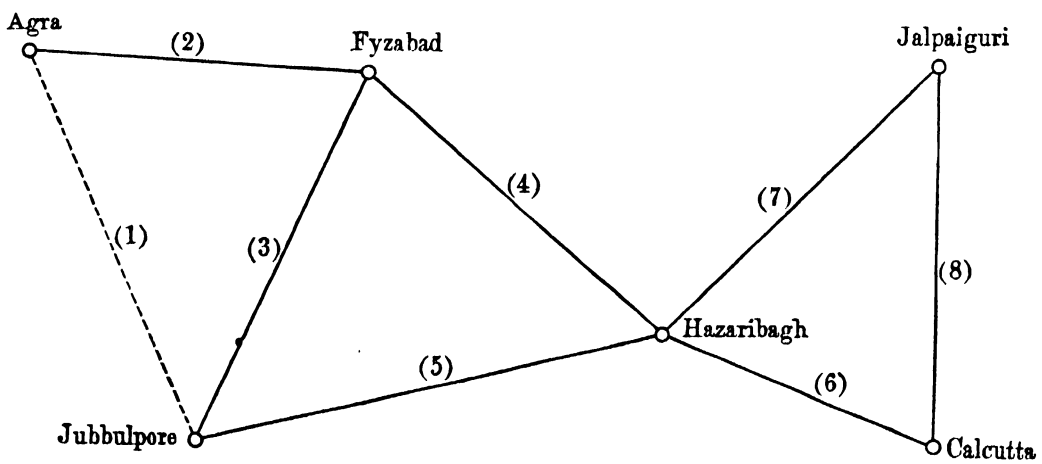
CHAPTER VI.

DETAILED ACCOUNT OF THE OPERATIONS OF EACH SEASON.

1.

Arcs measured during the Season 1881-82.

In the annexed diagram the arcs measured during the season 1881-82 are shown in black lines, and numbered for convenience of reference. One arc previously measured, which is required to make clear the connection of this season's operations with former work, is indicated by a dotted line.



The descriptions contained in the preceding five chapters apply throughout to the work of this

season, and it is only necessary to remark in passing that the system of changing pivots was as follows. On the arcs numbered (2), (4), (6) and (8) in the diagram, the pivots were dissimilarly placed throughout, *i.e.*, when one telescope was *I.P.E.* the other was *I.P.W.* and *vice versâ*. The pivots were reversed once only during the measurement of each arc, and this reversal was made for both instruments at the same time, *viz.*, when half the observations necessary for the work at each station had been secured. On the other arcs numbered (3), (5) and (7), the procedure was the same except that the pivots were similarly placed throughout, *i.e.*, both telescopes were always *I.P.E.* or *I.P.W.* together. It will be observed that these arcs form three triangular circuits from each of which may be formed a so-called "circuit equation", based on the condition that the arc subtending the station of middle longitude should, if the observations are perfect, equal the sum of the two including that station. The word "arc" is of course used here not in its linear signification but as expressing the difference of longitude of its two extremities.

Now the numerical values of these equations being derived from measures which are necessarily fallible, it follows that the equality alluded to can rarely if ever exist, and if the sum of the two last arcs be subtracted from the first the remainder will not be zero, but a small quantity whose magnitude will depend upon, and be a very trustworthy test of, the accuracy of the observations. These circuit equations are given in *Table D* of the Appendix, and it will be noticed that the residuals are astonishingly large when the exceeding refinement of all the operations involved is considered. For instance, the probable error in the estimation of the time of transit of a single star over the mean of 15 wires is $\pm$ ·012 of a second of time for each observer, and as each arc depends on the transits of more than 200 stars, it becomes at once evident that there must be other causes at work to produce circuit errors amounting, as they do, to ·281, ·551 and ·040 of a second, respectively. The cause has been traced to a defect in both telescopes, but more especially in No. 2, due to insufficient strength of the junction of the object end tube with the central cube of the axis. A similar defect, which had been previously noticed and repaired, is alluded to in Volume IX, Chapter II, Section 1, and it was supposed that it had been completely remedied, until the results of the season 1881-82 showed that it was still exercising a fatal influence on the accuracy of the measurements. Both instruments were consequently sent to the Mathematical Instrument Department in Calcutta during the recess of 1882, where the necessary repairs were carried out under the superintendence of Major M. W. Rogers, R.E.

2.

Personal Equation.

Personal equation was measured four times during the season 1881-82 as follows :—Firstly at Agra before the commencement of the longitude work proper; secondly at Fyzabad between the measurement of arcs (3) and (4); thirdly at Hazaribagh between arcs (4) and (5); and lastly at Jalpaiguri during the progress of arc (8), whilst cloudy weather at Calcutta prevented observations at that station, though not at Jalpaiguri. The determinations of the value of the equation were made in exact accordance with the system detailed in Chapter IV and call for no special remark. An abstract of the results and their probable errors will be found in *Table V*, page 75, Part II.

The length of time occupied each night in gazing through the telescope rendered it undesirable for the observers always to employ the same eye for observing, and it appeared possible that an equation might exist dependent on which eye was used. To ascertain if this were the case, Major Strahan took divided transits of about 80 stars at Hazaribagh, *i.e.*, he observed each star over the first ten wires with one eye, and over the last ten with the other eye, commencing alternately with right and left. The reduction of these observations showed such an equation to be entirely rejectaneous, but it brought to light most unmistakeably the fact that when a star is observed over a number of wires (15 or 20) there is in his case a marked tendency to anticipate the transit over the latter half of them, *i.e.*, that the mean

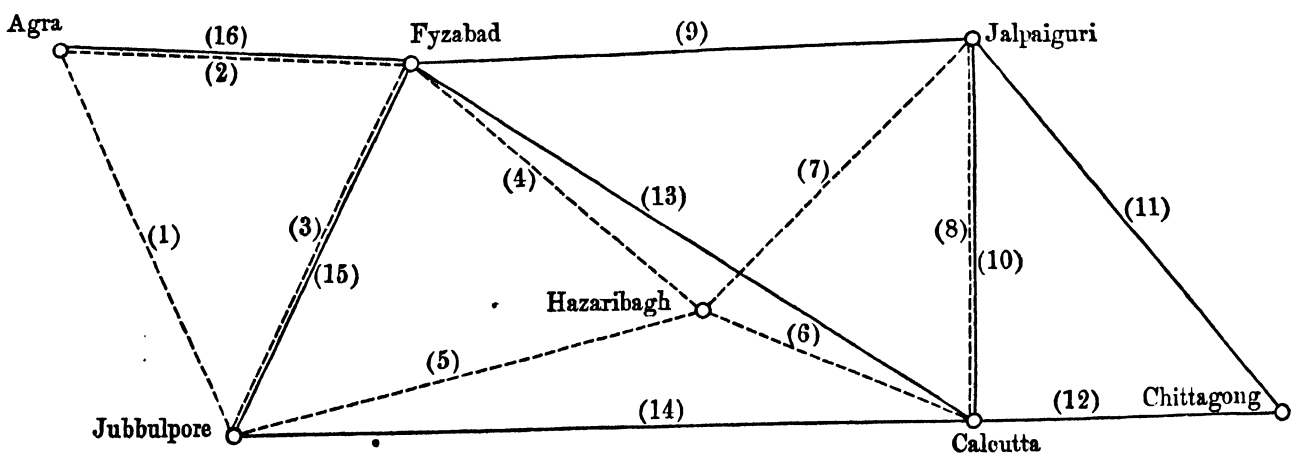
of the former half when reduced to the central wire gives a later epoch than the mean of the latter half. Major Heaviside's observations show the tendency less marked, and indeed in some cases the reverse condition holds with him. A little consideration will show that the effects of this peculiarity are taken into account by the application of the relative personal equation of the observers to the transits observed for longitude; for it may be considered as an idiosyncrasy, and as such is present in the observations for personal equation as well as in those for longitude. It would be entirely annihilated if the same number of wires were used in both processes: this is not strictly the case, as ten to twelve are used in the former, and any number from one to fifteen (fifteen in a large majority of stars) in the latter. The whole effect is however so small, and was moreover recognized only by the observation of twenty wires, that this departure from theoretical accuracy may be considered as quite immaterial.

3.

Arcs measured during the Season 1882-83.

In consequence of the magnitude of the circuit errors that had appeared in the previous season it became a matter for consideration whether that year's work should not be entirely rejected and remeasured; but as it seemed very uncertain whether all the arcs, or only one or two of them, were in fault, it was eventually determined to remeasure three only, *viz.*, (2), (3) and (8), and to add some new ones to strengthen the quadrilateral figure around Hazaribagh, from which it was hoped that sufficient evidence of the position of the faulty arcs would be forthcoming. This course proved very satisfactory, and afforded ample data for identifying the weak points of the previous work; but in order to avoid any suspicion of picking and choosing values to suit preconceived views, it was decided to publish the whole season's work, inaccurate though much of it is, and to leave to the reader the onus of taking or leaving as much of it as he thinks fit. A full discussion of this matter will be found in the Appendix, where the rejection of certain arcs is recommended, and the reasons for such rejection are given in detail.

The following diagram illustrates the operations of the season 1882-83. The arcs measured are shown as before by black lines, and those previously measured by dotted lines. Arcs remeasured are necessarily represented by both a black and a dotted line and have also two numbers affixed to them.



The changes in procedure from previous seasons were few. It was considered that more frequent change of pivots would be of use in furnishing more equations for investigation of pivot error and other instrumental defects; the reversal was therefore made after each night's work, instead of only once during the arc as heretofore, but the pivots were always similarly placed. In order further to vary the

conditions of observation, the moveable Ys described in the final paragraph of Section 2, Chapter I, were turned through 180° of azimuth one at a time at both stations, for the first two arcs only. Collimation and level were observed more frequently than in former years, three determinations each night being considered the normal number. In order to keep a watch as far as possible upon any instability in the tubes which had had such a disastrous effect in the preceding season, the collimators were intersected by the threads of the transit instrument by bringing the telescope alternately down from the zenith and up from the nadir, as it was supposed that the varying strains produced by this method would bring to light any imperfection of the kind.

4.

Difficulties experienced in Leveling.

The observers found considerable difficulty in Calcutta in seeing the reflection of the spider lines in the mercury trough with the Bohnenberger eye-piece when leveling the transit instruments, owing to tremors of the ground; and some experiments were made with a view to diminishing the vibration of the surface of the mercury caused by the extreme instability of the Calcutta soil, an instability so great that a tremor, sufficient to obliterate the reflected image of the wires, was set up by the wheels of a passing carriage long before even the sound of the carriage could be heard. A cough or sneeze from one of the men standing in the observatory tent would often render the image invisible for a second or two. Lieut.-Colonel Campbell suggested that the mercury trough itself should be made to float on the surface of mercury in a larger vessel; a trough suspended by a system of india-rubber rings was also tried, as well as a piece of silvered glass floating on the mercury, but none of these expedients caused any perceptible abatement of the nuisance; and it seems probable that the vibration of the telescope tube itself, communicated through the pillars, is a more active agent in producing it than the tremor of the mercurial surface.

5.

Personal Equation.

The observers, Lieut.-Colonel Campbell and Majors Strahan and Heaviside, met for the determination of their personal equations as follows:—Lieut.-Colonel Campbell and Major Strahan at Calcutta before commencing the first arc, Majors Strahan and Heaviside at Jalpaiguri between the arcs (8) and (9), Lieut.-Colonel Campbell and Major Strahan at Jalpaiguri during the measurement of arc (10), Majors Strahan and Heaviside at Jubbulpore between arcs (14) and (15) and again at Agra after completion of arc (16). An abstract, with the probable error of each night's determination, is given in *Table V*, page 268 Part II, the results obtained from N. and S. stars being kept separate as usual.

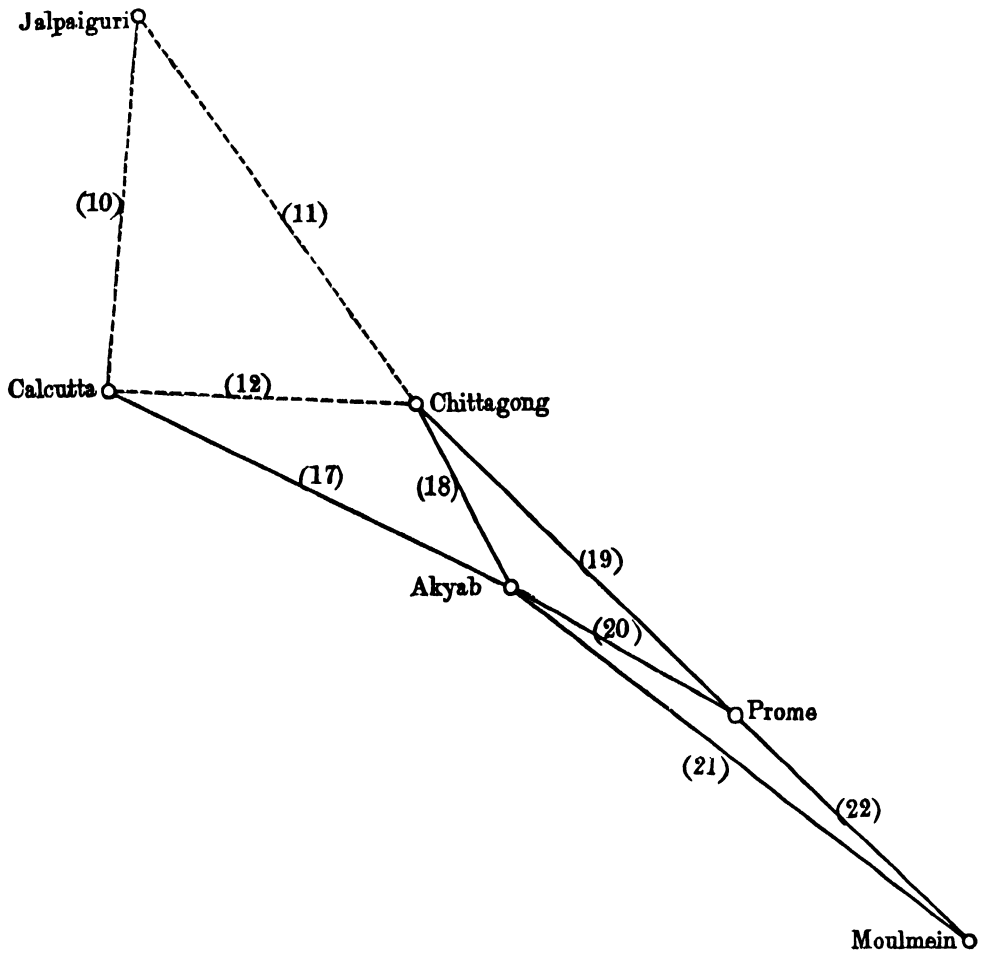
6.

Results of the Operations of Season 1882-83.

A full discussion of the conclusions to which the work of this season points with regard to the erroneous arcs of 1881-82 will be found in the Appendix. It may suffice to say here that the rejection of the arcs (3) and (4) of 1881-82, reduces the circuit errors very materially and brings them down almost to their normal magnitudes. The peculiar facial difference first observed in 1881-82 was very apparent throughout this season, and led to further changes in the routine of pivot changes for the next season which will be specified in the account of that year's work.

7.

Arcs measured during the Season 1883-84.



This diagram shows, as before, in black lines the arcs measured during the season, and the connection with previous work in dotted lines. The alternation of pivots was again changed and still with the same view of throwing further light on the facial differences. Independent experiments with the same object were also made on each telescope at intervals during the season. The observations were made with similar and dissimilar pivots, so that if the first night's work for the measurement of any one arc of longitude was begun with the illuminated pivots of both telescopes east, that of the second night was carried out with the one *I.P.E.*, and the other *I.P.W.*, of the third night with both telescopes *I.P.W.*, and of the fourth with the one *I.P.W.*, and the other *I.P.E.* The following nights were merely repetitions of previous ones. On the arcs (17) and (18) the same two systems of observation as in previous years were adopted, *viz.*, by observations of transits with local clocks combined by clock comparisons, and by observations of transits at both stations with the same clock, thus giving two results for each night for each position of the telescopes; and throughout these two arcs the telescope at the west station remained in position for the first two successive nights, whilst the other telescope was reversed, and then the telescope at the east station remained in position for two nights, whilst the other was reversed. On the last four arcs (19), (20), (21) and (22) the procedure was altered; observations were taken on the former system only, and the position of the telescope at the east station was reversed half way through each night's observations, whilst the telescope at the west station was reversed between each two successive

nights. Thus for eight nights' work there would be sixteen different values—four for each combination of instrumental position.

8.

Personal Equation.

The observers, Majors Strahan and Heaviside, met for determining the value of their relative personal equation twice, *viz.*, in Calcutta before commencing the longitude work and again in the same place after completing it. The methods of observation and reduction were the same as in the two previous seasons and call for no special remark. An abstract of results with values of probable error will be found in *Table V* of the season 1883-84.

9.

Independent Observations with each Telescope for Pivot Errors.

It has been previously stated that each observer made some experiments independently for determining the facial or pivot error of his instrument. The method adopted was to observe about 20 stars on one night with the telescope in one position, say, *I.P.E.*, and on any subsequent night to observe the same stars, one half with the telescope *I.P.E.* and the other half with the telescope *I.P.W.* Then assuming that the clock rate does not vary appreciably during the time the observations are being made, that is during about one hour each night, the mean rate obtained from the first ten should be the same as that from the last ten, any difference being due to some instrumental defect. Occasionally 30 stars were observed and the instrument was reversed twice on the second night, the positions being *I.P.E.*, *I.P.W.*, *I.P.E.* For further information on this point the Appendix should be consulted, where in *Table E* 9, the deduced clock rates are given and the resulting equations formed.

10.

Concluding Remarks.

Notwithstanding all the care and thought that have been bestowed on the three years' work contained in this volume it remains very evident that, owing to some peculiarities in one or both instruments the times of transit of a star, after all known corrections have been made, vary with change of pivot in a most vexatious manner, and that in spite of all attempts made to obtain a system of corrections to be applied according to the instrumental position *I.P.E.* or *I.P.W.*, circuit errors objectionably large still occur; it has therefore been decided to return the instruments to the makers for thorough examination and repair before they are again employed on determination of differences of longitude and more especially to have them fitted with new Ys of the usual fixed pattern to replace those now in use, which, though highly ingenious, are not free from suspicion of being the cause of the irregularities. The electrical arrangements worked satisfactorily and were the same from year to year, except that during the last season 1883-84 Leclanché or bichromate cells were at some stations substituted for Menotti cells for local batteries with very great advantage, as it was found that two of the former gave much sharper and cleaner action to the pens than four of the latter. They should always be used by preference when available.

APPENDIX.

APPENDIX.

1.

Determination of the Geodetic Elements of the Longitude Stations.

All the points used as longitude stations are connected with the stations fixed by the Great Trigonometrical Survey in order to determine their geodetic latitudes and longitudes. The longitude station at Calcutta is situated on the meridian of the latitude station, but in order to fix the longitude stations at Agra, Hazaribagh, Fyzabad, Chittagong, Jubbulpore, Jalpaiguri, Akyab, Moulmein and Prome, special triangulation was necessary in each case. This was executed by Messrs. H. Keelan and J. Bond; the results are given in *Tables A, B* and *C*, and explanatory diagrams will be found in Plates IV, V and VI.

The latitudes, longitudes and azimuths were computed by the formulæ given on pages 121 and 122, Volume II of the *Account of the Operations of the Great Trigonometrical Survey of India*, using the elements of the figure of the earth which will be found on page 127 of that volume. The elements of all trigonometrical stations employed are final except those of Chittagong, Akyab, Prome and Moulmein, and they either have been, or shortly will be, published in the printed records of the Great Trigonometrical Survey of India. In the case of those already published precise references are given. All the stations used were clearly identified, and their exact positions were recovered without any doubt.

2.

Descriptions of Stations of the Connecting Triangulation and of those at which the Longitude Observations were taken.

CALCUTTA CONNECTION.

THE LONGITUDE S. is in the enclosure of the building, No. 9 Park Street, occupied by the Government Mathematical Instrument Department, 20·3 feet due N. of the Calcutta Latitude s.

AGRA CONNECTION.

USIRA H.S. is a principal station of the Great Arc Meridional Series, Section 24° to 30°: it is situated in the Agra district on a shelving range of rocky hills running N.E. and S.W. The distances and bearings of the surrounding villages are:—Khand about 2 miles N.N.E.; Kheri about 1 mile N.N.W., in pargana Rupbas of the Bhurtpore territory; Usira close under the station to the west; and Nagla about 1 mile south, in pargana Jagner. The pillar is solid and 4½ feet high. It has a mark-stone at the top and also a mark engraved on the rock *in situ*.

MADHONI H.S. is a principal station of the Great Arc Meridional Series, Section 24° to 30°: it is situated in pargana Bhurtpore of the Bhurtpore territory, and is built on a sandstone ridge 8 miles N.W. of the celebrated fortress of Bhurtpore of which it commands as good a view as can be obtained at that distance. The station is named after the nearest village, and is denoted by a stone embedded in the ground and marked in the usual manner with a circle and dot.

PANJ MAHAL S. is situated on a gateway under the small N.E. dome at Fatehpur Sikri in the Agra district.

DURA or **DARHA S.** is situated on the N.W. corner of the S.E. turret of Indar Sing Ját's house, in the Agra district.

AKBAR'S TOMB S. is on the S.E. minaret of the gateway of Akbar Sháh's Mausoleum at Sikandra.

BARARA S. is situated on Mirza Mughal Beg's house on the centre of the highest building in the village of that name in the Agra district.

MOTI MASJID S. is situated at the centre of the floor of the S.W. minaret of the Moti Masjid in the Agra Fort, and is marked by a circle and dot in the usual manner.

TAJ MAHAL MINAR S. is situated about 2 feet east of the centre of the floor of the domed pavilion surmounting the N.W. minaret of the Taj Mahal, being one of the four at the corners of the marble platform on which the Taj stands. A circle and dot is engraved on a slab of the pavement.

TELEGRAPH OFFICE S. is situated on the roof of the Government Telegraph Office at Agra. Its distance from the N.W. corner of the upper platform on which it stands is 16 feet 6 inches, from the S.W. corner 17 feet 4 inches, and from the south front of the building 35 feet 10 inches.

THE LONGITUDE S. is on the same meridian as the Telegraph Office s. from which it is distant 232 feet 9 inches south, and is identical with that referred to in Volume IX.

HAZARIBAGH CONNECTION.

KASIATU H.S. is a principal station of the Calcutta Longitudinal Series: it is on the highest point of an isolated hill overlooking a nearly level and densely-wooded country, pargana Goria, district Hazaribagh. The pillar is solid and contains two marks, the upper 3·00 feet above the lower which is engraved on the rock *in situ*. In the present connection the station was observed to but not visited, and the angles of the principal series utilized.

MAHUDA H.S. (locally so called) is a principal station of the Calcutta Longitudinal Series: it is on the highest point of a range of hills running east and west, in the lands of the village of Gurri, district Hazaribagh. The station of Sindraili of the Chendwar Meridional Series is on a spur of the hill about 1¼ miles E. by N. The pillar is solid and contains two marks, the upper 3·00 feet above the lower which is engraved on the rock *in situ*. The village of Gurri is immediately below the station to the S., and the large village of Shahpur lies about 2 miles in the same direction. The station was found intact, and observations were taken from the intersection of the grooves on the rectangular protecting pillar.

UDEWA H.S. (or Hudwa), an intersected point of the Calcutta Longitudinal Series, is situated in the centre of a group of rocks on the highest part of the hill called Mastulwa-dongar, and is on the boundary of the village lands of Hesabar, Hudwa and Udepur, in the Karanpura pargana, Hazaribagh district. It is marked by a circle and dot engraved on a flat stone embedded flush with the surface of a platform of stones and earth about 8 feet high. The distances and azimuths of the adjacent villages are:—Hesabar 1 mile, 67° 56′; Udepur 1¼ miles, 202° 24′; and Hudwa 1¼ miles, 241° 51′.

CHENDWAR H.S. is a principal station of the Calcutta Longitudinal Series: it is on the highest and northernmost peak of a small, thickly-wooded and isolated range of hills running north and south; pargana Champa, district Hazaribagh. The village of Chendwar lies about 1 mile S.E., that of Marheta at the base of the hill to the S.W., and the station of Hazaribagh about 5 miles N.W. The station pillar is solid and was found intact. Observations were taken from the intersection of the grooves on the rectangular protecting pillar.

SINDUR H.S. is identical with the intersected point of the same name of the Calcutta Longitudinal Series: it is on the highest point of a hill called Kanhari-pahar, 2 miles N.E. of the Cantonment of Hazaribagh, and is on the boundary of the villages of Sindur and Jabara. The circle and dot is engraved on the rock *in situ* and surrounded by a paka platform 4 feet square.

SILWARI H.S. is on an isolated hill of the same name, so called after the village of Silwari situated ¼ mile to the east, in the lands of which the station lies. The high road from Hazaribagh to Giridih passes by the foot of the hill on the N. side. At the N. extremity of the hill, 135 yards from the station, is Silwari Semaphore, an intersected point of the Calcutta Longitudinal Series. The station is marked by a circle and dot engraved on the rock *in situ* enclosed by a circular platform of stones and earth. The azimuths of surrounding objects are:—Silwari Semaphore 176° 58′, Silwari village 250° 43′, and Rock (highest point of hill) 300° 18′ 26″.

HAZARIBAGH S. is situated close to the northern boundary of the Hazaribagh Cantonment, on the open flat between the old Telegraph Office and the Convent. The station consists of a solid masonry pillar 3 feet in diameter which contains two marks, one on its upper surface flush with the ground level, and the other 4 feet below it. A closing pillar of the usual dimensions has been erected over the station mark.

THE LONGITUDE S. is in the enclosure of the old Telegraph Office, 324·2 feet due south of Hazaribagh S.

FYZABAD CONNECTION.

OREJHAR S. is a principal station of the Gurwani Meridional Series: it is situated in the southern suburbs of the city of Ajodhya, and stands on a conical hill about 80 feet in height, named Orejhar from the fact, as is supposed, of its having been formed by the deposit of rubbish removed from the city. Towards the N. W. of the station is some high ground about 60 feet above the level of the surrounding country: this is said to be the site of the ancient city; it is now occupied as a burial ground, and has a secondary station fixed on it. The station is in thána and tahsíl Fyzabad, pargana Haveli, district Fyzabad. The station consists of a solid pillar of masonry carried up to a height of 8 feet above the ground level, and has a mark-stone at top, and others at 4, 8 and 10 feet respectively below this surface. The earthen platform which enclosed the masonry pillar was found completely destroyed and a temporary wooden erection was built for observing. The distances and bearings of the surrounding places are:—The city of Ajodhya 1½ miles, N.; the town of Fyzabad, nearly 3 miles W. by S.; and the village of Barchta, about ½ mile N.E.

DARSANNAGAR S. is situated on the tower at the N. face of the enclosure wall in the bazar of the same name, and ½ a mile S. of Chirai village. The station is marked by a circle and dot engraved on the centre of the roof of the western staircase leading to the top of the N. gateway. A similar mark on the roof of the western staircase of the tower at the W. face of the enclosure wall was found intact. The latter is a secondary station of the Gurwani Meridional Series, called Darsanganj S.

GULABARI S. (or **SIRAJ-UD-DAULA'S MAUSOLEUM**) is situated in the city of Fyzabad: it is marked by a circle and dot engraved on the top surface of the N.E. minaret, one of the four uppermost, which is only 2 feet 7 inches square. The following measurements from the station mark were taken to the inner corners of the pillars supporting a canopy on which a small brass dome rests:—N.E. pillar 1·8 feet, N.W. pillar 1·7 feet, S.E. pillar 1·2 feet, and S.W. pillar 0·8 feet. The spire of this mausoleum, which is an intersected point of the Gurwani Meridional Series and therein called Fyzabad Dome, has also been used in the present connection.

BEGAM'S MAUSOLEUM S. (also known as Mukarba) is situated in the outskirts of the city of Fyzabad, on the road to Allahabad. The station is marked by a circle and dot engraved in the centre of the third opening (counting from the N.E. minar) of the wall enclosing the upper terrace. The spire of this mausoleum which is an intersected point of the Gurwani Meridional Series, called Fyzabad Great Dome, has also been used in the present connection.

TELEGRAPH OFFICE S. is denoted by a circle and dot engraved on the terraced roof of the signal room, and is 23·1 feet from the N.E. corner, 11·3 feet from the N.W. corner and 16·4 feet from the S.W. corner of the roof.

THE LONGITUDE S. is within a few yards of the S.W. corner of the verandah of the Telegraph Office: its distance and azimuth from the Telegraph Office S. are 65·1 feet, 25° 40′.

CHITTAGONG CONNECTION.

ANDAOLI H.S. (locally called Adalat-ka-pahar) is an intersected point of the Eastern Frontier Series, but is not described in the records of that series. The mark, a circle and dot, engraved on a stone embedded flush with the upper surface of a masonry pillar 3 feet in diameter and 1 foot high, was found undisturbed in 1883. The hill on which the station is situated is one of several low knolls, all flat and inconspicuous, covered with grass and shrubs. A large double-storied building with two turrets—formerly the Judge's court, but at the time of the observations used

as a school house—stands about 250 yards to the south of the station; there are no other buildings in the neighbourhood. The native town of Chittagong lies on a plain half a mile to the east.

BATALI H.S. is a secondary station of the Eastern Frontier Series, described as situated on the highest hill to the west of the civil station of Chittagong, and marked by a pillar 3 feet in diameter and 1 foot high with the usual circle and dot in the centre. The pillar and upper mark-stone had been removed, but the lower mark engraved on an embedded stone was found apparently untouched in 1883, when the pillar was repaired and a new upper mark-stone inserted therein. The station is situated on the highest part of a small conical hill a little higher than the low, flat ranges to the east of it which run from north to south. A large tree, a few feet to the south of the station, forms a conspicuous land-mark and can be seen from most points of the lower part of the Karnaphuli or Chittagong river. A long flat-roofed masonry building formerly the Telegraph Office but used as a Traveller's Bungalow at the time of the observations, stands about half a mile S.E. of Batali hill. The high road from Chittagong to Dacca *vid* Comillah passes near the S.W. side of the hill and is about 100 feet below it.

Note.—The two hill stations of Andaoli and Batali were fixed from the principal stations of the Eastern Frontier Series for the purpose of observing points in the town and civil station of Chittagong.

CLUB HOUSE S. is on the roof of the Chittagong Club which is a masonry building: it is marked by a circle and dot cut on the southern portion of the roof. The station mark is 18·5 feet from the S.W. corner and 35·3 feet from the S.E. corner of the roof, and 20·3 feet from the western angle of the nearest skylight.

TELEGRAPH OFFICE S. is on the paka portion of the roof of the new Telegraph Office at Chittagong, and is denoted by a circle and dot cut in the masonry. The point is distant 23·5 feet from the S.W. corner of the roof.

TELEGRAPH OFFICE COMPOUND S. is situated on the Telegraph Office premises and about 400 feet east from the main building. It is marked by a 2 feet square platform flush with the surface of the ground in which is embedded a zinc telegraph insulator with a circle and dot engraved upon it. A marble slab, 15 inches square with a circle and the letters G. T. S. painted thereon, was (it is believed) placed in 1884 over the station mark.

THE LONGITUDE S. is situated 10·1 feet due north of the Telegraph Office Compound s., and 400 feet east of the main building.

JUBBULPORE CONNECTION.

KARAUNDI H.S. is a principal station of the Jubbulpore Meridional Series: it is situated about 3 miles E. by N. of the civil station of Jubbulpore. The pillar is solid and contains two mark-stones, the upper one being 3 feet above the lower which is on the ground level. The village of Karaundi lies about 1 mile N.E. of the hill.

JUBBULPORE H.S. is marked by a circle and dot engraved on a stone embedded flush with the ground at the S. extremity of the hill overlooking the regimental rifle butts. In the Jubbulpore Meridional Series it is called Jubbulpore Hill Mark. The old mark was found intact.

SID-TORIA H.S. is situated on a hill of that name about 1½ miles N.N.E. of the Telegraph Office at Jubbulpore, and is marked by a circle and dot engraved on an embedded stone. On the summit of the hill is a *fakir's* hut about 30 feet distant on an azimuth of 140°.

TELEGRAPH OFFICE S. is situated in the compound of the Telegraph Office, and consists of a masonry pillar 1 foot square and 1·5 feet below ground level. The distances and azimuths of the surrounding objects are:—Sid-Toria H.S. 196° 35′; S.W.; corner of clock room 84·4 feet, 207° 4′; east pillar of gate 221·7 feet, 40° 14′; pediment of Telegraph Master's Quarters 104° 41′; and meridian mark on S. face of collimator pillar 70·3 feet, 179° 59′.

THE LONGITUDE S. is situated on the meridian of the Telegraph Office s., 87·3 feet north of it, and is identical with that referred to in Volume IX.

JALPAIGURI CONNECTION.

DHARAMPUR T.S. is a principal station of the Assam Longitudinal Series: it is on the left bank of the Teesta from which it is distant ¾ of a mile. It is in the lands of the village Dharampur, thána Jalpaiguri, pargana Baikuntpur, district Jalpaiguri. The village of Bhakali (which was formerly an outpost station with a military guard) is 1¼ miles N., and Gasbari (formerly called Moktarpara) is ½ mile W. The station was found in ruins, its site being marked by a mound of

broken brick and earth about 10 feet high. On the south side of this mound and about 8 feet from its centre are two large trees 60 feet high, said to have been originally two posts of the scaffolding erected for the observations taken in 1854-55. The mound between these two trees was dug away till the mark, a circle and dot engraved on a stone, was found at the ground level. A bamboo scaffolding was then built up to a height of 9 feet 8 inches on which the instrument was plumbed over the station. On the completion of the observations the ground mark was covered with an earthen vessel and a protecting mound of brick and earth heaped over it.

MANTHAPARA S. is a secondary station of the Assam Longitudinal Series: it is situated 100 yards S.E. of Manthapara village in the lands of which it lies, táluk Mandal Ghat, district Jalpaiguri. The junction of two water courses meeting in the Kurkuri is 0·4 mile W., and the railway line passes ¼ mile E. The station site was marked by the mouth of an earthen vessel which was found on the ground level, protected by a low mound of earth. On the completion of the observations a solid masonry pillar 15 inches square and 3 feet high, was built containing three marks engraved on bricks, the first 1 foot below the ground level, the second flush with the ground and in the exact position of the old mark, and the third 2 feet above the second. The pillar was protected by a mound of earth 4 feet high and 10 feet in diameter at base. The distances and azimuths of the surrounding villages are:—Manthapara 100 yards, 128° 21′; Baniapara 0·3 mile, 141° 16′; Bakshipara 0·8 mile, 156° 40′; Adapara 0·4 mile, 189° 42′; and Madarganj 0·9 mile, 288° 12′.

BHASARBARI S. is a secondary station of the Assam Longitudinal Series: it is on a low mound in an open piece of cultivated ground in the lands of the village of Chondpara, táluk Khuria, thána and district Jalpaiguri. The high road from Jalpaiguri to Tentulia meets the Pangah river 1 mile to the west of the station, and a small water course which empties itself into the Pangah is 260 yards to the south. The station mark was found in the same condition as at Manthapara S., and on the completion of the observations a similar solid masonry pillar with a covering of earth was erected. The distances and azimuths of surrounding villages are:—Old site of Bhasarbari village 0·2 mile, 24°; Fakirpara 0·7 mile, 57° 44′; Chondpara 0·3 mile, 76° 54′; Porapara 0·5 mile, 249° 0′; Nakandebi 0·5 mile, 321° 14′; and Bhasarbari 0·2 mile, 353° 44′.

JALPAIGURI S. is situated on "The Point" a projecting piece of land at the junction of the Teesta and Kulla rivers: it is marked by a circle and dot engraved on the terraced roof of the Deputy Magistrate's court house at 15 feet 7 inches from the N.W. corner, 6 feet 1 inch from the S.W. corner, 36 feet 3½ inches from the N.E. corner, and 33 feet 4½ inches from the S.E. corner.

THE LONGITUDE S. is a few yards north of the Telegraph Office which is situated between it and the court house: its distance and azimuth from Jalpaiguri S. are 244·0 feet, 159° 11′.

AKYAB CONNECTION.

BORONGA H.S. is a secondary station of the Eastern Frontier Series, but is not described in the records of that series. The mark-stone was found in 1883 apparently undisturbed, and a pile of stones was placed over it on the completion of the observations. The station is on the highest part of a range running along the whole length of an island called the West Boronga which is about 20 miles long and 4 miles across its widest part. The part of the hill on which the station stands is nearly 1000 feet above the sea level. Thirty yards to the west of the station stands a massive timber structure known as the Flagstaff Beacon disused at the time the observations were taken. A good sized Arakanes village named Peindaung is situated on a small creek about 2 miles to the N. E. of the station, from which a path leads over several ridges up to the station.

CHECK MARK S. is a secondary station of the Eastern Frontier Series, at which Tidal observations for verifying the trigonometrical heights were taken: it is situated on the right bank of the Koladan river, on Government lands in Buddermokan, a sub-division of the town of Akyab, between the property of Mr. Durnford to the north and of Mr. Motley to the south, and having the "Point Road" passing 500 feet to the west of it. There is a supplemental station in the grounds of Mr. Durnford to the N.W., distant 501 feet, and the measurements from these two points to the Gauge Post are respectively, from the Check Mark S. 516 feet to the north, and from the supplemental station 501 feet to the N.E. A masonry pillar 3½ feet in diameter and ½ foot high, having two mark-stones, one at the foundation and the other at the surface of the pillar, defines the station, over which a rectangular pillar has been built. In 1883 the rectangular pillar was removed by Mr. Keelan and the upper mark-stone found in position. The station having become surrounded by huts and bungalows it became necessary to erect a substantial scaffolding from which observations were taken, and on the completion of the work the mark-stone was protected by a rectangular masonry pillar 2 feet square at base and 3 feet high.

WALKAN ISLAND H.S. is situated on a hill on a small uninhabited island. A large conical rock, locally known as Tumble Down Dick rises from the top of the southern side of this same hill, and forms a conspicuous object at the

east side of the Akyab harbour. The station is on the northern end of the hill, and is marked by a stone with circle and dot engraved on it embedded flush with the ground.

STONE JETTY S. is situated on the harbour side of the Strand road and 108 feet north of the shore end of the Akyab Stone Jetty from whence it has been named. A stone embedded flush with the ground surface and having the usual circle and dot engraved on it, marks the station. In 1884 a pillar 2 feet square at base, tapering to 15 inches square at a height of 3 feet 9 inches, was built over this mark by the Municipal Engineer, and a marble slab with the usual circle and dot and letters G. T. S. was subsequently sent from Calcutta to surmount the pillar.

TELEGRAPH OFFICE S. not being visible from any other place but the Stone Jetty s. owing to numerous large trees and buildings, the only means of connecting it with the triangulation was by an observed angle and direct measurement. The station is situated in the Telegraph Office premises, about 25 feet from the S.W. corner of the main building. It is marked by a circle and dot cut on a zinc telegraph insulator embedded in a small masonry pillar flush with the ground. In 1884 a rectangular pillar 3·75 feet high was built over the station, carrying a marble slab on its surface with a circle and the letters G. T. S. painted thereon.

THE LONGITUDE S. is on the meridian of the Telegraph Office s., 50·1 feet north of it, and about 20 feet west of the centre of the main building.

MOULMEIN CONNECTION.

THAKE H.S. is a secondary station of the Eastern Frontier Series, and is described in the records of that series as 6 yards N.W. of a pagoda platform on a low hill and about half a mile from Thake village: it is marked by a stone with circle and dot engraved thereon and embedded in the ground. In 1883 the mark-stone was found intact buried flush with the ground, but instead of being 6 yards N.W. of the pagoda platform it was found to be 6 yards to the S.E. from the N. W. corner of the platform.

MOULMEIN NO. 1 H.S. is a secondary station of the Eastern Frontier Series, and is described in the records of that series as on a hill west of Shoaylando's pagoda and a short distance from the flagstaff on the hill, and consisting of a masonry pillar 40 inches in diameter and 2 feet high, with three mark-stones, one at base, one at summit, and one midway within the pillar. In 1883 a rectangular masonry pillar 3·5 feet high was found in good preservation over the circular pillar.

MOULMEIN NO. 3 S. is situated on the north-western side of the remains of some old earthworks surrounding the former Artillery barracks, and is denoted by a stone with a circle and dot engraved on it and embedded flush with the ground.

MOULMEIN NO 4 S. is situated on the western side of the remains of some old earthworks surrounding the former Artillery barracks, and is on the highest part of a small mound. It is denoted by a stone with a circle and dot engraved on it and embedded flush with the ground.

MESS HOUSE S. is situated on the premises of the buildings known as the old Artillery barracks, it is about 300 feet from the east end of the main building now used as the Mess House of the Moulmein Volunteer Rifles.

THE LONGITUDE S. is on the meridian of the Mess House s., 10·0 feet south of it. In 1884 a marble slab 15 inches square with a circle and the letters G. T. S. painted thereon was placed between the transit pillars.

PROME CONNECTION.

PROME H.S. is a station of the Thayetmyo and Cape Negrais Secondary Series, and is described in the records of that series as having two mark-stones with the usual circle and dot, one at the surface of the ground and the other 13 inches below it: it is situated on the Taungdaung range, on the right bank of the Irrawaddy. Lepanze village lies about 1 mile to the south-east. The upper mark-stone was found undisturbed in 1883, and on the conclusion of the observations a pile of stones was erected over the mark.

KYAUNGGYI S. is a station of the Thayetmyo and Cape Negrais Secondary Series, and in the records of that series is stated as "not described." From a manuscript in original signed by the observer and by the officer in charge of the Burma Party, it appears that the station is on the left bank of the Irrawaddy and 113 and 60 feet distant respectively from the N. W. and S.W. angles of the Prome Court-house. The station has two mark-stones, one at ground level and the other 1

foot lower. A masonry pillar 2 feet square and 1 foot high was erected over the station. In 1883 the pillar was found to be removed but the mark undisturbed, and on the conclusion of the observations a pillar smaller than that removed was built over the mark.

MAJIZUDAUNG H.S. is situated on a small mound to the south of, and close to, the village of Majizu standing on the right bank of the Irrawaddy river. A stone with circle and dot engraved on it and buried flush with the ground level denotes the point of observation. A pile of stones and earth covers the mark.

PROME CLUB S. is within the municipal limits of Prome, close to the steep left bank of the Irrawaddy, 120 feet south of the Prome Club and Reading Rooms and about the same distance south-west of the Police Office; the removal of these buildings seemed probable at the time the observations were taken, in order to make room for a pumping engine to supply the town of Prome with water. A mark-stone with circle and dot engraved on it was embedded flush with the ground in 1883, and in 1884 a masonry pillar 3 feet 10 inches high was built over this, and capped by a marble slab on which a circle and the letters G.T.S. were painted in black.

THE LONGITUDE S. is 105·3 feet due east of Prome Club S., and about 120 feet south-east of the Prome Club and Reading room.

NOTE.—In Tables *A*, *B* and *C* and in Plates IV, V and VI the letters H.S., T.S. and S. denote Hill Station, Tower Station and Station respectively of the Principal Triangulation of the Great Trigonometrical Survey, while h.s. and s. apply to stations fixed by Secondary Triangulation.

TABLE A. TRIANGULATION FOR THE CONNECTION OF LONGITUDE STATIONS.

Computation of Triangles.

Longitude Station to be fixed	Theodolite used	No. of Triangle	Name of Station	Observed Angle	Corrections for		Corrected Angle	Distance in		
					Spherical Excess	Observation Error		Log Feet	Feet	Miles
	Inch			° ′ ″	″	″	° ′ ″			
			Madhoni H.S.	24 53 31·3	− 0·3	− 1·5	24 53 29·5	4·7329264	54066·3	10·240
	12	1	Usira „	45 27 53·9	− 0·4	− 1·4	45 27 52·1	4·9617229	91563·6	17·342
			Panj Mahal s.	109 38 40·3	− 0·4	− 1·5	109 38 38·4	5·0827042*	120977·4	22·912
			Sums ...	180 0 5·5	− 1·1	− 4·4	180 0 0·0			
AGRA			Usira H.S.	31 35 43·8	− 0·1	− 0·2	31 35 43·5	4·4580199	28709·1	5·437
	„	2	Panj Mahal s.	67 46 19·8	− 0·1	− 0·2	67 46 19·5	4·7052207	50724·8	9·607
			Dura „	80 37 57·4	− 0·1	− 0·3	80 37 57·0	4·7329264	54066·3	10·240
			Sums ...	180 0 1·0	− 0·3	− 0·7	180 0 0·0			

* This distance is taken from Triangle No. 37, page 15—*A* of the Great Arc Meridional Series, Section 24° to 30°, Synoptical Vol. II.

TABLE A. TRIANGULATION FOR THE CONNECTION OF LONGITUDE STATIONS.

Computation of Triangles—(Continued).

Longitude Station to be fixed	Theodolite used	No. of Triangle	Name of Station	Observed Angle	Corrections for		Corrected Angle	Distance in		
					Spherical Excess	Observation Error		Log Feet	Feet	Miles
	Inch			° ′ ″	″	″	° ′ ″			
			Panj Mahal s.	60 30 1·4	− 0·2	− 2·8	60 29 58·4	4·9646304	92178·7	17·458
	12	3	Dura „	103 46 23·6	− 0·2	− 2·8	103 46 20·6	5·0122661	102864·6	19·482
			Akbar's Tomb „	15 43 43·9	− 0·1	− 2·8	15 43 41·0	4·4580199	28709·1	5·437
			Sums ...	180 0 8·9	− 0·5	− 8·4	180 0 0·0			
			Panj Mahal s.	16 7 45·6	− 0·1	− 1·3	16 7 44·2	4·5514386	35599·1	6·742
	„	4	Akbar's Tomb „	37 15 40·8	− 0·2	− 1·3	37 15 39·3	4·8897815	77585·7	14·694
			Barara „	126 36 38·0	− 0·2	− 1·3	126 36 36·5	5·0122661	102864·6	19·482
			Sums ...	180 0 4·4	− 0·5	− 3·9	180 0 0·0			
			Akbar's Tomb s.	84 37 26·4	− 0·1	+ 0·3	84 37 26·6	4·6313300	42788·8	8·104
	„	5	Barara „	39 27 0·4	...	+ 0·3	39 27 0·7	4·4362967	27308·4	5·172
			Moti Masjid „	55 55 32·5	− 0·1	+ 0·3	55 55 32·7	4·5514386	35599·1	6·742
			Sums ...	179 59 59·3	− 0·2	+ 0·9	180 0 0·0			
			Akbar's Tomb s.	88 9 28·9	− 0·1	+ 1·6	88 9 30·4	4·6840686	48313·5	9·150
AGRA	„	6	Barara „	44 24 39·4	− 0·1	+ 1·5	44 24 40·8	4·5292699	33827·5	6·407
			Taj Mahal Minar „	47 25 47·3	− 0·1	+ 1·6	47 25 48·8	4·5514386	35599·1	6·742
			Sums ...	179 59 55·6	− 0·3	+ 4·7	180 0 0·0			
			Barara s.	4 57 39·0	...	− 1·8	4 57 37·2	3·8313903	6782·5	1·285
	„	7	Taj Mahal Minar „	33 3 32·2	...	− 1·9	33 3 30·3	4·6313346	42789·2	8·104
			Moti Masjid „	141 58 54·4	...	− 1·9	141 58 52·5	4·6840686	48313·5	9·150
			Sums ...	180 0 5·6	...	− 5·6	180 0 0·0			
			Akbar's Tomb s.	3 32 2·5	...	+ 3·1	3 32 5·6	3·8314498	6783·4	1·285
	„	8	Taj Mahal Minar „	14 22 15·1	...	+ 3·1	14 22 18·2	4·4362946	27308·3	5·172
			Moti Masjid „	162 5 33·1	...	+ 3·1	162 5 36·2	4·5292699	33827·5	6·407
			Sums ...	179 59 50·7	...	+ 9·3	180 0 0·0			
			Taj Mahal Minar s.	44 57 25·1	...	− 1·9	44 57 23·2	3·8358228	6852·1	1·298
	„	9	Moti Masjid „	90 39 42·6	...	− 2·0	90 39 40·6	3·9866393	9697·0	1·837
			Telegraph Office „	44 22 58·1	...	− 1·9	44 22 56·2	3·8314201*	6783·0	1·285
			Sums ...	180 0 5·8	...	− 5·8	180 0 0·0			

* Mean deduced from Triangles Nos. 7 and 8.

TABLE A. TRIANGULATION FOR THE CONNECTION OF LONGITUDE STATIONS.

Computation of Triangles—(Continued).

Longitude Station to be fixed	Theodolite used	No. of Triangle	Name of Station		Observed Angle	Corrections for: Spherical Excess	Corrections for: Observation Error	Corrected Angle	Distance in: Log Feet	Distance in: Feet	Distance in: Miles
	Inch				° ′ ″	″	″	° ′ ″			
			Kasiatu	H.S.	... ...	...	...	43 57 48·2	4·9460099	88310·0	16·725
	12	10	Mahuda	„	53 47 43·2	− 0·7	...	53 47 42·5	5·0113514	102648·2	19·441
			Udewa	h.s.	82 14 30·0	− 0·7	...	82 14 29·3	5·1005323*	126046·9	23·873
				Sums ...	... ...	− 2·1	...	180 0 0·0			
			Mahuda	H.S.	39 46 14·8	− 0·5	− 0·7	39 46 13·6	4·8745287	74908·1	14·187
	„	11	Chendwar	„	48 57 14·4	− 0·5	− 0·8	48 57 13·1	4·9460175	88311·5	16·726
			Udewa	h.s.	91 16 34·7	− 0·6	− 0·8	91 16 33·3	5·0684356*	117067·3	22·172
				Sums ...	180 0 3·9	− 1·6	− 2·3	180 0 0·0			
			Kasiatu	H.S.	... ...	...	...	33 54 4·0	4·9633953	91916·9	17·409
	„	12	Mahuda	„	96 12 14·7	− 0·9	...	96 12 13·8	5·2143962	163831·1	31·029
			Sindur	h.s.	49 53 43·1	− 0·9	...	49 53 42·2	5·1005323*	126046·9	23·873
				Sums ...	... ...	− 2·7	...	180 0 0·0			
HAZARIBAGH			Kasiatu	H.S.	... ...	...	...	7 19 41·5	4·4082395	25600·0	4·848
	„	13	Chendwar	„	54 42 54·3	− 0·3	...	54 42 54·0	5·2143938	163830·2	31·028
			Sindur	h.s.	117 57 24·8	− 0·3	...	117 57 24·5	5·2486588*	177279·6	33·576
				Sums ...	... ...	− 0·9	...	180 0 0·0			
			Mahuda	H.S.	42 24 31·5	− 0·4	+ 0·8	42 24 31·9	4·8147316	65272·7	12·362
	„	14	Udewa	h.s.	71 44 40·1	− 0·5	+ 0·9	71 44 40·5	4·9633758	91912·8	17·408
			Sindur	„	65 50 47·1	− 0·4	+ 0·9	65 50 47·6	4·9460137†	88310·8	16·726
				Sums ...	179 59 58·7	− 1·3	+ 2·6	180 0 0·0			
			Chendwar	H.S.	58 27 50·2	− 0·1	− 1·7	58 27 48·4	4·8147285	65272·2	12·362
	„	15	Udewa	h.s.	19 31 54·6	− 0·1	− 1·7	19 31 52·8	4·4082980	25603·4	4·849
			Sindur	„	102 0 20·8	− 0·2	− 1·8	102 0 18·8	4·8745287	74908·1	14·187
				Sums ...	180 0 5·6	− 0·4	− 5·2	180 0 0·0			

* This distance is taken from Triangle No. 72, page 27_B of the Calcutta Longitudinal Series Synoptical Vol. XII.

† Mean deduced from Triangles Nos. 10 and 11.

TABLE A. TRIANGULATION FOR THE CONNECTION OF LONGITUDE STATIONS.

Computation of Triangles—(Continued).

Longitude Station to be fixed	Theodolite used	No. of Triangle	Name of Station		Observed Angle	Corrections for: Spherical Excess	Corrections for: Observation Error	Corrected Angle	Distance in: Log Feet	Distance in: Feet	Distance in: Miles
	Inch				° ′ ″	″	″	° ′ ″			
			Mahuda	H.S.	5 45 16·8	− 0·1	+ 0·5	5 45 17·2	4·1566535	14343·4	2·717
	12	16	Chendwar	„	49 10 6·8	− 0·1	+ 0·5	49 10 7·2	5·0343660	108234·6	20·499
			Silwari	h.s.	125 4 35·1	− 0·1	+ 0·6	125 4 35·6	5·0684356*	117067·3	22·172
				Sums ...	179 59 58·7	− 0·3	+ 1·6	180 0 0·0			
			Mahuda	H.S.	45 31 31·6	− 0·5	− 0·1	45 31 31·0	4·8933945	78233·8	14·817
	„	17	Udewa	h.s.	80 49 9·3	− 0·6	− 0·2	80 49 8·5	5·0343647	108234·2	20·499
			Silwari	„	53 39 21·1	− 0·5	− 0·1	53 39 20·5	4·9460137†	88310·8	16·726
				Sums ...	180 0 2·0	− 1·6	− 0·4	180 0 0·0			
			Chendwar	H.S.	98 7 21·2	− 0·1	− 0·1	98 7 21·0	4·8933955	78234·0	14·817
	„	18	Udewa	h.s.	10 27 25·4	− 0·1	− 0·1	10 27 25·2	4·1566450	14343·2	2·717
			Silwari	„	71 25 14·0	− 0·1	− 0·1	71 25 13·8	4·8745287	74908·1	14·187
				Sums ...	180 0 0·6	− 0·3	− 0·3	180 0 0·0			
			Chendwar	H.S.	39 39 31·0	...	+ 1·0	39 39 32·0	4·2354866	17198·3	3·257
HAZARIBAGH	„	19	Sindur	h.s.	32 9 23·0	...	+ 1·0	32 9 24·0	4·1566236	14342·5	2·716
			Silwari	„	108 11 3·0	− 0·1	+ 1·1	108 11 4·0	4·4082688‡	25601·7	4·849
				Sums ...	179 59 57·0	− 0·1	+ 3·1	180 0 0·0			
			Chendwar	H.S.	21 58 30·5	...	+ 0·7	21 58 31·2	4·0019103	10044·1	1·902
	„	20	Sindur	h.s.	85 30 10·8	− 0·1	+ 0·8	85 30 11·5	4·4274591	26758·3	5·068
			Hazaribagh	s.	72 31 16·6	...	+ 0·7	72 31 17·3	4·4082688‡	25601·7	4·849
				Sums ...	179 59 57·9	− 0·1	+ 2·2	180 0 0·0			
			Chendwar	H.S.	61 38 1·5	...	+ 1·5	61 38 3·0	4·3729502	23602·1	4·470
	„	21	Silwari	h.s.	86 2 21·9	− 0·1	+ 1·5	86 2 23·3	4·4274629	26758·6	5·068
			Hazaribagh	s.	32 19 32·3	...	+ 1·4	32 19 33·7	4·1566407§	14343·0	2·716
				Sums ...	179 59 55·7	− 0·1	+ 4·4	180 0 0·0			
			Sindur	h.s.	117 39 33·8	...	+ 0·3	117 39 34·1	4·3729547	23602·3	4·470
	„	22	Silwari	„	22 8 41·1	...	+ 0·2	22 8 41·3	4·0019395	10044·8	1·902
			Hazaribagh	s.	40 11 44·3	...	+ 0·3	40 11 44·6	4·2354866	17198·3	3·257
				Sums ...	179 59 59·2	...	+ 0·8	180 0 0·0			

* This distance is taken from Triangle No. 72, page 27 of the Calcutta Longitudinal Series Synoptical Vol. XII.

† Mean deduced from Triangles Nos. 10 and 11.

‡ „ „ Nos. 13 and 15.

§ „ „ Nos. 16, 18 and 19.

TABLE A. TRIANGULATION FOR THE CONNECTION OF LONGITUDE STATIONS.

Computation of Triangles—(Continued).

Longitude Station to be fixed	Theodolite used	No. of Triangle	Name of Station	Observed Angle	Corrections for		Corrected Angle	Distance in		
					Spherical Excess	Observation Error		Log Feet	Feet	Miles
	Inch			° ′ ″	″	″	° ′ ″			
			Orejhar S.	101 28 53	...	...	101 28 53	4·264247	18375·8	3·480
	6	23	Fyzabad Dome	... ...	...	...	29 42 40	3·968181	9293·5	1·760
			Darsannagar s.	48 48 27	...	...	48 48 27	4·149533*	14110·2	2·672
			Sums ...	... ...	...	...	180 0 0			
			Orejhar S.	87 4 56	...	...	87 4 56	4·321963	20987·6	3·975
	„	24	Fyzabad Great Dome	... ...	...	...	26 14 44	3·968164	9293·2	1·760
			Darsannagar s.	66 40 20	...	...	66 40 20	4·2854891	19297·0	3·655
			Sums ...	... ...	...	...	180 0 0			
			Orejhar S.	101 23 55	...	+ 1	101 23 56	4·263677	18351·7	3·476
	„	25	Darsannagar s.	48 50 16	...	+ 1	48 50 17	4·149039	14094·2	2·669
			Gulabari „	29 45 47	...	...	29 45 47	3·968173‡	9293·4	1·760
			Sums ...	179 59 58	...	+ 2	180 0 0			
			Orejhar S.	87 4 31	...	+ 1	87 4 32	4·321342	20957·6	3·969
FYZABAD	„	26	Darsannagar s.	66 38 16	...	+ 1	66 38 17	4·284759	19264·6	3·649
			Begam's Mausoleum „	26 17 11	...	...	26 17 11	3·968173‡	9293·4	1·760
			Sums ...	179 59 58	...	+ 2	180 0 0			
			Orejhar S.	14 19 24	...	+ 4	14 19 28	3·819762	6603·3	1·251
	„	27	Begam's Mausoleum s.	31 52 41	...	+ 4	31 52 45	4·149081	14095·5	2·670
			Gulabari „	133 47 42	...	+ 5	133 47 47	4·284759	19264·6	3·649
			Sums ...	179 59 47	...	+ 13	180 0 0			
			Darsannagar s.	17 48 0	...	+ 4	17 48 4	3·819790	6603·7	1·251
	„	28	Gulabari „	104 1 56	...	+ 4	104 2 0	4·321316	20956·4	3·969
			Begam's Mausoleum „	58 9 52	...	+ 4	58 9 56	4·263677	18351·7	3·476
			Sums ...	179 59 48	...	+ 12	180 0 0			
			Begam's Mausoleum s.	76 35 28	...	+ 1	76 35 29	3·882237	7625·0	1·444
	„	29	Gulabari „	46 0 38	...	...	46 0 38	3·751251	5639·6	1·068
			Telegraph Office „	57 23 53	...	...	57 23 53	3·8197776§	6603·5	1·251
			Sums ...	179 59 59	...	+ 1	180 0 0			

* This distance is taken from Triangles Nos. 287 and 288, page 22—*N* } of the Gurwani Meridional Series Synoptical Vol. XVII.
† „ „ Triangle No. 283, „ }
‡ Mean deduced from Triangles Nos. 23 and 24.
§ „ „ Triangles Nos. 27 and 28.

TABLE A. TRIANGULATION FOR THE CONNECTION OF LONGITUDE STATIONS.

Computation of Triangles—(Continued).

Longitude Station to be fixed	Theodolite used	No. of Triangle	Name of Station	Observed Angle	Corrections for		Corrected Angle	Distance in		
					Spherical Excess	Observation Error		Log Feet	Feet	Miles
	Inch			° ′ ″	″	″	° ′ ″			
			Batali h.s.	38 22 29·8	...	− 0·1	38 22 29·7	3·6904918	4903	0·929
	12	30	Andaoli „	72 36 34·5	...	− 0·1	72 36 34·4	3·8772174	7537	1·428
			Club House s.	69 0 56·0	...	− 0·1	69 0 55·9	3·8677338*	7375	1·397
			Sums ...	180 0 0·3	...	− 0·3	180 0 0·0			
			Batali h.s.	3 0 11·8	...	+ 0·1	3 0 11·9	2·6067174	404	0·077
CHITTAGONG	„	31	Club House s.	99 22 44·9	...	+ 0·2	99 22 45·1	3·8815944	7614	1·442
			Telegraph Office „	77 37 2·9	...	+ 0·1	77 37 3·0	3·8772174	7537	1·428
			Sums ...	179 59 59·6	...	+ 0·4	180 0 0·0			
			Telegraph Office s.	66 8 27·5	...	− 0·2	66 8 27·3	2·6067145	404	0·077
	„	32	Club House „	47 43 2·5	...	− 0·2	47 43 2·3	2·5146448	327	0·062
			Telegraph Office Compound „	66 8 30·6	...	− 0·2	66 8 30·4	2·6067174	404	0·077
			Sums ...	180 0 0·6	...	− 0·6	180 0 0·0			
			Karaundi H.S.	42 59 47	...	− 7	42 59 40	3·978693	9521·2	1·803
	5	33	Jubbulpore h.s.	105 2 11	...	− 7	105 2 4	4·129829	13484·3	2·554
			Sid-Toria „	31 58 23	...	− 7	31 58 16	3·868814†	7392·9	1·400
			Sums ...	180 0 21	...	−21	180 0 0			
JUBBULPORE			Jubbulpore h.s.	47 42 33	...	− 5	47 42 28	3·863912	7309·9	1·384
	„	34	Sid-Toria „	57 49 21	...	− 5	57 49 16	3·922413	8364·0	1·584
			Telegraph Office s.	74 28 22	...	− 6	74 28 16	3·978693	9521·2	1·803
			Sums ...	180 0 16	...	−16	180 0 0			
			Dharampur T.S.	49 9 40	...	...	49 9 40	4·353455	22566·0	4·274
JALPAIGURI	12	85	Manthapara s.	98 12 18	...	− 1	98 12 17	4·470149	29522·2	5·591
			Jalpaiguri „	32 38 3	...	...	32 38 3	4·206426‡	16085·2	3·046
			Sums ...	180 0 1	...	− 1	180 0 0			

* Taken from the Field Computations of the Eastern Frontier Series, Season 1864-65, which are not in terms of the final reduction of the triangulation of the Great Trigonometrical Survey.

† This distance is taken from Triangle No. 84, page 17—$_Z$ of the Jubbulpore Meridional Series Synoptical Vol. IX.

‡ „ „ „ No. 101, page 18—$_Y$ of the Assam Longitudinal Series Synoptical Vol. XXII.

TABLE A. TRIANGULATION FOR THE CONNECTION OF LONGITUDE STATIONS.

Computation of Triangles—(Continued).

Longitude Station to be fixed	Theodolite used	No. of Triangle	Name of Station		Observed Angle	Corrections for: Spherical Excess	Corrections for: Observation Error	Corrected Angle	Distance in: Log Feet	Distance in: Feet	Distance in: Miles
	Inch				° ′ ″	″	″	° ′ ″			
JALPAIGURI	12	36	Manthapara	s.	42 31 12	...	+ 1	42 31 13	4·195615	15689·7	2·972
			Bhasarbari	„	76 24 53	...	+ 1	76 24 54	4·353440	22565·2	4·274
			Jalpaiguri	„	61 3 52	...	+ 1	61 3 53	4·307855*	20316·8	3·848
				Sums ...	179 59 57	...	+ 3	180 0 0			
AKYAB	12	37	Boronga	h.s.	37 4 19·9	...	− 1·3	37 4 18·6	4·4268010	26718	5·060
			Check Mark	s.	77 11 26·5	...	− 1·4	77 11 25·1	4·6356708	43219	8·185
			Walkan Island	h.s.	65 44 17·6	...	− 1·3	65 44 16·3	4·6064564†	40407	7·653
				Sums ...	180 0 4·0	...	− 4·0	180 0 0·0			
	„	38	Walkan Island	h.s.	80 7 48·8	...	+ 0·3	80 7 49·1	4·6635469	46084	8·728
			Boronga	„	32 21 32·9	...	+ 0·2	32 21 33·1	4·3985591	25036	4·742
			Stone Jetty	s.	67 30 37·5	...	+ 0·3	67 30 37·8	4·6356708	43219	8·185
				Sums ...	179 59 59·2	...	+ 0·8	180 0 0·0			
	„	39	Walkan Island	h.s.	14 23 31·2	...	− 0·2	14 23 31·0	3·8256952	6694	1·268
			Check Mark	s.	68 22 15·0	...	− 0·3	68 22 14·7	4·3985657	25036	4·742
			Stone Jetty	„	97 14 14·6	...	− 0·3	97 14 14·3	4·4268010	26718	5·060
				Sums ...	180 0 0·8	...	− 0·8	180 0 0·0			
	„	40	Boronga	h.s.	4 42 47·0	...	− 1·8	4 42 45·2	3·8257419	6695	1·268
			Check Mark	s.	145 33 41·5	...	− 1·9	145 33 39·6	4·6635523	46084	8·728
			Stone Jetty	„	29 43 37·1	...	− 1·9	29 43 35·2	4·6064564	40407	7·653
				Sums ...	180 0 5·6	...	− 5·6	180 0 0·0			
	„	41	Check Mark	s.	... ...	...	...	13 57 40·3	3·2304645‡	1700	0·322
			Stone Jetty	„	94 13 26·1	...	...	94 13 26·1	3·8467895	7027	1·331
			Telegraph Office	„	... ...	...	...	71 48 53·6	3·8257186§	6695	1·268
				Sums ...	... ...	...	...	180 0 0·0			

* This distance is taken from Triangle No. 100, page 18—$_X$ of the Assam Longitudinal Series Synoptical Vol. XXII.

† Taken from the Field Computations of the Eastern Frontier Series, Season 1866-67, which are not in terms of the final reduction of the triangulation of the Great Trigonometrical Survey.

‡ This distance was measured with a 100-foot chain, and checked by traverse.

§ Mean deduced from Triangles Nos. 39 and 40.

TABLE A. TRIANGULATION FOR THE CONNECTION OF LONGITUDE STATIONS.

Computation of Triangles—(Continued).

Longitude Station to be fixed	Theodolite used	No. of Triangle	Name of Station	Observed Angle	Corrections for		Corrected Angle	Distance in		
					Spherical Excess	Observation Error		Log Feet	Feet	Miles
	Inch			° ′ ″	″	″	° ′ ″			
			Thako h.s.	22 29 26·9	...	...	22 29 26·9	3·9146500	8216	1·556
	12	42	Moulmein No. 1 „	65 57 20·6	...	...	65 57 20·6	4·2925592	19614	3·715
			Moulmein No. 3 s.	91 33 12·5	...	...	91 33 12·5	4·3318189*	21469	4·066
			Sums ...	180 0 0·0	...	...	180 0 0·0			
			Moulmein No. 1 h.s.	4 42 32·9	...	− 0·3	4 42 32·6	2·8421812	695	0·132
MOULMEIN	„	43	Moulmein No. 3 s.	71 13 52·7	...	− 0·3	71 13 52·4	3·9041286	8019	1·519
			Moulmein No. 4 „	104 3 35·4	...	− 0·4	104 3 35·0	3·9146500	8216	1·556
			Sums ...	180 0 1·0	...	− 1·0	180 0 0·0			
			Moulmein No. 3 s.	93 52 20·6	...	− 0·9	93 52 19·7	3·0945365	1243	0·235
	„	44	Moulmein No. 4 „	52 12 32·0	...	− 0·8	52 12 31·2	2·9932922	985	0·186
			Mess House „	33 55 9·9	...	− 0·8	33 55 9·1	2·8421812	695	0·132
			Sums ...	180 0 2·5	...	− 2·5	180 0 0·0			
			Prome h.s.	15 13 47·0	...	− 1·4	15 13 45·6	3·5721605	3734	0·707
	12	45	Kyaunggyi s.	40 3 32·7	...	− 1·4	40 3 31·3	3·9613254	9148	1·733
			Majizudaung h.s.	124 42 44·6	...	− 1 5	124 42 43·1	4·0676132†	11685	2·213
			Sums ...	180 0 4·3	...	− 4·3	180 0 0·0			
			Prome h.s.	3 12 4·0	...	+ 0·7	3 12 4·7	2·8754240	751	0·142
	„	46	Kyaunggyi s.	116 25 17·6	...	+ 0·7	116 25 18·3	4·0805319	12037	2·280
			Prome Club „	60 22 36·3	...	+ 0·7	60 22 37·0	4·0676132	11685	2·213
			Sums ...	179 59 57·9	...	+ 2·1	180 0 0·0			
PROME			Majizudaung h.s.	11 35 16·0	...	+ 0·8	11 35 16·8	2·8753594	751	0·142
	„	47	Kyaunggyi s.	76 21 44·9	...	+ 0·8	76 21 45·7	3·5600188	3631	0·688
			Prome Club „	92 2 56·6	...	+ 0·9	92 2 57·5	3·5721605	3734	0·707
			Sums ...	179 59 57·5	...	+ 2·5	180 0 0·0			
			Majizudaung h.s.	136 18 0·5	...	− 1·7	136 17 58·8	4·0805246	12037	2·280
	„	48	Prome „	12 1 43·0	...	− 1·6	12 1 41·4	3·5600001	3631	0·688
			Prome Club s.	31 40 21·4	...	− 1·6*	31 40 19·8	3·9613254	9148	1·733
			Sums ...	180 0 4·9	...	− 4·9	180 0 0·0			

* Taken from the Field Computations of the Eastern Frontier Series, Season 1875-76, which are not in terms of the final reduction of the triangulation of the Great Trigonometrical Survey.

† Taken from the Field Computations of the Secondary Triangulation Thayetmyo *vid* Prome, Myanaung, towards Bassein and Cape Negrais, Season 1875-76, which are not in terms of the final reduction of the Triangulation of the Great Trigonometrical Survey.

APPENDIX.

TABLE B. TRIANGULATION FOR THE CONNECTION OF LO

Geodetic Latitudes, Longitudes and Azi..

Longitude Station to be fixed	Name of Station		No. of Triangle	Latitude North			Longitude East of Greenwich			
				°	′	″	°	′	″	
	Usira	H.S.*		26	57	6·22	77	40	19·76	Of Mu
	Madhoni	„ *		27	13	49·65	77	28	8·26	„ Us.
	Panj Mahal	s.	1	27	5	49·20	77	42	28·12	„ „
	Dura	„	2	27	3	7·55	77	46	49·43	„ Par
AGRA	Akbar's Tomb	„	3	27	13	12·63	77	59	33·51	„
	Barara	„	4	27	7	58·47	77	56	34·60	„ Ak'
	Moti Masjid	„	5, 7, 8	27	10	47·74	78	3	48·92	„
	Taj Mahal Minar	„	6	27	10	30·91	78	5	1·64	„
	Telegraph Office	„	9	27	9	42·24	78	3	29·07	
	Kasiatu	H.S.†		23	58	29·68	84	56	46·76	Of
	Mahuda	„ †		24	11	32·21	85	14	26·93	„ (
	Udewa	h.s.	10, 11	23	56	58·11	85	15	9·04	„ Ma
HAZARIBAGH	Chendwar	H.S.†		23	57	13·75	85	28	36·47	„
	Sindur	h.s.	12–15	24	0	47·21	85	26	7·28	„ Udew
	Silwari	„	16–19	23	59	34·82	85	28	55·21	„ Chend
	Hazaribagh	s.	20–22	23	59	47·01	85	24	41·01	„
	Orejhar	S. ‡		26	46	55·54	82	14	34·78	Of Darsa
	Fyzabad Domo	s. ‡		26	46	46·6	82	11	59·4	„ „
	Darsannagar	„	23, 24	26	45	26·68	82	15	1·55	„ Orejhar
FYZABAD	Fyzabad Great Dome	„ ‡		26	45	56·3	82	11	12·3	„ „
	Gulabari	„	25, 27	26	46	46·44	82	11	59·59	„ „
	Begam's Mausoleum	„	26, 28	26	45	56·37	82	11	12·69	„ „
	Telegraph Office	„	29	26	46	41·24	82	10	35·64	„ Begam'
	Andaoli	h.s.§		22	21	11·00	91	52	36·70	Of Ba
	Batali	„ §		22	20	44·40	91	51	23·50	„ A
CHITTAGONG	Club House	s.	30	22	20	22·50	91	52	40·26	„ B
	Telegraph Office	„	31	22	20	18·52	91	52	39·68	„
	Telegraph Office Compound	„	32	22	20	19·43	91	52	43·03	„
JUBBULPORE	Karaundi	H.S.‖		23	10	40·02	80	2	10·52	Of
	Jubbulpore	h.s.‖		23	10	7·70	80	0	59·42	„

* For geodetic elements of these stations *vide* page 29—*A.* of the Great Arc Meridional Series, Section

† For „ „ „ „ pages 99—*B.*, 102—*B.* and 92—*B.* of the Calcutta Le

‡ For „ „ „ „ „ 43—*N.* and 35—*N.* of the Gurwani Meridional

§ The „ „ „ are taken from the Field Computations of
which are not in terms of the final reduction of the triangulation of the Great

‖ For geodetic elements of these stations *vide* [illegible] and 89

ILATION FOR THE CONNECTION OF LONGITUDE STATIONS.

itudes, Longitudes and Azimuths.—(Continued).

	No. of Triangle	Latitude North	Longitude East of Greenwich	Azimuth		
		° ′ ″	° ′ ″			° ′ ″
h.s.	33	23 11 18·66	79 59 52·16	Of Jubbulpore	h.s.	318 46 14
s.	34	23 10 9·24	79 59 29·79			
T.S.*		26 27 26·06	88 50 2·87	Of Manthapara	s.	92 25 42
s. *		26 27 32·78	88 47 6·03	„ Dharampur	T.S.	272 24 23
„ *		26 29 46·55	88 44 18·98	„ Manthapara	s.	311 39 16
„	35, 36	26 31 15·13	88 46 40·90	„ „	„	354 11 33
s.†		20 1 10·1	92 59 43·1	Of Check Mark	s.	152 16 56·54
. †		20 7 4·7	92 56 25·9	„ Boronga	h.s.	332 15 48·59
h.s.	37	20 8 12·84	93 0 56·85	„ „	„	9 21 40·4
s.	38–40	20 8 10·58	92 56 34·08	„ Check Mark	s.	6 42 12·1
„	41	20 8 13·79	92 56 16·57	„ Stone Jetty	„	280 55 32·0
h.s.†		16 30 58·03	97 43 15·74	Of Moulmein	No. 1 h.s.	51 29 44
No. 1 „ †		16 28 45·51	97 40 23·03	„ Thake	h.s.	231 28 57
No. 3 s.	42	16 30 4·37	97 40 1·94	„ Moulmein	No. 1 h.s.	345 31 30
No. 4 „	43	16 30 0·60	97 39 55·96	„ „	No. 1 „	340 48 55
„	44	16 29 56·59	97 40 8·05	„ „	No. 3 s.	142 53 4
h.s.‡		18 50 1·07	95 13 28·14	Of Kyaunggyi	s.	289 26 15
s. ‡		18 49 22·50	95 15 22·87	„ Promo	h.s.	109 26 48
h.s.	45	18 49 9·48	95 14 46·48	„ „	„	124 40 24
s.	46–48	18 49 15·12	95 15 23·81	„ Kyaunggyi	s.	173 1 33

are taken from the results of the final reduction of the Assam Longitudinal Series, Synoptical Vol. XXII.

„ Field Computations of the Eastern Frontier Series for Seasons 1864-65, 1866-67 and 1875-76, the triangulation of the Great Trigonometrical Survey.

are taken from the Field Computations of the Secondary Triangulation Thayetmyo *vid* Prome, Myanaung towards are not in final terms.

Chittagong, Prome and Moulmein are in the preliminary terms of the side Gojalia–Tulamura (about lat. 23° 10′) final terms the following corrections are needed:—

	″		″
Gojalia, Latitude	− 1·08	Tulamura, Latitude	− 1·09
Longitude	+ 0·85	Longitude	+ 0·85
Azimuth	+ 6·19	Side	+ 0·0000001

s will have to be applied hereafter to the elements given in this table.

TABLE C. DEDUCTION OF THE GEODETIC ELEMENTS OF THE LONGITUDE STATIONS.

Name of Station	Latitude North	Longitude East of Greenwich	REMARKS
	° ′ ″	° ′ ″	
Calcutta Latitude s.*	22 32 54·67	88 23 55·95	The Longitude s. is 20·3 feet due north of the Latitude s.
Reduction to Longitude s. ...	+ 0·20	0·00	
Calcutta Longitude s.	22 32 54·87	88 23 55·95	
Agra Telegraph Office s.	27 9 42·24	78 3 29·07	Fixed by special triangulation (*vide Tables A* and *B*).
Reduction to Longitude s. ...	− 2·31	0·00	The Longitude s. is 232 feet 9 inches due south of the Telegraph Office s., *vide* page (4).
Agra Longitude s.	27 9 39·93	78 3 29·07	
Hazaribagh s.	23 59 47·01	85 24 41·01	Fixed by special triangulation (*vide Tables A* and *B*).
Reduction to Longitude s. ...	− 3·21	0·00	The Longitude s. is 324·2 feet due south of Hazaribagh s., *vide* page (5).
Hazaribagh Longitude s.	23 59 43·80	85 24 41·01	
Fyzabad Telegraph Office s.	26 46 41·24	82 10 35·64	Fixed by special triangulation (*vide Tables A* and *B*).
Reduction to Longitude s. ...	− 0·58	− 0·31	The Longitude s. is 58·7 feet south and 28·2 feet west of the Telegraph Office s., *vide* page (5).
Fyzabad Longitude s.	26 46 40·66	82 10 35·33	
Chittagong Telegraph Office Compound s.	22 20 19·43	91 52 42·03	Fixed by special triangulation (*vide Tables A* and *B*).
Reduction to Longitude s. ...	+ 0·10	0·00	The Longitude s. is 10·1 feet north, and on the meridian of the Telegraph Office Compound s., 400 feet east of the main building, *vide* page (6).
Chittagong Longitude s.	22 20 19·53	91 52 43·03	
Jubbulpore Telegraph Office s.	23 10 9·24	79 59 29·79	Fixed by special triangulation (*vide Tables A* and *B*).
Reduction to Longitude s. ...	+ 0·86	0·00	The Longitude s. is 87·3 feet due north of the Telegraph Office s., *vide* page (6).
Jubbulpore Longitude s.	23 10 10·10	79 59 29·79	
Jalpaiguri s.	26 31 15·13	88 46 40·90	Fixed by special triangulation (*vide Tables A* and *B*).
Reduction to Longitude s. ...	+ 2·26	− 0·95	The Longitude s. is 228·1 feet north and 86·7 feet west of Jalpaiguri s., *vide* page (7).
Jalpaiguri Longitude s.	26 31 17·39	88 46 39·95	
Akyab Telegraph Office s.	20 8 13·79	92 56 16·57	Fixed by special triangulation (*vide Tables A* and *B*).
Reduction to Longitude s. ...	+ 0·50	0·00	The Longitude s. is 50·1 feet north, and on the meridian of the Telegraph Office s., in the Telegraph Office premises, and about 20 feet west of the centre of the main building, *vide* page (8).
Akyab Longitude s.	20 8 14·29	92 56 16·57	
Moulmein Mess House s.	16 29 56·59	97 40 8·05	Fixed by special triangulation (*vide Tables A* and *B*).
Reduction to Longitude s. ...	− 0·10	0·00	The Longitude s. is 10·0 feet south, and on the meridian of the Mess House s., and is about 300 feet from the east end of the main building of the premises of the old Artillery Barracks at Moulmein, *vide* page (8).
Moulmein Longitude s.	16 29 56·49	97 40 8·05	

* The geodetic elements of the Calcutta Latitude s. are taken from page 90—B. of the Calcutta Longitudinal Series, Synoptical Vol. XII.

TABLE C. DEDUCTION OF THE GEODETIC ELEMENTS OF THE LONGITUDE STATIONS—(*Continued*).

Name of Station	Latitude North	Longitude East of Greenwich	REMARKS
	° ′ ″	° ′ ″	
Promo Club s.	18 49 15·12	95 15 23·81	Fixed by special triangulation (*vide Tables A* and *B*).
Reduction to Longitude s. ...	0·00	+ 1·10	The Longitude s. is 105·3 feet due east of the Promo Club s. and about 120 feet south-east of the Promo Club and Reading room, *vide* page (9).
Promo Longitude s.	18 49 15·12	95 15 24·91	

NOTE.—The geodetic elements of Akyab, Chittagong, Promo and Moulmein are in the preliminary terms of the side Gojalia–Tulamura (about lat. 23° 10′) of the Eastern Frontier Series, to reduce which to final terms the following corrections are needed :—

	″		″
Gojalia, Latitude	− 1·08	Tulamura, Latitude	− 1·09
Longitude	+ 0·85	Longitude	+ 0·85
Azimuth	+ 6·19	Side	+ 0·0000001

in consequence of these differences small corrections will have to be applied hereafter to the elements given in this table.

TABLE D. COMPARISON OF GEODETIC AND ELECTRO-TELEGRAPHIC VALUES OF ARCS, AND DEDUCTION OF CIRCUIT ERRORS.

Name of Arc	Number of Arc	Geodetic Value	Electro-Telegraphic Value	Geodetic *minus* Electro-Telegraphic Value		Circuit Error
				In Time	In Arc	
		m *s*	*m* *s*	*s*	″	*s*
Fyzabad–Agra	(2)	16 28·417	16 27·926	+ 0·491	+ 7·365	
Jubbulpore–Agra	(1)	7 44·048	7 42·993	+ 1·055	+ 15·825	
Fyzabad–Jubbulpore	(3)	8 44·369	8 44·642	− 0·273	− 4·095	+ 0·291
Hazaribagh–Jubbulpore	(5)	21 40·748	21 40·912	− 0·164	− 2·460	
Fyzabad–Jubbulpore	(3)	8 44·369	8 44·642			
Hazaribagh–Fyzabad	(4)	12 56·378	12 55·714	+ 0·664	+ 9·960	+ 0·556
Jalpaiguri–Hazaribagh	(7)	13 27·929	13 27·078	+ 0·851	+ 12·765	
Calcutta–Hazaribagh	(6)	11 56·996	11 56·725	+ 0·271	+ 4·065	
Jalpaiguri–Calcutta	(8)	1 30·933	1 30·399	+ 0·534	+ 8·010	− 0·046
Jalpaiguri–Fyzabad	(9)	26 24·308	26 22·979	+ 1·329	+ 19·935	
Calcutta–Fyzabad	(13)	24 53·375	24 52·664	+ 0·711	+ 10·665	
Jalpaiguri–Calcutta	(10)	1 30·933	1 30·283	+ 0·650	+ 9·750	+ 0·032
Calcutta–Jubbulpore	(14)	33 37·744	33 37·662	+ 0·082	+ 1·230	
Calcutta–Fyzabad	(13)	24 53·375	24 52·664			
Fyzabad–Jubbulpore	(15)	8 44·369	8 44·929	− 0·560	− 8·400	+ 0·069
Jalpaiguri–Fyzabad	(9)	26 24·308	26 22·979			
Jalpaiguri–Hazaribagh	(7)	13 27·929	13 27·078			
Hazaribagh–Fyzabad	(4)	12 56·378	12 55·714	.....	.....	+ 0·187
Calcutta–Fyzabad	(13)	24 53·375	24 52·664			
Calcutta–Hazaribagh	(6)	11 56·996	11 56·725			
Hazaribagh–Fyzabad	(4)	12 56·378	12 55·714	.....	.....	+ 0·225

TABLE D. COMPARISON OF GEODETIC AND ELECTRO-TELEGRAPHIC VALUES OF ARCS, AND DEDUCTION OF CIRCUIT ERRORS—(*Continued*).

Name of Arc	Number of Arc	Geodetic Value	Electro-Telegraphic Value	Geodetic *minus* Electro-Telegraphic Value		Circuit Error
				In Time	In Arc	
		m *s*	*m* *s*	*s*	"	*s*
Calcutta–Jubbulpore	(14)	33 37·744	33 37·662			
Calcutta–Hazaribagh	(6)	11 56·996	11 56·725			
Hazaribagh–Jubbulpore	(5)	21 40·748	21 40·912	.....	.....	+ 0·025
Fyzabad–Agra	(16)	16 28·417	16 27·990	+ 0·427	+ 6·405	
Jubbulpore–Agra	(1)	7 44·048	7 42·993			
Fyzabad–Jubbulpore	(15)	8 44·369	8 44·929	.....	.....	+ 0·068
Chittagong–Calcutta	(12)	13 55·138	13 55·126	+ 0·012	+ 0·180	
Chittagong–Jalpaiguri	(11)	12 24·205	12 24·816	− 0·611	− 9·165	
Jalpaiguri–Calcutta	(10)	1 30·933	1 30·283	.....	.....	+ 0·027
Akyab–Calcutta	(17)	18 9·375	18 9·353	+ 0·022	+ 0·330	
Akyab–Chittagong	(18)	4 14·236	4 14·187	+ 0·049	+ 0·735	
Chittagong–Calcutta	(12)	13 55·138	13 55·126	.....	.....	+ 0·040
Prome–Chittagong	(19)	13 30·792	13 30·497	+ 0·295	+ 4·425	
Prome–Akyab	(20)	9 16·556	9 16·229	+ 0·327	+ 4·905	
Akyab–Chittagong	(18)	4 14·236	4 14·187	.....	.....	+ 0·081
Moulmein–Akyab	(21)	18 55·432	18 54·932	+ 0·500	+ 7·500	
Prome–Akyab	(20)	9 16·556	9 16·229			
Moulmein–Prome	(22)	9 38·876	9 38·667	+ 0·209	+ 3·135	+ 0·036

3.

On the Errors in ΔL caused by Armature-time and the Retardation of the Electric Current.

Let A_e, B_e, S_e, R_e represent the errors due to the armature-times of *A* pen, *B* pen, the sending relay, the receiving relay and Q_e the pen equation at the eastern station, and let the same letters with subscript w, represent the same things at the western station, and let ρ be the retardation of the current along the line wire, necessarily assumed to be the same in both directions. According to the system employed in the present volume four groups of stars are observed each night, in the first two of which the eastern clock graduates both chronographs, and in the last two the western clock. The errors appertaining to the clock and star signals respectively, in consequence of armature-time and retardation, are shown in the annexed tabular statement. The pen equation is supposed to remain constant during the observations.

Number of Group	Clock in use	Pen used by Clock at both Stations	Pen used by Observer at both Stations	Errors caused by Armature-time and Retardation			
				At East Station		At West Station	
				In Clock Signals	In Star Signals	In Clock Signals	In Star Signals
1st Group	E.	*A*	*B*	A_e	$B_e + Q_e$	$S_e + \rho + R_w + A_w$	$B_w + Q_w$
2nd „	E.	*B*	*A*	B_e	$A_e - Q_e$	$S_e + \rho + R_w + B_w$	$A_w - Q_w$
3rd „	W.	*A*	*B*	$S_w + \rho + R_e + A_e$	$B_e + Q_e$	A_w	$B_w + Q_w$
4th „	W.	*B*	*A*	$S_w + \rho + R_e + B_e$	$A_e - Q_e$	B_w	$A_w - Q_w$

The errors in the recorded times of transits will therefore be:—

Number of Group	At East Station	At West Station
1st Group	$B_e + Q_e - A_e$	$B_w + Q_w - S_e - \rho - R_w - A_w$
2nd ,,	$A_e - Q_e - B_e$	$A_w - Q_w - S_e - \rho - R_w - B_w$
3rd ,,	$B_e + Q_e - S_w - \rho - R_e - A_e$	$B_w + Q_w - A_w$
4th ,,	$A_e - Q_e - S_w - \rho - R_e - B_e$	$A_w - Q_w - B_w$

Hence the errors in the deduced longitude which is obtained by subtracting the time at the East Station from that at the West will be as follows:—

By 1st Group .. $A_e - A_w - B_e + B_w - S_e - \rho - R_w - Q_e + Q_w$

,, 2nd ,, .. $-A_e + A_w + B_e - B_w - S_e - \rho - R_w + Q_e - Q_w$

,, 3rd ,, .. $A_e - A_w - B_e + B_w + S_w + \rho + R_e - Q_e + Q_w$

,, 4th ,, .. $-A_e + A_w + B_e - B_w + S_w + \rho + R_e + Q_e - Q_w$

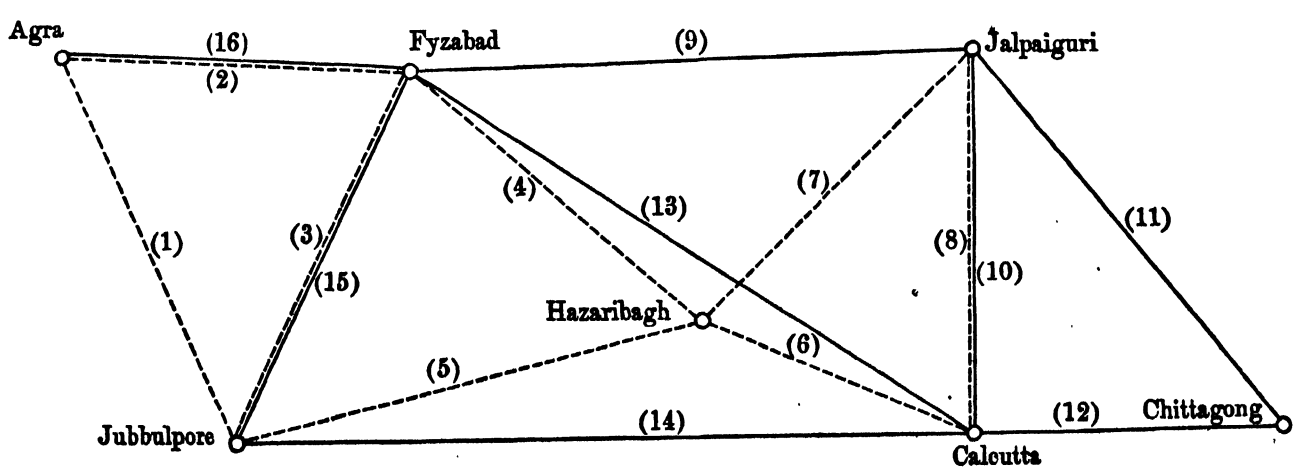
Hence it follows that if the first two groups only are taken the mean result is in error by $S_e + \rho + R_w$, and if the last two are taken, by $-S_w - \rho - R_e$.

The mean of the four will be in error by $\frac{1}{2}\left\{ S_e - S_w - R_e + R_w \right\}$. Now these four quantities are all positive, and the relays are so adjusted that each is very small; and as two are additive and two subtractive, the quantity within the brackets must be very minute indeed.

4.

On the Rejection of some doubtful Arcs of Season 1881–82.

The circuit errors resulting from the operations of the Season 1881–82 having proved abnormally large, and altogether in excess of what could be expected or accounted for, it was considered desirable to remeasure during the Season 1882–83 those arcs which on examination seemed to be most probably in fault, and also to add some more arcs to strengthen the figure around Hazaribagh, and to aid in localizing the errors alluded to above. With this view it was determined to revise the arcs Fyzabad–Agra, Fyzabad–Jubbulpore and Jalpaiguri–Calcutta, and to measure in addition the arcs Jalpaiguri–Fyzabad, Calcutta–Fyzabad, and Calcutta–Jubbulpore. In the diagram those arcs measured during 1882-83 are shown by firm lines, and those previously measured by dotted lines. The arcs have a number for reference attached to each; these numbers are the same as those in *Table D* and are adhered to throughout this volume. The arcs which have been twice measured have two numbers attached to each.



The following results of the measurements are taken from *Table D*, and repeated here for ready reference :—

		1881-82.		1882-83.	
		m s		m s	
Fyzabad–Agra	.. ..	(2) 16 27·926	..	(16) 16 27·990	
Fyzabad–Jubbulpore	.. ..	(3) 8 44·642	..	(15) 8 44·929	
Hazaribagh–Fyzabad	.. ..	(4) 12 55·714	..	..	
Hazaribagh–Jubbulpore	.. ..	(5) 21 40·912	..	..	
Calcutta–Hazaribagh	.. ..	(6) 11 56·725	..	..	
Jalpaiguri–Hazaribagh	.. ..	(7) 13 27·078	..	..	
Jalpaiguri–Calcutta	.. ..	(8) 1 30·399	..	(10) 1 30·283	
Jalpaiguri–Fyzabad	.. ..	..	..	(9) 26 22·979	
Calcutta–Fyzabad	.. ..	..	..	(13) 24 52·664	
Calcutta–Jubbulpore	.. ..	..	..	(14) 33 37·662	
Jubbulpore–Agra	(1) 7 42·993 previously measured.				

The circuit errors of 1881-82 are as follows :—

$$+ (2) - (1) - (3) = + 0^s\cdot 291,$$

$$+ (5) - (3) - (4) = + 0^s\cdot 556,$$

$$+ (7) - (6) - (8) = - 0^s\cdot 046,$$

and those of 1882-83 are as follows :—

$$+ (16) - (1) - (15) = + 0^s\cdot 068,$$

$$+ (14) - (13) - (15) = + 0^s\cdot 069,$$

$$+ (9) - (13) - (10) = + 0^s\cdot 032.$$

The problem before us is to ascertain from these data which arcs are most probably in fault, and to deduce some criterion by which to be guided in selecting those which may with advantage be rejected.

Of the arcs contained in the above groups (1) must of necessity be considered good, for it enters into a previously measured circuit which had, in common with all those observed during that season, closed satisfactorily, and moreover had been completed before any instrumental defects had begun to show themselves. The large errors of the first two circuits must therefore depend on (2), (3), (4) and (5). Now (2) has been measured twice with fairly accordant results, and therefore (3) stands convicted in the first circuit for two reasons. Firstly because of the large error appertaining to that circuit, to which it is probable that (1) and (2) do not materially contribute, and secondly and more convincingly, because it has been remeasured with a result $0^s\cdot 287$ in excess of the first value. The second measurement is more trustworthy than the first, having been executed after the telescope tubes had been strengthened and repaired. As a first step then this first value of (3) must be rejected entirely, and (15) substituted for it; and as the agreement between (2) and (16) is fairly good, the difference being only $0^s\cdot 064$, we shall be justified in taking the mean, *viz.*, $16^m\ 27^s\cdot 958$ as the best at present attainable. The circuit error then reduces to

$$+ (2)^* - (1) - (15) = + 0^s\cdot 036.$$

Now proceeding to the quadrilateral contained by (3), (9) (8) and (14) it will be noticed that (8) has been remeasured, and as the two values differ by $0^s\cdot 116$ we may take the mean, *viz.*, $1^m\ 30^s\cdot 341$ as the best approximation we can make to the true value for the purposes of the present discussion. Now taking this mean and the second value of (3), *i.e.*, (15) in the diagram, we form all the possible circuit equations within the quadrilateral, mixing together both years' work, (not the

* This is the mean of (2) and (16) but is written as (2) for convenience.

means of two or more measurements of one arc, be it observed, there being no arcs possessing more than one value, except those already considered). These circuit equations are as follows:—

$$
\begin{aligned}
+ (9) - (13) - (10)^* &= - 0''\cdot026,\\
+ (14) - (13) - (15) &= + 0''\cdot069,\\
+ (5) - (4) - (15) &= + 0''\cdot269,\\
+ (9) - (7) - (4) &= + 0''\cdot187,\\
+ (7) - (6) - (10)^* &= + 0''\cdot012,\\
+ (14) - (6) - (5) &= + 0''\cdot025,\\
+ (13) - (6) - (4) &= + 0''\cdot225.
\end{aligned}
$$

Here the evidence against (4) is overwhelming: all the other circuits except those which contain this arc close well, and all those including it give abnormally large errors. The introduction of this arc into any final adjustment of the figure would inevitably tend to dislocate it, and would cause the application of large corrections to sound work to force it into accordance with that of inferior accuracy, and it might therefore evidently be rejected without further examination: but as a farther justification for this course, two separate adjustments of the figure are here given under two different conditions, *viz*:—

(A). By retaining all the above arcs.

(B). By rejecting (4) and the equations containing it.

Let x_9, x_{13}, &c., represent corrections to be applied to the arcs (9), (13), &c., so as to reduce the circuit errors throughout the figure to zero. Then the condition (A) gives the following equations to be solved by the method of minimum squares:—

$$
\begin{aligned}
x_9 - x_{13} - x_{10} &= + 0''\cdot026,\\
x_{14} - x_{13} - x_{15} &= - 0''\cdot069,\\
x_5 - x_4 - x_{15} &= - 0''\cdot269,\\
x_9 - x_7 - x_4 &= - 0''\cdot187,\\
x_7 - x_6 - x_{10} &= - 0''\cdot012,\\
x_{14} - x_6 - x_5 &= - 0''\cdot025,\\
x_{13} - x_6 - x_4 &= - 0''\cdot225.
\end{aligned}
$$

The last two equations may be omitted from the computation, not being independent ones. The solution, the details of which it is unnecessary to give here, produces the following values:—

$$
\begin{aligned}
x_4 &= + 0''\cdot136, & x_7 &= + 0''\cdot031, & x_{13} &= - 0''\cdot036,\\
x_5 &= - 0''\cdot053, & x_9 &= - 0''\cdot021, & x_{14} &= - 0''\cdot026,\\
x_6 &= + 0''\cdot052, & x_{10} &= - 0''\cdot010, & x_{15} &= + 0''\cdot079.
\end{aligned}
$$

The condition (B), in which the equations involving (4) are rejected, gives the following group for solution:—

$$
\begin{aligned}
x_9 - x_{13} - x_{10} &= + 0''\cdot026, & x_7 - x_6 - x_{10} &= - 0''\cdot012,\\
x_{14} - x_{13} - x_{15} &= - 0''\cdot069, & x_{14} - x_6 - x_5 &= - 0''\cdot025,
\end{aligned}
$$

with these results,

$$
\begin{aligned}
x_5 &= - 0''\cdot008, & x_7 &= - 0''\cdot015, & x_{10} &= - 0''\cdot010, & x_{14} &= - 0''\cdot026,\\
x_6 &= + 0''\cdot007, & x_9 &= + 0''\cdot025, & x_{13} &= + 0''\cdot009, & x_{15} &= + 0''\cdot034.
\end{aligned}
$$

The weights of all arcs have been taken as unity, an assumption which is very approximately true, and one which at all events cannot vitiate a preliminary discussion of this kind to any appreciable extent. The marked diminution of the corrections under system (B) on the whole, and the large correction which falls to (4) in system (A), seem to be sufficient justification for adopting the former in which (4) is rejected. It will therefore be advisable when the final adjustment of the whole longitude work is taken in hand, that the mean of (2) and (16) should be taken for the true value of Fyzabad–Agra, and the mean of (8) and (10) for that of Jalpaiguri–Calcutta, and also that (3) and (4) should be entirely rejected.

---

* This is the mean of (8) and (10) but is written as (10) for convenience.

5.

On the probable Causes of the Errors of Arc-measurements, and on the Nature of the Defects in the Transit Instruments which might produce them.

When the extreme accuracy with which the exact instant of a star's transit over the wires in the telescopes can be recorded by electricity is considered (the probable error for a single wire being only $0^s{\cdot}045$) it appears at first sight rather strange that the measurement of arcs of longitude should be subject to such comparatively large errors as are shown to exist by the formation of the so-called "circuit equations."

These circuit equations are formed by proceeding from any one selected station along measured arcs (generally three in number) and returning to the initial station, when of course the sum of these arcs taken with their proper signs should, if the observations are perfect, equate to zero. The difference from zero is called "circuit error." Now there are at least eighteen possible sources of error in the measurement of an arc of longitude, *viz.*:—

1. Errors in estimating the time of a star passing a wire,
2. Personal equation,
3. Variation in personal equation,
4. Personality in measuring collimation and level,
5. Personality in reading chronograph sheets,
6. Retardation of electric currents,
7. Armature-time in pens and relays,
8. Irregular chronograph rate,
9. Pen equation,
10. Star places,
11. Clock rate,
12. Instability of pillars,
13. Wire intervals,
14. Values of micrometer screws,
15. Collimation,
16. Level,
17. Deviation from meridian,
18. Irregular flexure and instability of adjustments.

Most of these can have little or no effect on the result and may be dismissed at once. The first is utterly insignificant as the probable error owing to this cause is only about $0^s{\cdot}012$ for each star; and each arc depends on the transits of about 200 stars at either station. Personal equation is determined by the usual method of divided transits several times during the season, the probable error of the result on each night being very small. Variation in this equation cannot be entirely guarded against, and is always more or less a source of anxiety. For this there seems to be no remedy, the only palliation of the evil is to determine the equation as often as can conveniently be done, and so to arrange the arcs that each observer is as often at the eastern station as at the western: this precaution has never been lost sight of. Personality in measuring collimation and level has been proved to be rejectaneous by direct measurement, *i.e.*, by both observers using the same telescope and collimators under the same circumstances. Personality in reading off chronograph sheets is guarded against by employing the same person to read off the sheets of a whole arc. Retardation of electric currents, and armature-time in pens and relays are shown in the discussion in the appendix to have a probably inappreciable effect. The influence of irregular chronograph rate is obviated by the method adopted for reading off the sheets. This is so arranged that when the length of the seconds, as graphically recorded on the chronograph sheets, exceeds or falls short of the normal length by a certain fixed quantity, the pen equation (which is the quantity that would be most affected by any such irregularity) is applied graphically before reading off; in other cases the pen equation is applied numerically to the mean of the wires. The arrangement of the groups is such that this equation is alternately positive and negative, and hence any small uncertainty in its amount is cancelled in the mean.

Any effect of erroneous star places is eliminated by using the same stars at both stations; in fact only approximate places are necessary, the sole purpose for which they are required at all being for identification of the stars and for the calculation of constants for correcting for collimation, level and deviation. Clock rate is determined from a great number of stars each night both north and south of the zenith; moreover the rate of each clock is determined independently by both

observers; and as it is only required during the short interval (rarely exceeding 20 minutes and usually much less) of a star passing from the meridian of one station to that of the other, we may consider that the correction applied on this account can only contribute in an inappreciable degree to the errors we are now considering. Instability of pillars would be shown up by fluctuating level corrections, irregular clock rates, great differences between the values of the arc as determined by different stars, and other irregularities of which there is hardly any trace. Wire intervals are determined with such accuracy that any wires might be used indiscriminately; but even if this were not so, the precaution of using the same in both positions of the telescopes, *viz.*, *I. P. E.* and *I. P. W.*, cancels all errors arising from this source. A reference to *Tables I.* to *Q* in which an abstract of the measurements of the wire intervals is given, will show the amount of confidence to be placed in them. The same remarks apply to the value of the micrometer screws of the transit telescopes and the south collimators. They are both determined with great care, and the system adopted of placing the cross of the south collimator alternately on the east and west sides of that of the north collimator ensures, in great part at least, cancelment of small errors arising from incorrect micrometer screw values. The causes of our circuit errors then are apparently narrowed down to the three instrumental adjustments—collimation, level and deviation—and want of stability therein: a careful analysis of the observations of transits for longitude as well as of other experiments, shows that we have here at all events a very probable source of error. Let it be remembered that during the process of determining collimation, the telescope is pointed horizontally first towards the south and then towards the north, and that during the leveling by reflection it is pointed towards the nadir. Now although these processes are accurate enough in themselves, we have no means of knowing that the line of collimation remains immoveable even during these pointings, much less can we affirm it to keep so when the telescope is pointed to the zenith, near to which most of the observations for longitude are made. It is difficult to imagine an instrument of workmanship so perfect, as not to be subject to some amount of irregular flexure under such circumstances; and what seems really to occur is that in *both* telescopes in *both* positions, *I. P. E.* and *I. P. W.*, owing to some instability or flexure, the seat of which is at present unknown, the sight line after all known corrections are made does not describe the true astronomical meridian; by which term is here meant the great circle passing through the pole and the point where the plumb line produced cuts the celestial sphere. The astronomical meridian will probably, owing to local attraction, not coincide with the true meridian which may be defined as the intersection of the plane passing through the observer's position and the earth's axis with the celestial sphere. The astronomical meridian is in fact the great circle that the sight line of a transit instrument, perfect in all its adjustments and subject only to local attraction, should describe on the celestial sphere. The object of the evidence collected in the following tables is to endeavour to ascertain as far as possible, firstly, the amount of the divergence from the true astronomical meridian in both positions of the pivots in each of the telescopes, and secondly, the cause that produces it.

Now as we at present know nothing about the nature of this divergence, whether owing to dislevelment, faulty collimation or deviation, we may assume it to be the same for all stars observed, of whatever declination they are; and this assumption is not likely to lead us far astray in an investigation of this kind, especially as the stars observed are for the most part within a few degrees of the zenith, as many being north of that point as south. This latter condition also makes it probable that azimuthal deviation from the meridian is little, if at all, concerned in producing these errors, as its effect on north and south stars enters with opposite signs and tends to cancel. Dislevelment and unstable collimation are therefore probably the chief causes.

Let then the symbols x_e and x_w represent corrections to be added to times of transit observed by Telescope No. 1 *I. P. E.* and *I. P. W.*, respectively, and y_e and y_w the same for Telescope No. 2. Now although the observations ordinarily taken for a single arc of longitude will not enable us to separate x_e and y_e from x_w and y_w, still we can by analyzing our results obtain a number of fallible equations involving several different combinations of these four unknown quantities, their coefficients being unity in all cases; but as soon as we advance from a single arc to a circuit of three arcs the separation becomes possible. These fallible equations involving the four unknown quantities naturally arrange themselves in four groups. The first is deduced from the difference of clock rates given by the two instruments, the second from the discrepancies in the measurements of single arcs obtained by different pivot combinations, the third from comparison of circuit errors generated by different pivot positions, and the fourth from experiments especially devoted to the purpose, apart from the longitude observations.

As the forms of these equations vary from year to year according to the system employed in changing pivots, the results of each year are taken in hand separately. In the Season 1881-82 one change only was made during each arc, and both telescopes were reversed simultaneously, when half the number of nights had been completed. On the arcs (2), (4), (6) and (8), *vide* diagram on page (22), the pivots were dissimilarly placed, *i.e.*, when Telescope No. 1 was *I. P. E.* Telescope No. 2 was *I. P. W.* and *vice versâ*. On the arcs (3), (5) and (7), the pivots were similarly situated. This season consequently furnishes very few equations connecting x_e, x_w, y_e and y_w, as their number depends on the number of pivot changes. This is however of little consequence as the instability of the line of collimation was obviously so great that no trustworthy evidence can be extracted from the figures. In *Table E* 1. r_1, r_2, r_3, &c., represent the true clock rate between those two nights of observation which include the simultaneous change of pivots. Now taking the case of one telescope,

(say No. 1) if T be the true time of transit on the first of the two nights (between which the change of pivots from *I. P. E.* to *I. P. W.* is made) the apparent clock time of transit is $T - x_e$. Also if the true clock rate correction, supposed unknown, be r, the apparent clock time of transit on the second night will be $T - r - x_w$ (neglecting 24 hours). The difference of these two apparent clock times will be the rate correction as deduced from the observations, whence we have the equation:—

$$\text{Apparent clock rate correction} = T - x_e - T + r + x_w = r - x_e + x_w.$$

Each telescope gives an equation of similar form to this for each clock. Subtracting the equations for Telescope No. 2 from those for Telescope No. 1, the quantities r, r_2, r_3, &c., (the true clock rates) disappear, and we obtain a value of $(y_e - y_w) + (x_e - x_w)$ when the pivots are dissimilarly placed, and of $(y_e - y_w) - (x_e - x_w)$ when similarly placed. The formation of these equations is given in detail in *Table E* 1 for Season 1881-82. The first column contains the names of the terminal stations of each arc with the number of the telescope used thereat; the second shows the two dates between which the pivot change was made, and whether it was from E. to W. or W. to E.; the third contains the symbolical apparent clock rate correction for Telescope No. 1, which is the same of course for both clocks; the fourth and fifth give the corresponding numerical values as deduced from the observations; the sixth, seventh, eighth and ninth columns have the same relation to Telescope No. 2 that the second, third, fourth and fifth have to Telescope No. 1; and the tenth and eleventh give the resulting numerical values of $(y_e - y_w) + (x_e - x_w)$ and $(y_e - y_w) - (x_e - x_w)$ as explained above.

Table E 2 gives the formation of the residuals as derived from arc-measurements.

Let ΔL represent the true value of any arc. Then if this arc has been deduced by Telescope No. 1 *I. P. E.* at the eastern station, and No. 2 *I. P. E.* at the western station, its computed value will be not ΔL but $\Delta L - y_e + x_e$. During the Season 1881-82 therefore there will be two equations of this form for each arc, one resulting from the observations before change of pivots, and one from those after. By equating the two proper symbolical expressions for any particular measurements to their corresponding numerical values, and subtracting one from the other, ΔL disappears and leaves a numerical value for $(y_e - y_w) \pm (x_e - x_w)$ as before. In this table the first column is similar to that of *Table E* 1; the second column gives the dates of observation; the third and fourth specify the pivot positions for the two telescopes; the fifth is the symbolical, and the sixth the numerical value of each measurement: the quantities in the seventh and eighth columns are obtained from those in the preceding one by simple subtraction.

Table E 3 referring to the next Season, 1882-83, is almost exactly similar to *Table E* 2, except that as there are many more pivot changes, it is somewhat more extended. The symbolical equations after the first two nights of each arc, being mere repetitions, are not inserted, and as the pivots were similarly placed throughout, no values of $(y_e - y_w) + (x_e - x_w)$ can be obtained.

Table E 4 differs from *Table E* 2 in the same way as *Table E* 3 differs from *Table E* 1, and calls for no further remark.

Tables E 5, *E* 6 and *E* 7 are very similar to *Tables E* 3 and *E* 4. They only differ slightly in arrangement, owing to the greater number of pivot changes which include both similar and dissimilar positions. These were so arranged that one telescope had its pivots reversed half way through each night's work, and the other between each two nights' work. The former is therefore assumed to give true clock rate from one night to another, whilst the rate given by the other is affected by change of pivot. The practical result of this is valuable as it enables us to obtain $(y_e - y_w)$ and $(x_e - x_w)$ separately, as will be seen from an inspection of *Table E* 5. The arcs given in *Tables E* 6 and *E* 7 were measured with Telescope No 1 at the eastern and western station, respectively, and as the symbolical expressions are different for the two cases it was convenient to keep them in separate tables.

In *Table E* 8 the equations dependent on the errors in the circuits are formed. The symbols ΔL_1, ΔL_2, ΔL_3 represent the true values of the three arcs forming the circuit, ΔL_1 always being the arc subtending the station of middle longitude, and ΔL_2 and ΔL_3 those including that station. Hence we have the equation $\Delta L_1 - \Delta L_2 - \Delta L_3 = 0$. The first column contains the names of the stations of the three arcs forming the circuit, with the number of the telescope used at each; the second shows the month and year in which the arc was measured; the third and fifth columns give the symbolical values of each measurement before and after every change of pivots; and the fourth and sixth furnish the corresponding numerical values. These numerical values are the means of each pivot position for the whole arc. The algebraic addition of the three lines appertaining to each arc in the fourth and sixth columns, gives the numerical values corresponding to the symbols in the last four columns.

Table E 9 contains the results of a few experiments that were made during the Season 1883-84 with a view to throwing some further light on the pivot irregularities. Each telescope was tested independently, the principle underlying

the test being as follows :—A certain number of stars were observed on one night *I. P. E.*, and then a few *I. P. W.*; the next night the first group was observed *I. P. W.*, and the second *I. P. E.* The difference of the two clock rates thus obtained gives twice the difference of pivot errors for positions *I. P. E.* and *I. P. W.* There were variations in details, but the same principle prevailed throughout. It is evident that in the particular case given above, if r be the true rate-correction as before, then the apparent rate-correction for the first group will be $r - x_e + x_w$, and for the second $r - x_w + x_e$. The difference of the two will be $2\ (x_e - x_w)$ which must be equated to the difference of the numerical values. The deduced values of $(x_e - x_w)$ and of $(y_e - y_w)$ are given in the last two columns of the table.

Table E 10 furnishes for each arc a synopsis of all the equations involving the four unknown quantities, collected from the data for the Seasons 1882-83 and 1883-84: and in the last four columns of the table are given the values of x_e, x_w, y_e and y_w, computed from those equations.

In the first eight arcs there are only three equations to each, from which to determine the four unknown quantities, and moreover one of these three is not independent; the number of real equations is therefore only two, but the group is of the following form in every case :—

$$\begin{aligned} y_e - y_w - x_e + x_w &= a, \\ y_e - x_e \qquad\quad &= b, \\ y_w - x_w \qquad\quad &= c. \end{aligned}$$

Put

$$y_e - x_e = k, \quad \text{and } y_w - x_w = l,$$

then we have the three fallible equations :—

$$\begin{aligned} k - l &= a, \\ k \qquad &= b, \\ l \qquad &= c. \end{aligned}$$

Let v_1, v_2 and v_3 be three unknown quantities such that—

$$\begin{aligned} k - l &= a + v_1, \\ k \qquad &= b + v_2, \\ l \qquad &= c + v_3, \end{aligned}$$

then this group of equations must be solved with the condition that $v_1^2 + v_2^2 + v_3^2$ is to be a minimum, *i.e.*,

$$(k - l - a)^2 + (k - b)^2 + (l - c)^2 \text{ is to be a minimum.}$$

Differentiating first with respect to k and then with respect to l :—

$$\begin{aligned} k - l - a + k - b &= 0, \\ -k + l + a + l - c &= 0, \end{aligned}$$

whence

$$\begin{aligned} 2k - l &= a + b, \\ -k + 2l &= c - a, \end{aligned}$$

and

$$k = \frac{a + 2b + c}{3},$$

$$l = \frac{-a + b + 2c}{3}.$$

Re-introducing the original values of k and l

$$y_e - x_e = \frac{a + 2b + c}{3},$$

$$y_w - x_w = \frac{-a + b + 2c}{3},$$

from which equations we must in the absence of any other conditions assume that

$$y_e = -x_e = \frac{a + 2b + c}{6},$$

$$y_w = -x_w = \frac{-a + b + 2c}{6},$$

by which formulæ the numbers in the last four columns of *Table E* 10 for the first eight arcs were obtained.

The equations furnished by the last six arcs are somewhat more complicated. Numerical values of the differences of all the four unknown quantities taken two and two are available. Their form is as follows:—

$$\begin{aligned} y_e - x_e &= b \quad \ldots \quad \text{(I)} \\ y_w - x_w &= c \quad \ldots \quad \text{(II)} \\ y_e - y_w &= d \quad \ldots \quad \text{(III)} \\ x_e - x_w &= e \quad \ldots \quad \text{(IV)} \\ y_e - x_w &= f \quad \ldots \quad \text{(V)} \\ y_w - x_e &= g \quad \ldots \quad \text{(VI)} \end{aligned}$$

Now it is obvious that these are not all independent equations, for (IV) may be obtained by subtracting (I) from the sum of (II) and (III); (V) is the sum of (II) and (III), and (VI) can be got by subtracting (III) from (I), as far at least as the left hand members are concerned; but as the equations result from fallible measures, the right hand members thus obtained will not be identical with those in (IV), (V) and (VI), and consequently the first step in the solution of the equations is to apply a system of corrections to the right-hand members, which must fulfil two conditions, *viz.*, that all contradiction among the equations shall be removed, and that the sum of the squares of the corrections shall be a minimum. Symbolize these corrections by the first six letters of the Greek alphabet so that

$$\begin{aligned} y_e - x_e &= b + \alpha, \\ y_w - x_w &= c + \beta, \\ y_e - y_w &= d + \gamma, \\ x_e - x_w &= e + \delta, \\ y_e - x_w &= f + \epsilon, \\ y_w - x_e &= g + \zeta. \end{aligned}$$

Then the two conditions alluded to furnish the following equations:—

$$\begin{aligned} e + \delta &= c + d - b + \beta + \gamma - \alpha, \\ f + \epsilon &= c + d + \beta + \gamma, \\ g + \zeta &= b - d + \alpha - \gamma, \end{aligned}$$

and

$$\alpha^2 + \beta^2 + \gamma^2 + \delta^2 + \epsilon^2 + \zeta^2 \text{ to be a minimum.}$$

By the ordinary process of minimum squares, the details of which it is unnecessary to give here, these conditions are found to be satisfied by the following values:—

$$\begin{aligned} \alpha &= \tfrac{1}{4}(-2b + d - e + f + g), \\ \beta &= \tfrac{1}{4}(-2c - d + e + f + g), \\ \gamma &= \tfrac{1}{4}(-2d + b - c + f - g), \\ \delta &= \tfrac{1}{4}(-2e - b + c + f - g), \\ \epsilon &= \tfrac{1}{4}(-2f + b + c + d + e), \\ \zeta &= \tfrac{1}{4}(-2g + b + c - d - e), \end{aligned}$$

and applying these corrections to the original group of equations we have:—

$$\begin{aligned} y_e - x_e &= \tfrac{1}{4}(2b + d - e + f + g), \\ y_w - x_w &= \tfrac{1}{4}(2c - d + e + f + g), \\ y_e - y_w &= \tfrac{1}{4}(2d + b - c + f - g), \\ x_e - x_w &= \tfrac{1}{4}(2e - b + c + f - g), \\ y_e - x_w &= \tfrac{1}{4}(2f + b + c + d + e), \\ y_w - x_e &= \tfrac{1}{4}(2g + b + c - d - e), \end{aligned}$$

in this group any three equations can be obtained from the remaining three.

Let us take the first, third and fifth, and for the sake of simplicity write the right-hand members as B, D and F so that

$$y_e - x_e = B,$$
$$y_e - y_w = D,$$
$$y_e - x_w = F,$$

these three must be solved under the condition that the sum of the squares of the corrections y_e, y_w, x_e and x_w is to be a minimum. The following will be found to be the required values :—

$$y_e = \tfrac{1}{4}(\ \ B + D + F),$$
$$x_e = \tfrac{1}{4}(-3B + D + F),$$
$$x_w = \tfrac{1}{4}(\ \ B + D - 3F),$$
$$y_w = \tfrac{1}{4}(\ \ B - 3D + F),$$

and substituting for B, D and F their original values we have finally :—

$$y_e = \tfrac{1}{4}(\ \ b + d + f),$$
$$x_e = \tfrac{1}{4}(-b + e - g),$$
$$x_w = \tfrac{1}{4}(-c - e - f),$$
$$y_w = \tfrac{1}{4}(\ \ c - d + g),$$

by means of which formulæ the numbers in the last four columns of *Table E* 10 for the last six arcs have been obtained.

Table E 11 shows the values of the arcs after the corrections worked out in the preceding table have been applied to them It will be noticed how very much the discordances in the measurements depending on the pivot positions are smoothed down, while in some cases there results also a very appreciable change in the final mean value of the arc, amounting in one case to as much as + 0ˢ·079.

Table E 12 shows the effect on the circuit errors by employing the corrected arcs instead of the original values. In every case the error is diminished, and in most instances notably so, the average error being in the former case 0ˢ·050 and in the latter 0ˢ·033.

The above discussion seems to show very clearly that the quantities x_e, x_w, y_e and y_w do really exist, and have a sensibly constant magnitude throughout the whole of the seasons 1882-83 and 1883-84. For the former season the average values are :—

$x_e = +\ 0^s{\cdot}064 \pm {\cdot}016$; $x_w = -\ 0^s{\cdot}074 \pm {\cdot}009$; $y_e = -\ 0^s{\cdot}074 \pm {\cdot}016$; $y_w = +\ 0^s{\cdot}064 \pm {\cdot}009$;

and for the latter season :—

$x_e = +\ 0^s{\cdot}013 \pm {\cdot}006$; $x_w = -\ 0^s{\cdot}062 \pm {\cdot}005$; $y_e = -\ 0^s{\cdot}097 \pm {\cdot}012$; $y_w = +\ 0^s{\cdot}146 \pm {\cdot}013$.

The causes of such irregularities as these are very obscure : if $x_e = -x_w$, and $y_e = -y_w$ they might be accounted for in various ways, such as want of truth in the cylindrical figure of the pivots, and flexure of the axis or telescope tube, but the same part of the pivots comes into play in both positions of the telescope, only that that part which is used in intersecting the south collimator when *I. P. E.* is used in intersecting the north collimator when *I. P. W.* and *vice versâ*, so that errors from this cause would enter with equal magnitudes and contrary signs according to the pivot position. In leveling and in observing transits near the zenith the pivots change Ys when the telescope is reversed but the same parts of them rest on the bearings. Inequality in the sizes of the pivots or in the angle of the Ys would have no effect as the process of leveling by reflection from mercury applies to the axis of the pivots and not to their upper surfaces as in leveling with the spirit-level. The quantities x_e, x_w, y_e and y_w, though in reality very small, are yet sufficiently large with exception of the first to be very visible in the field of the telescope, the minimum that can be clearly discerned being about ·45 of a second of arc (or ·03 of time).

TABLE E 1. FORMATION OF RESIDUALS FROM CLOCK RATES, SEASON 1881-82.

Station observed at and Telescope used	By Telescope No. 1				By Telescope No. 2				$(y_e - y_w) + (x_e - x_w)$	$(y_e - y_w) - (x_e - x_w)$
	Dates from which Rate is obtained, and Pivot Position	Clock Rate Correction			Dates from which Rate is obtained, and Pivot Position	Clock Rate Correction				
		Symbolical	E Clock	W Clock		Symbolical	E Clock	W Clock		
			s	s			s	s	s	s
(E) Fyzabad Tel. 1	Nov. 29, *I.P.E.* to	$r_1 - x_e + x_w$	+ 9·483	− 4·013	Nov. 29, *I.P.W.* to	$r_1 - y_w + y_e$	+ 8·990	− 4·770	−0·493	
(W) Agra „ 2	Nov. 30, *I.P.W.*				Nov. 30, *I.P.E.*				−0·757	
(E) Fyzabad „ 1	Dec. 14, *I.P.W.* to	$r_2 - x_w + x_e$	+23·052	+17·259	Dec. 14, *I.P.W.* to	$r_2 - y_w + y_e$	+23·378	+17·649		+0·326
(W) Jubbulpore „ 2	Dec. 16, *I.P.E.*				Dec. 16, *I.P.E.*					+0·390
(E) Hazaribagh „ 2	Jan. 6, *I.P.W.* to	$r_3 - x_w + x_e$	+ 5·060	+11·385	Jan. 6, *I.P.E.* to	$r_3 - y_e + y_w$	+ 4·820	+11·341	+0·240	
(W) Fyzabad „ 1	Jan. 7, *I.P.E.*				Jan. 7, *I.P.W.*				+0·044	
(E) Hazaribagh „ 2	Jan. 21, *I.P.W.* to	$r_4 - x_w + x_e$	+15·424	+57·626	Jan. 21, *I.P.W.* to	$r_4 - y_w + y_e$	+15·401	+57·455		−0·023
(W) Jubbulpore „ 1	Jan. 24, *I.P.E.*				Jan. 24, *I.P.E.*					−0·171
(E) Calcutta „ 1	Feb. 10, *I.P.W.* to	$r_5 - x_w + x_e$	+43·001	+17·013	Feb. 10, *I.P.E.* to	$r_5 - y_e + y_w$	+43·078	+17·171	−0·077	
(W) Hazaribagh „ 2	Feb. 13, *I.P.E.*				Feb. 13, *I.P.W.*				−0·158	
(E) Jalpaiguri „ 1	Mar. 2, *I.P.W.* to	$r_6 - x_w + x_e$	+12·088	+ 6·270	Mar. 2, *I.P.W.* to	$r_6 - y_w + y_e$	+12·100	+ 6·129		+0·012
(W) Hazaribagh „ 2	Mar. 3, *I.P.E.*				Mar. 3, *I.P.E.*					−0·141

TABLE E 2. FORMATION OF RESIDUALS FROM ARC-MEASUREMENTS, SEASON 1881-82.

Station observed at and Telescope used	Date of Observation	Pivot Position		Value of Arc-Measurement		$(y_e - y_w) + (x_e - x_w)$	$(y_e - y_w) - (x_e - x_w)$
		Telescope No. 1	Telescope No. 2	Symbolical	Numerical		
					m s	s	s
(E) Fyzabad Tel. 1	Nov. 25, 28, 29, 30, Dec. 1, 2	*I. P. E.*	*I. P. W.*	$\Delta L_1 - y_w + x_e$	16 27·657	−0·525	
(W) Agra „ 2		*I. P. W.*	*I. P. E.*	$\Delta L_1 - y_e + x_w$	28·182		
(E) Fyzabad „ 1	Dec. 12, 13, 14, 16, 19, 20	*I. P. W.*	*I. P. W.*	$\Delta L_2 - y_w + x_w$	8 44·737		+0·204
(W) Jubbulpore „ 2		*I. P. E.*	*I. P. E.*	$\Delta L_2 - y_e + x_e$	44·533		
(E) Hazaribagh „ 2	Jan. 4, 5, 6, 7, 9, 10	*I. P. W.*	*I. P. E.*	$\Delta L_3 - x_w + y_e$	12 55·711	−0·027	
(W) Fyzabad „ 1		*I. P. E.*	*I. P. W.*	$\Delta L_3 - x_e + y_w$	55·738		
(E) Hazaribagh „ 2	Jan. 19, 20, 21, 24, 25, 26	*I. P. W.*	*I. P. W.*	$\Delta L_4 - x_w + y_w$	21 40·883		+0·061
(W) Jubbulpore „ 1		*I. P. E.*	*I. P. E.*	$\Delta L_4 - x_e + y_e$	40·944		
(E) Calcutta „ 1	Feb. 8, 9, 10, 13, 14, 16	*I. P. W.*	*I. P. E.*	$\Delta L_5 - y_e + x_w$	11 56·796	−0·148	
(W) Hazaribagh „ 2		*I. P. E.*	*I. P. W.*	$\Delta L_5 - y_w + x_e$	56·648		
(E) Jalpaiguri „ 1	Feb. 25, Mar. 1, 2, 3, 4, 5	*I. P. W.*	*I. P. W.*	$\Delta L_6 - y_w + x_w$	13 26·986		−0·184
(W) Hazaribagh „ 2		*I. P. E.*	*I. P. E.*	$\Delta L_6 - y_e + x_e$	27·170		
(E) Jalpaiguri „ 1	Mar. 17, 19, 22, April 4, 5, 6	*I. P. E.*	*I. P. W.*	$\Delta L_7 - y_w + x_e$	1 30·196	−0·348	
(W) Calcutta „ 2		*I. P. W.*	*I. P. E.*	$\Delta L_7 - y_e + x_w$	30·544		

TABLE E 3. FORMATION OF RESIDUALS FROM CLOCK RATES, SEASON 1882-83.

Station observed at and Telescope used	Date of Observation	Pivot Positions for both Telescopes	By Telescope No. 1 — Clock Rate Correction			By Telescope No. 2 — Clock Rate Correction			$(y_e - y_w) - (x_e - x_w)$	
			Symbolical	E Clock	W Clock	Symbolical	E Clock	W Clock	by E Clock	by W Clock
				s	s		s	s	s	s
	Dec. 2	*I. P. E.*								
	„ 4	*I. P. W.*	$r - x_e + x_w$	+ 1·34	+ 5·72	$r - y_e + y_w$	+ 1·85	+ 6·22	−0·51	−0·50
	„ 5	*I. P. E.*	$r - x_w + x_e$	+ 1·16	+ 3·07	$r - y_w + y_e$	+ 0·86	+ 2·78	−0·30	−0·29
(E) Jalpaiguri Tel. 2	„ 6	*I. P. W.*		+ 1·40	+ 3·16		+ 1·52	+ 3·32	−0·12	−0·16
(W) Fyzabad „ 1	„ 7	*I. P. E.*		+ 1·19	+ 3·13		+ 1·14	+ 3·06	−0·05	−0·07
	„ 8	*I. P. W.*		+ 1·61	+ 3·48		+ 1·66	+ 3·57	−0·05	−0·09
	„ 9	*I. P. E.*		+ 1·20	+ 3·24		+ 1·18	+ 3·12	−0·02	−0·12
	„ 11	*I. P. W.*		+ 2·95	+ 6·91		+ 3·04	+ 6·95	−0·09	−0·04
	Dec. 21	*I. P. W.*								
	„ 26	*I. P. E.*	$r - x_w + x_e$	+12·76	+10·69	$r - y_w + y_e$	+12·16	+10·06	−0·60	−0·63
(E) Jalpaiguri Tel. 2	„ 27	*I. P. W.*	$r - x_e + x_w$	+ 2·73	+ 1·95	$r - y_e + y_w$	+ 3·25	+ 2·58	−0·52	−0·63
(W) Calcutta „ 1	„ 28	*I. P. E.*		+ 3·05	+ 2·47		+ 2·60	+ 1·98	−0·45	−0·49
	„ 29	*I. P. W.*		+ 2·63	+ 2·11		+ 3·04	+ 2·59	−0·41	−0·48
	Jan. 2	*I. P. E.*		+12·90	+ 9·89		+12·41	+ 9·34	−0·49	−0·55
	Jan. 12	*I. P. E.*								
	„ 13	*I. P. W.*	$r - x_e + x_w$	+ 1·17	+ 3·78	$r - y_e + y_w$	+ 1·64	+ 4·18	−0·47	−0·40
(E) Chittagong Tel. 1	„ 14	*I. P. E.*	$r - x_w + x_e$	+ 1·51	+ 4·16	$r - y_w + y_e$	+ 1·18	+ 3·89	−0·33	−0·27
(W) Jalpaiguri „ 2	„ 15	*I. P. W.*		+ 1·54	+ 4·08		+ 1·84	+ 4·25	−0·30	−0·17
	„ 17	*I. P. E.*		+ 3·40	+ 8·32		+ 3·12	+ 8·09	−0·28	−0·23
	„ 18	*I. P. W.*		+ 1·68	+ 4·02		+ 2·12	+ 4·45	−0·44	−0·43
	Jan. 23	*I. P. W.*								
	„ 24	*I. P. E.*	$r - x_w + x_e$	+ 2·00	− 1·31	$r - y_w + y_e$	+ 1·85	− 1·57	−0·15	−0·26
	„ 25	*I. P. W.*	$r - x_e + x_w$	+ 2·20	− 1·44	$r - y_e + y_w$	+ 2·32	− 1·33	−0·12	−0·11
(E) Chittagong Tel. 1	„ 26	*I. P. E.*		+ 2·54	− 1·01		+ 2·08	− 1·39	−0·46	−0·38
(W) Calcutta „ 2	„ 28	*I. P. W.*		+ 4·63	− 1·81		+ 5·10	− 1·38	−0·47	−0·43
	„ 29	*I. P. E.*		+ 2·79	+ 0·22		+ 2·40	− 0·19	−0·39	−0·41
	„ 30	*I. P. W.*		+ 2·82	+ 0·16		+ 3·06	+ 0·39	−0·24	−0·23
	Feb. 8	*I. P. E.*								
	„ 9	*I. P. W.*	$r - x_e + x_w$	+ 0·94	...	$r - y_e + y_w$	+ 1·22	− 3·94	−0·28	...
(E) Calcutta Tel. 1	„ 10	*I. P. E.*	$r - x_w + x_e$	+ 1·12	...	$r - y_w + y_e$	+ 0·90	− 4·10	−0·22	...
(W) Fyzabad „ 2	„ 11	*I. P. W.*		+ 0·60	− 3·92		+ 0·84	− 3·81	−0·24	−0·11
	„ 13	*I. P. E.*		+ 0·79	− 6·71		+ 0·60	− 6·76	−0·19	−0·05
	„ 14	*I. P. W.*		+ 0·27	− 3·34		+ 0·45	− 3·21	−0·18	−0·13
	Feb. 22	*I. P. W.*								
	„ 23	*I. P. E.*	$r - x_w + x_e$	+ 1·01	+ 4·21	$r - y_w + y_e$	+ 0·80	+ 4·03	−0·21	−0·18
(E) Calcutta Tel. 1	„ 24	*I. P. W.*	$r - x_e + x_w$	+ 1·12	+ 4·08	$r - y_e + y_w$	+ 1·26	+ 4·25	−0·14	−0·17
(W) Jubbulpore „ 2	„ 28	*I. P. E.*		+ 5·56	...		+ 5·42	...	−0·14	...
	Mar. 2	*I. P. W.*		+ 2·33	+ 8·44		+ 2·46	+ 8·69	−0·13	−0·25
	„ 3	*I. P. E.*		+ 1·11	+ 4·33		+ 0·75	+ 4·01	−0·36	−0·32

TABLE E 3. FORMATION OF RESIDUALS FROM CLOCK RATES, SEASON 1882-83—(*Continued*).

Station observed at and Telescope used	Date of Observation	Pivot Positions for both Telescopes	By Telescope No. 1 — Clock Rate Correction			By Telescope No. 2 — Clock Rate Correction			$(y_e - y_w) - (x_e - x_w)$	
			Symbolical	E Clock	W Clock	Symbolical	E Clock	W Clock	by E Clock	by W Clock
				s	*s*		*s*	*s*	*s*	*s*
	Mar. 14	*I. P. E.*								
	„ 15	*I. P. W.*	$r - x_e + x_w$	− 6·07	+ 1·53	$r - y_e + y_w$	− 5·78	+ 1·81	−0·29	−0·28
	„ 16	*I. P. E.*	$r - x_w + x_e$	− 5·78	+ 1·80	$r - y_w + y_e$	− 5·98	+ 1·54	−0·20	−0·26
(E) Fyzabad Tel. 1	„ 17	*I. P. W.*		− 5·63	+ 2·05		− 5·46	+ 2·22	−0·17	−0·17
(W) Jubbulpore „ 2	„ 18	*I. P. E.*		− 5·41	+ 2·29		− 5·67	+ 2·05	−0·26	−0·24
	„ 19	*I. P. W.*		− 6·05	+ 1·35		− 5·68	+ 1·71	−0·37	−0·36
	„ 20	*I. P. E.*		− 5·46	+ 2·14		− 5·86	+ 1·72	−0·40	−0·42
	Mar. 28	*I. P. E.*								
	„ 29	*I. P. W.*	$r - x_e + x_w$	− 5·22	− 6·13	$r - y_e + y_w$	− 5·28	− 6·10	+0·06	−0·03
(E) Fyzabad Tel. 1	„ 30	*I. P. E.*	$r - x_w + x_e$	− 5·35	− 6·23	$r - y_w + y_e$	− 5·39	− 6·42	−0·04	−0·19
(W) Agra „ 2	„ 31	*I. P. W.*		− 5·54	− 6·16		− 5·29	− 5·89	−0·25	−0·27
	April 3	*I. P. E.*		−15·84	−18·56		−16·22	−18·91	−0·38	−0·35
	„ 4	*I. P. W.*		− 5·40	− 6·66		− 5·09	− 6·26	−0·31	−0·40

TABLE E 4. FORMATION OF RESIDUALS FROM ARC-MEASUREMENTS, SEASON 1882-83.

Station observed at and Telescope used	Date of Observation	Pivot Positions for both Telescopes	Value of Arc-Measurement — Symbolical	Value of Arc-Measurement — Numerical	$(y_e - y_w) - (x_e - x_w)$
				m *s*	*s*
	Dec. 2	*I. P. E.*	$\Delta L - x_e + y_e$	26 22·668	− 0·519
	„ 4	*I. P. W.*	for *I. P. E.*	23·187	− 0·299
	„ 5	*I. P. E.*	and	22·888	− 0·155
(E) Jalpaiguri Tel. 2	„ 6	*I. P. W.*	$\Delta L - x_w + y_w$	23·043	− 0·075
(W) Fyzabad „ 1	„ 7	*I. P. E.*	for *I. P. W.*	22·968	− 0·068
	„ 8	*I. P. W.*		23·036	− 0·105
	„ 9	*I. P. E.*		22·931	− 0·095
	„ 11	*I. P. W.*		23·026	
	Dec. 21	*I. P. W.*	$\Delta L - x_e + y_e$	1 30·610	− 0·653
	„ 26	*I. P. E.*	for *I. P. E.*	29·957	− 0·606
(E) Jalpaiguri Tel. 2	„ 27	*I. P. W.*	and	30·563	− 0·508
(W) Calcutta „ 1	„ 28	*I. P. E.*	$\Delta L - x_w + y_w$	30·055	− 0·464
	„ 29	*I. P. W.*	for *I. P. W.*	30·519	− 0·524
	Jan. 2	*I. P. E.*		29·995	

TABLE E4. FORMATION OF RESIDUALS FROM ARC-MEASUREMENTS, SEASON 1882-83—(*Continued*).

Station observed at and Telescope used	Date of Observation	Pivot Positions for both Telescopes	Value of Arc-Measurement		$(y_e - y_w) - (x_e - x_w)$
			Symbolical	Numerical	
				m *s*	*s*
	Jan. 12	*I. P. E.*	$\Delta L - y_e + x_e$	12 25·095	− 0·459
	„ 13	*I. P. W.*	for *I. P. E.*	24·636	− 0·312
(E) Chittagong Tel. 1	„ 14	*I. P. E.*	and	24·948	− 0·234
(W) Jalpaiguri „ 2	„ 15	*I. P. W.*	$\Delta L - y_w + x_w$	24·714	− 0·279
	„ 17	*I. P. E.*	for *I. P. W.*	24·993	− 0·482
	„ 18	*I. P. W.*		24·511	
	Jan. 23	*I. P. W.*	$\Delta L - y_e + x_e$	13 54·901	− 0·200
	„ 24	*I. P. E.*	for *I. P. E.*	55·101	− 0·141
	„ 25	*I. P. W.*	and	54·960	− 0·410
(E) Chittagong Tel. 1	„ 26	*I. P. E.*	$\Delta L - y_w + x_w$	55·370	− 0·437
(W) Calcutta „ 2	„ 28	*I. P. W.*	for *I. P. W.*	54·933	− 0·418
	„ 29	*I. P. E.*		55·351	− 0·239
	„ 30	*I. P. W.*		55·112	
	Feb. 8	*I. P. E.*	$\Delta L - y_e + x_e$	24 52·836	− 0·284
	„ 9	*I. P. W.*	for *I. P. E.*	52·552	− 0·221
	„ 10	*I. P. E.*	and	52·773	− 0·206
(E) Calcutta Tel. 1	„ 11	*I. P. W.*	$\Delta L - y_w + x_w$	52·567	− 0·148
(W) Fyzabad „ 2	„ 13	*I. P. E.*	for *I. P. W.*	52·715	− 0·176
	„ 14	*I. P. W.*		52·539	
	Feb. 22	*I. P. W.*	$\Delta L - y_e + x_e$	33 37·490	− 0·232
	„ 23	*I. P. E.*	for *I. P. E.*	37·722	− 0·173
	„ 24	*I. P. W.*	and	37·549	− 0·213
(E) Calcutta Tel. 1	„ 28	*I. P. E.*	$\Delta L - y_w + x_w$	37·762	− 0·199
(W) Jubbulpore „ 2	Mar. 2	*I. P. W.*	for *I. P. W.*	37·563	− 0·320
	„ 3	*I. P. E.*		37·883	
	Mar. 14	*I. P. E.*	$\Delta L - y_e + x_e$	8 45·058	− 0·291
	„ 15	*I. P. W.*	for *I. P. E.*	44·767	− 0·238
	„ 16	*I. P. E.*	and	45·005	− 0·151
(E) Fyzabad Tel. 1	„ 17	*I. P. W.*	$\Delta L - y_w + x_w$	44·854	− 0·268
(W) Jubbulpore „ 2	„ 18	*I. P. E.*	for *I. P. W.*	45·122	− 0·400
	„ 19	*I. P. W.*		44·722	− 0·404
	„ 20	*I. P. E.*		45·126	
	Mar. 28	*I. P. E.*	$\Delta L - y_e + x_e$	16 27·989	− 0·030
	„ 29	*I. P. W.*	for *I. P. E.*	27·959	− 0·144
	„ 30	*I. P. E.*	and	28·103	− 0·272
(E) Fyzabad Tel. 1	„ 31	*I. P. W.*	$\Delta L - y_w + x_w$	27·831	− 0·386
(W) Agra „ 2	April 3	*I. P. E.*	for *I. P. W.*	28·217	− 0·375
	„ 4	*I. P. W.*		27·842	

TABLE E 5. FORMATION OF RESIDUALS FROM CLOCK RATES, SEASON 1883-84.

Station observed at and Telescope used	By Telescope No. 1				By Telescope No. 2				$y_e - y_w$		$x_e - x_w$	
	Dates from which Rate is obtained, and Pivot Position	Clock Rate Correction			Dates from which Rate is obtained, and Pivot Position	Clock Rate Correction						
		Symbolical	E Clock	W Clock		Symbolical	E Clock	W Clock	E Clock	W Clock	E Clock	W Clock
			s	s			s	s	s	s	s	s
(E) Akyab Tel. 1 (W) Calcutta Tel. 2	Dec. 8, *I.P.W.* Dec. 9, *I.P.W.*	$r-x_w+x_w$	− 0·24	− 1·09	Dec. 8, *I.P.E.* Dec. 9, *I.P.W.*	$r-y_e+y_w$	+ 0·08	− 0·76	−0·32	−0·33		
	„ 9, *I.P.W.* „ 10, *I.P.E.*	$r-x_w+x_e$	− 0·31	− 0·77	„ 9, *I.P.W.* „ 10, *I.P.W.*	$r-y_w+y_w$	− 0·35	− 0·92			+0·04	+0·15
	„ 10, *I.P.E.* „ 11, *I.P.E.*	$r-x_e+x_e$	− 0·29	− 0·25	„ 10, *I.P.W.* „ 11, *I.P.E.*	$r-y_w+y_e$	− 0·66	− 0·64	−0·37	−0·39		
	„ 11, *I.P.E.* „ 12, *I.P.W.*	$r-x_e+x_w$	− 0·44	− 0·09	„ 11, *I.P.E.* „ 12, *I.P.E.*	$r-y_e+y_e$	− 0·39	+ 0·11			+0·05	+0·20
	„ 12, *I.P.W.* „ 13, *I.P.W.*	$r-x_w+x_w$	− 0·25	+ 0·23	„ 12, *I.P.E.* „ 13, *I.P.W.*	$r-y_e+y_w$	+ 0·12	+ 0·56	−0·37	−0·33		
	„ 13, *I.P.W.* „ 14, *I.P.E.*	$r-x_w+x_e$	+ 0·10	+ 0·35	„ 13, *I.P.W.* „ 14, *I.P.W.*	$r-y_w+y_w$	− 0·20	+ 0·06			+0·30	+0·29
(E) Akyab Tel. 1 (W) Chittagong Tel. 2	Dec. 26, *I.P.E.* Dec. 27, *I.P.W.*	$r-x_e+x_w$	+ 0·65	− 8·81	Dec. 26, *I.P.E.* Dec. 27, *I.P.E.*	$r-y_e+y_e$	+ 0·78	− 8·64			+0·13	+0·17
	„ 27, *I.P.W.* „ 28, *I.P.W.*	$r-x_w+x_w$	+ 0·68	− 9·03	„ 27, *I.P.E.* „ 28, *I.P.W.*	$r-y_e+y_w$	+ 0·96	− 8·72	−0·28	−0·31		
	„ 28, *I.P.W.* „ 29, *I.P.E.*	$r-x_w+x_e$	+ 0·76	− 8·94	„ 28, *I.P.W.* „ 29, *I.P.W.*	$r-y_w+y_w$	+ 0·79	− 8·98			−0·03	+0·04
	„ 29, *I.P.E.* „ 30, *I.P.E.*	$r-x_e+x_e$	+ 0·76	− 8·91	„ 29, *I.P.W.* „ 30, *I.P.E.*	$r-y_w+y_e$	+ 0·39	− 9·21	−0·37	−0·30		
	„ 30, *I.P.E.* Jan. 2, *I.P.W.*	$r-x_e+x_w$	+ 1·95	−28·35	„ 30, *I.P.E.* Jan. 2, *I.P.E.*	$r-y_e+y_e$	+ 2·01	−28·29			+0·06	+0·06
	Jan. 2, *I.P.W.* „ 3, *I.P.W.*	$r-x_w+x_w$	+ 0·76	− 9·24	Jan. 2, *I.P.E.* „ 3, *I.P.W.*	$r-y_e+y_w$	+ 1·13	− 8·88	−0·37	−0·36		
	„ 3, *I.P.W.* „ 4, *I.P.E.*	$r-x_w+x_e$	+ 0·94	− 8·93	„ 3, *I.P.W.* „ 4, *I.P.W.*	$r-y_w+y_w$	+ 0·84	− 9·03			+0·10	+0·10
(E) Prome Tel. 1 (W) Chittagong Tel. 2	Jan. 21, *I.P.W.* Jan. 22, *I.P.E.*	$r-x_w+x_e$	+ 2·15	+ 0·93	Jan. 21, *I.P.W.* Jan. 22, *I.P.E.*	$r-y_w+y_e$	+ 1·77	+ 0·60	−0·26	−0·29	+0·13	+0·04
	„ 21, *I.P.E.* „ 22, *I.P.W.*	$r-x_e+x_w$	+ 1·90	+ 0·85								
	„ 22, *I.P.E.* „ 23, *I.P.W.*	$r-x_e+x_w$	+ 1·98	+ 1·08	„ 22, *I.P.E.* „ 23, *I.P.W.*	$r-y_e+y_w$	+ 2·21	+ 1·28	−0·20	−0·20	+0·03	0·00
	„ 22, *I.P.W.* „ 23, *I.P.E.*	$r-x_w+x_e$	+ 2·04	+ 1·08								
	„ 23, *I.P.W.* „ 24, *I.P.E.*	$r-x_w+x_e$	+ 2·28	+ 1·25	„ 23, *I.P.W.* „ 24, *I.P.E.*	$r-y_w+y_e$	+ 2·07	+ 0·99	−0·19	−0·21	+0·02	+0·06
	„ 23, *I.P.E.* „ 24, *I.P.W.*	$r-x_e+x_w$	+ 2·24	+ 1·14								
	„ 24, *I.P.E.* „ 25, *I.P.W.*	$r-x_e+x_w$	+ 2·28	+ 1·04	„ 24, *I.P.E.* „ 25, *I.P.W.*	$r-y_e+y_w$	+ 2·53	+ 1·23	−0·25	−0·18	−0·01	+0·01
	„ 24, *I.P.W.* „ 25, *I.P.E.*	$r-x_w+x_e$	+ 2·27	+ 1·06								
	„ 25, *I.P.W.* „ 26, *I.P.E.*	$r-x_w+x_e$	+ 2·41	+ 0·93	„ 25, *I.P.W.* „ 26, *I.P.E.*	$r-y_w+y_e$	+ 2·09	+ 0·62	−0·23	−0·19	+0·09	+0·12
	„ 25, *I.P.E.* „ 26, *I.P.W.*	$r-x_e+x_w$	+ 2·23	+ 0·69								
	„ 26, *I.P.E.* „ 29, *I.P.W.*	$r-x_e+x_w$	+ 7·52	+ 3·01	„ 26, *I.P.E.* „ 29, *I.P.W.*	$r-y_e+y_w$	+ 7·91	+ 3·47	−0·22	−0·26	+0·17	+0·20
	„ 26, *I.P.W.* „ 29, *I.P.E.*	$r-x_w+x_e$	+ 7·85	+ 3·40								
	„ 29, *I.P.W.* „ 30, *I.P.E.*	$r-x_w+x_e$	+ 2·51	+ 1·35	„ 29, *I.P.W.* „ 30, *I.P.E.*	$r-y_w+y_e$	+ 2·12	+ 0·93	−0·24	−0·28	+0·15	+0·15
	„ 29, *I.P.E.* „ 30, *I.P.W.*	$r-x_e+x_w$	+ 2·21	+ 1·06								
(E) Prome Tel. 1 (W) Akyab Tel. 2	Feb. 8, *I.P.E.* Feb. 9, *I.P.W.*	$r-x_e+x_w$	+ 2·69	+ 6·60	Feb. 8, *I.P.E.* Feb. 9, *I.P.W.*	$r-y_e+y_w$	+ 3·01	+ 6·92	−0·27	−0·26	+0·05	+0·06
	„ 8, *I.P.W.* „ 9, *I.P.E.*	$r-x_w+x_e$	+ 2·79	+ 6·71								
	„ 9, *I.P.W.* „ 12, *I.P.E.*	$r-x_w+x_e$	+ 7·83	+21·16	„ 9, *I.P.W.* „ 12, *I.P.E.*	$r-y_w+y_e$	+ 7·50	+20·91	−0·15	−0·15	+0·18	+0·10
	„ 9, *I.P.E.* „ 12, *I.P.W.*	$r-x_e+x_w$	+ 7·47	+20·96								
	„ 12, *I.P.E.* „ 13, *I.P.W.*	$r-x_e+x_w$	+ 2·81	+ 8·18	„ 12, *I.P.E.* „ 13, *I.P.W.*	$r-y_e+y_w$	+ 3·04	+ 8·42	−0·08	−0·17	+0·15	+0·07
	„ 12, *I.P.W.* „ 13, *I.P.E.*	$r-x_w+x_e$	+ 3·10	+ 8·31								

TABLE E 5. FORMATION OF RESIDUALS FROM CLOCK RATES, SEASON 1883-84—(*Continued*).

Station observed at and Telescope used	By Telescope No. 1				By Telescope No. 2				$y_e - y_w$		$x_e - x_w$	
	Dates from which Rate is obtained, and Pivot Position	Clock Rate Correction			Dates from which Rate is obtained, and Pivot Position	Clock Rate Correction						
		Symbolical	E Clock	W Clock		Symbolical	E Clock	W Clock	E Clock	W Clock	E Clock	W Clock
			s	s			s	s	s	s	s	s
(E) Moulmein Tel. 2 (W) Prome Tel. 1	Mar. 8, *I.P.W.* Mar. 9, *I.P.W.*	$r-x_w+x_w$	+10·66	+ 2·57	Mar. 8, *I.P.E.* Mar. 9, *I.P.W.*	$r-y_e+y_w$	+10·82	+ 2·59	−0·16	−0·02		
	„ 9, *I.P.W.* „ 10, *I.P.E.*	$r-x_w+x_e$	+11·29	+ 2·46	„ 9, *I.P.W.* „ 10, *I.P.W.*	$r-y_w+y_w$	+11·10	+ 2·37			+0·19	+0·09
	„ 10, *I.P.E.* „ 11, *I.P.W.*	$r-x_e+x_w$	+11·52	+ 2·07	„ 10, *I.P.W.* „ 11, *I.P.E.*	$r-y_w+y_e$	+11·50	+ 2·06	−0·11	−0·13	+0·09	+0·12
					„ 10, *I.P.E.* „ 11, *I.P.W.*	$r-y_e+y_w$	+11·72	+ 2·31				
	„ 11, *I.P.W.* „ 12, *I.P.E.*	$r-x_w+x_e$	+11·72	+ 1·96	„ 11, *I.P.E.* „ 12, *I.P.W.*	$r-y_e+y_w$	+11·86	+ 2·05	−0·14	−0·13	−0·01	+0·04
					„ 11, *I.P.W.* „ 12, *I.P.E.*	$r-y_w+y_e$	+11·59	+ 1·79				
	„ 12, *I.P.E.* „ 13, *I.P.W.*	$r-x_e+x_w$	+12·08	+ 1·84	„ 12, *I.P.W.* „ 13, *I.P.E.*	$r-y_w+y_e$	+11·86	+ 1·70	−0·12	−0·06	−0·10	−0·08
					„ 12, *I.P.E.* „ 13, *I.P.W.*	$r-y_e+y_w$	+12·09	+ 1·81				
	„ 13, *I.P.W.* „ 14, *I.P.E.*	$r-x_w+x_e$	+12·34	+ 1·85	„ 13, *I.P.E.* „ 14, *I.P.W.*	$r-y_e+y_w$	+12·48	+ 1·96	−0·03	−0·02	−0·12	−0·09
					„ 13, *I.P.W.* „ 14, *I.P.E.*	$r-y_w+y_e$	+12·43	+ 1·92				
	„ 14, *I.P.E.* „ 15, *I.P.W.*	$r-x_e+x_w$	+12·54	+ 1·64	„ 14, *I.P.W.* „ 15, *I.P.E.*	$r-y_w+y_e$	+12·49	+ 1·63	−0·05	−0·09	0·00	+0·08
					„ 14, *I.P.E.* „ 15, *I.P.W.*	$r-y_e+y_w$	+12·59	+ 1·80				
(E) Moulmein Tel. 2 (W) Akyab Tel. 1	Mar. 26, *I.P.E.* Mar. 27, *I.P.W.*	$r-x_e+x_w$	− 2·22	+ 0·81	Mar. 26, *I.P.E.* Mar. 27, *I.P.W.*	$r-y_e+y_w$	− 2·09	+ 0·88		−0·14		−0·06
					„ 26, *I.P.W.* „ 27, *I.P.E.*	$r-y_w+y_e$		+ 0·61				
	„ 27, *I.P.W.* „ 28, *I.P.E.*	$r-x_w+x_e$	− 2·36	+ 0·89	„ 27, *I.P.W.* „ 28, *I.P.E.*	$r-y_w+y_e$	− 2·37	+ 0·88		+0·08		+0·09
					„ 27, *I.P.E.* „ 28, *I.P.W.*	$r-y_e+y_w$		+ 0·72				
	„ 28, *I.P.E.* „ 29, *I.P.W.*	$r-x_e+x_w$	− 2·66	+ 0·73	„ 28, *I.P.E.* „ 29, *I.P.W.*	$r-y_e+y_w$	− 2·65	+ 0·78		+0·09		+0·14
					„ 28, *I.P.W.* „ 29, *I.P.E.*	$r-y_w+y_e$		+ 0·95				
	„ 29, *I.P.W.* „ 30, *I.P.E.*	$r-x_w+x_e$	− 2·24	+ 0·86	„ 29, *I.P.W.* „ 30, *I.P.E.*	$r-y_w+y_e$	− 2·26	+ 0·75	−0·03	−0·04	−0·01	+0·07
					„ 29, *I.P.E.* „ 30, *I.P.W.*	$r-y_e+y_w$	− 2·20	+ 0·83				
	„ 30, *I.P.E.* „ 31, *I.P.W.*	$r-x_e+x_w$	− 1·66	+ 0·82	„ 30, *I.P.E.* „ 31, *I.P.W.*	$r-y_e+y_w$	− 1·67	+ 0·91	−0·04	−0·08	−0·05	+0·01
					„ 30, *I.P.W.* „ 31, *I.P.E.*	$r-y_w+y_e$	− 1·74	+ 0·75				
	„ 31, *I.P.W.* Apr. 1, *I.P.E.*	$r-x_w+x_e$	− 1·73	+ 0·87	„ 31, *I.P.W.* Apr. 1, *I.P.E.*	$r-y_w+y_e$	− 1·92	+ 0·70	−0·09	−0·09	+0·10	+0·08
					„ 31, *I.P.E.* „ 1, *I.P.W.*	$r-y_e+y_w$	− 1·74	+ 0·88				

TABLE E 6. FORMATION OF RESIDUALS FROM ARC-MEASUREMENTS, SEASON 1883-84. FIRST FOUR ARCS.

Station observed at and Telescope used	Date of Observation	Pivot Position		Value of Arc-Measurement				$y_e - y_w$	$x_e - x_w$
		Tel. No. 1	Tel. No 2	$\Delta L - y_e + x_e$	$\Delta L - y_w + x_w$	$\Delta L - y_e + x_w$	$\Delta L - y_w + x_e$		
				m s	*m s*	*m s*	*m s*	*s*	*s*
	Nov. 27	*I. P. E.*	*I. P. E.*	18 9·572					
	Dec. 8	*I. P. W.*	*I. P. E.*			18 9·430			
	„ 9	*I. P. W.*	*I. P. W.*		18 9·110				
(E) Akyab Tel. 1	„ 10	*I. P. E.*	*I. P. W.*				18 9·190	− 0·273	+ 0·135
(W) Calcutta „ 2	„ 11	*I. P. E.*	*I. P. E.*	18 9·568				− 0·324	+ 0·186
	„ 12	*I. P. W.*	*I. P. E.*			18 9·441			
	„ 13	*I. P. W.*	*I. P. W.*		18 9·111				
	„ 14	*I. P. E.*	*I. P. W.*				18 9·403		
			Means	18 9·570	18 9·111	18 9·435	18 9·297	− 0·299	+ 0·161
	Dec. 26	*I. P. E.*	*I. P. E.*	4 14·478					
	„ 27	*I. P. W.*	*I. P. E.*			4 14·329			
	„ 28	*I. P. W.*	*I. P. W.*		4 14·033				
(E) Akyab Tel. 1	„ 29	*I. P. E.*	*I. P. W.*				4 14·037	− 0·396	+ 0·115
(W) Chittagong „ 2	„ 30	*I. P. E.*	*I. P. E.*	4 14·378				− 0·331	+ 0·050
	Jan. 2	*I. P. W.*	*I. P. E.*			4 14·297			
	„ 3	*I. P. W.*	*I. P. W.*		4 13·928				
	„ 4	*I. P. E.*	*I. P. W.*				4 14·027		
			Means	4 14·428	4 13·981	4 14·313	4 14·032	− 0·364	+ 0·083
	Jan. 21	*I. P. W.*	*I. P. W.*		13 30·267				
	„ 21	*I. P. E.*	*I. P. W.*			13 30·558			
	„ 22	*I. P. E.*	*I. P. E.*	13 30·674					
	„ 22	*I. P. W.*	*I. P. E.*				13 30·402		
	„ 23	*I. P. W.*	*I. P. W.*		13 30·438				
	„ 23	*I. P. E.*	*I. P. W.*			13 30·550			
	„ 24	*I. P. E.*	*I. P. E.*	13 30·676					
(E) Prome Tel. 1	„ 24	*I. P. W.*	*I. P. E.*				13 30·397	− 0·310	+ 0·167
(W) Chittagong „ 2	„ 25	*I. P. W.*	*I. P. W.*		13 30·452			− 0·162	+ 0·019
	„ 25	*I. P. E.*	*I. P. W.*			13 30·468			
	„ 26	*I. P. E.*	*I. P. E.*	13 30·744					
	„ 26	*I. P. W.*	*I. P. E.*				13 30·341		
	„ 29	*I. P. W.*	*I. P. W.*		13 30·320				
	„ 29	*I. P. E.*	*I. P. W.*			13 30·547			
	„ 30	*I. P. E.*	*I. P. E.*	13 30·698					
	„ 30	*I. P. W.*	*I. P. E.*				13 30·412		
			Means	13 30·698	13 30·369	13 30·531	13 30·388	− 0·236	+ 0·093
	Feb. 8	*I. P. E.*	*I. P. E.*	9 16·346					
	„ 8	*I. P. W.*	*I. P. E.*			9 16·413			
	„ 9	*I. P. W.*	*I. P. W.*		9 16·037				
(E) Prome Tel. 1	„ 9	*I. P. E.*	*I. P. W.*				9 16·195	− 0·149	+ 0·054
(W) Akyab „ 2	„ 12	*I. P. E.*	*I. P. E.*	9 16·358				− 0·234	+ 0·139
	„ 12	*I. P. W.*	*I. P. E.*			9 16·182			
	„ 13	*I. P. W.*	*I. P. W.*		9 16·090				
	„ 13	*I. P. E.*	*I. P. W.*				9 16·211		
			Means	9 16·352	9 16·064	9 16·298	9 16·203	− 0·192	+ 0·097

TABLE E7. FORMATION OF RESIDUALS FROM ARC-MEASUREMENTS, SEASON 1883-84. LAST TWO ARCS.

Station observed at and Telescope used	Date of Observation	Pivot Position		Value of Arc-Measurement				$y_e - y_w$	$x_e - x_w$
		Tel. No. 1	Tel. No. 2	$\Delta L - x_e + y_e$	$\Delta L - x_w + y_w$	$\Delta L - x_e + y_w$	$\Delta L - x_w + y_e$		
				m *s*	*m* *s*	*m* *s*	*m* *s*	*s*	*s*
	Mar. 26	*I. P. E.*	*I. P. E.*	18 54·901					
	„ 26	*I. P. W.*	*I. P. E.*				18 54·915		
	„ 27	*I. P. W.*	*I. P. W.*		18 54·990				
	„ 27	*I. P. E.*	*I. P. W.*			18 54·914			
	„ 28	*I. P. E.*	*I. P. E.*	18 54·814					
	„ 28	*I. P. W.*	*I. P. E.*				18 54·946		
(E) Moulmein Tel. 2	„ 29	*I. P. W.*	*I. P. W.*		18 55·045			− 0·042	+ 0·042
(W) Akyab „ 1	„ 29	*I. P. E.*	*I. P. W.*			18 54·979		− 0·093	+ 0·093
	„ 30	*I. P. E.*	*I. P. E.*	18 54·966					
	„ 30	*I. P. W.*	*I. P. E.*				18 54·914		
	„ 31	*I. P. W.*	*I. P. W.*		18 55·019				
	„ 31	*I. P. E.*	*I. P. W.*			18 54·887			
	April 1	*I. P. E.*	*I. P. E.*	18 54·849					
	„ 1	*I. P. W.*	*I. P. E.*						
			Means	18 54·883	18 55·018	18 54·927	18 54·925	− 0·068	+ 0·068
	Mar. 8	*I. P. E.*	*I. P. W.*				9 38·677		
	„ 8	*I. P. E.*	*I. P. W.*						
	„ 9	*I. P. W.*	*I. P. W.*		9 38·771				
	„ 9	*I. P. W.*	*I. P. W.*						
	„ 10	*I. P. W.*	*I. P. E.*				9 38·631		
	„ 10	*I. P. E.*	*I. P. E.*	9 38·541					
	„ 11	*I. P. E.*	*I. P. W.*			9 38·637			
(E) Moulmein Tel. 2	„ 11	*I. P. W.*	*I. P. W.*		9 38·754			− 0·079	+ 0·025
(W) Prome „ 1	„ 12	*I. P. W.*	*I. P. E.*				9 38·575	− 0·095	+ 0·041
	„ 12	*I. P. E.*	*I. P. E.*	9 38·601					
	„ 13	*I. P. E.*	*I. P. W.*			9 38·739			
	„ 13	*I. P. W.*	*I. P. W.*		9 38·586				
	„ 14	*I. P. W.*	*I. P. E.*				9 38·653		
	„ 14	*I. P. E.*	*I. P. E.*	9 38·685					
	„ 15	*I. P. E.*	*I. P. W.*			9 38·688			
	„ 15	*I. P. W.*	*I. P. W.*		9 38·805				
			Means	9 38·609	9 38·729	9 38·688	9 38·634	− 0·087	+ 0·033

TABLE E 8. FORMATION OF RESIDUALS FROM CIRCUITS, SEASONS 1881 82, 1882-83 AND 1883 84.

Name of Arc and Number of Telescope used at each Station				Season of Measurement	Value of Arc-Measurement				$y_e - x_e$	$y_w - x_w$	$y_e - x_w$	$y_w - x_e$
					Symbolical	E Clock	Symbolical	W Clock				
						m s		m s	s	s	s	s
Fyzabad	Tel. 1,	Agra	Tel. 2	1881-82	$\Delta L_1 - y_w + x_e$	16 27·657	$\Delta L_1 - y_e + x_w$	16 28·182			−0·287	−0·116
Fyzabad	„ 1,	Jubbulpore	„ 2	„	$-\Delta L_2 + y_e - x_e$	− 8 44·533	$-\Delta L_2 + y_w - x_w$	− 8 44·737				
Jubbulpore	„ 2,	Agra	„ 1	1880-81	$-\Delta L_3 + x_e - y_e$	− 7 43·008	$-\Delta L_3 + x_w - y_w$	− 7 43·158				
Hazaribagh	Tel. 2,	Jubbulpore	Tel. 1	1881-82	$\Delta L_1 - x_e + y_e$	21 40·944	$\Delta L_1 - x_w + y_w$	21 40·883			+0·612	+0·496
Hazaribagh	„ 2,	Fyzabad	„ 1	„	$-\Delta L_2 + x_w - y_e$	−12 55·711	$-\Delta L_2 + x_e - y_w$	−12 55·738				
Fyzabad	„ 1,	Jubbulpore	„ 2	„	$-\Delta L_3 + y_w - x_w$	− 8 44·737	$-\Delta L_3 + y_e - x_e$	− 8 44·533				
Jalpaiguri	Tel. 1,	Hazaribagh	Tel 2	1881-82	$\Delta L_1 - y_e + x_e$	13 27·170	$\Delta L_1 - y_w + x_w$	13 26·986	−0·206	+0·178		
Jalpaiguri	„ 1,	Calcutta	„ 2	„	$-\Delta L_2 + y_w - x_e$	− 1 30 196	$-\Delta L_2 + y_e - x_w$	− 1 30·544				
Calcutta	„ 1,	Hazaribagh	„ 2	„	$-\Delta L_3 + y_e - x_w$	−11 56·796	$-\Delta L_3 + y_w - x_e$	−11 56·648				
Chittagong	Tel. 1,	Calcutta	Tel. 2	1882-83	$\Delta L_1 - y_e + x_e$	13 55·274	$\Delta L_1 - y_w + x_w$	13 54·977	−0·260	+0·207		
Chittagong	„ 1,	Jalpaiguri	„ 2	„	$-\Delta L_2 + y_e - x_e$	−12 25 012	$-\Delta L_2 + y_w - x_w$	−12 24 620				
Jalpaiguri	„ 2,	Calcutta	„ 1	„	$-\Delta L_3 + x_e - y_e$	− 1 30·002	$-\Delta L_3 + x_w - y_w$	− 1 30·564				
Jalpaiguri	Tel. 2,	Fyzabad	Tel. 1	1882-83	$\Delta L_1 - x_e + y_e$	26 22·864	$\Delta L_1 - x_w + y_w$	26 23·073	−0·087	+0·044		
Jalpaiguri	„ 2,	Calcutta	„ 1	„	$-\Delta L_2 + x_e - y_e$	− 1 30·002	$-\Delta L_2 + x_w - y_w$	− 1 30·564				
Calcutta	„ 1,	Fyzabad	„ 2	„	$-\Delta L_3 + x_e - y_e$	−24 52·775	$-\Delta L_3 + x_w - y_w$	−24 52·553				
Calcutta	Tel. 1,	Jubbulpore	Tel. 2	1882-83	$\Delta L_1 - y_e + x_e$	33 37·780	$\Delta L_1 - y_w + x_w$	33 37·542	−0·073	+0·208		
Calcutta	„ 1,	Fyzabad	„ 2	„	$-\Delta L_2 + y_e - x_e$	−24 52·775	$-\Delta L_2 + y_w - x_w$	−24 52·553				
Fyzabad	„ 1,	Jubbulpore	„ 2	„	$-\Delta L_3 + y_e - x_e$	− 8 45 078	$-\Delta L_3 + y_w - x_w$	− 8 44·781				
Fyzabad	Tel. 1,	Agra	Tel. 2	1882-83	$\Delta L_1 - y_e + x_e$	16 28·103	$\Delta L_1 - y_w + x_w$	16 27·877	−0·017	+0·062		
Fyzabad	„ 1,	Jubbulpore	„ 2	„	$-\Delta L_2 + y_e - x_e$	− 8 45 078	$-\Delta L_2 + y_w - x_w$	− 8 44·781				
Jubbulpore	„ 2,	Agra	„ 1	1880-81	$-\Delta L_3 + x_e - y_e$	− 7 43·008	$-\Delta L_3 + x_w - y_w$	− 7 43·158				
Akyab	Tel. 1,	Calcutta	Tel. 2	1883-84	$\Delta L_1 - y_e + x_e$	18 9·570	$\Delta L_1 - y_w + x_w$	18 9·111	−0·132	+0·152		
Akyab	„ 1,	Chittagong	„ 2	„	$-\Delta L_2 + y_e - x_e$	− 4 14·428	$-\Delta L_2 + y_w - x_w$	− 4 13·982				
Chittagong	„ 1,	Calcutta	„ 2	„	$-\Delta L_3 + y_e - x_e$	−13 55·274	$-\Delta L_3 + y_w - x_w$	−13 54·977				
Promo	Tel. 1,	Chittagong	Tel. 2	1883-84	$\Delta L_1 - y_e + x_e$	13 30·698	$\Delta L_1 - y_w + x_w$	13 30·369	−0·082	+0·323		
Promo	„ 1,	Akyab	„ 2	„	$-\Delta L_2 + y_e - x_e$	− 9 16·352	$-\Delta L_2 + y_w - x_w$	− 9 16·064				
Akyab	„ 1,	Chittagong	„ 2	„	$-\Delta L_3 + y_e - x_e$	− 4 14·428	$-\Delta L_3 + y_w - x_w$	− 4 13·982				
Promo	Tel. 1,	Chittagong	Tel. 2	1883-84	$\Delta L_1 - y_e + x_w$	13 30·531	$\Delta L_1 - y_w + x_e$	13 30·388			−0·080	+0·153
Promo	„ 1,	Akyab	„ 2	„	$-\Delta L_2 + y_e - x_w$	− 9 16·208	$-\Delta L_2 + y_w - x_e$	− 9 16·203				
Akyab	„ 1,	Chittagong	„ 2	„	$-\Delta L_3 + y_e - x_w$	− 4 14·313	$-\Delta L_3 + y_w - x_e$	− 4 14·032				
Moulmein	Tel. 2,	Akyab	Tel. 1	1883-84	$\Delta L_1 - x_e + y_e$	18 54·883	$\Delta L_1 - x_w + y_w$	18 55·018	−0·078	+0·225		
Moulmein	„ 2,	Promo	„ 1	„	$-\Delta L_2 + x_e - y_e$	− 9 38·609	$-\Delta L_2 + x_w - y_w$	− 9 38·729				
Promo	„ 1,	Akyab	„ 2	„	$-\Delta L_3 + y_e - x_e$	− 9 16·352	$-\Delta L_3 + y_w - x_w$	− 9 16·064				
Moulmein	Tel. 2,	Akyab	Tel. 1	1883-84	$\Delta L_1 - x_e + y_w$	18 54·925	$\Delta L_1 - x_w + y_e$	18 54·925			−0·061	+0·088
Moulmein	„ 2,	Promo	„ 1	„	$-\Delta L_2 + x_e - y_w$	− 9 38·688	$-\Delta L_2 + x_w - y_e$	− 9 38·634				
Promo	„ 1,	Akyab	„ 2	„	$-\Delta L_3 + y_e - x_w$	− 9 16·298	$-\Delta L_3 + y_w - x_e$	− 9 16·203				

TABLE E9. FORMATION OF RESIDUALS FROM INDEPENDENT EXPERIMENTS, SEASON 1883-84.

Name of Station and Telescope used	Date of Observation	Pivot change from first Date to second	Clock Rate Correction		$x_e - x_w$	$y_e - y_w$
			Symbolical	E Clock		
				s	s	s
		I.P.E. to *I.P.W.*	$r - x_e + x_w$	+ 1·612	+ 0·062	
	Dec. 17 to Dec. 20	*I.P.W.* „ *I.P.E.*	$r - x_w + x_e$	+ 1·735	+ 0·012	
		I.P.E. „ *I.P.W.*	$r - x_e + x_w$	+ 1·710		
		I.P.W. „ *I.P.E.*	$r - x_w + x_e$	+ 0·838	+ 0·072	
	„ 20 „ „ 21	*I.P.E.* „ *I.P.W.*	$r - x_e + x_w$	+ 0·695	+ 0·072	
Akyab Tel. 1		*I.P.W.* „ *I.P.E.*	$r - x_w + x_e$	+ 0·838		
	„ 21 „ Jan. 6	*I.P.W.* „ *I.P.E.*	$r - x_w + x_e$	+12·222	+ 0·084	
		I.P.E. „ *I.P.W.*	$r - x_e + x_w$	+12·055		
		I.P.E. „ *I.P.W.*	$r - x_e + x_w$	+ 0·862	− 0·005	
	Jan. 6 „ „ 7	*I.P.W.* „ *I.P.E.*	$r - x_w + x_e$	+ 0·853	+ 0·021	
		I.P.E. „ *I.P.W.*	$r - x_e + x_w$	+ 0·811		
		I.P.W. „ *I.P.E.*	$r - x_w + x_e$	+ 0·712	− 0·003	
	Feb. 3 „ Feb. 4	*I.P.E.* „ *I.P.W.*	$r - x_e + x_w$	+ 0·718	+ 0·081	
		I.P.W. „ *I.P.E.*	$r - x_w + x_e$	+ 0·880		
Prome „ 1		*I.P.E.* „ *I.P.E.*	$r - x_e + x_e$	+ 2·629	− 0·007	
	„ 23 „ „ 24	*I.P.E.* „ *I.P.W.*	$r - x_e + x_w$	+ 2·636		
		I.P.E. „ *I.P.W.*	$r - x_e + x_w$	+30·114	+ 0·086	
	„ 24 „ Mar. 7	*I.P.W.* „ *I.P.E.*	$r - x_w + x_w$	+30·200		
Chittagong „ 2	Jan. 26 „ Jan. 27	*I.P.E.* „ *I.P.E.*	$r - y_e + y_e$	+ 0·933	.....	− 0·229
		I.P.E. „ *I.P.W.*	$r - y_e + y_w$	+ 1·162		
	Feb. 11 „ Feb. 12	*I.P.E.* „ *I.P.E.*	$r - y_e + y_e$	−23·064	.....	− 0·361
		I.P.W. „ *I.P.E.*	$r - y_w + y_e$	−23·425		
	„ 11 „ „ 16	*I.P.E.* „ *I.P.E.*	$r - y_e + y_e$	−20·180	.....	− 0·315
		I.P.W. „ *I.P.E.*	$r - y_w + y_e$	−20·495		
Akyab „ 2	„ 16 „ „ 17	*I.P.E.* „ *I.P.W.*	$r - y_e + y_w$	+ 7·908	.....	− 0·308
		I.P.W. „ *I.P.W.*	$r - y_w + y_w$	+ 7·600		
		I.P.W. „ *I.P.W.*	$r - y_w + y_w$	+ 7·800	.....	− 0·328
	„ 17 „ „ 18	*I.P.W.* „ *I.P.E.*	$r - y_w + y_e$	+ 7·472	.....	− 0·114
		I.P.W. „ *I.P.W.*	$r - y_w + y_w$	+ 7·586		

TABLE E 10. SHOWING THE COMBINATIONS OF x_e, x_w, y_e AND y_w, AND THE VALUES DEDUCED FROM THEM FOR EACH ARC.

Name and Number of Arc	$(y_e - y_w) - (x_e - x_w)$	$y_e - x_e$	$y_w - x_w$	$y_e - y_w$	$x_e - x_w$	$y_e - x_w$	$y_w - x_e$	Deduced Value of x_e	Deduced Value of x_w	Deduced Value of y_e	Deduced Value of y_w
	s	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
Fyzabad-Agra (16)	− 0·225	− 0·017	+ 0·062	...	...	...	...	+0·033	−0·055	−0 033	+0·055
Fyzabad-Jubbulpore (15)	− 0·287	− 0·045	+ 0·135	..	...	...	...	+0·040	−0·085	−0 040	+0·085
Calcutta-Jubbulpore (14)	− 0·216	− 0·073	+ 0·208	...	...	...	...	+0·026	−0·093	−0·026	+0·093
Calcutta-Fyzabad (13)	− 0·190	− 0·080	+ 0·126	. .	...	...	...	+0·037	−0·060	−0·037	+0·060
Jalpaiguri-Fyzabad (9)	− 0·177	− 0·087	+ 0·044	...	...	...	...	+0·051	−0·030	−0·051	+0·030
Jalpaiguri-Calcutta (10)	− 0·533	− 0·184	+ 0·143	...	...	...	...	+0·126	−0·106	−0·126	+0·106
Chittagong-Calcutta (12)	− 0·306	− 0·196	+ 0·180	...	...	...	...	+0·086	−0·078	−0·086	+0·078
Chittagong-Jalpaiguri (11)	− 0·339	− 0·260	+ 0·207	. .	...	...	...	+0·109	−0·082	−0·109	+0·082
Prome-Chittagong (19)	...	− 0·082	+ 0·323	− 0·230	+ 0·078	− 0·080	+ 0·153	+0 001	−0·080	−0·098	+0·177
Akyab-Chittagong (18)	...	− 0·107	+ 0·238	− 0·339	+ 0·064	− 0·080	+ 0·153	+0·005	−0 056	−0·132	+0·183
Prome-Akyab (20)	...	− 0·080	+ 0·274	− 0·216	+ 0·078	− 0·071	+ 0·120	+0·010	−0·070	−0·092	+0·153
Akyab-Calcutta (17)	...	− 0·132	+ 0·152	− 0·338	+ 0·167	− 0·068	+ 0·103	+0·049	−0·063	−0·135	+0·148
Moulmein-Prome (22)	...	− 0·078	+ 0·225	− 0·108	+ 0·037	− 0·061	+ 0·088	+0·007	−0·050	−0·062	+0·105
Moulmein-Akyab (21)	...	− 0·078	+ 0·225	− 0·115	+ 0·043	− 0·061	+ 0·088	+0·008	−0·052	−0·064	+0·107

TABLE E 11. COMPARISON OF THE VALUES OF ΔL BEFORE AND AFTER THE APPLICATION OF THE CORRECTIONS x_e, x_w, y_e AND y_w.

Station observed at and Telescope used	Number of Arc	Pivot Position Tel. 1	Pivot Position Tel. 2	Unadjusted Value of ΔL	Unadjusted Value of Mean	Correction	Corrected Value of ΔL	Corrected Value of Mean
				m *s*	*m* *s*	*s*	*m* *s*	*m* *s*
(E) Fyzabad Tel. 1	(16)	*I.P.E.*	*I.P.E.*	16 28·103		− ·066	16 28 037	
(W) Agra „ 2		*I.P.W.*	*I.P.W.*	27·877	16 27·990	+ ·110	27·987	16 28·012
(E) Fyzabad Tel. 1	(15)	*I.P.E.*	*I.P.E.*	8 45·078		− ·080	8 44·998	
(W) Jubbulpore „ 2		*I.P.W.*	*I.P.W.*	44·781	8 44·929	+ ·170	44·951	8 44·974
(E) Calcutta Tel. 1	(14)	*I.P.E.*	*I.P.E.*	33 37·780		− ·052	33 37·728	
(W) Jubbulpore „ 2		*I.P.W.*	*I.P.W.*	37·542	33 37·662	+ ·186	37·728	33 37·728
(E) Calcutta Tel. 1	(13)	*I.P.E.*	*I.P.E.*	24 52·775		− ·074	24 52·701	
(W) Fyzabad „ 2		*I.P.W.*	*I.P.W.*	52·553	24 52·664	+ ·120	52·673	24 52·687

The means entered in columns 6 and 9 are not in all cases merely the arithmetic means of the corresponding numbers in columns 5 and 8, but are weighted in proportion to the number of observations in each combination of pivots.

TABLE E 11. COMPARISON OF THE VALUES OF ΔL BEFORE AND AFTER THE APPLICATION OF THE CORRECTIONS x_e, x_w, y_e AND y_w—(*Continued*).

Station observed at and Telescope used	Number of Arc	Pivot Position		Unadjusted Value of		Correction	Corrected Value of	
		Tel. 1	Tel. 2	ΔL	Mean		ΔL	Mean
				m s	m s	s	m s	m s
(E) Jalpaiguri Tel. 2	(9)	*I.P.E.*	*I.P.E.*	26 22·864		+ ·102	26 22·966	
(W) Fyzabad „ 1		*I.P.W.*	*I.P.W.*	23·073	26 22·979	− ·060	23·013	26 23·001
(E) Jalpaiguri Tel. 2	(10)	*I.P.E.*	*I.P.E.*	1 30·002		+ ·252	1 30·254	
(W) Calcutta „ 1		*I.P.W.*	*I.P.W.*	30·564	1 30·283	− ·212	30·352	1 30·303
(E) Chittagong Tel. 1	(12)	*I.P.E.*	*I.P.E.*	13 55·274		− ·172	13 55·102	
(W) Calcutta „ 2		*I.P.W.*	*I.P.W.*	54·977	13 55·126	+ ·156	55·133	13 55·118
(E) Chittagong Tel. 1	(11)	*I.P.E.*	*I.P.E.*	12 25·012		− ·218	12 24·794	
(W) Jalpaiguri „ 2		*I.P.W.*	*I.P.W.*	24·620	12 24·816	+ ·164	24·784	12 24·789
		I.P.E.	*I.P.E.*	18 9·570		− ·184	18 9·386	
(E) Akyab Tel. 1	(17)	*I.P.W.*	*I.P.W.*	9·111		+ ·211	9·322	
(W) Calcutta „ 2		*I.P.W.*	*I.P.E.*	9·435		− ·072	9·363	
		I.P.E.	*I.P.W.*	9·297	18 9·353	+ ·099	9·396	18 9·367
		I.P.E.	*I.P.E.*	4 14·428		− ·137	4 14·291	
(E) Akyab Tel. 1	(18)	*I.P.W.*	*I.P.W.*	13·982		+ ·239	14·221	
(W) Chittagong „ 2		*I.P.W.*	*I.P.E.*	14·313		− ·076	14·237	
		I.P.E.	*I.P.W.*	14·032	4 14·187	+ ·178	14·210	4 14·238
		I.P.E.	*I.P.E.*	13 30·698		− ·099	13 30·599	
(E) Promo Tel. 1	(19)	*I.P.W.*	*I.P.W.*	30·369		+ ·257	30·626	
(W) Chittagong „ 2		*I.P.W.*	*I.P.E.*	30·531		− ·018	30·513	
		I.P.E.	*I.P.W.*	30·388	13 30·497	+ ·176	30·564	13 30·576
		I.P E.	*I.P.E.*	9 16·352		− ·102	9 16·250	
(E) Promo Tel. 1	(20)	*I.P W.*	*I.P.W.*	16·064		+ ·223	16·287	
(W) Akyab „ 2		*I.P.W.*	*I.P.E.*	16·298		− ·022	16·276	
		I.P.E.	*I.P.W.*	16·203	9 16·229	+ ·143	16·346	9 16·290
		I.P E.	*I.P.E.*	9 38·609		+ ·069	9 38·678	
(E) Moulmein Tel. 2	(22)	*I.P.W.*	*I.P.W.*	38·729		− ·155	38·574	
(W) Promo „ 1		*I.P.E.*	*I.P.W.*	38·688		− ·098	38·590	
		I.P.W.	*I.P.E.*	38·634	9 38·667	+ ·012	38·646	9 38·624
		I.P.E.	*I.P.E.*	18 54·883		+ ·072	18 54·955	
(E) Moulmein Tel. 2	(21)	*I.P.W.*	*I.P.W.*	55·018		− ·159	54·859	
(W) Akyab „ 1		*I.P.E.*	*I.P.W.*	54·925		− ·099	54·826	
		I.P.W.	*I.P.E.*	54·925	18 54·932	+ ·012	54·937	18 54·888

The means entered in columns 6 and 9 are not in all cases merely the arithmetic means of the corresponding numbers in columns 5 and 8, but are weighted in proportion to the number of observations in each combination of pivots.

TABLE E 12. SHOWING CIRCUIT ERRORS BEFORE AND AFTER THE APPLICATION OF THE CORRECTIONS x_e, x_w, y_e AND y_w.

Number of Arc	Original Value		Corrected Value of	
	ΔL	Circuit Error	ΔL	Circuit Error
	m *s*	*s*	*m* *s*	*s*
(16)	16 27·990		16 28·012	
(1)	7 42·993		7 42·993	
(15)	8 44·929	+ 0·068	8 44·974	+ 0·045
(14)	33 37·662		33 37·728	
(13)	24 52·664		24 52·687	
(15)	8 44·929	+ 0·069	8 44·974	+ 0·067
(9)	26 22·979		26 23·001	
(13)	24 52·664		24 52·687	
(10)	1 30·283	+ 0·032	1 30·303	+ 0·011
(12)	13 55·126		13 55·118	
(11)	12 24·816		12 24·789	
(10)	1 30·283	+ 0·027	1 30·303	+ 0·026
(17)	18 9·353		18 9·367	
(18)	4 14·187		4 14·238	
(12)	13 55·126	+ 0·040	13 55·118	+ 0·011
(19)	13 30·497		13 30·576	
(20)	9 16·229		9 16·290	
(18)	4 14·187	+ 0·081	4 14·238	+ 0·048
(21)	18 54·932		18 54·888	
(20)	9 16·229		9 16·290	
(22)	9 38·667	+ 0·036	9 38·624	− 0·026

TABLE F. SPECIMEN OF FORM OF RECORDING THE OBSERVATIONS FOR COLLIMATION AND LEVEL.

Station Akyab, Arc Akyab–Calcutta, Season 1883-84, Telescope No. 1, Observer Major Heaviside, R.E.

Astronomical Date	Pivot Position	Collimation								Level	
		A	B	A − B = e	D	E	E − e = F	$\frac{D+F}{2}$ = C_o	C_s	M	$C_o - M$ = b
d h m									$C_o - C_s$ = c_1		
1883, Nov. 27 2 5	*I. P. E.*	92·3	19·2	73·1	1299·7	1415·7			1300·0	1298·1	
		94·5	18·3	76·2	99·2	17·3				98·0	
		94·9	19·2	75·7	1300·9	18·9				96·9	
		94·3	19·7	74·6	1·8	20·3				98·5	
		94·9	19·5	75·4	0·9	18·5				1297·9	− 0·7
		95·5	18·3	77·2	0·9	17·9					
			Means	+ 75·4	1300·6	1418·1	1293·7	1297·2			
				+ 124·4*					− 2·8		
„ „ 4 51	*I. P. E.*	88·5	18·5	70·0	1302·5	1416·1				1299·5	
		90·0	18·4	71·6	2·9	16·5				99·5	
										98·4	
			Means	+ 70·8	1302·7	1416·3	1299·5	1301·1		98·8	
				+ 116·8*					+ 1·1		
										1299·0	+ 2·1
„ „ 5 55	*I. P. E.*	89·0	18·3	70·7	1299·7	1417·0				1298·1	
		90·4	18·6	71·8	98·0	16·5				97·5	
		90·4	19·2	71·2	98·3	17·3				98·2	
		90·5	18·8	71·7	98·0	16·7				96·9	
			Means	+ 71·4	1298·5	1416·9	1299·1	1298·8		1297·7	+ 1·1
				+ 117·8*					− 1·2		

N.B.—The signs given for e, c and b are for position *I.P.E.* They must be reversed for *I.P W.*

In this table A is the reading of the South Collimator Micrometer when its moveable wire intersects the North Collimator cross, and B is its reading when the same wire intersects the South Collimator cross. D is the reading of the North Collimator cross and E of the South Collimator cross in the Transit Telescope For explanation of the other symbols *vide* Part I, Chapter V, Sections 2, 3 and 4.

* These numbers are obtained from those directly above them by multiplying by a quantity representing the proportion between the divisions of the South Collimator Micrometer and that of the Transit Telescope.

TABLE G. ABSTRACT OF RESULTS OF THE IDIOMETER OBSERVATIONS AND COMPARISON OF PERSONAL EQUATION AS OBTAINED FROM IDIOMETER AND STAR OBSERVATIONS, SEASON 1881-82.

Arc	Astronl. Date	Major Strahan's Observations				Major Heaviside's Observations				Relative Personal Equation			
		By Idiometer			By Zenith Stars	By Idiometer			By Zenith Stars	By Idiometer		By Star Observation	
		S_n	S_s	$S_n - S_s$	$S_N - S_S$	H_n	H_s	$H_n - H_s$	$H_N - H_S$	$S_n - H_n$	$S_s - H_s$	$S_N - H_N$	$S_S - H_S$
	1881	s	s	s	s	s	s	s	s	s	s	s	s
	Nov. 24	−0·045	−0·018	−0·027		...	...	...		...	...		
	„ 25	−0·053	+0·010	−0·063		−0·073	−0·083	+0·010		+0·020	+0·093		
Fyzabad	„ 28	−0·038	−0·005	−0·033		−0·093	−0·090	−0·003		+0·055	+0·085		
and	„ 29	−0·023	−0·053	+0·030		−0·090	−0·075	−0·015		+0·067	+0·022		
Agra	„ 30	−0·045	−0·030	−0·015		−0·093	−0·100	+0·007		+0·048	+0·070		
	Dec. 1	+0·040	+0·045	−0·005		−0·085	−0·093	+0·008		+0·125	+0·138		
	„ 2	−0·040	−0·008	−0·032		−0·095	−0·075	−0·020		+0·055	+0·067		
	Means	...	...	−0·021	−0·016	...	...	−0·002	+0·007	+0·062	+0·079	−0·007	+0·016
	Dec. 12	...	...	...		−0·090	−0·070	−0·020		...	...		
	„ 13	...	...	...		−0·080	−0·068	−0·012		...	...		
Fyzabad	„ 14	−0·010	−0·003	−0·007		−0·093	−0·063	−0·030		+0·083	+0·060		
and	„ 16	−0·008	−0·018	+0·010		−0·060	−0·048	−0·012		+0·052	+0·030		
Jubbulpore	„ 19	−0·018	−0·005	−0·013		−0·058	−0·043	−0·015		+0·040	+0·038		
	„ 20	−0·005	0·000	−0·005		−0·058	−0·040	−0·018		+0·053	+0·040		
	Means	...	...	−0·004	−0·001	...	...	−0·018	+0·023	+0·057	+0·042	−0·007	+0·016
	1882												
	Jan. 4	−0·035	−0·008	−0·027		...	...	...		...	...		
	„ 5	−0·040	0·000	−0·040		−0·113	−0·088	−0·025		+0·073	+0·088		
Hazaribagh	„ 6	−0·010	+0·003	−0·013		−0·103	−0·088	−0·015		+0·093	+0·091		
and	„ 7	−0·035	−0·013	−0·022		−0·110	−0·100	−0·010		+0·075	+0·087		
Fyzabad	„ 9	−0·010	+0·005	−0·015		−0·120	−0·088	−0·032		+0·110	+0·093		
	„ 10	−0·015	−0·023	+0·008		−0·118	−0·105	−0·013		+0·103	+0·082		
	Means	...	...	−0·018	+0·014	...	...	−0·019	+0·032	+0·091	+0·088	−0·016	+0·011
	Jan. 19	+0·040	+0·018	+0·022		−0·075	−0·065	−0·010		+0·115	+0·083		
	„ 20	+0·018	−0·013	+0·031		−0·093	−0·068	−0·025		+0·111	+0·055		
Hazaribagh	„ 21	−0·025	−0·018	−0·007		−0·105	−0·088	−0·017		+0·080	+0·070		
and	„ 24	+0·038	+0·015	+0·023		−0·080	−0·060	−0·020		+0·118	+0·075		
Jubbulpore	„ 25	+0·038	+0·040	−0·002		−0·083	−0·060	−0·023		+0·121	+0·100		
	„ 26	+0·038	+0·020	+0·018		−0·073	−0·078	+0·005		+0·111	+0·098		
	Means	...	...	+0·014	+0·029	...	...	−0·015	+0·027	+0·109	+0·080	−0·016	+0·011

TABLE G. ABSTRACT OF RESULTS OF THE IDIOMETER OBSERVATIONS AND COMPARISON OF PERSONAL EQUATION AS OBTAINED FROM IDIOMETER AND STAR OBSERVATIONS, SEASON 1881-82—(*Continued*).

Arc	Astronl. Date	Major Strahan's Observations				Major Heaviside's Observations				Relative Personal Equation			
		By Idiometer			By Zenith Stars	By Idiometer			By Zenith Stars	By Idiometer		By Star Observation	
		S_n	S_s	$S_n - S_s$	$S_N - S_S$	H_n	H_s	$H_n - H_s$	$H_N - H_S$	$S_n - H_n$	$S_s - H_s$	$S_N - H_N$	$S_S - H_S$
	1882	s	s	s	s	s	s	s	s	s	s	s	s
	Feb. 8	−0·040	−0·043	+0·003		−0·070	−0·045	−0·025		+0·030	+0·002		
	„ 9	−0·003	−0·033	+0 030		−0·063	−0·023	−0·040		+0·060	−0·010		
Calcutta	„ 10	−0·040	−0·033	−0·007		−0·085	−0·060	−0·025		+0·045	+0·027		
and	„ 13	−0·043	−0·043	0·000		−0·025	−0·058	+0·033		−0·018	+0·015		
Hazaribagh	„ 14	−0·035	−0·028	−0·007		−0·043	−0 055	+0·012		+0·008	+0·027		
	„ 16	−0·053	−0·038	−0·015		−0·083	−0·073	−0·010		+0·030	+0·035		
	Means	...	...	+0·001	+0·029	...	...	−0·009	+0·021	+0·026	+0 016	−0·019	+0·006
	Feb. 25	−0·065	−0·053	−0·012		...	...	...		...	...		
	„ 27	...	...	...		−0·088	−0·098	+0·010		...	...		
Jalpaiguri	Mar. 1	−0·045	−0·030	−0·015		−0·118	−0·110	−0·008		+0·073	+0·080		
and	„ 2	−0·053	−0·033	−0·020		−0·115	−0·105	−0·010		+0·062	+0·072		
Hazaribagh	„ 3	−0·050	−0·030	−0·020		−0·108	−0·118	+0·010		+0·058	+0·088		
	„ 4	−0·060	−0·043	−0·017		−0·115	−0·120	+0·005		+0·055	+0·077		
	„ 5	−0·053	−0·013	−0·040		−0·128	−0·130	+0·002		+0·075	+0·117		
	Means	...	...	−0·021	+0·042	...	...	+0·002	+0·030	+0·065	+0·087	−0·019	+0·006
	Mar. 17	−0·050	−0·040	−0·010		−0·125	−0·110	−0·015		+0·075	+0·070		
	„ 19	−0·025	−0·020	−0·005		−0·095	−0·078	−0·017		+0·070	+0·058		
Jalpaiguri	„ 22	−0·060	−0·035	−0·025		−0·115	−0·098	−0·017		+0·055	+0 063		
and	Apr. 4	−0·060	−0·060	0·000		−0·080	−0·075	−0·005		+0·020	+0·015		
Calcutta	„ 5	−0·095	−0·070	−0·025		−0·063	−0·070	+0·007		−0·032	0·000		
	„ 6	−0·060	−0·045	−0·015		−0·075	−0·073	−0·002		+0·015	+0·038		
	Means	...	...	−0·013	+0·007	...	...	−0·008	+0·052	+0·034	+0·039	−0·019	+0·006

TABLE II. SHOWING RESULTS OF EXAMINATION OF THE MICROMETER SCREW OF TELESCOPE NO. 2, AT AGRA, NOV. 22 AND 23, 1881.

Micrometer Readings	Equatorial Intervals in Seconds of Time by the following B.A.C. Stars: Number of Star and Apparent Declination							Mean	Value of 1 Revolution of Micrometer Head
	960 84° 29′ 32″	1235 85° 14′ 33″	262 85° 37′ 42″	4498 85° 21′ 59″	960 84° 29′ 32″	1061 86° 16′ 30″	1235 85° 14′ 33″		
	s	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
000	0·000	0·000	0·000	0·000	0·000	0 000	0 000	0 000	
100	2·169	2·223	2·198	2·325	2·247	2·287	2·331	2·254	2·254
200	4·455	4·487	4·464	4·455	4·513	4·549	4 546	4·496	2·242
300	6·732	6·735	6·769	6·739	6·837	6·785	6·785	6·769	2·273
400	8·950	9·000	9·013	8·910	9·113	9 027	9·092	9 015	2 246
500	11·293	11·306	11·264	11·153	11·389	11 296	11·356	11·294	2·279
600	13·510	13·529	13·614	13·502	13·674	13·583	13·588	13·571	2·277
700	15·729	15·843	15·927	15·730	16·026	15 884	15·910	15 864	2·293
800	17·976	18·025	18·170	18·014	18·206	18·120	18·150	18·094	2·230
900	20·261	20·322	20·422	20·273	20·520	20·369	20·381	20·364	2·270
1000	22·527	22·620	22·688	22·428	22·700	22 611	22·613	22·598	2·234
1100	24·832	24·802	24 978	24·850	24·928	24·906	24·919	24·888	2·290
1200	27·089	27·125	27·213	27 061	27·233	27·076	27 159	27·137	2 249
1300	29·393	29·439	29·495	29·240	29·470	29·377	29·539	29·422	2·285
1400	31·563	31·686	31·769	31·492	31·717	31·684	31 663	31·653	2·231
1500	33·868	33·868	34·013	33·784	33·964	33·952	33 935	33·912	2·259
1600	36·125	36·149	36 318	36·036	36 144	36·226	36 224	36·175	2·263
1700	38 496	38·455	38·577	38·320	38·506	38·430	38·464	38·464	2·289
1800	40·705	40·736	40·813	40·547	40·753	40·730	40·687	40·710	2·246
1900	42·942	42·967	43·064	42·839	43·057	42·956	43·051	42 982	2·272
2000	45·122	45·290	45·399	45·067	45·295	45·150	45·283	45·230	2·248
2100	47·446	47·513	47·582	47·367	47·542	47·483	47·514	47·492	2·262
2200	49·722	49·695	49·879	49·579	49·827	49·765	49 836	49·758	2·266
2300	51·940	51·959	52·130	51·855	52·074	52·072	52·043	52·010	2·252
2400	54·197	54·249	54·404	54·106	54·340	54·269	54·224	54·256	2·246
2500	56·473	56·513	56·602	56·358	56·616	56·504	56·530	56·514	2·258
2600	58·729	58·869	58·869	58 658	58·940	58·811	58·786	58·809	2·295
2700	61·004	...	...	60·877	61·110	61·093	60·993	61·015	2·206
2800	63·290	...	..	63·242	63·348	63·329	63·283	63·298	2·283
2900	65·518	...	...	65·462	65·585	65·512	65·597	65 535	2·237
3000	67·784	...	...	67·624	67·870	67·839	67·812	67·786	2·251
3100	69·877	...	...	69·900	70·137	69·997	70·093	70·001	2·215
3200	72·172	...	...	72·144	72·422	72·284	72·407	72·286	2·285
								Mean	2·25894

The letters B.A.C. signify British Association Catalogue. For explanation of this table *vide* Part I, Chapter V, Section 1.

TABLE J. DETERMINATION OF THE RELATIVE VALUE OF THE MICROMETER SCREWS OF THE SOUTH COLLIMATOR AND OF THE TRANSIT TELESCOPE NO. 1.

Measurement of Distance between the Fixed Wires of South Collimator	
By Screw of South Collimator	By Screw of Transit Telescope No. 1
309·78 Mean of 6 values	510·25 Mean of 4 values
309·85 „ 6 „	509·28 „ 4 „
309·76 „ 16 „	511·08 „ 4 „
	510·28 „ 4 „
	510·60 „ 4 „
	509·60 „ 4 „
General Mean 309·80	General Mean 510·18

Hence the relative value of the Micrometer Screws $= \frac{510 \cdot 18}{309 \cdot 80} = 1 \cdot 6468$ which is the value adopted in this volume.
The formation and use of this table is explained in Part I, Chapter V, Section 1.

TABLE K. DETERMINATION OF THE RELATIVE VALUE OF THE MICROMETER SCREWS OF THE SOUTH COLLIMATOR AND OF THE TRANSIT TELESCOPE NO. 2.

Measurement of Distance between the Fixed Wires of South Collimator	
By Screw of South Collimator	By Screw of Transit Telescope No. 2
307·4 Mean of 10 values	509·5 Mean of 5 values
307·1 „ 4 „	510·2 „ 5 „
306·0 „ 4 „	510·0 „ 5 „
307·4 „ 4 „	511·8 „ 5 „
307·5 „ 5 „	509·7 „ 5 „
General Mean 307·1	General Mean 510·2

Hence the relative value of the Micrometer Screws $= \frac{510 \cdot 2}{307 \cdot 1} = 1 \cdot 6613$ which is the value adopted in this volume.
The formation and use of this table is explained in Part I, Chapter V, Section 1.

TABLE L. EQUATORIAL INTERVALS IN SECONDS OF TIME OF EACH WIRE FROM THE CENTRE WIRE OF TELESCOPE NO. 1, AS DETERMINED BY TRANSITS OF CIRCUMPOLAR STARS, SEASON 1881-82.

Name of Wire	November 23, *I.P.E.*				November 26, *I.P.E.*					Mean *I.P.E.*	Dec. 2, *I.P.W.*	Dec. 3, *I.P.W.*			Dec. 5, *I.P.W.*		Mean *I.P.W.*	Mean adopted for Season 1881-82
	B.A.C. 626	B.A.C. 784	B.A.C. 908	B.A.C. 960	B.A.C. 8336	B.A.C. 86	B.A.C. 154	B.A.C. 225	Polaris		51 Cephei	B.A.C. 8336	B.A.C. 225	Polaris	B.A.C. 225	Polaris		
	s	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
A	34·212	34·221	34·215	34·237	34·279	34·199	34·288	34·278	...	34·241	...	34·280	...	34·185	34·303	34·222	34·248	34·245
B	32·095	32·051	32·014	32·079	32·059	32·085	32·132	32·011	...	32·066	32·074	32·066	...	32·002	32·072	32·013	32·045	32·056
C	29·674	29·676	29·578	29·690	29·667	29·639	29·707	29·648	...	29·660	29·693	29·687	29·708	29 603	29·744	29·639	29·679	29·670
D	27·058	27·081	27·048	27·003	27·082	27·046	27·056	26·982	...	27·045	27·041	27·054	27·006	26·986	27·030	27·020	27·023	27·034
E	24·577	24·581	24·580	24·605	24·593	24·601	24·617	...	...	24·593	24·610	24·593	24·486	24·525	24·570	24·592	24·563	24·578
F	19·552	19·517	19·489	19·596	19·525	19·600	19·583	19·516	...	19·547	19·565	19·580	19·541	19·542	19·577	19·593	19·566	19·557
G	17·204	17·284	17·256	17·216	17·221	17·265	17·300	17·212	...	17·245	17·260	17·270	17·249	17·172	17·237	17·287	17·246	17·246
H	14·795	14·783	14·758	14·644	14·677	14·728	14·734	14·740	...	14·732	14·751	14·739	14·740	14·674	14·788	14·736	14·738	14·735
I	12·264	12·283	12·228	12·283	12·126	12·264	12·280	...	...	12·247	12·150	12·298	12·231	12·199	12·291	12·290	12·243	12·245
J	9·831	9·861	9·729	9·798	9·746	9·855	9·841	9·794	...	9·807	9·830	9·801	9·746	9·738	9·758	9·770	9·774	9·791
K	4·903	4·875	4·904	4·933	4·856	4·909	4·921	4·885	4·921	4·901	4·951	4·925	4·897	4·866	4·849	4·855	4·891	4·896
L	2·701	2·658	2·686	2·649	2·655	2·666	2·836	2·630	2·651	2·681	2·699	2·744	2·726	2·673	2·642	2·694	2·696	2·689
M	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000
N	2·251	2·375	2·296	2·351	2·345	2·353	2·283	2·340	2·376	2·330	2·277	2·270	2·328	2·292	2·340	2·294	2·300	2·315
O	4·794	4·828	4·794	4·798	4·801	4·854	4·765	4·801	4·873	4·812	4·767	4·746	4·777	4·811	4·813	4·781	4·783	4·798
P	9·637	9·751	9·667	9·673	9·711	9·708	9·643	9·734	9·665	9·688	9·660	9·629	9·686	9·692	9·710	9·642	9·670	9·679
Q	12·215	12·252	12·228	12·255	12·277	12·301	12·224	12·363	12·266	12·265	12·291	12·215	12·255	12·323	12·267	12·251	12·267	12·266
R	14·540	14·610	14·648	14·577	14·622	14·617	14·507	14·631	14·570	14·591	14·601	14·574	14·547	14·631	14·607	14·544	14·584	14·588
S	17·009	17·016	16·991	17·005	17·022	17·007	16·960	17·007	17·035	17·006	17·008	16·995	17·020	17·048	16·971	17·023	17·011	17·009
T	19·430	19·423	19·443	19·404	19·429	19·472	19·370	19·552	19·421	19·438	19·410	19·374	19·408	19·478	19·396	19·380	19·408	19·423
U	24·370	24·392	24·440	24·374	24·448	24·344	24·405	24·462	24·407	24·405	24·393	24·380	...	24·456	24·438	24·408	24·415	24·410
V	26·803	26·830	26·845	26·850	26·855	26·844	26·758	26·910	26·831	26·836	26·852	26·752	26·801	26·874	...	26·791	26·814	26·825
W	29·395	29·393	29·391	29·383	29·426	29·363	29·354	29·406	29·368	29·387	29·383	29·364	29·346	29·431	29·395	29·350	29·378	29·383
X	31·633	31·548	31·593	31·484	31·585	31·570	31·579	31·662	31·633	31·587	31·619	31·619	31·577	31·630	31·637	31·619	31·617	31·602
Y	34·188	34·174	34·200	34·141	34·210	34·199	34·104	...	34·170	34·173	34·188	34·155	34·146	34·249	34·146	34·174	34·176	34·175

TABLE M. EQUATORIAL INTERVALS IN SECONDS OF TIME OF EACH WIRE FROM THE CENTRE WIRE OF TELESCOPE NO. 1, AS DETERMINED BY TRANSITS OF CIRCUMPOLAR STARS, AND BY MICROMETER MEASUREMENTS, SEASON 1882–83.

Name of Wire	December 3, *I.P.W.*			December 3, *I.P.E.*		December 11, *I.P.E.*	Micrometer Measurement		Mean adopted for Season 1882–83
	B.A.C. 1565	B.A.C. 1598	Gr.* 514	Gr. 1630	Gr. 1631	Gr. 1109			
	s	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
A	...	...	30·827	30·953	31·000	...	30·89	30·90	30·91
B	...	...	28·977	28·936	28·953	...	28·98	28·99	28·98
C	26·627	...	26·661	26·889	26·724	...	26·73	26·74	26·73
D	24·413	...	24·480	24·720	24·586	...	24·55	24·56	24·55
E	22·086	...	22·129	22·275	22·143	...	22·20	22·22	22·20
F	17·392	...	17·488	17·631	17·287	...	17·51	17·55	17·50
G	15·311	...	15·392	15·583	15·362	...	15·38	15·41	15·40
H	13·039	...	13·135	13·261	13·255	...	13·16	13·17	13·17
I	11·052	...	11·073	11·245	11·148	...	11·09	11·12	11·11
J	8·914	...	9·096	9·197	9·040	...	9·07	9·08	9·07
K	4·353	4·464	4·421	4·522	4·490	4·432	4·46	...	4·44
L	2·176	2·252	2·164	2·200	2·199	2·200	2·21	...	2·21
M	0·000	0·000	0·000	0·000	0·000	0·000	0·00	0·00	0·00
N	2·422	2·293	2·376	2·383	2·352	2·408	2·37	...	2·38
O	5·034	4·951	4·947	4·950	5·070	4·982	4·96	...	4·97
P	8·800	8·807	8·714	8·617	8·765	9·275	8·71	8·73	8·76
Q	11·109	...	10·980	10·908	10·904	11·017	10·98	11·00	10·99
R	13·172	13·109	13·076	13·078	12·766	13·122	13·06	13·11	13·07
S	15·746	15·666	15·579	15·583	15·698	15·625	15·63	15·66	15·65
T	17·771	17·816	17·700	17·661	17·775	17·779	17·71	17·75	17·74
U	22·199	22·058	22·095	22·000	22·082	22·172	22·11	22·13	22·11
V	24·489	24·513	24·462	24·322	24·433	24·577	24·50	24·53	24·50
W	26·760	26·725	26·669	26·675	26·662	26·780	26·73	26·75	26·73
X	28·975	28·876	28·850	28·722	28·923	29·014	28·90	28·94	28·91
Y	31·416	31·250	31·327	31·198	31·152	31·457	31·34	31·39	31·34

* The letters Gr. refer to the Greenwich 9-Year Catalogue for 1872.

TABLE N. EQUATORIAL INTERVALS IN SECONDS OF TIME OF EACH WIRE FROM THE CENTRE WIRE OF TELESCOPE NO. 1, AS DETERMINED BY TRANSITS OF CIRCUMPOLAR STARS, AND BY MICROMETER MEASUREMENTS, SEASON 1883-84.

Name of Wire	November 22, *I.P.E.*			November 24, *I.P.W.*						Micrometer Measurement	Mean adopted for Season 1883-84
	B.A.C. 43	B.A.C. 68	B.A.C. 89	B.A.C. 2074	B.A.C. 2076	B.A.C. 2109	B.A.C. 2137	B.A.C. 2154	B.A.C. 2164		
	s	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
A	31·02	30·90	30·84	30·88	30·81	30·84	30·84	30·88	...	30·89	30·89
B	29·03	28·97	28·94	29·01	29·00	28·87	29·00	28·93	...	29·00	28·98
C	26·77	26·56	26·67	26·73	26·80	26·69	26·68	26·73	...	26·74	26·72
D	24·57	24·45	...	24·60	24·53	24·49	24·56	24·52	...	24·57	24·55
E	22·24	22·16	22·16	22·26	22·25	22·13	22·20	22·25	...	22·23	22·22
F	17·56	17·47	17·44	17·51	17·51	17·46	17·48	17·48	...	17·52	17·50
G	15·44	15·36	15·40	15·37	15·44	15·35	15·40	15·38	15·29	15·40	15·39
H	13·17	13·01	13·19	13·17	13·16	13·17	13·08	13·17	13·10	13·16	13·15
I	11·12	11·08	11·06	11·16	11·16	11·07	11·16	11·03	11·08	11·09	11·10
J	9·10	9·03	9·05	9·09	9·16	9·12	9·08	9·15	9·06	9·09	9·09
K	4·53	4·34	4·43	4·41	4·48	4·40	4·44	4·41	4·42	4·45	4·44
L	2·27	2·17	2·25	2·27	2·21	2·20	2·20	2·27	2·18	2·23	2·22
M	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
N	2·34	2·41	2·41	2·41	2·34	2·42	2·36	2·34	2·40	2·38	2·38
O	4·89	5·00	...	4·95	4·95	4·99	5·00	4·93	4·91	4·95	4·95
P	8·64	8·73	...	8·69	8·69	8·73	8·68	8·69	8·84	8·70	8·71
Q	10·98	10·96	...	10·96	11·03	10·99	11·00	10·93	10·97	10·98	10·98
R	12·96	13·10	...	13·03	12·96	13·09	13·00	13·01	13·05	13·06	13·04
S	15·58	15·72	...	15·44	15·64	15·59	15·64	15·57	15·72	15·63	15·62
T	17·56	17·95	...	...	17·64	17·73	17·64	17·68	17·74	17·72	17·71
U	22·02	22·19	...	22·06	22·05	22·13	22·12	22·06	22·16	22·10	22·10
V	24·43	24·63	...	24·46	24·39	24·55	24·44	24·46	24·46	24·49	24·49
W	26·63	26·86	...	26·67	26·66	26·73	26·68	26·73	26·75	26·72	26·72
X	28·82	28·91	...	28·87	28·87	28·91	28·84	28·87	28·88	28·89	28·88
Y	31·16	31·38	...	31·28	31·34	31·35	31·32	31·34	31·44	31·35	31·34

TABLE O. EQUATORIAL INTERVALS IN SECONDS OF TIME OF EACH WIRE FROM THE CENTRE WIRE OF TELESCOPE NO. 2, AS DETERMINED BY TRANSITS OF CIRCUMPOLAR STARS, AND BY MICROMETER MEASUREMENTS, SEASON 1881-82.

Name of Wire	November 19, *I.P.E.*					November 21, *I.P.W.*					Mean	Micrometer Measurement	Mean adopted for Season 1881-82
	B.A.C. 273	B.A.C. 4498	B.A.C. 960	B.A.C. 1061	B.A.C. 1235	B.A.C. 273	B.A.C. 4498	B.A.C. 960	B.A.C. 1061	B.A.C. 1235			
	s	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
A	34·316	34·161	34·421	34·402	34·147	34·307	34·147	34·386	34·259	34·424	34·297	34·270	34·284
B	32·013	31·927	31·989	31·938	31·831	31·931	31·831	31·985	31·822	31·902	31·917	31·878	31·898
C	29·407	29·257	29·500	29·371	29·265	29·385	29·265	29·345	29·288	29·530	29·361	29·351	29·356
D	26·982	26·942	27·068	27·193	26·827	26·961	26·827	27·012	26·909	27·058	26·978	26·950	26·964
E	24·479	24·280	24·424	24·547	24·398	24·391	24·398	24·515	24·354	24·495	24·428	24·399	24·414
F	19·663	19·545	19·647	19·658	19·579	19·584	19·579	19·695	19·538	19·642	19·613	19·558	19·582
G	17·201	17·061	17·138	17·214	17·026	17·099	17·026	17·227	17·108	17·187	17·129	17·085	17·107
H	14·953	14·696	14·803	14·874	14·761	14·747	14·761	14·865	14·735	14·914	14·810	14·763	14·787
I	12·291	12·140	12·313	12·338	12·284	12·262	12·284	12·224	12·181	12·326	12·264	12·252	12·258
J	9·569	9·535	9·622	9·608	9·523	9·576	9·523	9·631	9·528	9·722	9·584	9·523	9·554
K	4·952	4·759	5·018	4·980	4·826	4·956	4·826	5·022	4·823	4·993	4·916	4·902	4·909
L	2·436	...	2·480	2·477	2·405	2·412	2·405	2·506	2·431	2·588	2·460	2·451	2·456
M	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000	0·000
N	2·546	2·581	2·557	2·490	2·582	2·625	2·582	2·478	2·606	2·464	2·551	2·581	2·566
O	4·879	5·001	5·046	4·863	4·996	4·970	4·996	4·858	5·011	4·911	4·953	4·915	4·934
P	9·764	9·825	...	9·719	9·790	9·868	9·790	9·794	9·847	9·722	9·791	9·831	9·811
Q	12·140	12·293	...	12·130	12·251	12·359	12·251	12·090	12·245	12·119	12·210	12·247	12·229
R	14·649	14·664	...	14·575	14·697	14·729	14·697	14·615	14·716	14·665	14·665	14·693	14·679
S	17·340	17·415	...	17·259	17·303	17·482	17·303	17·363	17·438	17·286	17·354	17·408	17·381
T	19·777	19·803	...	19·697	19·741	19·584	19·741	19·666	19·792	19·609	19·715	19·778	19·747
U	24·400	24·433	...	24·235	24·382	24·506	24·382	24·294	24·386	24·313	24·370	24·407	24·389
V	27·171	27·269	...	27·088	27·126	27·228	27·126	27·088	27·169	27·000	27·140	27·149	27·145
W	29·498	29·475	...	29·357	...	29·555	...	29·441	...	29·448	29·447	29·448	29·448
X	31·861	31·798	...	31·789	...	31·883	...	31·794	31·816	31·787	31·817	31·800	31·809
Y	34·413	34·242	...	34·265	...	34·489	...	34·357	34·358	34·382	34·358	34·369	34·364

TABLE P. EQUATORIAL INTERVALS IN SECONDS OF TIME OF EACH WIRE FROM THE CENTRE WIRE OF TELESCOPE NO. 2, AS DETERMINED BY TRANSITS OF CIRCUMPOLAR STARS, SEASON 1882-83.

Name of Wire	December 4		December 7		December 8		December 12		Dec. 20	Dec. 22	January 3	January 5	Mean adopted for Season 1882-83
	R.P.L.* 98	Polaris	R.P.L. 158	R.P.L. 89	R.P.L. 158	R.P.L. 89	R.P.L. 93	Polaris	R P.L. 93	R.P L. 37	Polaris	Polaris	
	s	s	s	s	s	s	s	s	s	s	s	s	s
A	31·15	31·24	31·32	31·23	31·31	31·16	31·13	31·25	31·22	31·26	31·35	31·26	31·24
B	29·10	29·01	29·16	29·00	29·10	29·00	28·99	29·14	29·04	29·13	29·09	29·11	29·07
C	26·63	26·65	26·71	26·57	26·71	26·57	26·57	26·72	26·62	26·57	26·67	26·65	26·64
D	24·34	24·35	24·50	24·34	24·44	24·40	24·38	24·49	24·41	24·52	24·49	24·51	24·43
E	22·03	22·04	22·12	21·98	22·12	22·04	22·02	22·14	22·08	22·11	22·16	22·11	22·08
F	17·58	17·55	17·69	17·52	17·63	17·52	17·55	17·68	17·70	17·71	17·70	17·68	17·63
G	15·60	15·44	15·59	15·48	15·54	15·48	15·51	15·58	15·57	15·66	15·56	15·56	15·55
H	13·21	13·19	13·27	13·25	13·27	13·25	13·29	13·33	13·38	13·40	13·33	...	13·29
I	11·08	11·06	11·12	11·09	11·17	11·09	11·10	11·15	11·16	11·20	11·11	11·15	11·12
J	8·74	8·77	8·84	8·79	8·79	8·79	8·79	8·84	8·84	8·93	8·84	8·77	8·81
K	4·06	4·24	4·42	4·26	4·37	4·40	4·34	4·40	4·39	4·47	4·42	4·35	4·34
L	1·98	1·96	2·03	1·97	2·04	1·97	2·05	2·04	2·02	2·12	2·02	1·99	2·02
M	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
N	2·55	2·49	2·44	2·49	2·44	2·43	2·46	2·43	2·51	2·42	2·47	2·47	2·47
O	4·84	4·78	4·71	4·72	4·77	4·72	4·71	4·72	...	4·68	4·74	4·76	4·74
P	9·31	9·20	9·20	9·18	9·20	9·18	9·22	9·23	9·31	9·15	9·18	...	9·21
Q	11·49	11·45	11·35	11·35	11·41	11·35	11·42	11·36	11·36	11·20	11·36	11·47	11·38
R	13·84	13·71	13·68	13·64	13·74	13·64	13·70	13·63	13·67	13·62	13·74	13·76	13·69
S	16·17	16·06	16·01	16·01	16·06	16·01	15·97	...	15·97	15·96	16·04	16·07	16·03
T	18·36	18·24	18·16	18·17	18·27	18·11	18·16	18·12	18·13	18·08	18·23	18·23	18·19
U	22·78	22·63	22·58	22·63	22·64	22·50	22·57	22·55	22·51	22·55	22·69	22·64	22·61
V	25·12	24·94	24·91	24·86	24·91	24·86	24·84	24·80	24·76	24·89	25·01	24·94	24·90
W	27·41	27·24	27·18	27·16	27·30	27·09	27·17	27·11	27·06	27·16	27·25	27·27	27·20
X	29·64	29·49	29·45	29·32	29·51	29·32	29 36	29·39	29·33	29·43	29·62	29·53	29·45
Y	31·88	31·72	31·72	31·62	31·72	31·62	31·57	31·60	31·59	31·62	31·81	31·78	31·69

* The letters R.P.L. signify Radcliffe Polar List.

TABLE Q. EQUATORIAL INTERVALS IN SECONDS OF TIME OF EACH WIRE FROM THE CENTRE WIRE OF TELESCOPE NO. 2, AS DETERMINED BY TRANSITS OF CIRCUMPOLAR STARS, SEASON 1883-84.

Name of Wire	November 15, *I.P.E.*					November 16, *I.P.E.*				Mean adopted for Season 1883-84
	Gr. 2017	Gr. 2074	Gr. 2076	Gr. 2109	Gr. 2137	Gr. 2074	Gr. 2076	B.A.C. 7854	Gr. 2137	
	s	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
A	31·29	31·06	31·06	31·22	31·05	31·11	31·16	31·33	31·28	31·17
B	29·11	28·97	28·91	29·07	28·96	28·91	28·89	29·09	29·06	29·00
C	26·71	26·59	26·40	26·54	26·56	26·58	26·76	26·75	26·70	26·62
D	24·40	24·26	24·29	24·51	24·32	24·25	24·25	24·47	24·45	24·36
E	22·15	22·03	21·86	21·95	21·92	21·89	21·88	22·14	22·16	22·00
F	17·70	17·63	17·46	17·52	17·79	17·42	17·38	17·69	17·60	17·58
G	15·63	15·59	15·51	15·49	15·51	15·38	15·34	15·69	15·71	15·54
H	13·34	13·55	13·38	13·20	13·24	13·15	13·15	13·38	13·31	13·30
I	11·16	11·13	11·27	11·06	11·03	11·14	11·15	11·19	11·10	11·14
J	8·83	8·95	8·81	8·80	8·76	8·87	8·78	8·87	8·84	8·83
K	4·44	4·40	4·37	4·31	4·29	4·37	4·39	4·39	4·42	4·38
L	2·04	2·10	1·93	2·01	1·95	1·99	2·07	2·06	2·00	2·02
M	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00	0·00
N	2·44	2·45	2·60	2·49	2·51	2·42	2·48	2·42	2·43	2·47
O	...	4·79	4·75	4·79	4·77	4·67	4·69	4·73	4·74	4·74
P	...	9·35	9·25	9·28	9·18	9·21	9·21	9·14	9·17	9·22
Q	11·33	11·49	11·53	11·38	11·42	11·36	11·32	11·33	11·39	11·40
R	13·65	13·58	13·73	13·70	13·69	13·58	13·57	13·67	13·65	13·65
S	...	15·90	16·03	16·05	16·02	15·94	15·92	16·06	16·06	16·00
T	18·09	18·07	18·23	18·25	18·24	18·05	18·08	18·17	18·19	18·15
U	22·49	22·43	22·52	22·56	...	22·37	22·43	22·56	22·59	22·50
V	24·92	24·64	24·73	24·93	...	24·70	24·78	24·85	24·88	24·80
W	27·16	26·87	27·09	27·22	...	26·99	27·00	27·13	27·17	27·08
X	29·45	29·27	29·24	29·47	...	29·26	29·26	29·39	29·39	29·34
Y	31·63	31·57	31·55	31·65	...	31·46	31·44	31·62	31·65	31·57

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ELECTRO-TELEGRAPHIC LONGITUDES

PART II.

1881-82, 1882-83 AND 1883-84.

INDIAN ARCS.

ABSTRACT OF THE OBSERVATIONS

AND

REDUCTION OF THE RESULTS.

ELECTRO-TELEGRAPHIC LONGITUDES

1881-82

INDIAN ARCS

ABSTRACT OF THE OBSERVATIONS

AND

REDUCTION OF THE RESULTS.

EXPLANATION OF *TABLE I.*

"*Abstract of Determinations of Collimation and Level Correction-Constants.*"

The method followed in making the observations to determine Collimation and Level correction-constants is fully explained in Chapter VI, Volume IX of the *Account of the Operations of the Great Trigonometrical Survey of India.*

The results obtained are given in Abstract in the following table, and the meaning of the symbols used therein are here briefly recapitulated.

The contents of the table are divided into groups, one for each arc measured; and, in each group, the left and right hand sides contain data belonging to the East and West stations, respectively.

All the transit wires are moveable by the telescope micrometer, on the reading of which, therefore, the collimation of the telescope depends.

Columns 1 & 10 contain the astronomical dates.

„ 2 & 11 contain the names of the stations, and indicate the telescope in use at each.

„ 3 & 12 show the position of the telescopes on each day. *I. P. E.* (or *W*) meaning, Illuminated Pivot East (or West).

„ 4 & 13. Headed C_o. This is the reading of the telescope micrometer, when so set that the centre wire is truly collimated, as found by observation.

„ 5 & 14. Headed C_s. This is the reading of the telescope micrometer as set during the observation of star transits. The setting is arbitrary and is generally constant for each station.

„ 6 & 15. Headed c_1. This is the collimation correction-constant. It is equal to $C_o - C_s$, or $C_s - C_o$, when the position of the telescope is *I. P. E.*, or *I. P. W.*, respectively.

„ 7 & 16. Headed c. This is simply c_1, altered to include the correction-constant for diurnal aberration. c is used in combination with each star's constant for computing the correction for collimation, which therefore includes the correction for diurnal aberration.

„ 8 & 17. Headed M. M is the reading of the telescope micrometer when the centre wire and its reflection from the mercury coincide.

„ 9 & 18. Headed b. This is the level correction-constant. It is equal to $C_o - M$, or $M - C_o$, when the telescope is *I. P. E.*, or *I. P. W.*, respectively.

All these quantities are expressed in divisions of the telescope micrometer head, the values of which are as below.

In 1876.	Telescope No. 1,	1 division	= 0·02245 s:	Telescope No. 2,	1 division	= 0·02261 s.
In 1877.	„	„	= 0·02239:	„	„	= 0·02259.
In 1881.	„	„	= 0·02243:	„	„	= 0·02259.

Whenever there is more than one value of C_o or M for the same date, the mean of all the values has been employed to obtain c_1 and b.

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1881			*d*	*d*	*d*	*d*	*d*	*d*	1881			*d*	*d*	*d*	*d*	*d*	*d*
Nov. 24	FYZABAD (Telescope No. 1)	*I.P.E.*	106·2	105·5	+ 0·7	− 0·1	100·3	+ 5·9	Nov. 24	AGRA (Telescope No. 2)	*I.P.W.*	16·7	15·0	− 1·7	− 2·5	13·0	− 3·7
																7·6	− 9·1
„ 25		„	103·4	105·0	− 1·6	− 2·4	99·2	+ 4·2	„ 25		„	8·8	15·0	+ 6·2	+ 5·4	7·5	− 1·3
																4·5	− 4·3
„ 28		„	104·7	105·0	− 0·3	− 1·1	100·3	+ 4·4	„ 28		„	12·4	15·0	+ 2·6	+ 1·8	13·7	+ 1·3
							100·5	+ 4·2								9·8	− 2·6
„ 29		„	107·1	105·0	+ 2·1	+ 1·3	100·4	+ 6·7	„ 29		„	14·8	15·0	+ 0·2	− 0·6	15·2	+ 0·4
			104·8	105·0	− 0·2	− 1·0	99·7	+ 5·1								13·8	− 1·0
„ 30		*I.P.W.*	100·3	100·0	− 0·3	− 1·1	101·5	+ 1·2	„ 30		*I.P.E.*	11·9	15·0	− 3·1	− 3·9	10·1	+ 1·8
			103·7	100·0	− 3·7	− 4·5	106·5	+ 2·8								5·7	+ 6·2
Dec. 1		„	104·4	105·0	+ 0·6	− 0·2	106·4	+ 2·0	Dec. 1		„	8·2	15·0	− 6·8	− 7·6	7·1	+ 1·1
							108·4	+ 4·0								4·7	+ 3·5
„ 2		„	99·7	105·0	+ 5·3	+ 4·5	105·1	+ 5·4	„ 2		„	7·7	15·0	− 7·3	− 8·1	7·2	+ 0·5
							102·0	− 0·2								3·9	+ 3·8
			104·7	105·0	+ 0·3	− 0·5	108·9	+ 4·2									
Dec. 12	FYZABAD (Telescope No. 1)	*I.P.W.*	13·2	15·0	+ 1·8	+ 1·0	17·8	+ 4·6	Dec. 12	JUBBULPORE (Telescope No. 2)	*I.P.W.*	108·4	110·0	+ 1·6	+ 0·8	108·1	− 0·3
							18·6	+ 4·8								103·8	− 4·6
			14·3	15·0	+ 0·7	− 0·1	21·4	+ 7·1									
„ 13		„	14·5	15·0	+ 0·5	− 0·3	20·3	+ 5·8	„ 13		„	101·7	100·0	− 1·7	− 2·5	101·5	− 0·2
			16·1	15·0	− 1·1	− 1·9	22·9	+ 6·8				96·8	100·0	+ 3·2	+ 2·4	99·0	+ 2·2
„ 14		„	14·3	15·0	+ 0·7	− 0·1	13·1	− 1·2	„ 14		„	100·2	100·0	− 0·2	− 1·0	98·1	− 2·1
			17·0	15·0	− 2·0	− 2·8	14·2	− 2·8				96·9	100·0	+ 3·1	+ 2·3	100·1	+ 3·2
„ 16		*I.P.E.*	15·4	15·0	+ 0·4	− 0·4	13·7	+ 1·7	„ 16		*I.P.E.*	79·5	100·0	−20·5	−21·3	86·3	− 6·8
			15·3	15·0	+ 0·3	− 0·5	13·8	+ 1·5				76·9	100·0	−23·1	−23·9	87·8	−10·9
„ 19		„	14·4	15·0	− 0·6	− 1·4	16·7	− 2·3	„ 19		„	78·7	100·0	−21·3	−22·1	86·4	− 7·7
			14·0	15·0	− 1·0	− 1·8	16·9	− 2·9				76·8	100·0	−23·2	−24·0	83·4	− 6·6
„ 20		„	15·1	15·0	+ 0·1	− 0·7	15·7	− 0·6	„ 20		„	76·3	100·0	−23·7	−24·5	85·9	− 9·6
							15·3	− 0·2				78·9	100·0	−21·1	−21·9		
							16·4	− 1·3									
1882									1882								
Jan. 4	HAZARIBAGH (Telescope No. 2)	*I.P.E.*	80·2	85·0	− 4·8	− 5·6	78·9	+ 1·3	Jan. 4	FYZABAD (Telescope No. 1)	*I.P.W.*	9·8	10·0	+ 0·2	− 0·6	13·2	+ 3·4
			77·9	85·0	− 7·1	− 7·9	77·9	0·0				15·0	10·0	− 5·0	− 5·8	15·7	+ 0·7
„ 5		„	79·5	85·0	− 5·5	− 6·3	80·6	− 1·1	„ 5		„	10·7	10·0	− 0·7	− 1·5	14·8	+ 4·1
			78·0	85·0	− 7·0	− 7·8	80·6	− 2·6								16·9	+ 4·5
												14·2	10·0	− 4·2	− 5·0	18·3	+ 4·1
„ 6		„	92·1	85·0	+ 7·1	+ 6·3	95·5	− 3·4	„ 6		„	14·1	15·0	+ 0·9	+ 0·1	9·0	− 5·1
			79·7	85·0	− 5·3	− 6·1	86·1	− 6·4				15·2	15·0	− 0·2	− 1·0	10·0	− 5·2
												16·2	15·0	− 1·2	− 2·0	10·2	− 6·0

TABLE I. ABSTRACT OF DETERMINATIONS OF COLLIMATION AND LEVEL CORRECTION-CONSTANTS.

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1882			*d*	*d*	*d*	*d*	*d*	*d*	1882			*d*	*d*	*d*	*d*	*d*	*d*
Jan. 7	HAZARIBAGH (Telescope No. 2)—(*Continued*).	*I. P. W.*	104·6	100·0	− 4·6	− 5·4	103·4	− 1·2	Jan. 7	FYZABAD (Telescope No. 1)—(*Continued*).	*I. P. E.*	13·9	15·0	− 1·1	− 1·9	13·9	0·0
			93·4	100·0	+ 6·6	+ 5·8	99·7	+ 6·3								15·4	− 1·9
												13·1	15·0	− 1·9	− 2·7	14·7	− 1·6
„ 9		„	98·9	100·0	+ 1·1	+ 0·3	95·9	− 3·0	„ 9		„	13·1	15·0	− 1·9	− 2·7	11·7	+ 1·4
			91·6	100·0	+ 8·4	+ 7·6	93·0	+ 1·4								11·0	+ 2·4
												13·6	15·0	− 1·4	− 2·2	10·9	+ 2·7
„ 10		„	93·8	100·0	+ 6·2	+ 5·4	88·4	− 5·4	„ 10		„	14·5	15·0	− 0·5	− 1·3	10·5	+ 4·0
			91·4	100·0	+ 8·6	+ 7·8	86·5	− 4·9								11·3	+ 3·1
												14·3	15·0	− 0·7	− 1·5	11·2	+ 3·1
Jan. 19	HAZARIBAGH (Telescope No. 2)	*I. P. W.*	93·5	95·0	+ 1·5	+ 0·7	90·5	− 3·0	Jan. 19	JUBBULPORE (Telescope No. 1)	*I. P. W.*	16·3	15·0	− 1·3	− 2·1	15·0	− 1·3
			90·3	95·0	+ 4·7	+ 3·9	85·8	− 4·5				19·2	15·0	− 4·2	− 5·0	14·8	− 4·4
												20·9	15·0	− 5·9	− 6·7	16·4	− 4·5
„ 20		„	97·8	95·0	− 2·8	− 3·6	94·3	− 3·5	„ 20		„	22·8	20·0	− 2·8	− 3·6	18·2	− 3·2
			90·4	95·0	+ 4·6	+ 3·8	85·0	− 5·4				20·2	20·0	− 0·2	− 1·0		
												21·2	20·0	− 1·2	− 2·0	17·7	− 3·7
„ 21		„	93·6	95·0	+ 1·4	+ 0·6	88·9	− 4·7	„ 21		„	17·1	20·0	+ 2·9	+ 2·1	15·3	− 1·8
			91·3	95·0	+ 3·7	+ 2·9	85·3	− 6·0				18·8	20·0	+ 1·2	+ 0·4	18·1	− 0·7
												21·4	20·0	− 1·4	− 2·2	17·8	− 3·6
„ 24		*I. P. E.*	89·9	90·0	− 0·1	− 0·9	91·6	− 1·7	„ 24		*I. P. E.*	19·0	20·0	− 1·0	− 1·8	16·1	+ 2·9
			86·3	90·0	− 3·7	− 4·5	91·6	− 5·3				19·4	20·0	− 0·6	− 1·4	13·8	+ 5·6
„ 25		„	84·1	90·0	− 5·9	− 6·7	92·1	− 8·0	„ 25		„	18·6	20·0	− 1·4	− 2·2	14·9	+ 3·7
			85·8	90·0	− 4·2	− 5·0	91·6	− 5·8				18·9	20·0	− 1·1	− 1·9	16·3	+ 2·6
„ 26		„	86·2	90·0	− 3·8	− 4·6	95·7	− 9·5	„ 26		„	20·8	20·0	+ 0·8	0·0	15·5	+ 5·3
			79·8	90·0	−10·2	−11·0	89·2	− 9·4				19·5	20·0	− 0·5	− 1·3	14·1	+ 5·4
Feb. 8	CALCUTTA (Telescope No. 1)	*I. P. W.*	8·7	10·0	+ 1·3	+ 0·5	9·8	+ 1·1	Feb. 8	HAZARIBAGH (Telescope No. 2)	*I. P. E.*	83·7	85·0	− 1·3	− 2·1	84·6	− 0·9
			12·7	10·0	− 2·7	− 3·5	17·6	+ 4·9				85·4	85·0	+ 0·4	− 0·4	84·5	+ 0·9
			14·1	10·0	− 4·1	− 4·9	16·3	+ 2·2									
							17·7	+ 3·6									
„ 9		„	8·9	10·0	+ 1·1	+ 0·3	17·9	+ 9·0	„ 9		„	84·6	85·0	− 0·4	− 1·2	87·0	− 2·4
			9·3	10·0	+ 0·7	− 0·1	15·2	+ 5·9				82·8	85·0	− 2·2	− 3·0	85·2	− 2·4
			13·9	10·0	− 3·9	− 4·7	18·7	+ 4·8									
„ 10		„	9·6	10·0	+ 0·4	− 0·4	17·1	+ 7·5	„ 10		„	85·0	85·0	0·0	− 0·8	86·0	− 1·0
			14·3	10·0	− 4·3	− 5·1	17·3	+ 3·0				79·6	85·0	− 5·4	− 6·2	84·5	− 4·9
			11·8	10·0	− 1·8	− 2·6	19·1	+ 7·3									
„ 13		*I. P. E.*	14·4	15·0	− 0·6	− 1·4	12·4	+ 2·0	„ 13		*I. P. W.*	92·4	90·0	− 2·4	− 3·2	90·5	− 1·9
			15·9	15·0	+ 0·9	+ 0·1	14·5	+ 1·4				89·0	90·0	+ 1·0	+ 0·2	89·4	+ 0·4
„ 14		„	15·3	15·0	+ 0·3	− 0·5	11·9	+ 3·4	„ 14		„	89·9	90·0	+ 0·1	− 0·7	89·2	− 0·7
			14·8	15·0	− 0·2	− 1·0	11·4	+ 3·4			c	88·1	90·0	+ 1·9	+ 1·1	87·8	− 0·3
„ 16		„	14·4	15·0	− 0·6	− 1·4	13·8	+ 0·6	„ 16		„	88·6	90·0	+ 1·4	+ 0·6	89·1	+ 0·5
			16·7	15·0	+ 1·7	+ 0·9	12·9	+ 3·8				86·1	90·0	+ 3·9	+ 3·1	88·3	+ 2·2

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1882			*d*	*d*	*d*	*d*	*d*	*d*	1882			*d*	*d*	*d*	*d*	*d*	*d*
Feb. 25	JALPAIGURI (Telescope No. 1)	*I. P. W.*	67·7	70·0	+ 2·3	+ 1·5	68·6	+ 0·9	Feb. 25	HAZARIBAGH (Telescope No. 2)	*I. P. W.*	91·0	90·0	− 1·0	− 1·8	92·8	+ 1·8
			70·7	70·0	− 0·7	− 1·5	69·1	− 1·6				86·7	90·0	+ 3·3	+ 2·5	91·6	+ 4·9
Mar. 1		„	65·9	70·0	+ 4·1	+ 3·3	63·3	− 2·6	Mar. 1		„	93·1	90·0	− 3·1	− 3·9	85·7	− 7·4
			68·2	70·0	+ 1·8	+ 1·0	66·6	− 1·6				87·0	90·0	+ 3·0	+ 2·2	88·8	+ 1·8
												87·2	90·0	+ 2·8	+ 2·0	88·2	+ 1·0
„ 2		„	64·5	70·0	+ 5·5	+ 4·7	64·0	− 0·5	„ 2		„	77·2	80·0	+ 2·8	+ 2·0	74·8	− 2·4
			66·9	70·0	+ 3·1	+ 2·3	65·7	− 1·2				78·3	80·0	+ 1·7	+ 0·9	79·4	+ 1·1
			67·4	70·0	+ 2·6	+ 1·8	67·5	+ 0·1									
„ 3		*I. P. E.*	70·2	70·0	+ 0·2	− 0·6	69·7	+ 0·5	„ 3		*I. P. E.*	74·9	80·0	− 5·1	− 5·9	77·4	− 2·5
							70·3	− 0·3				75·5	80·0	− 4·5	− 5·3	76·0	− 0·5
			69·7	70·0	− 0·3	− 1·1	70·8	− 1·1									
„ 4		„	67·3	70·0	− 2·7	− 3·5	69·6	− 2·3	„ 4		„	77·2	80·0	− 2·8	− 3·6	75·2	+ 2·0
							69·0	− 0·3				73·2	80·0	− 6·8	− 7·6	73·9	− 0·7
			70·1	70·0	+ 0·1	− 0·7	69·5	+ 0·6									
„ 5		„	70·7	70·0	+ 0·7	− 0·1	69·6	+ 1·1	„ 5		„	73·2	80·0	− 6·8	− 7·6	75·7	− 2·5
			69·4	70·0	− 0·6	− 1·4	69·4	0·0				72·9	80·0	− 7·1	− 7·9	74·4	− 1·5
Mar. 17	At JALPAIGURI (Telescope No. 1)	*I.P.E.*	65·9	70·0	− 4·1	− 4·9	68·1	− 2·2	Mar. 17	At CALCUTTA (Telescope No. 2)	*I.P.W.*	78·5	80·0	+ 1·5	+ 0·7	72·2	− 6·3
							66·9	+ 0·1				73·7	80·0	+ 6·3	+ 5·5	70·1	− 3·6
			68·0	70·0	− 2·0	− 2·8	67·5	+ 0·5									
„ 19		„	71·7	70·0	+ 1·7	+ 0·9	67·0	+ 4·7	„ 19		„	76·1	80·0	+ 3·9	+ 3·1	74·4	− 1·7
			69·8	70·0	− 0·2	− 1·0	66·6	+ 3·2				73·8	80·0	+ 6·2	+ 5·4	69·8	− 4·0
„ 22		„	68·4	70·0	− 1·6	− 2·4	65·6	+ 1·6	„ 22		„	74·4	80·0	+ 5·6	+ 4·8	75·7	+ 1·3
			65·7	70·0	− 4·3	− 5·1						73·2	80·0	+ 6·8	+ 6·0	69·7	− 3·5
			67·6	70·0	− 2·4	− 3·2	64·9	+ 2·3									
Apr. 4		*I.P.W.*	58·1	60·0	+ 1·9	+ 1·1	62·5	+ 5·2	Apr. 4		*I.P.E.*	74·4	80·0	− 5·6	− 6·4	75·9	− 1·5
			56·9	60·0	+ 3·1	+ 2·3						75·7	80·0	− 4·3	− 5·1	76·8	− 1·1
			57·9	60·0	+ 2·1	+ 1·3	62·4	+ 5·3									
„ 5		„	55·6	60·0	+ 4·4	+ 3·6	62·5	+ 6·9	„ 5		„	78·3	80·0	− 1·7	− 2·5	76·9	+ 1·4
			56·6	60·0	+ 4·4	+ 3·6						73·8	80·0	− 6·2	− 7·0	78·0	− 4·2
			60·9	60·0	− 0·9	− 1·7	63·4	+ 4·7									
„ 6		„	58·5	60·0	+ 1·5	+ 0·7	62·7	+ 4·2	„ 6		„	77·0	80·0	− 3·0	− 3·8	80·3	− 3·3
			59·1	60·0	+ 0·9	+ 0·1	61·8	+ 2·7				71·7	80·0	− 8·3	− 9·1	77·0	− 5·3

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a_1, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for				Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
										Collimation	Level	Pen Equation Q	Clock Rate				
		1881							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
FYZABAD AND AGRA	AGRA (Latitude 27° 10′)	Nov. 25	*I. P. W.*	E	1364 Gr. 72	L	1	+0·2149	3 22 45·10	−1·25	+0·24	+1·69		45·78	3 3 23·10	−19 22·68	
				„	326 „	U	4	−0·2958	3 47 35·33	+1·86	−0·50	+1·69	+0·13	38·51	3 28 23·74	−19 14·77	−15·5
				W	8 Ursæ Minoris	L	3	+0·3485	6 10 50·07	−2·06	+0·43	−1·69		46·75	6 9 59·73	− 0 47·02	
				„	51 Cephei	U	3	−0·4024	6 45 45·37	+2·51	−0·65	−1·69	−0·12	45·42	6 45 14·97	− 0 30·45	−22·1
		„ 28	„	E	1364 Gr. 72	L	5	+0·2149	3 22 18·50	−0·42	+0·06	+1·70		19·84	3 3 23·22	−18 56·62	
				„	326 „	U	4	−0·2958	3 47 3·40	+0·62	−0·12	+1·70	+0·13	5·73	3 28 23·70	−18 42·03	−28·6
				W	8 Ursæ Minoris	L	5	+0·3485	6 11 6·76	−0·69	+0·11	−1·70		4·48	6 9 58·99	− 1 5·49	
				„	51 Cephei	U	5	−0·4024	6 45 56·70	+0·84	−0·16	−1·70	−0·12	55·56	6 45 16·09	− 0 39·47	−34·7
		„ 29	„	E	1364 Gr. 72	L	4	+0·2149	3 22 8·98	+0·14	+0·03	+1·69		10·84	3 3 23·26	−18 47·58	
				„	326 „	U	4	−0·2958	3 46 53·98	−0·21	−0·05	+1·69	+0·13	55·54	3 28 23·68	−18 31·86	−30·8
				W	8 Ursæ Minoris	L	5	+0·3485	6 11 9·62	+0·23	+0·05	−1·69		8·21	6 9 58·79	− 1 9·42	
				„	51 Cephei	U	5	−0·4024	6 45 61·32	−0·28	−0·07	−1·69	−0·12	59·16	6 45 16·41	− 0 42·75	−35·5
		„ 30	*I. P. E.*	E	1364 Gr. 72	L	4	+0·2149	3 21 57·93	+0·90	−0·34	+1·70		60·19	3 3 23·30	−18 36·89	
				„	326 „	U	4	−0·2958	3 46 50·03	−1·34	+0·71	+1·70	+0·13	51·23	3 28 23·67	−18 27·56	−18·3
				W	8 Ursæ Minoris	L	5	+0·3485	6 11 3·22	+1·49	−0·61	0·00		4·10	6 9 58·60	− 1 5·50	
				„	51 Cephei	U	4	−0·4024	6 46 10·75	−1·81	+0·93	−1·70	−0·12	8·05	6 45 16·70	− 0 51·35	−18·8
		Dec. 1	„	E	1364 Gr. 72	L	2	+0·2149	3 21 47·25	+1·76	−0·20	+1·70		50·51	3 3 23·35	−18 27·16	
				„	326 „	U	4	−0·2958	3 46 40·90	−2·62	+0·41	+1·70	+0·13	40·52	3 28 23·65	−18 16·87	−20·1
				W	8 Ursæ Minoris	L	5	+0·3485	6 11 9·02	+2·89	−0·35	−1·70		9·86	6 9 58·41	− 1 11·45	
				„	51 Cephei	U	4	−0·4024	6 46 16·38	−3·53	+0·53	−1·70	−0·12	11·56	6 45 17·00	− 0 54·56	−22·5
		„ 2	„	E	1364 Gr. 72	L	4	+0·2149	3 21 37·98	+1·87	−0·19	+1·69		41·35	3 3 23·40	−18 17·95	
				„	326 „	U	4	−0·2958	3 46 30·88	−2·79	+0·39	+1·69	+0·13	30·80	3 28 23·64	−18 7·16	−21·1
				W	8 Ursæ Minoris	L	6	+0·3485	6 11 12·23	+3·08	−0·34	−1·69		13·28	6 9 58·22	− 1 15·06	
				„	51 Cephei	U	4	−0·4024	6 46 15·13	−3·76	+0·51	−1·69	−0·12	10·07	6 45 17·30	− 0 52·77	−29·7
		1881															
	FYZABAD (Latitude 26° 47′)	Nov. 25	*I. P. E.*	E	326 Gr. 72	U	4	−0·2969	3 29 15·28	−0·83	+0·74	+2·02		17·21	3 28 23·74	− 0 53·47	
					8 Ursæ Minoris	L	5	+0·3495	6 10 47·52	+0·91	−0·64	−2·02	+0·86	46·63	6 9 59·73	− 0 46·90	+10·2
					51 Cephei	U	3	−0·4039	6 46 7·40	−1·11	+0·96	−2·02	+1·05	6·28	6 45 14·97	− 0 51·31	+ 5·9
					1364 Gr. 72	L	6	+0·2154	3 3 41·82	+0·25	−0·36	+1·67		40·26	3 3 23·22	− 0 17·04	
		„ 28	„	„	326 „	U	3	−0·2969	3 28 48·07	−0·38	+0·75	+1·67	+0·13	50·24	3 28 23·70	− 0 26·54	+18·6
					8 Ursæ Minoris	L	4	+0·3495	6 10 19·10	+0·42	−0·65	−1·67		17·20	6 9 58·99	− 0 18·21	
					51 Cephei	U	4	−0·4039	6 45 38·43	−0·51	+0·99	−1·67	+0·19	37·43	6 45 16·09	− 0 21·34	+ 4·2

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a_1, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for				Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
										Collimation	Level	Pen Equation Q	Clock Rate				
		1881							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
FYZABAD AND AGRA	FYZABAD (Latitude 26° 47′)	Nov. 29	*I. P. E*	E	1364 Gr. 72	L	5	+0·2154	3 3 32·78	−0·05	−0·50	+1·70		33·93	3 3 23·26	− 0 10·67	
					326 „	U	4	−0·2969	3 28 38·68	+0·07	+1·03	+1·70	+0·13	41·61	3 28 23·68	− 0 17·93	+14·2
					δ Ursæ Minoris	L	3	+0·3495	6 10 8·13	−0·08	−0·89	−1·70		5·46	6 9 58·79	− 0 6·67	
					51 Cephei	U	1	−0·4039	6 45 31·30	+0·09	+1·85	−1·70	+0·19	31·23	6 45 16·41	− 0 14·82	+10·8
		„ 30	*I. P. W.*	„	1364 Gr. 72	L	5	+0·2154	3 3 21·96	+0·65	−0·17	+1·68		24·12	3 3 23·30	− 0 0·82	
					326 „	U	4	−0·2969	3 28 31·73	−0·97	+0·35	+1·68	+0·13	32·92	3 28 23·67	− 0 9·25	+16·5
					δ Ursæ Minoris	L	4	+0·3495	6 9 54·13	+1·07	−0·30	−1·68		53·22	6 9 58·60	+ 0 5·38	
					51 Cephei	U	4	−0·4039	6 45 27·10	−1·30	+0·46	−1·68	+0·19	24·77	6 45 16·70	− 0 8·07	+17·9
		Dec. 1	„	„	1364 Gr. 72	L	5	+0·2154	3 3 11·80	+0·05	−0·26	+1·68		13·27	3 3 23·35	+ 0 10·08	
					326 „	U	4	−0·2969	3 28 22·50	−0·07	+0·53	+1·68	+0·13	24·77	3 28 23·65	− 0 1·12	+21·9
					δ Ursæ Minoris	L	4	+0·3495	6 9 45·18	+0·08	−0·45	−1·68		43·13	6 9 58·41	+ 0 15·28	
					51 Cephei	U	4	−0·4039	6 45 16·15	−0·09	+0·69	−1·68	+0·19	15·26	6 45 17·00	+ 0 1·74	+18·0
		„ 2	„	„	1364 Gr. 72	L	5	+0·2154	3 3 1·90	−0·46	−0·26	+1·68		2·86	3 3 23·40	+ 0 20·54	
					326 „	U	4	−0·2969	3 28 12·93	+0·69	+0·54	+1·68	+0·13	15·97	3 28 23·64	+ 0 7·67	+25·1
					δ Ursæ Minoris	L	4	+0·3495	6 9 34·30	−0·76	−0·47	−1·68		31·39	6 9 58·22	+ 0 26·83	
					51 Cephei	U	4	−0·4039	6 45 7·65	+0·93	+0·71	−1·68	+0·19	7·80	6 45 17·30	+ 0 9·50	+23·0
		1881															
FYZABAD AND JUBBULPORE	FYZABAD (Latitude 26° 47′)	Dec. 12	*I. P. W.*	E	326 Gr. 72	U	4	−0·2969	3 29 28·08	+0·14	+0·96	+0·80		29·98	3 28 23·04	− 1 6·94	
				„	1424 „	L	9	+0·1059	3 49 13·31	−0·04	−0·16	+0·80	+0·14	14·05	3 48 10·85	− 1 3·20	+ 9·2
				W	δ Ursæ Minoris	L	5	+0·3494	6 2 59·00	−0·15	−0·83	−0·80		57·22	6 9 56·28	+ 6 59·06	
				„	51 Cephei	U	5	−0·4041	6 38 22·44	+0·19	+1·26	−0·80	+0·26	23·30	6 45 20·54	+ 6 57·24	+ 2·4
		„ 13	„	E	326 Gr. 72	U	4	−0·2969	3 29 20·15	−0·38	+1·10	+0·79		21·66	3 28 22·92	− 0 58·74	
				„	1424 „	L	5	+0·1059	3 49 1·70	+0·12	−0·18	+0·79	+0·14	2·57	3 48 10·89	− 0 51·68	+17·5
				W	δ Ursæ Minoris	L	4	+0·3494	6 2 49·95	+0·42	−0·95	−0·79		48·63	6 9 56·16	+ 7 7·53	
				„	51 Cephei	U	3	−0·4041	6 38 16·73	−0·51	+1·44	−0·79	+0·21	17·08	6 45 20·75	+ 7 3·67	+ 5·1
		„ 14	„	E	326 Gr. 72	U	3	−0·2969	3 29 11·00	−0·52	−0·35	+0·81		10·94	3 28 22·79	− 0 48·15	
				„	1424 „	L	9	+0·1059	3 48 49·78	+0·17	+0·22	+0·81	+0·14	51·12	3 48 10·93	− 0 40·19	+19·9
				W	δ Ursæ Minoris	L	4	+0·3494	6 2 39·53	+0·55	+0·30	−0·81		39·59	6 9 56·06	+ 7 16·47	
				„	51 Cephei	U	4	−0·4041	6 38 12·58	−0·70	−0·46	−0·81	+0·21	10·82	6 45 20·95	+ 7 10·13	+ 8·4
		„ 16	*I. P. E.*	E	326 Gr. 72	U	3	−0·2969	3 28 41·60	−0·17	+0·28	+1·21		42·92	3 28 22·54	− 0 20·38	
				„	1424 „	L	7	+0·1059	3 48 29·03	+0·01	−0·05	+1·21	+0·14	30·34	3 48 11·00	− 0 19·34	+ 2·6
				W	δ Ursæ Minoris	L	4	+0·3494	6 2 29·63	+0·19	−0·24	−1·21		28·37	6 9 55·87	+ 7 27·50	
				„	51 Cephei	U	3	−0·4041	6 37 47·77	−0·23	+0·37	−1·21	+0·21	46·91	6 45 21·33	+ 7 34·42	− 9·2

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a_1, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for				Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
										Collimation	Level	Pen Equation Q	Clock Rate				
		1881				′			*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
FYZABAD AND JUBBULPORE	FYZABAD (Latitude 26° 47′)	Dec. 19	*I. P. E.*	E	326 Gr. 72	U	3	−0·2969	3 28 10·90	− 0·55	−0·46	+1·20		11·09	3 28 22·16	+ 0 11·07	
				„	1424 „	L	8	+0·1059	3 47 58·49	+ 0·02	+0·07	+1·20	+0·14	59·92	3 48 11·11	+ 0 11·19	+ 0·3
				W	δ Ursæ Minoris	L	4	+0·3494	6 2 4·23	+ 0·61	+0·39	−1·20		4·03	6 9 55·54	+ 7 51·51	
				„	51 Cephei	U	5	−0·4041	6 37 18·50	− 0·74	−0·60	−1·20	+0·21	16·23	6 45 21·99	+ 8 5·76	−18·9
		„ 20	„	E	326 Gr. 72	U	4	−0·2969	3 28 0·20	− 0·24	−0·12	+1·20		1·04	3 28 22·04	+ 0 21·00	
				„	1424 „	L	9	+0·1059	3 47 49·18	+ 0·01	+0·02	+1·20	+0·14	50·55	3 48 11·15	+ 0 20·60	− 1·0
				W	δ Ursæ Minoris	L	4	+0·3494	6 1 56·00	+ 0·27	+0·11	−1·20		55·18	6 9 55·42	+ 8 0·24	
				„	51 Cephei	U	4	−0·4041	6 37 9·08	− 0·33	−0·16	−1·20	+0·21	7·60	6 45 22·24	+ 8 14·64	−19·1
		1881															
		Dec. 12	*I. P. W.*	W	326 Gr. 72	U	9	−0·3074	3 30 20·07	+ 0·28	−0·39	−1·72		18·24	3 28 23·04	− 1 55·20	
					R. P. L. 115	L	8	+0·2557	3 46 60·14	− 0·22	+0·21	−1·72	+0·10	58·51	3 45 14·40	− 1 44·11	+19·7
					1424 Gr. 72	L	8	+0·1075	3 49 59·51	− 0·09	+0·05	−1·72	+0·12	57·87	3 48 10 85	− 1 47·02	+19·7
					δ Ursæ Minoris	L	4	+0·3582	6 11 36·70	− 0·30	+0·32	+1·72		38·44	6 9 56·28	− 1 42·16	
					51 Cephei	U	4	−0·4178	6 47 11·05	+ 0·37	−0·51	+1·72	+0·21	12·84	6 45 20·54	− 1 52·30	+13·1
		„ 13	„	„	326 Gr. 72	U	6	−0·3074	3 30 16·82	− 0·03	+0·16	−1·70		15·25	3 28 22·92	− 1 52·33	
					R. P. L. 115	L	4	+0·2557	3 46 48·48	+ 0·03	−0·09	−1·70	+0·10	46·82	3 45 14·49	− 1 32·33	+35·5
					1424 Gr. 72	L	10	+0·1075	3 49 49·58	+ 0·01	−0·02	−1·70	+0·12	47·99	3 48 10·89	− 1 37·10	+36·7
					δ Ursæ Minoris	L	5	+0·3582	6 11 22·40	+ 0·04	−0·13	+1·70		24·01	6 9 56·16	− 1 27·85	
					51 Cephei	U	4	−0·4178	6 47 10·45	− 0·05	+0·20	+1·70	+0·21	12·51	6 45 20·75	− 1 51·76	+30·8
		„ 14	„	„	326 Gr. 72	U	5	−0·3074	3 30 11·80	+ 0·24	+0·09	−1·68		10·45	3 28 22·79	− 1 47·66	
					R. P. L. 115	L	5	+0·2557	3 46 38·66	− 0·19	−0·05	−1·68	+0·10	36·84	3 45 14·58	− 1 22·26	+45·1
					1424 Gr. 72	L	7	+0·1075	3 49 40·91	− 0·08	−0·01	−1·68	+0·12	39·26	3 48 10·93	− 1 28·33	+46·6
					δ Ursæ Minoris	L	6	+0·3582	6 11 11·28	− 0·27	−0·08	+1·68		12·61	6 9 56·06	− 1 16·55	
					51 Cephei	U	3	−0·4178	6 47 6·37	+ 0·33	+0·12	+1·68	+0·21	8·71	6 45 20·95	− 1 47·76	+40·2
		„ 16	*I. P. E.*	„	326 Gr. 72	U	5	−0·3074	3 29 60·78	− 7·79	−1·39	−1·68		49·92	3 28 22·54	− 1 27·38	
					R. P. L. 115	L	4	+0·2557	3 46 16·85	+ 6·09	+0·76	−1·68	+0·10	22·12	3 45 14·75	− 1 7·37	+35·6
					1424 Gr. 72	L	8	+0·1075	3 49 21·44	+ 2·48	+0·19	−1·68	+0·12	22·55	3 48 11·00	− 1 11·55	+38·1
					δ Ursæ Minoris	L	6	+0·3582	6 10 46·50	+ 8·61	+1·13	+1·68		57·92	6 9 55·87	− 1 2·05	
					51 Cephei	U	4	−0·4178	6 46 59·33	−10·50	−1·81	+1·68	+0·21	48·91	6 45 21·33	− 1 27·58	+32·9
		„ 19	„	„	326 Gr. 72	U	5	−0·3074	3 29 33·10	− 7·96	−1·12	−1·67		22·35	3 28 22·16	− 1 0·19	
					R. P. L. 115	L	5	+0·2557	3 45 50·72	+ 6·23	+0·61	−1·67	+0·10	55·99	3 45 15·01	− 0 40·98	+34·1
					1424 Gr. 72	L	8	+0·1075	3 48 55·00	+ 2·53	+0·15	−1·67	+0·12	56·13	3 48 11·11	− 0 45·02	+36·6
					δ Ursæ Minoris	L	4	+0·3582	6 10 20·05	+ 8·79	+0·93	+1·67		31·44	6 9 55·54	− 0 35·90	
					51 Cephei	U	4	−0·4178	6 46 33·23	−10·73	−1·46	+1·67	+0·21	22·92	6 45 21·99	− 1 0·93	+32·3

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a_1, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
FYZABAD AND JUBBULPORE	JUBBULPORE (Latitude 23° 10′)	1881							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
		Dec. 20	*I. P. E.*	W	326 Gr. 72	U	5	−0·3074	3 20 23·90	− 8·00	−1·50	−1·61		12·79	3 28 22·04	− 0 50·75	
					R. P. L. 115	L	5	+0·2557	3 45 41·18	+ 6·25	+0·82	−1·61	+0·10	46·74	3 45 15·10	− 0 31·64	+33·9
					1424 Gr. 72	L	7	+0·1075	3 48 45 84	+ 2·54	+0·21	−1·61	+0·12	47·10	3 48 11·15	− 0 35·95	+35·7
					δ Ursæ Minoris	L	6	+0·3582	6 10 9·63	+ 8·83	+1·24	+1·61		21·31	6 9 55·42	− 0 25·89	
					51 Cephei	U	4	−0·4178	6 46 23·70	−10·78	−1·95	+1·61	+0·21	12·79	6 45 22·24	− 0 50·55	+31·8
HAZARIBAGH AND FYZABAD	HAZARIBAGH (Latitude 24° 0′)	1882															
		Jan. 4	*I. P. E.*	E	483 Gr. 72	U	13	−0·0901	5 7 3·82	− 0·75	+0·05	+1·43		4·55	5 7 45·96	+ 0 41·41	
				„	δ Ursæ Minoris	L	4	+0·3561	6 9 13·70	+ 2·59	−0·09	−1·43	+0·22	14·99	6 9 54·80	+ 0 39·81	− 3·6
				„	51 Cephei	U	4	−0·4151	6 44 45·50	− 3·16	+0·15	−1·43	+0·36	41·42	6 45 24·36	+ 0 42·94	− 4·1
				W	R. P. L. 49	U	4	−0·2002	7 37 38·30	− 1·57	+0·08	0·00	+0·59	36·81			
									*(7 48 7·58)					*(6 68)	7 48 48·20	+ 0 41·52	− 3·1
		„ 5	„	E	483 Gr. 72	U	12	−0·0901	5 6 58·83	− 0·79	−0·12	+1·43		59·35	5 7 45·90	+ 0 46·55	
				„	δ Ursæ Minoris	L	5	+0·3561	6 9 6·50	+ 2·70	+0·25	−1·43	+0·22	8·24	6 9 54·80	+ 0 46·56	0·0
				„	51 Cephei	U	4	−0·4151	6 44 43·28	− 3·30	−0·40	−1·43	+0·36	38·51	6 45 24·46	+ 0 45·95	+ 0·8
				W	R. P. L. 49	U	4	−0·2002	7 37 30·78	− 1·63	−0·22	−1·43	+0·59	27·50			
									*(7 48 5·15)					*(2·46)	7 48 48·28	+ 0 45·82	+ 1·3
		„ 6	„	E	483 Gr. 72	U	10	−0·0901	5 6 52·15	+ 0·01	−0·32	+1·43		53·27	5 7 45·84	+ 0 52·57	
				„	δ Ursæ Minoris	L	5	+0·3561	6 9 5·94	− 0·04	+0·66	−1·43	+0·22	5·35	6 9 54·81	+ 0 49·46	− 6·9
				„	51 Cephei	U	3	−0·4151	6 44 32·53	+ 0·05	−1·03	−1·43	+0·36	30·48	6 45 24·53	+ 0 54·05	− 6·1
				W	R. P. L. 49	U	4	−0·2002	7 37 17·85	+ 0·02	−0·56	−1·43	+0·59	15·88			
									*(7 47 57·74)					*(56 36)	7 48 48·36	+ 0 52·00	− 4·6
		„ 7	*I. P. W.*	E	483 Gr. 72	U	10	−0·0901	5 6 48·43	+ 0·02	+0·17	+1·41		50·03	5 7 45·78	+ 0 55·75	
				„	δ Ursæ Minoris	L	5	+0·3561	6 8 59·44	− 0·08	−0·35	−1·41	+0·22	57·82	6 9 54·85	+ 0 57·03	+ 2·9
				„	51 Cephei	U	3	−0·4151	6 44 29·63	+ 0·09	+0·54	−1·41	+0·36	29·21	6 45 24·58	+ 0 55·37	+ 2·2
				W	R. P. L. 49	U	4	−0·2002	7 37 5·75	+ 0·05	+0·30	−1·41	+0·59	4·69			
									*(7 47 52·05)					*(51 58)	7 48 48·45	+ 0 56·87	+ 0·3
		„ 9	„	E	483 Gr. 72	U	10	−0·0901	5 6 37·84	+ 0·53	−0·05	+1·41		39·73	5 7 45·67	+ 1 5·94	
				„	δ Ursæ Minoris	L	5	+0·3561	6 8 51·46	− 1·83	+0·11	−1·41	+0·22	48·55	6 9 54·99	+ 1 6·44	+ 1·1
				„	51 Cephei	U	4	−0·4151	6 44 15·60	+ 2·23	−0·17	−1·41	+0·36	16·61	6 45 24·59	+ 1 7·98	− 2·0
				W	R. P. L. 49	U	4	−0·2002	7 36 42·70	+ 1·10	−0·09	−1·41	+0·59	42·30			
									*(7 47 40·81)					*(41·00)	7 48 48·62	+ 1 7·62	− 2·1

* The numbers in brackets give the time by East Clock, corresponding to that by the West Clock in the line next above, as deduced from clock comparisons.

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a_1, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Level	Pen Equation Q	Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Error (Corrections)	Deduced Value of Deviation a_1 Correction
									h m s	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
HAZARIBAGH AND FYZABAD	HAZARIBAGH (Latitude 24° 0′)	1882 Jan. 10	*I. P. W.*	E	483 Gr. 72	U	10	−0·0901	5 6 31·25	+ 0·82	− 0·34	+ 1·41		33·14	5 7 45·6	+ 1 12·47	
				„	δ Ursæ Minoris	L	4	+0·3561	6 8 48·45	− 2·81	+ 0·70	− 1·41	+0·22	45·15	6 9 55·0	+ 1 9·93	− 5·7
				„	51 Cephei	U	4	−0·4151	6 44 7·28	+ 3·44	− 1·09	− 1·41	+0·36	8·58	6 45 24·5	+ 1 15·99	− 7·8
				W	R. P. L. 49	U	4	−0·2002	7 36 31·33	+ 1·70	− 0·59	− 1·41	+0·59	31·03			
									* (7 47 34·14)					* (34·43)	7 48 48·70	+ 1 15·27	− 9·6
	FYZABAD (Latitude 26° 47′)	1882 Jan. 4	*I. P. W.*	W	483 Gr. 72	U	9	−0·0868	5 9 28·63	−0·36	+0·14	+1·14		29·55	5 7 45·96	− 1 43·59	
					δ Ursæ Minoris	L	4	+0·3492	6 11 46·43	+1·02	−0·32	+1·14	+0·49	48·76	6 9 54·80	− 1 53·96	−23·8
					51 Cephei	U	4	−0·4044	6 47 1·43	−1·49	+0·48	+1·14	+0·76	2·32	6 45 24·36	− 1 37·96	−21·2
					R. P. L. 49	U	4	−0·1944	7 50 29·38	−0·74	+0·26	−1·14	+1·26	29·02	7 48 48·20	− 1 40·82	−24·2
		„ 5	„	„	483 Gr. 72	U	9	−0·0868	5 9 19·04	−0·36	+0·30	+1·14		20·12	5 7 45·90	− 1 34·22	
					δ Ursæ Minoris	L	3	+0·3492	6 11 34·33	+1·22	−0·65	+1·14	+0·49	36·53	6 9 54·80	− 1 41·73	−17·2
					51 Cephei	U	4	−0·4044	6 46 51·88	−1·49	+0·99	+1·14	+0·76	53·28	6 45 24·46	− 1 28·82	−17·1
					R. P. L. 49	U	3	−0·1944	7 50 20·07	−0·74	+0·53	−1·14	+1·26	19·98	7 48 48·28	− 1 31·70	−18·4
		„ 6	„	„	483 Gr. 72	U	8	−0·0868	5 9 8·44	−0·11	−0·38	+1·14		9·09	5 7 45·84	− 1 23·25	
					δ Ursæ Minoris	L	4	+0·3492	6 11 24·53	+0·38	+0·83	+1·14	+0·49	27·37	6 9 54·81	− 1 32·56	−21·4
					51 Cephei	U	4	−0·4044	6 46 39·40	−0·46	−1·26	+1·14	+0·76	39·58	6 45 24·53	− 1 15·05	−23·2
					R. P. L. 49	U	5	−0·1944	7 50 9·38	−0·23	−0·68	−1·14	+1·26	8·59	7 48 48·36	− 1 20·23	−22·7
		„ 7	*I. P. E.*	„	483 Gr. 72	U	8	−0·0868	5 8 56·74	−0·26	−0·08	+1·14		57·54	5 7 45·78	− 1 11·76	
					δ Ursæ Minoris	L	3	+0·3492	6 11 19·04	+0·87	+0·18	+1·14	+0·49	21·72	6 9 54·85	− 1 26·87	−34·7
					51 Cephei	U	4	−0·4044	6 46 25·20	−1·07	−0·28	+1·14	+0·76	25·75	6 45 24·58	− 1 1·17	−34·1
					R. P. L. 49	U	5	−0·1944	7 49 55·54	−0·53	−0·15	−1·14	+1·26	54·98	7 48 48·45	− 1 6·53	−37·4
		„ 9	„	„	483 Gr. 72	U	5	−0·0868	5 8 33·64	−0·27	+0·15	+1·14		34·66	5 7 45·67	− 0 48·99	
					δ Ursæ Minoris	L	4	+0·3492	6 10 57·90	+0·91	−0·33	+1·14	+0·49	60·11	6 9 54·99	− 1 5·12	−37·0
					51 Cephei	U	4	−0·4044	6 45 59·15	−1·12	+0·50	+1·14	+0·76	60·43	6 45 24·59	− 0 35·84	−38·9
					R. P. L. 49	U	5	−0·1944	7 49 33·20	−0·55	+0·27	−1·14	+1·26	33·04	7 48 48·62	− 0 44·42	−38·1
		„ 10	„	„	483 Gr. 72	U	8	−0·0868	5 8 21·78	−0·16	+0·23	+1·15		23·00	5 7 45·61	− 0 37·39	
					δ Ursæ Minoris	L	4	+0·3492	6 10 49·28	+0·53	−0·51	+1·15	+0·49	50·94	6 9 55·08	− 0 55·86	−42·4
					51 Cephei	U	4	−0·4044	6 45 47·80	−0·65	+0·78	+1·15	+0·76	49·84	6 45 24·57	− 0 25·27	−40·6
					R. P. L. 49	U	2	−0·1944	7 49 20·70	−0·32	+0·42	−1·15	+1·26	20·91	7 48 48·70	− 0 32·21	−43·5

* The numbers in brackets give the time by East Clock, corresponding to that by the West Clock in the line next above, as deduced from clock comparisons.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for				Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
										Collimation	Level	Pen Equation Q	Clock Rate				
		1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
HAZARIBAGH AND JUBBULPORE	HAZARIBAGH (Latitude 24° 0′)	Jan. 19	*I. P. W.*	E	δ Ursæ Minoris	L	4	+0·3559	6 9 60·60	−0·87	+0·51	−1·41		58·83	6 9 55·87	− 0 2·96	
					51 Cephei	U	4	−0·4153	6 45 1·78	+1·07	−0·80	−1·41	+0·12	0·76	6 45 24·36	+ 0 23·60	−34·4
					815 Gr. 72	U	3	−0·2501	8 20 24·60	+0·65	−0·52	+1·41	+0·43	26·57	8 20 45·87	+ 0 19·30	−36·7
		„ 20	„	„	δ Ursæ Minoris	L	4	+0·3559	6 9 41·80	−0·04	+0·60	−1·42		40·94	6 9 55·98	+ 0 15·04	
					51 Cephei	U	3	−0·4153	6 45 15·10	+0·05	−0·94	−1·42	+0·12	12·91	6 45 24·31	+ 0 11·40	+ 4·7
					815 Gr. 72	U	4	−0·2501	8 20 29·33	+0·03	−0·61	+1·42		30·17	8 20 45·87	+ 0 15·70	
					1927 „	L	1	+0·1392	8 35 13·30	−0·01	+0·17	+1·42	+0·05	14·93	8 35 26·31	+ 0 11·38	−11·1
		„ 21	„	„	δ Ursæ Minoris	L	4	+0·3559	6 9 39·53	−1·06	+0·72	−1·41		37·78	6 9 56·13	+ 0 18·35	
					51 Cephei	U	3	−0·4153	6 45 7·63	+1·30	−1·13	−1·41	+0·12	6·51	6 45 24·23	+ 0 17·72	+ 0·8
					815 Gr. 72	U	4	−0·2501	8 20 24·55	+0·80	−0·73	+1·41		26·03	8 20 45·87	+ 0 19·84	
					1927 „	L	3	+0·1392	8 35 8·40	−0·40	+0·20	+1·41	+0·05	9·66	8 35 26·31	+ 0 16·65	− 8·5
		„ 24	*I. P. E.*	„	δ Ursæ Minoris	L	2	+0·3559	6 9 29·00	+1·03	+0·47	−1·38		29·12	6 9 56·69	+ 0 27·57	
					51 Cephei	U	3	−0·4153	6 44 48·57	−1·26	−0·73	−1·38	+0·12	45·32	6 45 23·77	+ 0 38·45	−14·1
					815 Gr. 72	U	4	−0·2501	8 20 9·48	−0·77	−0·48	+1·38		9·61	8 20 45·87	+ 0 36·26	
					1927 „	L	3	+0·1392	8 34 52·77	+0·39	+0·13	+1·38	+0·05	54·72	8 35 26·31	+ 0 31·59	−12·0
		„ 25	„	„	δ Ursæ Minoris	L	5	+0·3559	6 9 24·18	+2·24	+0·92	−1·37		25·97	6 9 56·89	+ 0 30·92	
					51 Cephei	U	4	−0·4153	6 44 43·58	−2·74	−1·44	−1·37	+0·12	38·15	6 45 23·60	+ 0 45·45	−18·8
					815 Gr. 72	U	3	−0·2501	8 20 3·90	−1·68	−0·94	+1·37		2·65	8 20 45·87	+ 0 43·22	
					1927 „	L	2	+0·1392	8 34 48·80	+0·85	+0·26	+1·37	+0·05	51·33	8 35 26·31	+ 0 34·98	−21·2
		„ 26	„	„	δ Ursæ Minoris	L	4	+0·3559	6 9 21·20	+2·97	+1·27	−1·39		24·05	6 9 57·07	+ 0 33·02	
					51 Cephei	U	4	−0·4153	6 44 38·28	−3·63	−1·99	−1·39	+0·12	31·39	6 45 23·45	+ 0 52·06	−24·7
					815 Gr. 72	U	3	−0·2501	8 19 59·23	−2·22	−1·29	+1·39		57·11	8 20 45·87	+ 0 48·76	
					1927 „	L	2	+0·1392	8 34 42·80	+1·12	+0·35	+1·39	+0·05	45·71	8 35 26·31	+ 0 40·60	−20·9
		1882															
	JUBBULPORE (Latitude 23° 10′)	Jan. 19	*I. P. W.*	E	δ Ursæ Minoris	L	4	+0·3578	6 31 24·43	+1·75	+0·44	+1·41		28·03	6 9 55·87	−21 32·16	
				„	51 Cephei	U	4	−0·4182	7 6 56·63	−2·14	−0·69	+1·41	+0·12	55·33	6 45 24·36	−21 30·97	− 1·5
				W	815 Gr. 72	U	3	−0·2521	8 22 32·73	−1·31	−0·49	+1·41		32·34	8 20 45·87	− 1 46·47	
				„	1927 „	L	5	+0·1397	8 37 10·50	+0·66	+0·12	+1·41	+0·21	12·90	8 35 26·31	− 1 46·59	− 0·3
		„ 20	„	„	δ Ursæ Minoris	L	3	+0·3578	6 11 21·90	+0·84	+0·44	+1·42		24·60	6 9 55·98	− 1 28·62	
					51 Cephei	U	3	−0·4182	6 46 54·37	−1·02	−0·69	+1·42	+0·52	54·60	6 45 24·31	− 1 30·29	+ 2·2
					815 Gr. 72	U	3	−0·2521	8 22 11·33	−0·63	−0·49	+1·42		11·63	8 20 45·87	− 1 25·76	
					1927 „	L	3	+0·1397	8 36 51·13	+0·32	+0·12	+1·42	+0·21	53·20	8 35 26·31	− 1 26·89	− 2·9

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a_1, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for				Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
										Collimation	Level	Pen Equation Q	Clock Rate				
		1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
HAZARIBAGH AND JUBBULPORE	JUBBULPORE (Latitude 23° 10′)	Jan. 21	*I. P. W.*	W	δ Ursæ Minoris	L	4	+0·3578	6 11 1·55	−0·04	+0·26	+1·40		3·17	6 9 56·13	− 1 7·04	
					51 Cephei	U	3	−0·4182	6 46 33·43	+0·05	−0·41	+1·40	+0·52	34·99	6 45 24·23	− 1 10·76	+ 4·8
					815 Gr. 72	U	4	−0·2521	8 21 53·50	+0·03	−0·29	+1·40		54·64	8 20 45·87	− 1 8·77	
					1927 „	L	5	+0·1397	8 36 32·50	−0·01	+0·07	+1·40	+0·21	34·17	8 35 26·31	− 1 7·86	+ 2·3
		„ 24	*I. P. E.*	„	δ Ursæ Minoris	L	3	+0·3578	6 10 7·30	+0·61	−0·54	+1·40		8·77	6 9 56·69	− 0 12·08	
					51 Cephei	U	4	−0·4182	6 45 34·65	−0·74	+0·85	+1·40	+0·52	36·68	6 45 23·77	− 0 12·91	+ 1·1
					815 Gr. 72	U	4	−0·2521	8 20 53·68	−0·46	+0·62	+1·40		55·24	8 20 45·87	− 0 9·37	
					1927 „	L	5	+0·1397	8 35 35·54	+0·23	−0·15	+1·40	+0·21	37·23	8 35 26·31	− 0 10·92	− 3·9
		„ 25	„	„	δ Ursæ Minoris	L	4	+0·3578	6 9 47·95	+0·80	−0·40	+1·41		49·76	6 9 56·89	+ 0 7·13	
					51 Cephei	U	3	−0·4182	6 45 14·60	−0·98	+0·63	+1·41	+0·52	16·18	6 45 23·60	+ 0 7·42	− 0·4
					815 Gr. 72	U	4	−0·2521	8 20 33·05	−0·60	+0·46	+1·41		34·32	8 20 45·87	+ 0 11·55	
					1927 „	L	5	+0·1397	8 35 16·12	+0·30	−0·11	+1·41	+0·21	17·93	8 35 26·31	+ 0 8·38	− 8·1
		„ 26	„	„	δ Ursæ Minoris	L	3	+0·3578	6 9 27·93	+0·23	−0·69	+1·40		28·87	6 9 57·07	+ 0 28·20	
					51 Cephei	U	3	−0·4182	6 44 54·10	−0·28	+1·10	+1·40	+0·52	56·84	6 45 23·45	+ 0 26·61	+ 2·1
					815 Gr. 72	U	4	−0·2521	8 20 12·05	−0·17	+0·79	+1·40		14·07	8 20 45·87	+ 0 31·80	
					1927 „	L	5	+0·1397	8 34 55·12	+0·09	−0·19	+1·40	+0·21	56·53	8 35 26·31	+ 0 29·78	− 5·2
CALCUTTA AND HAZARIBAGH	CALCUTTA (Latitude 22° 33′)	1882															
		Feb. 8	*I. P. W.*	E	λ Ursæ Minoris	L	2	+1·1400	7 45 2·95	+3·19	−1·61	−1·48		3·05	7 40 38·72	− 4 24·33	
				„	815 Gr. 72	U	1	−0·2521	8 25 14·60	−0·74	+0·48	−1·48	+0·41	13·27	8 20 46·22	− 4 27·05	+ 2·0
				W	R. P. L. 72	U	5	−0·2218	10 0 45·02	−0·65	+0·42	+1·48		46·27	10 12 34·10	+11 47·83	
				„	2109 Gr. 72	L	5	+0·2737	10 10 26·08	+0·75	−0·32	+1·48	+0·04	28·03	10 22 16·79	+11 48·76	+ 1·9
		„ 9	„	E	λ Ursæ Minoris	L	3	+1·1400	7 44 52·00	+1·84	−2·96	−1·48		49·40	7 40 39·23	− 4 10·17	
				„	815 Gr. 72	U	4	−0·2521	8 24 56·63	−0·43	+0·87	−1·48	+0·41	56·00	8 20 46·11	− 4 9·89	− 0·2
				W	R. P. L. 72	U	4	−0·2218	10 0 40·53	−0·38	+0·77	+1·48		42·40	10 12 34·16	+11 51·76	
				„	2109 Gr. 72	L	4	+0·2737	10 10 19·73	+0·43	−0·59	+1·48	+0·04	21·09	10 22 16·71	+11 55·62	+ 7·8
		„ 10	„	E	λ Ursæ Minoris	L	3	+1·1400	7 44 36·97	+3·31	−2·65	−1·47		36·16	7 40 39·75	− 3 56·41	
				„	815 Gr. 72	U	4	−0·2521	8 24 40·08	−0·77	+0·78	−1·47	+0·41	39·03	8 20 46·00	− 3 53·03	− 2·4
				W	R. P. L. 72	U	4	−0·2218	10 0 32·68	−0·68	+0·69	+1·47		34·16	10 12 34·22	+12 0·06	
				„	2109 Gr. 72	L	4	+0·2737	10 10 14·98	+0·78	−0·53	+1·47	+0·04	16·74	10 22 16·64	+11 59·90	− 0·3
		„ 13	*I. P. E.*	E	λ Ursæ Minoris	L	2	+1·1400	7 43 49·15	+0·74	−0·76	−1·49		50·62	7 40 41·11	− 3 9·51	
				„	815 Gr. 72	U	4	−0·2521	8 24 1·18	−0·17	+0·22	−1·49	+0·41	0·15	8 20 45·52	− 3 14·63	+ 3·7
				W	R. P. L. 72	U	4	−0·2218	10 0 17·33	−0·15	+0·20	+1·49		18·87	10 12 34·41	+12 15·54	
				„	2109 Gr. 72	L	4	+0·2737	10 9 56·13	+0·17	−0·15	+1·49	+0·04	57·68	10 22 16·41	+12 18·73	+ 6·4

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Level	Pen Equation Q	Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
		1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
CALCUTTA AND HAZARIBAGH	CALCUTTA (Latitude 22° 33′)	Feb. 14	*I. P. E.*	E	λ Ursæ Minoris	L	1	+1·1400	7 43 34·60	+0·86	−1·53	−1·48		35·41	7 40 41·50	− 2 53·91	
				„	815 Gr. 72	U	5	−0·2521	8 23 46·12	−0·20	+0·44	−1·48	+0·41	45·29	8 20 45·41	− 2 59·88	+ 4·3
				W	R. P. L. 72	U	5	−0·2218	10 0 14·12	−0·18	+0·40	+1·48		15·82	10 12 34·48	+12 18·66	
				„	2109 Gr. 72	L	4	+0·2737	10 9 50·15	+0·20	−0·30	+1·48	+0·04	51·57	10 22 16·26	+12 24·69	+12·2
		„ 16	„	E	λ Ursæ Minoris	L	2	+1·1400	7 43 7·25	+0·37	−0·94	−1·50		8·18	7 40 42·32	− 2 25·86	
				„	815 Gr. 72	U	4	−0·2521	8 23 15·33	−0·09	+0·27	−1·50	+0·41	15·42	8 20 45·30	− 2 30·12	+ 3·1
				W	R. P. L. 72	U	4	−0·2218	9 59 59·80	−0·08	+0·24	+1·50		61·46	10 12 34·60	+12 33·14	
				„	2109 Gr. 72	L	4	+0·2737	10 9 40·25	+0·09	−0·19	+1·50	+0·04	41·69	10 22 16·19	+12 34·50	+ 2·7
		1882															
		Feb. 8	*I. P. E.*	E	λ Ursæ Minoris	L	2	+1·1283	7 57 27·65	+1·59	0·00	−1·40		27·84	7 40 38·72	−16 49·12	
				„	815 Gr. 72	U	3	−0·2501	8 37 3·77	−0·37	0·00	−1·40	+0·41	2·41	8 20 46·22	−16 16·19	−23·9
				W	R. P. L 72	U	4	−0·2188	10 12 36·88	−0·33	0·00	+1·40		37·95	10 12 34·10	− 0 3·85	
				„	2109 Gr. 72	L	3	+0·2713	10 22 29·37	+0·37	0·00	+1·40	+0·04	31·18	10 22 16·79	− 0 14·39	−21·5
		„ 9	„	E	λ Ursæ Minoris	L	3	+1·1283	7 57 21·80	+2·57	+1·15	−1·40		24·12	7 40 39·23	−16 44·89	
				„	815 Gr. 72	U	4	−0·2501	8 36 47·40	−0·60	−0·33	−1·40	+0·41	45·48	8 20 46·11	−15 59·37	−33·0
				W	R. P. L. 72	U	3	−0·2188	10 12 30·47	−0·53	−0·29	+1·40		31·05	10 12 34·16	+ 0 3·11	
				„	2109 Gr. 72	L	3	+0·2713	10 22 24·73	+0·60	+0·23	+1·40	+0·04	27·00	10 22 16·71	− 0 10·29	−27·4
		„ 10	„	E	λ Ursæ Minoris	L	3	+1·1283	7 57 4·17	+4·29	+1·43	−1·40		8·49	7 40 39·75	−16 28·74	
				„	815 Gr. 72	U	3	−0·2501	8 36 31·30	−1·00	−0·41	−1·40	+0·41	28·90	8 20 46·00	−15 42·90	−33·3
				W	R. P. L. 72	U	3	−0·2188	10 12 23·90	−0·88	−0·37	+1·40		24·05	10 12 34·22	+ 0 10·17	
				„	2109 Gr. 72	L	3	+0·2713	10 22 18·37	+1·01	+0·29	+1·40	+0·04	21·11	10 22 16·64	− 0 4·47	−29·9
		„ 13	*I. P. W.*	E	λ Ursæ Minoris	L	3	+1·1283	7 56 33·13	+1·84	+0·38	−1·40		33·95	7 40 41·11	−15 52·84	
				„	815 Gr. 72	U	4	−0·2501	8 35 43·10	−0·43	−0·11	−1·40	+0·41	41·57	8 20 45·52	−14 56·05	−41·2
				W	R. P. L. 72	U	4	−0·2188	10 12 3·28	−0·38	−0·10	+1·40		4·20	10 12 34·41	+ 0 30·21	
				„	2109 Gr. 72	L	4	+0·2713	10 22 6·48	+0·43	+0·08	+1·40	+0·04	8·43	10 22 16·41	+ 0 7·98	−45·4
		„ 14	„	E	λ Ursæ Minoris	L	2	+1·1283	7 56 16·85	−0·25	+0·24	−1·40		15·44	7 40 41·50	−15 33·94	
				„	815 Gr. 72	U	4	−0·2501	8 35 28·93	+0·06	−0·07	−1·40	+0·41	27·93	8 20 45·41	−14 42·52	−37·3
				W	R. P. L. 72	U	4	−0·2188	10 11 58·30	+0·05	−0·06	+1·40		59·69	10 12 34·48	+ 0 34·79	
				„	2109 Gr. 72	L	4	+0·2713	10 22 2·80	−0·06	+0·05	+1·40	+0·04	4·23	10 22 16·26	+ 0 12·03	−46·5
		„ 16	„	E	λ Ursæ Minoris	L	3	+1·1283	7 55 48·67	−2·33	−0·67	−1·42		44·25	7 40 42·32	−15 1·93	
				„	815 Gr. 72	U	4	−0·2501	8 35 0·58	+0·54	+0·19	−1·42	+0·41	0·30	8 20 45·30	−14 15·00	−34·0
				W	R. P. L. 72	U	4	−0·2188	10 11 47·55	+0·48	+0·17	+1·42		49·62	10 12 34·60	+ 0 44·98	
				„	2109 Gr. 72	L	4	+0·2713	10 21 48·20	−0·55	−0·13	+1·42	+0·04	48·98	10 22 16·19	+ 0 27·21	−36·3
	HAZARIBAGH (Latitude 24° 0′)																

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a_1, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for				Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
										Collimation	Level	Pen Equation Q	Clock Rate				
		1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
JALPAIGURI AND HAZARIBAGH	JALPAIGURI (Latitude 26° 31′)	Feb. 25	*I. P. W.*	W	2209 Gr. 72	L	3	+0·3647	11 13 41·73	0·00	+0·04	−0·99		40·78	11 27 33·41	+13 52·63	
				,,	1109 ,,	U	4	−0·3072	11 45 8·48	0·00	−0·05	−0·99	+0·10	7·54	11 59 3·98	+13 56·44	− 5·7
		Mar. 1	,,	E	815 Gr. 72	U	4	−0·2439	8 20 29·58	+0·60	−0·31	+1·01		30·88	8 20 43·81	+ 0 12·93	
				,,	1927 ,,	L	7	+0·1374	8 35 21·41	−0·30	+0·09	+1·01	+0·13	22·34	8 35 27·41	+ 0 5·07	−20·6
				W	2209 ,,	L	4	+0·3647	11 13 25·33	−0·81	+0·27	−1·01		23·78	11 27 33·15	+14 9·37	
				,,	1109 ,,	U	4	−0·3072	11 44 44·23	+0·72	−0·32	−1·01	+0·10	43·72	11 59 4·44	+14 20·72	−16·9
		,, 2	,,	,,	2209 Gr. 72	L	4	+0·3647	11 13 17·18	−1·12	+0·08	−1·01		15·13	11 27 33·09	+14 17·96	
				,,	1109 ,,	U	4	−0·3072	11 44 36·83	+0·99	−0·09	−1·01	+0·10	36·82	11 59 4·55	+14 27·73	−14·5
		,, 3	*I. P. E.*	E	815 Gr. 72	U	4	−0·2439	8 20 6·70	−0·23	−0·04	+1·01		7·44	8 20 43·59	+ 0 36·15	
				,,	1927 ,,	L	6	+0·1374	8 34 56·52	+0·12	+0·01	+1·01	+0·13	57·79	8 35 27·51	+ 0 29·72	−16·9
				W	2209 ,,	L	3	+0·3647	11 13 9·37	+0·31	+0·04	−1·01		8·71	11 27 33·03	+14 24·32	
				,,	1109 ,,	U	3	−0·3072	11 44 31·27	−0·27	−0·05	−1·01	+0·10	30·04	11 59 4·66	+14 34·62	−15·3
		,, 4	,,	E	815 Gr. 72	U	5	−0·2439	8 19 54·18	−0·60	−0·10	+1·01		54·49	8 20 43·48	+ 0 48·99	
				,,	1927 ,,	L	7	+0·1374	8 34 44·49	+0·30	+0·03	+1·01	+0·13	45·96	8 35 27·56	+ 0 41·60	−19·4
				W	2209 ,,	L	3	+0·3647	11 13 6·00	+0·81	+0·09	−1·01		5·89	11 27 32·97	+14 27·08	
				,,	1109 ,,	U	4	−0·3072	11 44 27·30	−0·72	−0·10	−1·01	+0·10	25·57	11 59 4·77	+14 39·20	−18·0
		,, 5	,,	E	815 Gr. 72	U	4	−0·2439	8 19 40·20	−0·20	+0·09	+1·01		41·10	8 20 43·37	+ 1 2·27	
				,,	1927 ,,	L	6	+0·1374	8 34 31·00	+0·10	−0·03	+1·01	+0·13	32·21	8 35 27·61	+ 0 55·40	−18·0
				W	2209 ,,	L	4	+0·3647	11 12 60·20	+0·27	−0·08	−1·01		59·38	11 27 32·91	+14 33·53	
				,,	1109 ,,	U	4	−0·3072	11 44 22·03	−0·24	+0·09	−1·01	+0·10	20·97	11 59 4·88	+14 43·91	−15·5
		1882															
	HAZARIBAGH (Latitude 24° 0′)	Feb. 25	*I. P. W.*	W	815 Gr. 72	U	3	−0·2501	8 20 7·33	+0·11	+0·46	+1·36		9·26	8 20 44·28	+ 0 35·02	
					1927 ,,	L	4	+0·1392	8 35 3·48	−0·06	−0·13	+1·36	+0·05	4·70	8 35 27·14	+ 0 22·44	−32·3
					2209 ,,	L	3	+0·3614	11 27 20·40	−0·15	−0·46	−1·36		18·43	11 27 33·41	+ 0 14·98	
					1109 ,,	U	4	−0·3033	11 58 26·55	+0·14	+0·54	−1·36	+0·10	25·97	11 59 3·98	+ 0 38·01	−34·6
		Mar. 1	,,	,,	815 Gr. 72	U	3	−0·2501	8 19 42·73	+0·06	−0·20	+1·37		43·96	8 20 43·81	+ 0 59·85	
					1927 ,,	L	8	+0·1392	8 34 44·18	−0·03	+0·06	+1·37	+0·05	45·63	8 35 27·41	+ 0 41·78	−46·4
					2209 ,,	L	3	+0·3614	11 27 3·13	−0·08	+0·20	−1·37		1·88	11 27 33·15	+ 0 31·27	
					1109 ,,	U	4	−0·3033	11 57 61·40	+0·07	−0·24	−1·37	+0·10	59·96	11 59 4·44	+ 1 4·48	−50·0
		,, 2	,,	,,	1109 Gr. 72	U	1	−0·3033	11 57 55·40	+0·51	−0·11	−1·37		54·43	11 59 4·55	+ 1 10·12	*−46·7

* This value of a_1 has been deduced by the method of comparative-azimuth star observations; *vide* Volume IX, page 44.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Peu Equation Q	Corrections for: Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
		1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
JALPAIGURI AND HAZARIBAGH	HAZARIBAGH (Latitude 24° 0′)	Mar. 3	*I. P. E.*	W	815 Gr. 72	U	3	−0·2501	8 19 29·70	−1·59	−0·20	+1·37		29·28	8 20 43·59	+ 1 14·31	
					1927 „	L	7	+0·1392	8 34 31·16	+0·81	+0·06	+1·37	+0·05	33·45	8 35 27·51	+ 0 54·06	−52·0
					2209 „	L	3	+0·3614	11 26 46·53	+2·16	+0·20	−1·37		47·52	11 27 33·03	+ 0 45·51	
					1109 „	U	4	−0·3033	11 57 53·68	−1·92	−0·24	−1·37	+0·10	50·25	11 59 4·66	+ 1 14·41	−43·5
		„ 4	„	„	815 Gr. 72	U	5	−0·2501	8 19 24·44	−1·59	+0·10	+1·36		24·31	8 20 43·48	+ 1 19·17	
					1927 „	L	5	+0·1392	8 34 26·14	+0·81	−0·03	+1·36	+0·05	28·33	8 35 27·56	+ 0 59·23	−51·2
					2209 „	L	3	+0·3614	11 26 42·53	+2·16	−0·10	−1·36		43·23	11 27 32 97	+ 0 49 74	
					1109 „	U	5	−0·3033	11 57 48·24	−1·92	+0·11	−1·36	+0·10	45·17	11 59 4·77	+ 1 19·60	−44·9
		„ 5	„	„	815 Gr. 72	U	5	−0·2501	8 19 20·58	−2·22	−0·27	+1·38		19·47	8 20 43·37	+ 1 23·90	
					1927 „	L	8	+0·1392	8 34 22 05	+1·12	+0·07	+1·38	+0·05	24·67	8 35 27·61	+ 1 2·94	−53·8
					2209 „	L	4	+0·3614	11 26 36·55	+2·81	+0·27	−1·38		38·25	11 27 32·91	+ 0 54·66	
					1109 „	U	4	−0·3033	11 57 44·80	−2·67	−0·32	−1·38	+0·10	40·53	11 59 4·88	+ 1 24·35	−44·7
		1882															
JALPAIGURI AND CALCUTTA	JALPAIGURI (Latitude 26° 31′)	Mar. 17	*I. P. E.*	E	4275 W. C.	U	4	−0·2138	10 12 51·65	−0·98	−0·08	+1·01		52·60	10 12 31·30	− 0 21·30	
					2109 Gr. 72	L	4	+0·2666	10 22 34·58	+1·12	+0·05	−1·01	+0·08	34·82	10 22 17·19	− 0 17·63	+ 7·6
					1191 „	U	5	−0·1833	12 48 35·02	−0·85	−0·07	+1·01	+1·30	36·41	12 48 18 20	− 0 18·21	− 3·2
					1192 „	U	5	−0·1833	12 48 43·12	−0 85	−0·07	+1·01	+1·30	44·51	12 48 26·02	− 0 18·49	− 2·5
					86 „	L	4	+0·2733	12 52 57·63	+1·15	+0·07	+1·01	+1·33	61·19	12 52 41·54	− 0 19·65	
		„ 19	„	„	4275 W. C.	U	4	−0·2138	10 12 28·35	−0·03	+0·51	+1·02		29·85	10 12 31·06	+ 0 1·21	
					2109 Gr. 72	L	4	+0·2666	10 22 7·90	+0·03	−0·35	−1·02	+0·08	6·64	10 22 17·43	+ 0 10·79	+19·9
					1191 „	U	5	−0·1833	12 48 10·88	−0·02	+0·45	+1·02	+1·30	13·63	12 48 18·23	+ 0 4·60	+ 9·4
					1192 „	U	5	−0·1833	12 48 18·68	−0·02	+0·45	+1·02	+1·30	21·43	12 48 26·05	+ 0 4·62	+ 9·4
					86 „	L	4	+0·2733	12 52 30·65	+0·03	−0·43	+1·02	+1·33	32·60	12 52 41·50	+ 0 8·90	
		„ 22	„	„	μ Hydræ	U	15	+0·0159	10 19 44·29	−0·08	+0·03	−1·01		43·23	10 20 25·77	+ 0 42·54	
					α Ursæ Majoris	U	15	−0·0284	10 55 46·74	−0·17	+0·07	+1·01	+0·30	47·95	10 56 30·33	+ 0 42·38	+ 3·6
					1191 Gr. 72	U	5	−0·1833	12 47 34·80	−0·78	+0·22	+1·01	+1·25	36·50	12 48 18·28	+ 0 41·78	+ 4·6
					1192 „	U	5	−0·1833	12 47 42·76	−0·78	+0·22	+1·01	+1·25	44·46	12 48 26·09	+ 0 41·63	+ 4·9
					86 „	L	5	+0·2733	12 51 54·44	+1·06	−0·21	+1·01	+1·27	57·57	12 52 41·45	+ 0 43·88	
		Apr. 4	*I. P. W.*	„	δ Crateris	U	15	+0·0151	11 14 10·59	+0·37	+0·09	+1·29		12·34	11 13 29·35	− 0 42·99	
					λ Draconis	U	8	−0·0452	11 25 11·89	+0·11	+0·23	−1·29	+0·07	11·01	11 24 27·81	− 0 43·20	+ 3·5
					1191 Gr. 72	U	3	−0·1833	12 49 4·40	+0·35	+0·57	−1·29	+0·67	4·70	12 48 18·46	− 0 46·24	+20·0
					1192 „	U	3	−0·1833	12 49 12·27	+0·35	+0·57	−1·29	+0·67	12·57	12 48 26·27	− 0 46·30	+20·0
					Polaris	L	2	+0·8852	13 15 25·00	−1·57	−2·04	−1·29	+0·72	20·82	13 14 55·84	− 0 24·98	

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a_1, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for				Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1
										Collimation	Level	Pen Equation Q	Clock Rate				
		1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*
JALPAIGURI AND CALCUTTA	JALPAIGURI (Latitude 26° 31′)	Apr. 5	*I. P. W.*	E	α Ursæ Majoris	U	12	−0·0284	10 56 58·18	+0·07	+0·21	+1·32		59·78	10 56 30·10	− 0 29·68	
					δ Crateris	U	15	+0·0151	11 13 56·80	+0·35	+0·09	+1·32	+0·10	58·66	11 13 29·35	− 0 29·31	+ 8·6
					λ Draconis	U	9	−0·0452	11 24 58·61	+0·10	+0·25	−1·32	+0·17	57·81	11 24 27·78	− 0 30·03	+11·9
					1191 Gr. 72	U	5	−0·1833	12 48 50·98	+0·33	+0·62	−1·32	+0·67	51·28	12 48 18·48	− 0 32·80	+19·6
					1192 „	U	5	−0·1833	12 48 59·00	+0·33	+0·62	−1·32	+0·67	59·30	12 48 26·29	− 0 33·01	+20·1
					86 „	L	2	+0·2733	12 53 6·65	−0·44	−0·59	−1·32	+0·69	4·99	12 52 41·16	− 0 23·83	
		„ 6	„	„	α Ursæ Majoris	U	10	−0·0284	10 56 45·51	+0·02	+0·14	+1·32		46·99	10 56 30·08	− 0 16·91	
				„	δ Crateris	U	15	+0·0151	11 13 44·08	+0·01	+0·06	+1·32	+0·10	45·57	11 13 29·35	− 0 16·22	+16·0
				„	λ Draconis	U	6	−0·0452	11 24 45·82	+0·03	+0·17	−1·32	+0·17	44·87	11 24 27·76	− 0 17·11	+14·8
				W	Polaris	L	2	+0·8852	13 13 52·00	−0·39	−1·46	+1·32	+0·83	52·30			
									*(13 15 0·34)					*(0·64)	13 14 56·02	− 0 4·62	+13·4
	CALCUTTA (Latitude 22° 33′)	1882 Mar. 17	*I. P. W.*	E	4275 W. C.	U	4	−0·2219	10 13 55·33	+0·78	−0·58	+1·06		56·59	10 12 31·30	− 1 25·29	
				„	2109 Gr. 72	L	3	+0·2735	10 24 38·50	−0·89	+0·45	−1·06	+0·09	37·09	10 22 17·19	− 2 19·90	−110·3
				W	1191 „	U	3	−0·1910	12 48 33·17	+0·67	−0·52	−1·06		32·26	12 48 18·20	− 0 14·06	−111·5
				„	1192 „	U	3	−0·1910	12 48 41·40	+0·67	−0·52	−1·06	0·00	40·49	12 48 26·02	− 0 14·47	−110·7
				„	86 „	L	3	+0·2803	12 53 49·63	−0·91	+0·46	−1·06	+0·01	48·13	12 52 41·54	− 1 6·59	
		„ 19	„	E	4275 W. C.	U	3	−0·2219	10 13 46·73	+1·08	−0·34	+1·09		48·56	10 12 31·06	− 1 17·50	
				„	2109 Gr. 72	L	3	+0·2735	10 23 53·70	−1·24	+0·26	−1·09	+0·09	51·72	10 22 17·43	− 1 34·29	− 33·9
				W	1191 „	U	7	−0·1910	12 48 41·41	+0·93	−0·30	−1·09		40·95	12 48 18·23	− 0 22·72	− 37·1
				„	1192 „	U	7	−0·1910	12 48 49·00	+0·93	−0·30	−1·09	0·00	48·54	12 48 26·05	− 0 22·49	− 37·6
				„	86 „	L	7	+0·2803	12 53 23·76	−1·27	+0·27	−1·09	+0·01	21·68	12 52 41·50	− 0 40·18	
		„ 22	„	E	4275 W. C.	U	3	−0·2211	10 13 11·47	+1·35	−0·13	+1·10		13·79	10 12 30·70	− 0 43·09	
				„	2109 Gr. 72	L	2	+0·2735	10 23 16·05	−1·55	+0·10	−1·10	+0·09	13·59	10 22 17·79	− 0 55·80	− 25·7
				W	1191 „	U	7	−0·1910	12 48 32·81	+1·17	−0·11	−1·10		32·77	12 48 18·28	− 0 14·49	− 27·2
				„	1192 „	U	7	−0·1910	12 48 40·50	+1·17	−0·11	−1·10	0·00	40·46	12 48 26·09	− 0 14·37	− 27·4
				„	86 „	L	4	+0·2803	12 53 11·33	−1·59	+0·10	−1·10	+0·01	8·75	12 52 41·45	− 0 27·30	
		Apr. 4	*I. P. E.*	„	1191 Gr. 72	U	5	−0·1910	12 49 6·24	−1·26	−0·13	+1·04		5·89	12 48 18·46	− 0 47·43	+ 16·9
					1192 „	U	5	−0·1910	12 49 13·40	−1·26	−0·13	+1·04	0·00	13·05	12 48 26·27	− 0 46·78	+ 15·5
					86 „	L	4	+0·2803	12 53 17·80	+1·71	+0·12	+1·04	+0·01	20·68	12 52 41·18	− 0 39·50	
		„ 5	„	„	1191 Gr. 72	U	9	−0·1910	12 49 4·77	−1·04	−0·15	+1·12		4·70	12 48 18·48	− 0 46·22	
					1192 „	U	9	−0·1910	12 49 12·53	−1·04	−0·15	+1·12	0·00	12·46	12 48 26·29	− 0 46·17	
					86 „	L	6	+0·2803	12 53 12·25	+1·42	+0·13	+1·12	+0·01	14·93	12 52 41·16	− 0 33·77	+ 26·4
					Polaris	L	1	+0·9120	13 15 9·30	+4·70	+0·50	+1·12	+0·05	15·67	13 14 55·92	− 0 19·75	+ 24·1
		„ 6	„	„	1191 Gr. 72	U	8	−0·1910	12 49 2·00	−1·41	−0·45	+1·15		1·29	12 48 18·49	− 0 42·80	+27·4
					1192 „	U	8	−0·1910	12 49 9·78	−1·41	−0·45	+1·15	0·00	9·07	12 48 26·30	− 0 42·77	+27·4
					Polaris	L	2	+0·9120	13 14 59·50	+6·36	+1·52	+1·15	+0·05	68·58	13 14 56·02	− 0 12·56	

* The numbers in brackets give the time by East Clock, corresponding to that by West Clock in the line next above, as deduced from clock comparisons.

Arc Fyzabad and Agra.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q-$	$Q+$
1881	s	s	s	s	s	s	s	s
November 25	10·25	48·55	1·90	5·86	28·09	9·56	37·06	40·10
	·22	·55	·89	·84	·09	·56	·04	·11
	·22	·55	·90	·85	·11	·52	·05	·10
	·21	·54	·88	·81	·12	·52	·05	·10
	·22	·55	·90	·85	·16	·52	·05	·10
	·22	·56	·89	·84	·15	·53	·04	·11
	·22	·60	·90	·86	·16	·55	·05	·10
	·21	·59	·90	·84	·15	·54	·04	·11
	·21	·60	·91	·86	·17	·55	·04	·10
	·20	·60	·89	·84	·15	·56	·06	·10
	·18	·60	·90	·84	·15	·55	·07	·10
	·19	·58	·89	·81	·11	·53	·03	·11
	·16	·60	·89	·83	·11	·52	·05	·10
	·18	·59	·88	·81	·10	·56	·04	·10
	·17	·60	·90	·85	·11	·55	·05	·10
	·20	·56	·89	·82	·13	·59	·03	·12
	·15	·56	·90	·85	·19	·60	·04	·10
	·17	·55	·87	·85	·20	·59	·02	·12
	·15	·55	·91	·85	·19	·55	·04	·10
	·17	·55	·89	·84	·19	·55	·03	·10
Corresponding Mean Observed Times at E	h m s 2 47 0	h m s 2 48 35	h m s 5 5 11 s +0·893	h m s 5 6 15 s +0·840	h m s 4 31 17	h m s 4 32 55	h m s 6 24 47 s +0·044	h m s 6 23 50 s +0·104
Corresponding Mean Observed Times at W	h m s 2 30 20 s +0·195	h m s 2 31 58 s +0·573	h m s 4 48 33	h m s 4 49 41	h m s 4 14 38 s +0·142	h m s 4 16 19 s +0·550	h m s 6 8 13	h m s 6 7 12
Difference	m s 16 39·805	m s 16 36·427	m s 16 38·893	m s 16 34·840	m s 16 38·858	m s 16 35·450	m s 16 34·044	m s 16 38·104

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad and Agra.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q											
	At W		At E		At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1881	s	s	s	s	s	s	s	s	s	s	s	s
November 28	35·20	32·52	28·86	57·50	7·15	30·60	36·46	25·80	13·11	31·50	32·60	25·94
	·20	·55	·89	·55	·18	·60	·48	·84	·12	·54	·56	·90
	·20	·56	·88	·54	·19	·60	·49	·84	·11	·50	·60	·91
	·21	·57	·90	·55	·20	·61	·49	·84	·15	·50	·56	·88
	·20	·52	·85	·56	·21	·60	·48	·81	·13	·50	·59	·91
	·21	·54	·88	·56	·23	·60	·50	·81	·12	·50	·59	·89
	·20	·52	·85	·55	·24	·60	·48	·82	·09	·50	·60	·90
	·20	·53	·86	·56	·24	·63	·49	·84	·09	·49	·59	·90
	·20	·54	·85	·52	·22	·61	·49	·80	·05	·50	·61	·94
	·19	·50	·86	·52	·24	·61	·50	·85	·08	·50	·59	·91
	·19	·53	·85	·51	·20	·64	·48	·80	·05	·50	·60	·91
	·19	·54	·89	·51	·20	·66	·50	·83	·06	·51	·60	·90
	·15	·53	·85	·50	·18	·64	·49	·81	·03	·51	·60	·93
	·15	·55	·85	·53	·18	·63	·50	·84	·06	·50	·57	·91
	·12	·51	·84	·52	·20	·60	·48	·84	·03	·51	·60	·94
	·13	·53	·84	·54	·21	·61	·50	·85	·05	·50	·60	·93
	·13	·53	·82	·50	·21	·61	·50	·84	·00	·50	·60	·94
	·15	·55	·85	·51	·21	·63	·52	·85	·00	·49	·59	·93
	·10	·54	·86	·50	·20	·67	·51	·84	·00	·50	·60	·93
	·11	·52	·90	·52	·20	·66	·51	·85	·01	·51	·59	·91
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	2 41 44	2 42 38	2 44 38	2 46 7	4 31 15	4 32 35	4 33 46	4 34 35	6 7 20	6 8 35	6 9 42	6 10 35
			s	s			s	s			s	s
			+0·862	+0·528			+0·493	+0·830			+0·592	+0·916
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	2 25 45	2 26 42	2 28 40	2 30 12	4 15 17	4 16 40	4 17 52	4 18 38	5 51 23	5 52 41	5 53 49	5 54 39
	s	s			s	s			s	s		
	+0·172	+0·534			+0·205	+0·621			+0·067	+0·503		
Difference	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	15 58·828	15 55·466	15 58·862	15 55·528	15 57·795	15 54·379	15 54·493	15 57·830	15 56·933	15 53·497	15 53·592	15 56·916

Arc Fyzabad and Agra.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q											
	At W		At E		At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1881	s	s	s	s	s	s	s	s	s	s	s	s
November 29	16·61	22·96	47·06	46·55	20·60	17·02	35·02	45·40	18·58	54·92	15·13	32·46
	·63	·99	·06	·54	·62	·06	·05	·40	·55	·95	·12	·45
	·64	·98	·06	·55	·62	·02	·03	·40	·55	·95	·13	·46
	·64	·98	·06	·53	·60	·01	·04	·40	·56	·94	·11	·45
	·68	·99	·08	·55	·61	·02	·04	·40	·55	·90	·12	·49
	·69	·99	·05	·54	·62	·01	·07	·39	·55	·91	·10	·49
	·70	·96	·10	·55	·66	·03	·05	·40	·55	·92	·12	·49
	·69	·99	·06	·52	·69	·02	·02	·39	·55	·91	·11	·46
	·65	·99	·07	·53	·70	·03	·05	·40	·55	·92	·12	·48
	·63	23·00	·06	·53	·70	·00	·03	·40	·50	·94	·10	·46
	·64	·03	·09	·55	·70	·02	·05	·40	·51	·96	·12	·46
	·65	·02	·06	·53	·73	·00	·03	·40	·53	·96	·11	·48
	·64	·05	·06	·53	·70	·01	·04	·40	·51	·96	·14	·47
	·64	·05	·06	·53	·71	·00	·03	·39	·50	·93	·13	·49
	·61	·05	·06	·55	·71	·01	·03	·39	·51	·95	·13	·47
	·64	·04	·05	·57	·70	·00	·05	·40	·53	·95	·13	·49
	·65	·06	·06	·56	·69	·03	·06	·39	·55	·96	·15	·48
	·65	·05	·07	·56	·69	·01	·07	·40	·60	·97	·11	·49
	·65	·06	·10	·58	·69	·02	·07	·40	·60	·99	·12	·45
	·64	·05	·05	·56	·69	·02	·04	·40	·60	·99	·10	·48
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	2 41 12	2 42 15	2 43 57	2 44 56	4 31 15	4 32 8	4 33 45	4 34 55	6 8 12	6 8 45	6 10 25	6 11 42
			s	s			s	s			s	s
			+0·066	+0·546			+0·044	+0·398			+0·120	+0·473
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	2 25 26	2 26 33	2 28 15	2 29 11	4 15 30	4 16 27	4 18 4	4 19 11	5 52 28	5 53 4	5 54 45	5 55 59
	s	s			s	s			s	s		
	+0·649	+0·015			+0·672	+0·017			+0·547	+0·944		
Difference	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	15 45·351	15 41·985	15 42·066	15 45·546	15 44·328	15 40·983	15 41·044	15 44·398	15 43·453	15 40·056	15 40·120	15 43·473

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad and Agra.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q											
	At W		At E		At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1881	s	s	s	s	s	s	s	s	s	s	s	s
November 30	49·11	32·50	13·61	51·95	54·14	56·55	31·55	35·92	6·02	7·41	34·65	37·02
	·11	·50	·60	·96	·12	·56	·55	·92	·01	·44	·66	·01
	·10	·50	·63	·95	·13	·55	·55	·93	·04	·43	·66	·02
	·12	·50	·61	·96	·11	·55	·56	·91	·03	·43	·67	·01
	·11	·50	·61	·95	·11	·54	·55	·93	·05	·40	·64	·01
	·11	·50	·60	·96	·09	·54	·56	·91	·04	·41	·66	·01
	·10	·50	·63	·93	·10	·50	·55	·92	·04	·40	·65	·02
	·10	·49	·60	·97	·12	·50	·55	·91	·02	·40	·66	·01
	·11	·51	·63	·96	·13	·46	·55	·92	·02	·40	·65	·01
	·11	·50	·60	·97	·14	·46	·56	·91	·02	·39	·67	·00
	·10	·50	·61	·95	·14	·46	·55	·92	·03	·37	·65	·01
	·10	·50	·60	·98	·18	·50	·56	·91	·02	·37	·67	·00
	·09	·51	·60	·96	·16	·48	·55	·94	·04	·39	·65	·01
	·09	·51	·59	·99	·18	·50	·55	·92	·01	·39	·65	·00
	·06	·46	·62	·96	·15	·50	·54	·93	·01	·40	·66	·00
	·06	·50	·61	·99	·15	·51	·57	·91	·01	·40	·65	·00
	·04	·49	·60	·95	·16	·52	·53	·92	·01	·40	·64	·01
	·03	·46	·61	·96	·16	·56	·54	·91	·01	·41	·65	·00
	·02	·45	·60	·94	·17	·55	·54	·92	·01	·41	·63	·00
	·02	·45	·62	·95	·19	·53	·54	·91	·00	·45	·65	·01
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	2 41 31	2 42 11	2 44 23	2 45 1	4 30 35	4 31 34	4 33 41	4 34 45	6 4 46	6 5 44	6 7 44	6 8 47
			s	s			s	s			s	s
			+0·609	+0·960			+0·550	+0·919			+0·654	+0·008
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	2 25 59	2 26 42	2 28 55	2 29 30	4 15 4	4 16 6	4 18 14	4 19 15	5 49 16	5 50 17	5 52 18	5 53 17
	s	s			s	s			s	s		
	+0·085	+0·492			+0·142	+0·516			+0·022	+0·405		
Difference	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	15 31·915	15 28·508	15 28·609	15 31·960	15 30·858	15 27·484	15 27·550	15 30·919	15 29·978	15 26·595	15 26·654	15 30·008

Arc Fyzabad and Agra.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q											
	At W		At E		At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1881	s	s	s	s	s	s	s	s	s	s	s	s
December 1	46·66	2·08	56·93	56·30	47·80	24·29	53·86	47·20	23·76	25·20	30·94	31·29
	·66	·07	·96	·31	·80	·30	·89	·22	·71	·20	·92	·27
	·65	·09	·95	·29	·81	·29	·87	·20	·73	·20	·95	·30
	·66	·10	·95	·30	·81	·26	·89	·22	·72	·20	·90	·29
	·65	·11	·95	·31	·83	·21	·87	·20	·75	·20	·95	·29
	·64	·11	·99	·31	·83	·20	·89	·21	·71	·20	·93	·27
	·65	·11	·98	·31	·85	·20	·87	·20	·70	·20	·95	·27
	·67	·08	·92	·32	·86	·20	·89	·21	·70	·20	·92	·25
	·67	·11	·95	·33	·85	·22	·89	·20	·70	·18	·95	·29
	·70	·10	·99	·31	·82	·20	·89	·21	·69	·19	·94	·25
	·70	·11	·98	·32	·82	·20	·89	·19	·70	·20	·95	·29
	·72	·11	·99	·30	·80	·20	·89	·24	·70	·18	·91	·26
	·70	·11	·99	·32	·80	·21	·89	·21	·70	·16	·92	·30
	·72	·11	·98	·30	·80	·21	·90	·22	·70	·18	·91	·26
	·71	·11	·98	·30	·80	·22	·89	·23	·70	·11	·95	·30
	·73	·11	·98	·30	·80	·24	·90	·24	·70	·14	·92	·28
	·71	·14	·97	·33	·79	·24	·89	·24	·70	·13	·95	·29
	·72	·13	·98	·30	·79	·25	·90	·23	·71	·15	·94	·28
	·73	·15	·98	·32	·80	·25	·88	·24	·77	·11	·94	·30
	·73	·13	·98	·32	·79	·25	·90	·23	·78	·13	·92	·28
Corresponding Mean Observed Times at E	h m s 2 41 15	h m s 2 42 27	h m s 2 44 6 s +0·969	h m s 2 45 6 s +0·310	h m s 4 31 15	h m s 4 31 48	h m s 4 34 3 s +0·887	h m s 4 34 57 s +0·217	h m s 6 4 50	h m s 6 5 48	h m s 6 7 40 s +0·933	h m s 6 8 41 s +0·281
Corresponding Mean Observed Times at W	h m s 2 25 56 s +0·689	h m s 2 27 12 s +0·109	h m s 2 28 52	h m s 2 29 48	h m s 4 15 57 s +0·813	h m s 4 16 34 s +0·232	h m s 4 18 50	h m s 4 19 40	h m s 5 49 33 s +0·717	h m s 5 50 35 s +0·173	h m s 5 52 28	h m s 5 53 25
Difference	m s 15 18·311	m s 15 14·891	m s 15 14·969	m s 15 18·310	m s 15 17·187	m s 15 13·768	m s 15 13·887	m s 15 17·217	m s 15 16·283	m s 15 12·827	m s 15 12·933	m s 15 16·281

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad and Agra.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q											
	At W		At E		At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1881	s	s	s	s	s	s	s	s	s	s	s	s
December 2	53·94	35·35	30·75	40·15	43·99	10·32	37·70	38·04	2·98	14·30	38·65	39·09
	·90	·35	·80	·13	·97	·31	·69	·01	3·00	·30	·69	·06
	·90	·34	·79	·15	·99	·32	·70	·03	3·00	·32	·68	·06
	·90	·33	·80	·14	·97	·33	·68	·03	3·00	·34	·70	·05
	·89	·31	·77	·15	·99	·35	·71	·03	3·00	·34	·69	·05
	·89	·30	·80	·14	·98	·35	·69	·02	3·00	·34	·70	·05
	·89	·30	·78	·15	·97	·39	·70	·05	3·00	·35	·69	·08
	·90	·30	·79	·15	·96	·39	·68	·01	3·00	·35	·70	·05
	·90	·29	·78	·14	·96	·39	·70	·02	2·99	·37	·69	·09
	·92	·27	·80	·14	·97	·40	·69	·02	2·99	·39	·70	·07
	·90	·25	·75	·14	·99	·40	·70	·06	2·99	·40	·70	·09
	·92	·24	·79	·11	·99	·40	·70	·04	3·00	·40	·71	·08
	·91	·24	·76	·14	·99	·40	·70	·05	3·00	·39	·68	·08
	·93	·24	·79	·13	·96	·41	·69	·04	3·00	·39	·70	·07
	·91	·25	·79	·13	·93	·40	·70	·06	3·00	·40	·69	·09
	·91	·25	·80	·15	·95	·38	·69	·03	3·01	·40	·71	·06
	·90	·29	·78	·14	·96	·38	·70	·05	3·00	·41	·70	·08
	·91	·30	·80	·14	·95	·40	·68	·04	3·01	·40	·70	·07
	·90	·30	·80	·14	·98	·39	·70	·05	3·00	·40	·70	·10
	·90	·31	·80	·13	·98	·36	·68	·03	3·00	·40	·70	·09
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	2 41 8	2 41 46	2 43 40	2 45 50	4 29 57	4 31 20	4 32 47	4 33 48	6 5 15	6 6 23	6 9 48	6 8 49
			s	s			s	s			s	s
			+0·786	+0·140			+0·694	+0·036			+0·694	+0·073
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	2 26 3	2 26 45	2 28 40	2 30 46	4 14 53	4 16 20	4 17 48	4 18 45	5 50 12	5 51 24	5 54 50	5 53 47
	s	s			s	s			s	s		
	+0·906	+0·391			+0·972	+0·374			+0·999	+0·370		
Difference	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s	m s
	15 4·094	15 0·709	15 0·786	15 4·140	15 3·028	14 59·626	14 59·694	15 3·036	15 2·001	14 58·630	14 58·694	15 2·073

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1881	s	s	s	s	s	s	s	s
December 12	1·65	34·19	31·51	28·94	48·75	3·14	53·47	28·86
	·67	·19	·51	·96	·77	·18	·47	·84
	·66	·20	·53	·94	·73	·18	·45	·83
	·67	·18	·52	·93	·76	·19	·46	·85
	·63	·20	·51	·95	·78	·19	·46	·82
	·70	·15	·52	·95	·80	·18	·46	·85
	·65	·12	·54	·93	·76	·20	·43	·85
	·64	·14	·51	·94	·74	·19	·45	·85
	·63	·11	·50	·96	·74	·16	·45	·81
	·66	·10	·52	·94	·74	·19	·44	·85
	·70	·10	·50	·96	·77	·20	·41	·83
	·61	·10	·53	·94	·78	·23	·44	·84
	·65	·10	·56	·93	·80	·17	·44	·82
	·65	·10	·55	·91	·80	·21	·43	·85
	·64	·18	·52	·95	·81	.16	·46	·85
	·64	·14	·54	·95	·80	·16	·44	·85
	·64	·11	·52	·94	·82	·14	·45	·83
	·68	·20	·57	·93	·83	·13	·44	·86
	·70	·20	·53	·94	·88	·17	·45	·82
	·65	·21	·56	·96	·82	·14	·45	·84
Corresponding Mean Observed Times at E	h m s 4 52 13	h m s 4 54 42	h m s 4 56 41 s +0·528	h m s 4 53 38 s +0·943	h m s 5 36 59	h m s 5 40 10	h m s 5 41 3 s +0·448	h m s 5 38 38 s +0·840
Corresponding Mean Observed Times at W	h m s 4 44 11 s +0·656	h m s 4 46 44 s +0·151	h m s 4 48 41	h m s 4 45 40	h m s 5 28 57 s +0·784	h m s 5 32 12 s +0·176	h m s 5 33 3	h m s 5 30 40
Difference	m s 8 1·344	m s 7 57·849	m s 8 0·528	m s 7 58·943	m s 8 1·216	m s 7 57·824	m s 8 0·448	m s 7 58·840

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1881	s	s	s	s	s	s	s	s
December 13	36·71	35·16	27·50	56·89	2·93	25·24	1·32	56·74
	·72	·19	·50	·90	·90	·28	·33	·77
	·74	·19	·50	·89	·90	·27	·32	·76
	·76	·20	·52	·90	·91	·27	·32	·74
	·76	·19	·50	·90	·91	·30	·32	·75
	·72	·20	·51	·90	·91	·32	·32	·77
	·74	·19	·50	·90	·91	·30	·35	·74
	·74	·19	·50	·89	·90	·32	·39	·75
	·76	·18	·48	·91	·90	·32	·35	·80
	·75	·16	·48	·90	·90	·36	·34	·76
	·75	·16	·46	·88	·89	·34	·33	·74
	·74	·15	·48	·90	·89	·30	·33	·76
	·77	·14	·45	·89	·90	·30	·31	·75
	·78	·13	·45	·90	·90	·34	·31	·74
	·77	·15	·46	·90	·90	·31	·30	·74
	·77	·16	·47	·89	·90	·30	·31	·76
	·78	·16	·46	·90	·91	·29	·31	·76
	·78	·18	·48	·89	·92	·29	·30	·74
	·76	·18	·47	·89	·94	·26	·30	·71
	·75	·18	·49	·88	·96	·25	·30	·73
Corresponding Mean Observed Times at E	h m s 4 41 45	h m s 4 44 40	h m s 4 46 37 s +0·483	h m s 4 43 6 s +0·895	h m s 5 36 11	h m s 5 39 30	h m s 5 41 11 s +0·323	h m s 5 38 6 s +0·751
Corresponding Mean Observed Times at W	h m s 4 33 46 s +0·753	h m s 4 36 45 s +0·172	h m s 4 38 40	h m s 4 35 11	h m s 5 28 12 s +0·909	h m s 5 31 35 s +0·298	h m s 5 33 14	h m s 5 30 11
Difference	m s 7 58·247	m s 7 54·828	m s 7 57·483	m s 7 55·895	m s 7 58·091	m s 7 54·702	m s 7 57·323	m s 7 55·751

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1881	s	s	s	s	s	s	s	s
December 14	6·85	48·29	34·35	12·75	35·08	58·38	24·20	47·59
	·86	·29	·35	·74	·08	·39	·20	·60
	·88	·29	·34	·74	·06	·39	·20	·60
	·88	·30	·36	·71	·06	·40	·19	·61
	·89	·30	·35	·71	·06	·39	·19	·61
	·90	·30	·39	·74	·10	·40	·19	·61
	·90	·30	·35	·70	·09	·40	·19	·62
	·91	·29	·36	·74	·09	·40	·20	·61
	·91	·29	·34	·71	·06	·40	·18	·63
	·94	·28	·35	·75	·09	·40	·18	·60
	·94	·30	·35	·72	·06	·40	·20	·60
	·92	·28	·35	·72	·09	·40	·20	·61
	·93	·29	·34	·72	·05	·40	·21	·61
	·91	·29	·34	·72	·08	·41	·20	·60
	·90	·30	·33	·72	·04	·41	·19	·60
	·89	·30	·33	·74	·05	·40	·20	·60
	·88	·31	·34	·73	·08	·41	·20	·56
	·86	·30	·35	·72	·09	·40	·21	·59
	·85	·29	·36	·74	·09	·41	·20	·61
	·91	·26	·36	·73	·10	·42	·20	·61
Corresponding Mean Observed Times at E	h m s 4 41 12	h m s 4 43 50	h m s 4 45 44 s +0·350	h m s 4 42 22 s +0·728	h m s 5 35 40	h m s 5 39 0	h m s 5 40 34 s +0·197	h m s 5 36 57 s +0·604
Corresponding Mean Observed Times at W	h m s 4 33 16 s +0·896	h m s 4 35 58 s +0·293	h m s 4 37 50	h m s 4 34 30	h m s 5 27 45 s +0·075	h m s 5 31 8 s +0·401	h m s 5 32 40	h m s 5 29 5
Difference	m s 7 55·104	m s 7 51·707	m s 7 54·350	m s 7 52·728	m s 7 54·925	m s 7 51·599	m s 7 54·197	m s 7 52·604

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1881 December 16	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	20·64	13·98	29·01	51·62	10·74	24·05	38·90	21·50
	·64	14·00	·02	·62	·74	·07	·92	·50
	·63	14·00	·00	·62	·72	·10	·92	·50
	·65	13·99	·00	·62	·73	·10	·91	·50
	·64	13·99	·00	·60	·73	·10	·90	·50
	·63	13·97	·02	·60	·75	·10	·90	·49
	·63	13·98	·00	·60	·73	·10	·90	·50
	·64	13·98	·01	·60	·72	·09	·90	·50
	·62	13·97	·00	·59	·70	·10	·90	·50
	·61	13·98	·01	·60	·70	·10	·92	·50
	·60	13·98	·01	·60	·70	·10	·91	·51
	·60	13·99	·01	·61	·72	·10	·91	·50
	·61	14·00	·00	·61	·75	·11	·92	·51
	·62	14·00	·00	·60	·76	·11	·93	·50
	·60	14·00	·00	·60	·74	·10	·90	·52
	·61	14·02	·01	·60	·75	·10	·91	·50
	·61	14·03	·00	·60	·73	·10	·91	·50
	·62	14·03	·00	·60	·74	·10	·91	·51
	·61	14·02	·00	·60	·75	·10	·91	·50
	·60	14·01	·02	·60	·77	·10	·92	·50
Corresponding Mean Observed Times at E	*h m s* 4 41 20	*h m s* 4 44 10	*h m s* 4 45 39 *s* +0·006	*h m s* 4 43 1 *s* +0·605	*h m s* 5 35 10	*h m s* 5 38 20	*h m s* 5 39 48 *s* +0·910	*h m s* 5 36 31 *s* +0·502
Corresponding Mean Observed Times at W	*h m s* 4 33 30 *s* +0·621	*h m s* 4 36 23 *s* +0·996	*h m s* 4 37 50	*h m s* 4 35 15	*h m s* 5 27 20 *s* +0·734	*h m s* 5 30 34 *s* +0·097	*h m s* 5 32 0	*h m s* 5 28 45
Difference	*m s* 7 49·379	*m s* 7 46·004	*m s* 7 49·006	*m s* 7 46·605	*m s* 7 49·266	*m s* 7 45·903	*m s* 7 48·910	*m s* 7 46·502

Arc Fyzabad and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1881	s	s	s	s	s	s	s	s
December 19	24·66	28·04	45·01	4·60	44·64	48·01	32·94	14·52
	·64	·00	·01	·60	·65	·02	·95	·58
	·63	·01	·01	·60	·67	·02	·95	·55
	·63	·00	·01	·60	·66	·02	·96	·56
	·62	·00	·01	·60	·64	·01	·95	·60
	·64	·00	·00	·61	·65	·00	·97	58
	·63	·01	·01	·60	·65	·00	·96	·57
	·65	·00	·02	·60	·68	·00	·96	·59
	·66	·02	·00	·60	·66	·01	·96	·56
	·65	·01	·01	·61	·69	·01	·98	·59
	·66	·00	·01	·60	·70	·01	·99	·57
	·66	·00	·01	·61	·70	·02	·97	·57
	·68	·00	·00	·60	·70	·01	·98	·60
	·70	·01	·00	·60	·70	·01	·98	·58
	·69	·01	·00	·63	·69	·01	·97	·57
	·69	·02	·01	·61	·66	·02	·98	·55
	·66	·02	·00	·60	·66	·01	·97	·55
	·65	·04	·01	·60	·65	·01	·96	·55
	·66	·03	·02	·61	·65	·00	·97	·55
	·65	·02	·02	·60	·63	·02	·97	·55
Corresponding Mean Observed Times at E	h m s 4 42 80	h m s 4 45 20	h m s 4 46 55 s +0·009	h m s 4 44 14 s +0·604	h m s 5 35 40	h m s 5 38 40	h m s 5 40 42 s +0·966	h m s 5 37 24 s +0·567
Corresponding Mean Observed Times at W	h m s 4 34 34 s +0·656	h m s 4 37 38 s +0·012	h m s 4 39 10	h m s 4 36 32	h m s 5 27 54 s +0·667	h m s 5 30 58 s +0·011	h m s 5 32 58	h m s 5 29 42
Difference	m s 7 45·344	m s 7 41·988	m s 7 45·009	m s 7 42·604	m s 7 45·333	m s 7 41·989	m s 7 44·966	m s 7 42·567

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1881 December 20	s	s	s	s	s	s	s	s
	44·95	14·15	8·72	20·35	40·00	54·24	45·72	52·32
	·96	·16	·74	·36	·01	·21	·70	·31
	·94	·18	·73	·35	·01	·21	·73	·30
	·96	·19	·74	·35	·01	·20	·70	·30
	·95	·20	·72	·35	·02	·20	·70	·31
	·95	·20	·75	·35	·02	·20	·72	·31
	·95	·21	·74	·34	·01	·20	·70	·31
	·94	·23	·75	·34	·00	·20	·71	·30
	·96	·23	·73	·35	·00	·20	·70	·30
	·95	·25	·73	·35	·00	·21	·70	·31
	·96	·24	·73	·35	·01	·20	·70	·30
	·96	·22	·74	·35	·01	·20	·70	·30
	·96	·20	·74	·34	·02	·20	·70	·29
	·99	·21	·74	·35	·01	·21	·68	·30
	·96	·20	·74	·34	·01		·70	·30
	·96	·20	·73	·35	·00		·70	·31
	·97	·20	·73	·35	·02		·70	·30
	·99	·21	·72	·35	·03		·70	·31
	·98	·23	·72	·35	·03		·71	·30
	·95	·22	·73	·36	·03		·70	·31
Corresponding Mean Observed Times at E	h m s 4 40 40	h m s 4 44 6	h m s 4 45 18 s +0·734	h m s 4 42 30 s +0·349	h m s 5 37 35	h m s 5 41 43	h m s 5 42 55 s +0·704	h m s 5 39 2 s +0·305
Corresponding Mean Observed Times at W	h m s 4 32 54 s +0·960	h m s 4 36 24 s +0·207	h m s 4 37 34	h m s 4 34 48	h m s 5 29 50 s +0·013	h m s 5 34 1 s +0·206	h m s 5 35 11	h m s 5 31 20
Difference	m s 7 45·040	m s 7 41·793	m s 7 44·734	m s 7 42·349	m s 7 44·987	m s 7 41·794	m s 7 44·704	m s 7 42·305

Arc Hazaribagh and Fyzabad.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
January 4	1·09	2·30	35·52	10·40	31·80	22·10	38·80	39·68
	·09	·31	·50	·40	·80	·09	·80	·69
	·10	·33	·50	·40	·80	·10	·80	·67
	·08	·31	·54	·39	·80	·10	·80	·68
	·08	·33	·51	·39	·80	·09	·80	·66
	·07	·31	·55	·40	·81	·10	·80	·62
	·09	·30	·51	·40	·80	·09	·80	·62
	·09	·32	·52	·39	·79	·10	·81	·60
	·10	·30	·50	·38	·80	·09	·80	·60
	·09	·34	·51	·38	·80	·10	·80	·60
	·09	·30	·51	·38	·80	·10	·80	·60
	·06	·33	·50	·40	·80	·08	·79	·60
	·09	·30	·50	·40	·79	·09	·79	·60
	·09	·34	·50	·40	·80	·09	·79	·60
	·09	·30	·50	·40	·80	·07	·79	·62
	·07	·32	·50	·40	·80	·08	·79	·63
	·10	·30	·50	·40	·80	·08	·77	·63
	·09	·33	·49	·40	·80	·07	·76	·64
	·09	·30	·50	·40	·80	·09	·77	·65
	·10	·34	·56	·40	·79	·08	·76	·63
Corresponding Mean Observed Times at E	*h m s* 6 11 41	*h m s* 6 14 40	*h m s* 6 12 45	*h m s* 6 16 20	*h m s* 7 13 12	*h m s* 7 16 0	*h m s* 7 14 48	*h m s* 7 16 49
			s +0·511	*s* +0·396			*s* +0·791	*s* +0·631
Corresponding Mean Observed Times at W	*h m s* 6 1 11	*h m s* 6 4 12	*h m s* 6 2 18	*h m s* 6 5 50	*h m s* 7 2 41	*h m s* 7 5 32	*h m s* 7 4 21	*h m s* 7 6 19
	s +0·088	*s* +0·315			*s* +0·799	*s* +0·090		
Difference	*m s* 10 29·912	*m s* 10 27·685	*m s* 10 27·511	*m s* 10 30·396	*m s* 10 30·201	*m s* 10 27·910	*m s* 10 27·791	*m s* 10 30·631

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Hazaribagh and Fyzabad.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882 January 5	s	s	s	s	s	s	s	s
	2·92	2·19	2·60	2·50	27·70	2·94	12·89	5·73
	·93	·19	·60	·48	·70	·97	·90	·75
	·92	·20	·60	·49	·70	·94	·89	·75
	·93	·19	·62	·48	·70	·96	·89	·74
	·92	·21	·63	·47	·70	·95	·88	·73
	·94	·19	·65	·46	·70	·99	·89	·77
	·93	·20	·64	·48	·70	·96	·88	·77
	·93	·18	·63	·49	·70	·98	·89	·79
	·92	·20	·61	·50	·70	·95	·89	·77
	·95	·19	·61	·50	·70	·99	·89	·75
	·92	·20	·63	·50	·70	·98	·89	·76
	·94	·20	·63	·50	·70	·98	·90	·76
	·93	·20	·62	·50	·69	·97	·89	·77
	·93	·20	·63	·50	·70	·99	·89	·77
	·93	·20	·61	·50	·70	·98	·88	·78
	·92	·20	·61	·49	·70	·98	·90	·75
	·91	·20	·60	·50	·70	·96	·90	·75
	·94	·20	·61	·50	·70	·98	·90	·75
	·94	·20	·63	·50	·69	·97	·90	·74
	·95	·20	·63	·50	·69	·98	·90	·74
Corresponding Mean Observed Times at E	h m s 6 10 48	h m s 6 13 45	h m s 6 12 12 s +0·620	h m s 6 15 12 s +0·492	h m s 7 15 13	h m s 7 17 46	h m s 7 16 22 s +0·892	h m s 7 19 15 s +0·756
Corresponding Mean Observed Times at W	h m s 6 0 12 s +0·930	h m s 6 3 12 s +0·197	h m s 6 1 40	h m s 6 4 37	h m s 7 4 37 s +0·699	h m s 7 7 12 s +0·970	h m s 7 5 50	h m s 7 8 40
Difference	m s 10 35·070	m s 10 32·803	m s 10 32·620	m s 10 35·492	m s 10 35·301	m s 10 33·030	m s 10 32·892	m s 10 35·756

Arc Hazaribagh and Fyzabad.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
January 6	35·44	1·72	39·10	11·01	20·20	1·42	18·45	1·25
	·46	·74	·10	11·03	·20	·46	·45	·28
	·46	·72	·11	11·00	·20	·48	·44	·23
	·47	·74	·10	11·01	·19	·45	·44	·24
	·46	·73	·10	11·00	·20	·43	·41	·25
	·45	·74	·10	11·00	·20	·45	·43	·25
	·46	·73	·09	11·00	·20	·44	·41	·28
	·45	·75	·10	11·00	·20	·48	·40	·26
	·44	·72	·10	11·00	·20	·47	·40	·20
	·44	·74	·16	11·00	·19	·45	·40	·25
	·43	·73	·15	11·00	·20	·47	·37	·25
	·46	·73	·10	10·99	·20	·48	·41	·26
	·44	·73	·14	10·98	·20	·44	·44	·27
	·47	·73	·16	10·99	·20	·46	·40	·27
	·46	·73	·10	10·99	·18	·46	·37	·26
	·47	·74	·10	11·02	·18	·45	·37	·27
	·44	·73	·10	11·02	·18	·48	·36	·26
	·49	·74	·10	11·04	·19	·48	·39	·26
	·44	·73	·09	11·02	·18	·47	·40	·23
	·47	·72	·05	11·04	·18	·46	·43	·26
Corresponding Mean Observed Times at E	*h m s* 6 10 26	*h m s* 6 13 50	*h m s* 6 11 49 *s* +0·108	*h m s* 6 15 21 *s* +0·007	*h m s* 7 15 11	*h m s* 7 17 50	*h m s* 7 16 28 *s* +0·409	*h m s* 7 20 11 *s* +0·254
Corresponding Mean Observed Times at W	*h m s* 5 59 45 *s* +0·455	*h m s* 6 3 11 *s* +0·732	*h m s* 6 1 11	*h m s* 6 4 40	*h m s* 7 4 30 *s* +0·194	*h m s* 7 7 11 *s* +0·459	*h m s* 7 5 50	*h m s* 7 9 30
Difference	*m s* 10 40·545	*m s* 10 38·268	*m s* 10 38·108	*m s* 10 41·007	*m s* 10 40·806	*m s* 10 38·541	*m s* 10 38·409	*m s* 10 41·254

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Hazaribagh and Fyzabad.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882 January 7	s	s	s	s	s	s	s	s
	30·05	17·36	1·49	54·30	48·76	16·06	20·79	2·63
	·04	·39	·49	·31	·79	·05	·80	·64
	·03	·38	·49	·30	·79	·05	·80	·63
	·02	·38	·48	·31	·80	·06	·80	·61
	·04	·38	·48	·30	·79	·05	·80	·62
	·01	·38	·47	·30	·80	·05	·80	·61
	·03	·37	·47	·30	·79	·04	·79	·63
	·07	·34	·48	·30	·79	·04	·79	·63
	·09	·34	·50	·31	·80	·04	·80	·61
	·08	·35	·50	·30	·80	·05	·80	·62
	·09	·34	·49	·30	·79	·03	·80	·64
	·07	·34	·50	·30	·80	·03	·81	·66
	·09	·33	·50	·30	·79	·05	·80	·64
	·09	·35	·48	·30	·80	·02	·80	·64
	·09	·33	·49	·30	·79	·00	·79	·64
	·08	·34	·46	·30	·80	·01	·78	·62
	·09	·35	·46	·31	·80	·02	·80	·62
	·07	·34	·45	·33	·80	·01	·80	·63
	·08	·32	·45	·33	·79	·02	·78	·64
	·08	·34	·46	·33	·79	·00	·79	·66
Corresponding Mean Observed Times at E	h m s 6 10 27	h m s 6 13 12	h m s 6 11 11 s +0·480	h m s 6 15 4 s +0·307	h m s 7 15 46	h m s 7 18 11	h m s 7 16 30 s +0·796	h m s 7 20 12 s +0·631
Corresponding Mean Observed Times at W	h m s 5 59 40 s +0·065	h m s 6 2 27 s +0·352	h m s 6 0 27	h m s 6 4 17	h m s 7 4 58 s +0·793	h m s 7 7 26 s +0·034	h m s 7 5 46	h m s 7 9 25
Difference	m s 10 46·935	m s 10 44·648	m s 10 44·480	m s 10 47·307	m s 10 47·207	m s 10 44·966	m s 10 44·796	m s 10 47·631

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Hazaribagh and Fyzabad.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
January 9	3·20	5·49	26·32	2·20	35·95	5·23	35·60	39·47
	·22	·49	·35	·20	·94	·26	·60	·47
	·21	·49	·37	·20	·96	·25	·62	·48
	·20	·50	·38	·20	·95	·24	·61	·47
	·20	·49	·40	·20	·97	·24	·60	·47
	·20	·50	·41	·20	·94	·22	·61	·47
	·20	·49	·40	·20	·97	·22	·63	·47
	·20	·49	·42	·20	·95	·21	·64	·46
	·20	·49	·40	·20	·96	·22	·67	·44
	·20	·48	·40	·20	·95	·22	·65	·45
	·20	·47	·39	·23	·97	·22	·66	·45
	·20	·48	·38	·21	·98	·20	·67	·46
	·20	·47	·36	·21	·98	·20	·66	·45
	·20	·48	·37	·21	·97	·20	·66	·45
	·20	·48	·37	·22	·98	·20	·65	·46
	·20	·48	·37	·22	·98	·20	·64	·46
	·20	·47	·36	·22	·99	·20	·62	·47
	·20	·48	·38	·20	·98	·21	·60	·48
	·18	·46	·39	·23	·98	·20	·60	·48
	·18	·47	·39	·23	·97	·20	·60	·47
Corresponding Mean Observed Times at E	h m s 6 10 12	h m s 6 13 12	h m s 6 11 36 s +0·381	h m s 6 14 12 s +0·209	h m s 7 12 45	h m s 7 16 12	h m s 7 14 45 s +0·630	h m s 7 16 49 s +0·464
Corresponding Mean Observed Times at W	h m s 5 59 13 s +0·200	h m s 6 2 15 s +0·482	h m s 6 0 40	h m s 6 3 13	h m s 7 1 45 s +0·966	h m s 7 5 15 s +0·217	h m s 7 3 49	h m s 7 5 50
Difference	m s 10 58·800	m s 10 56·518	m s 10 56·381	m s 10 59·209	m s 10 59·034	m s 10 56·783	m s 10 56·630	m s 10 59·464

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Hazaribagh and Fyzabad.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* −	*Q* +	*Q* −	*Q* +	*Q* −	*Q* +
1882	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
January 10	36·45	2·79	30·12	39·92	36·29	5·60	39·42	40·26
	·46	·79	·10	·94	·30	·60	·43	·26
	·45	·78	·11	·95	·29	·60	·45	·24
	·48	·79	·10	·96	·30	·60	·45	·21
	·46	·79	·10	·95	·29	·60	·40	·21
	·48	·79	·10	·96	·30	·60	·40	·22
	·47	·78	·11	·96	·30	·59	·40	·27
	·48	·78	·10	·95	·30	·60	·41	·26
	·46	·78	·08	·93	·30	·60	·40	·21
	·48	·78	·09	·95	·30	·60	·41	·20
	·47	·78	·10	·95	·30	·60	·40	·20
	·49	·77	·10	·97	·30	·60	·40	·20
	·48	·77	·12	·93	·30	·60	·37	·20
	·49	·76	·10	·96	·30	·59	·38	·24
	·47	·76	·11	·96	·30	·59	·39	·26
	·49	·75	·10	·94	·30	·58	·39	·26
	·48	·75	·10	·93	·30	·58	·40	·25
	·49	·75	·09	·91	·30	·59	·40	·25
	·48	·75	·09	·95	·30	·59	·40	·21
	·49	·75	·09	·95	·30	·58	·40	·21
Corresponding Mean Observed Times at E	*h m s* 6 8 50	*h m s* 6 11 14	*h m s* 6 9 40 *s* +0·101	*h m s* 6 12 49 *s* +0·946	*h m s* 7 12 50	*h m s* 7 15 17	*h m s* 7 6 49 *s* +0·405	*h m s* 7 7 50 *s* +0·231
Corresponding Mean Observed Times at W	*h m s* 5 57 46 *s* +0·475	*h m s* 6 0 12 *s* +0·772	*h m s* 5 58 39	*h m s* 6 1 46	*h m s* 7 1 46 *s* +0·299	*h m s* 7 4 15 *s* +0·594	*h m s* 6 55 48	*h m s* 6 56 46
Difference	*m s* 11 3·525	*m s* 11 1·228	*m s* 11 1·101	*m s* 11 3·946	*m s* 11 3·701	*m s* 11 1·406	*m s* 11 1·405	*m s* 11 4·231

Arc Hazaribagh and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882 January 19	s	s	s	s	s	s	s	s
	35·03	46·80	56·17	15·34	15·36	10·14	7·84	53·00
	·03	·82	·17	·39	·32	·15	·84	·03
	·02	·80	·17	·35	·34	·14	·86	·03
	·03	·80	·18	·33	·35	·13	·85	·05
	·02	·80	·18	·33	·35	·13	·89	·04
	·03	·85	·16	·33	·31	·15	·88	·06
	·01	·80	·19	·34	·34	·15	·89	
	·01	·84	·17	·34	·36	·14	·88	
	·04	·81	·19	·34	·34	·15	·89	
	·03	·81	·18	·34	·35	·15	·87	
	·05	·79	·19	·32	·32	·15	·90	
	·05	·83	·16	·34	·34	·14	·89	
	·03	·84	·15	·34	·35	·14	·91	
	·05	·81	·16	·37	·35	·15	·89	
	·02	·82	·16	·36	·35	·15	·91	
	·05	·83	·17	·40	·34	·14	·90	
	·04	·80	·19	·40	·31	·14	·90	
	·03	·83	·19	·40	·33	·14	·90	
	·03	·81	·21	·38	·34	·15	·91	
	·04	·82	·18	·38	·31	·15	·89	
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	7 22 31	7 25 40	7 27 6	7 24 25	8 29 12	8 32 4	8 33 17	8 30 56
			s	s			s	s
			+0·176	+0·356			+0·885	+0·035
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	7 2 45	7 5 56	7 7 20	7 4 42	8 9 25	8 12 20	8 13 31	8 11 12
	s	s			s	s		
	+0·032	+0·816			+0·338	+0·144		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	19 45·968	19 43·184	19 46·176	19 43·356	19 46·662	19 43·856	19 46·885	19 44·035

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Hazaribagh and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1882 January 20	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	19·02	6·86	11·20	3·31	3·36	36·15	12·90	19·05
	·03	·84	·20	·31	·37	·13	·01	·07
	·02	·85	·16	·40	·35	·14	·01	·06
	·02	·84	·19	·30	·36	·13	·00	·03
	·00	·84	·21	·33	·38	·16	·95	·07
	·03	·86	·20	·33	·37	·13	·91	·05
	·00	·84	·20	·39	·39	·15	·94	·02
	·04	·85	·22	·38	·35	·10	·91	·05
	·04	·84	·20	·39	·35	·14	·91	·05
	·04	·86	·20	·37	·35	·11	·90	·07
	·01	·84	·20	·35	·36	·11	·94	·05
	·02	·83	·22	·39	·35	·13	·95	·07
	·00	·86	·22	·35	·35	·15	·95	·04
	·00	·84	·24	·34	·35	·13	·00	·10
	·00	·84	·21	·30	·34	·13		·09
	·04	·84	·20	·31	·36	·15		·10
	·00	·85	·21	·38	·38	·16		·05
	·02	·84	·20	·36	·35	·15		·04
	·00	·82	·20	·40	·34	·13		·11
	·03	·82	·20	·39	·35	·14		·11
Corresponding Mean Observed Times at E	*h m s* 7 22 30	*h m s* 7 25 15	*h m s* 7 27 21	*h m s* 7 24 13	*h m s* 8 29 15	*h m s* 8 31 45	*h m s* 8 33 19	*h m s* 8 30 29
			s +0·204	*s* +0·354			*s* +0·949	*s* +0·064
Corresponding Mean Observed Times at W	*h m s* 7 2 29	*h m s* 7 5 16	*h m s* 7 7 20	*h m s* 7 4 15	*h m s* 8 9 13	*h m s* 8 11 46	*h m s* 8 13 18	*h m s* 8 10 30
	s +0·018	*s* +0·843			*s* +0·358	*s* +0·136		
Difference	*m s* 20 0·982	*m s* 19 58·157	*m s* 20 1·204	*m s* 19 58·354	*m s* 20 1·642	*m s* 19 58·864	*m s* 20 1·949	*m s* 19 59·064

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Hazaribagh and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882 January 21	s	s	s	s	s	s	s	s
	34·20	56·97	20·00	55·19	45·50	48·28	5·76	20·92
	·18	·98	·05	·20	·50	·27	·76	·90
	·19	·97	·09	·17	·50	·28	·76	·90
	·17	·97	·08	·19	·51	·28	·75	·90
	·19	·96	·09	·19	·50	·27	·76	·90
	·19	·96	·08	·19	·50	·25	·76	·91
	·21	·95	·02	·20	·50	·26	·71	·90
	·20	·96	·01	·21	·50	·29	·70	·90
	·16	·94	·05	·20	·49	·26	·72	·89
	·19	·96	·04	·20	·50	·25	·71	·88
	·19	·96	·04	·21	·50	·25	·78	·94
	·19	·97	·01	·20	·51	·25	·78	·90
	·21	·95	·01	·20	·49	·25	·73	·91
	·20	·96	·10	·17	·49	·25	·75	·89
	·20	·95	·10	·19	·49	·24	·70	·90
	·20	·95	·06	·19	·50	·25		·90
	·19	·92	·05	·19	·50	·24		·95
	·20	·96	·04	·19	·51	·26		·91
	·21	·95	·08	·20	·50	·25		·90
	·20	·96	·05	·19	·50	·25		·92
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	7 22 0	7 25 20	7 26 30	7 23 5	8 29 12	8 32 12	8 33 15	8 30 30
			s	s			s	s
			+0·053	+0·194			+0·742	+0·906
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	7 1 44	7 5 6	7 6 14	7 2 52	8 8 55	8 11 58	8 12 59	8 10 17
	s	s			s	s		
	+0·194	+0·958			+0·500	+0·259		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	20 15·806	20 13·042	20 16·053	20 13·194	20 16·500	20 13·741	20 16·742	20 13·906

Arc Hazaribagh and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882 January 24	s	s	s	s	s	s	s	s
	39·95	44·71	18·25	20·52	2·29	39·04	33·90	46·12
	·95	·75	·25	·48	·28	·04	·92	·11
	·95	·73	·27	·44	·30	·03	·94	·10
	·95	·73	·30	·44	·28	·02	·90	·11
	·95	·73	·29	·49	·29	·03	·94	·12
	·96	·75	·25	·50	·29	·02	·94	·16
	·96	·71	·26	·50	·30	·02	·98	·14
	·98	·74	·25	·41	·29	·03	·97	·14
	·99	·70	·28	·49	·29	·04	·98	·18
	·00	·74	·30	·49	·30	·04	·97	·18
	·98	·74	·30	·50	·29	·04	·98	·14
	·99	·74	·25	·50	·28	·04	·93	·15
	·98	·73	·21	·49	·28	·06	·95	·13
	·00	·77	·25	·46	·28	·05	·91	·14
	·98	·74	·30	·50	·25	·04	·93	·14
	·00	·74	·25	·41	·24	·05	·90	·15
	·99	·74	·26	·48	·25	·05	·93	·13
	·98	·76	·26	·44	·25	·04	·95	·13
	·00	·73	·28	·45	·25	·06	·94	·17
	·98	·73	·25	·45	·25	·05	·90	·21
Corresponding Mean Observed Times at E	h m s 7 21 48	h m s 7 24 50	h m s 7 26 28 s +0·266	h m s 7 23 30 s +0·472	h m s 8 27 11	h m s 8 29 45	h m s 8 33 43 s +0·938	h m s 8 29 56 s +0·143
Corresponding Mean Observed Times at W	h m s 7 0 49 s +0·976	h m s 7 3 54 s +0·736	h m s 7 5 30	h m s 7 2 35	h m s 8 6 12 s +0·277	h m s 8 8 49 s +0·040	h m s 8 12 45	h m s 8 9 0
Difference	m s 20 58·024	m s 20 55·264	m s 20 58·266	m s 20 55·472	m s 20 58·723	m s 20 55·960	m s 20 58·938	m s 20 56·143

Arc Hazaribagh and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882	s	s	s	s	s	s	s	s
January 25	52·09	19·87	53·13	15·40	6·30	41·10	23·87	12·09
	·08	·85	·16	·36	·30	·11	·86	·09
	·09	·85	·11	·38	·30	·10	·85	·08
	·04	·84	·13	·33	·27	·11	·83	·09
	·08	·85	·11	·32	·29	·10	·87	·10
	·08	·84	·14	·39	·30	·14	·85	·08
	·10	·85	·14	·39	·30	·10	·86	·10
	·09	·84	·13	·35	·30	·11	·86	·08
	·08	·81	·13	·40	·27	·11	·86	·10
	·06	·84	·16	·35	·29	·12	·88	·10
	·05	·83	·16	·36	·30	·11	·89	·11
	·06	·83	·18	·36	·30	·12	·89	·10
	·10	·81	·15	·34	·30	·11	·86	·11
	·08	·84	·16	·34	·30	·11	·85	·10
	·05	·81	·15	·36	·30	·11	·86	·12
	·05	·84	·15	·36	·30	·11	·90	·10
	·08	·84	·14	·39	·29	·10	·90	·11
	·08	·84	·13	·35	·30	·11	·90	·08
	·07	·84	·14	·36	·28	·10	·90	·10
	·05	·85	·16	·40	·28	·12	·90	·10
Corresponding Mean Observed Times at E	h m s 7 22 15	h m s 7 24 40	h m s 7 26 3 s +0·143	h m s 7 23 25 s +0·365	h m s 8 28 30	h m s 8 31 2	h m s 8 32 33 s +0·872	h m s 8 30 22 s +0·097
Corresponding Mean Observed Times at W	h m s 7 1 2 s +0·073	h m s 7 3 29 s +0·839	h m s 7 4 50	h m s 7 2 15	h m s 8 7 16 s +0·294	h m s 8 9 51 s +0·110	h m s 8 11 20	h m s 8 9 11
Difference	m s 21 12·927	m s 21 10·161	m s 21 13·143	m s 21 10·365	m s 21 13·706	m s 21 10·890	m s 21 13·872	m s 21 11·097

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Hazaribagh and Jubbulpore.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882 January 26	s	s	s	s	s	s	s	s
	33·43	14·22	1·86	36·04	9·66	28·43	2·60	28·75
	·44	·20	·81	·01	·65	·40	·60	·79
	·43	·20	·85	·02	·65	·42	·64	·81
	·42	·20	·80	·01	·65	·42	·61	·81
	·41	·21	·80	·01	·66	·40	·59	·82
	·44	·19	·82	·07	·65	·40	·63	·82
	·44	·19	·83	·04	·65	·40	·62	·81
	·44	·22	·83	·08	·65	·41	·62	·81
	·41	·20	·82	·06	·65	·41	·64	·82
	·44	·19	·88	·10	·68	·40	·60	·82
	·42	·20	·86	·06	·65	·43	·60	·80
	·44	·20	·85	·04	·66	·41	·62	·78
	·43	·21	·88	·03	·66	·44	·64	·80
	·46	·19	·84	·02	·68	·41	·61	·80
	·45	·20	·84	·02	·68	·41	·59	·76
	·44	·20	·85	·02	·66	·41	·60	·79
	·44	·19	·82	·01	·67	·40	·61	·79
	·42	·21	·83	·04	·64	·40	·58	·82
	·41	·19	·84	·00	·69	·40	·62	·79
	·41	·20	·84	·02	·66	·40	·60	·82
Corresponding Mean Observed Times at E	h m s 7 22 12	h m s 7 24 50	h m s 7 26 11 s +0·838	h m s 7 23 46 s +0·035	h m s 8 28 49	h m s 8 32 5	h m s 8 33 12 s +0·611	h m s 8 30 38 s +0·801
Corresponding Mean Observed Times at W	h m s 7 0 43 s +0·431	h m s 7 3 24 s +0·201	h m s 7 4 43	h m s 7 2 20	h m s 8 7 19 s +0·660	h m s 8 10 38 s +0·410	h m s 8 11 43	h m s 8 9 12
Difference	m s 21 28·569	m s 21 25·799	m s 21 28·838	m s 21 26·035	m s 21 29·340	m s 21 26·590	m s 21 29·611	m s 21 26·801

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta and Hazaribagh.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
February 8	12·29	2·10	39·95	39·87	22·70	28·50	13·55	40·44
	·30	·10	·93	·83	·70	·48	·54	·49
	·29	·14	·92	·86	·70	·49	·55	·48
	·29	·11	·95	·88	·70	·50	·55	·49
	·29	·11	·94	·88	·70	·50	·56	·49
	·27	·10	·95	·88	·71	·50	·55	·49
	·28	·10	·94	·88	·70	·48	·55	·48
	·28	·09	·95	·86	·69	·50	·55	·49
	·27	·08	·91	·89	·68	·50	·54	·49
	·27	·10	·96	·89	·67	·50	·56	·49
	·28	·10	·90	·85	·65	·51	·54	·49
	·29	·10	·95	·83	·65	·50	·55	·50
	·28	·13	·92	·87	·64	·50	·53	·49
	·30	·10	·96	·89	·69	·50	·53	·50
	·30	·10	·91	·89	·70	·49	·52	·49
	·30	·14	·95	·88	·72	·48	·54	·50
	·29	·13	·93	·88	·70	·49	·51	·49
	·29	·11	·96	·88	·70	·48	·52	·49
	·29	·10	·95	·89	·70	·49	·51	·48
	·30	·10	·98	·89	·69	·48	·52	·49
Corresponding Mean Observed Times at E	h m s 8 50 37	h m s 8 53 24	h m s 8 51 49 s +0·941	h m s 8 54 49 s +0·873	h m s 9 51 47	h m s 9 54 50	h m s 9 53 23 s +0·539	h m s 9 56 50 s +0·487
Corresponding Mean Observed Times at W	h m s 8 34 22 s +0·288	h m s 8 37 12 s +0·107	h m s 8 35 38	h m s 8 38 35	h m s 9 35 32 s +0·690	h m s 9 38 38 s +0·493	h m s 9 37 12	h m s 9 40 36
Difference	m s 16 14·712	m s 16 11·893	m s 16 11·941	m s 16 14·873	m s 16 14·310	m s 16 11·507	m s 16 11·539	m s 16 14·487

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta and Hazaribagh.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
February 9	1·81	32·66	5·40	40·30	25·30	39·10	4·95	39·89
	·80	·70	·40	·30	·28	·10	·98	·88
	·83	·68	·40	·30	·28	·10	·95	·89
	·83	·66	·38	·30	·30	·11	·97	·89
	·83	·66	·39	·30	·30	·10	·94	·89
	·83	·69	·37	·30	·29	·10	·97	·90
	·82	·70	·38	·30	·29	·10	·96	·89
	·86	·69	·38	·30	·30	·10	·98	·89
	·85	·68	·39	·30	·30	·10	·96	·89
	·88	·69	·38	·30	·30	·10	·99	·90
	·86	·69	·39	·30	·30	·10	·96	·90
	·82	·70	·37	·30	·28	·10	·96	·90
	·86	·67	·38	·30	·29	·09	·96	·90
	·80	·66	·38	·30	·28	·09	·96	·90
	·81	·61	·37	·30	·30	·09	·95	·90
	·81	·62	·38	·30	·28	·09	·96	·90
	·81	·62	·40	·30	·28	·08	·94	·90
	·85	·62	·38	·30	·26	·09	·93	·90
	·86	·60	·37	·30	·26	·09	·93	·90
	·86	·64	·37	·30	·28	·09	·93	·89
Corresponding Mean Observed Times at E	h m s 8 50 17	h m s 8 52 45	h m s 8 51 15 s +0·383	h m s 8 54 50 s +0·300	h m s 9 50 40	h m s 9 53 51	h m s 9 52 14 s +0·956	h m s 9 54 49 s +0·895
Corresponding Mean Observed Times at W	h m s 8 34 11 s +0·834	h m s 8 36 42 s +0·662	h m s 8 35 13	h m s 8 38 45	h m s 9 34 35 s +0·288	h m s 9 37 49 s +0·096	h m s 9 36 13	h m s 9 38 45
Difference	m s 16 5·166	m s 16 2·338	m s 16 2·383	m s 16 5·300	m s 16 4·712	m s 16 1·904	m s 16 1·956	m s 16 4·895

Arc Calcutta and Hazaribagh.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882 February 10	s	s	s	s	s	s	s	s
	5·31	8·20	39·89	35·80	6·70	37·53	22·48	5·44
	·30	·20	·88	·79	·71	·53	·49	·43
	·30	·18	·88	·80	·80	·55	·49	·43
	·30	·20	·88	·80	·74	·57	·49	·41
	·32	·20	·88	·80	·74	·57	·48	·41
	·35	·20	·88	·80	·72	·57	·49	·41
	·35	·20	·88	·80	·76	·56	·48	·42
	·35	·20	·87	·80	·76	·55	·49	·42
	·34	·20	·88	·80	·75	·57	·49	·41
	·38	·20	·87	·80	·73	·54	·49	·41
	·38	·20	·88	·80	·74	·54	·48	·41
	·39	·20	·89	·80	·74	·53	·49	·42
	·38	·19	·89	·80	·73	·50	·49	·40
	·39	·20	·89	·80	·72	·51	·49	·40
	·36	·20	·88	·80	·74	·55	·49	·40
	·39	·20	·89	·80	·75	·53	·49	·41
	·36	·20	·89	·80	·77	·53	·49	·40
	·36	·20	·89	·80	·75	·51	·49	·40
	·38	·20	·90	·80	·75	·53	·49	·40
	·38	·20	·89	·80	·74	·51	·49	·41
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	8 48 11	8 51 11	8 49 49	8 52 45	9 49 12	9 51 40	9 50 32	9 53 15
			s	s			s	s
			+0·884	+0·800			+0·488	+0·412
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	8 32 15	8 35 18	8 33 57	8 36 50	9 33 16	9 35 47	9 34 40	9 37 20
	s	s			s	s		
	+0·354	+0·198			+0·742	+0·539		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	15 55·646	15 52·802	15 52·884	15 55·800	15 55·258	15 52·461	15 52·488	15 55·412

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta and Hazaribagh.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
February 13	39·18	11·99	41·02	4·98	1·64	39·49	39·59	5·52
	·20	·98	·01	·97	·62	·48	·59	·52
	·18	·00	·01	·99	·61	·48	·58	·52
	·19	·00	·00	·96	·66	·46	·59	·55
	·20	·00	·00	·99	·65	·48	·59	·53
	·20	·00	·00	·96	·66	·48	·59	·54
	·20	·00	·01	·98	·63	·50	·59	·51
	·21	·02	·00	·96	·63	·44	·58	·55
	·20	·01	·00	·96	·65	·48	·58	·52
	·23	·02	·00	·97	·67	·46	·58	·53
	·20	·02	·00	·99	·63	·48	·58	·53
	·20	·00	·00	·97	·65	·48	·58	·55
	·20	·00	·00	·99	·63	·48	·58	·54
	·21	·00	·00	·97	·66	·46	·59	·54
	·20	·00	·01	·99	·65	·47	·60	·53
	·20	·00	·02	·97	·63	·48	·60	·55
	·20	·98	·02	·98	·61	·46	·60	·54
	·20	·99	·01	·98	·64	·43	·59	·55
	·20	·99	·01	·99	·62	·42	·59	·50
	·20	·99	·01	·97	·63	·43	·58	·53
Corresponding Mean Observed Times at E	h m s 8 46 19	h m s 8 48 49	h m s 8 47 51 s +0·007	h m s 8 50 14 s +0·976	h m s 9 48 41	h m s 9 51 16	h m s 9 49 49 s +0·588	h m s 9 53 15 s +0·532
Corresponding Mean Observed Times at W	h m s 8 30 49 s +0·200	h m s 8 33 22 s +0·000	h m s 8 32 24	h m s 8 34 45	h m s 9 33 11 s +0·639	h m s 9 35 49 s +0·467	h m s 9 34 23	h m s 9 3 46
Difference	m s 15 29·800	m s 15 27·000	m s 15 27·007	m s 15 29·976	m s 15 29·361	m s 15 26·533	m s 15 26·588	m s 15 29·532

Arc Calcutta and Hazaribagh.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
February 14	12·00	20·84	39·14	39·10	1·43	35·30	45·70	39·69
	·03	·84	·15	·10	·43	·30	·72	·70
	·06	·84	·13	·10	·43	·28	·73	·70
	·06	·82	·12	·10	·46	·26	·73	·69
	·06	·83	·14	·10	·44	·27	·72	·68
	·05	·84	·15	·10	·48	·26	·72	·69
	·05	·85	·14	·10	·47	·28	·73	·69
	·08	·84	·15	·10	·43	·25	·72	·69
	·09	·83	·16	·10	·43	·24	·72	·69
	·08	·86	·16	·10	·45	·26	·72	·70
	·09	·85	·16	·10	·44	·22	·74	·69
	·08	·87	·18	·10	·44	·24	·73	·69
	·09	·85	·16	·10	·44	·23	·74	·69
	·08	·84	·17	·10	·45	·24	·74	·69
	·02	·85	·17	·10	·44	·28	·76	·68
	·02	·84	·17	·10	·45	·29	·76	·69
	·02	·86	·17	·10	·46	·28	·76	·69
	·02	·85	·17	·10	·44	·30	·77	·70
	·00	·86	·17	·10	·44	·30	·75	·70
	·00	·86	·19	·10	·46	·30	·74	·70
Corresponding Mean Observed Times at E	h m s 8 44 42	h m s 8 47 48	h m s 8 46 49 s +0·158	h m s 8 49 49 s +0·100	h m s 9 48 31	h m s 9 51 2	h m s 9 49 55 s +0·735	h m s 9 52 49 s +0·692
Corresponding Mean Observed Times at W	h m s 8 29 22 s +0·049	h m s 8 32 30 s +0·846	h m s 8 31 32	h m s 8 34 29	h m s 9 33 11 s +0·446	h m s 9 35 45 s +0·269	h m s 9 34 39	h m s 9 37 30
Difference	m s 15 19·951	m s 15 17·154	m s 15 17·158	m s 15 20·100	m s 15 19·554	m s 15 16·731	m s 15 16·735	m s 15 19·692

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Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* −	*Q* +	*Q* −	*Q* +	*Q* −	*Q* +
1882	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
February 16	36·69	6·50	36·45	5·50	36·95	35·90	4·13	5·13
	·70	·50	·45	·50	·93	·89	·16	·16
	·70	·50	·45	·48	·95	·90	·16	·12
	·70	·51	·47	·48	·93	·90	·18	·12
	·69	·51	·46	·48	·97	·90	·16	·15
	·70	·57	·47	·48	·95	·90	·16	·14
	·70	·53	·46	·47	·97	·90	·14	·13
	·70	·54	·47	·48	·96	·90	·15	·12
	·70	·55	·47	·46	·98	·90	·14	·13
	·70	·56	·48	·46	·00	·89	·13	·12
	·70	·56	·47	·46	·00	·86	·11	·13
	·70	·57	·47	·46	·98	·84	·14	·13
	·70	·53	·46	·46	·99	·83	·15	·11
	·70	·54	·49	·48	·01	·82	·16	·11
	·70	·55	·48	·43	·00	·83	·13	·11
	·71	·55	·48	·43	·00	·82	·16	·11
	·73	·52	·48	·43	·98	·82	·12	·10
	·73	·52	·49	·46	·97	·82	·15	·12
	·72	·51	·46	·44	·98	·84	·11	·11
	·71	·54	·48	·46	·99	·83	·12	·12
Corresponding Mean Observed Times at E	*h m s* 8 45 50	*h m s* 8 48 17	*h m s* 8 46 46 *s* +0·470	*h m s* 8 50 15 *s* +0·465	*h m s* 9 47 50	*h m s* 9 50 46	*h m s* 9 49 14 *s* +0·143	*h m s* 9 52 15 *s* +0·124
Corresponding Mean Observed Times at W	*h m s* 8 30 46 *s* +0·704	*h m s* 8 33 16 *s* +0·533	*h m s* 8 31 46	*h m s* 8 35 12	*h m s* 9 32 46 *s* +0·975	*h m s* 9 35 45 *s* +0·864	*h m s* 9 34 14	*h m s* 9 37 12
Difference	*m s* 15 3·296	*m s* 15 0·467	*m s* 15 0·470	*m s* 15 3·465	*m s* 15 3·025	*m s* 15 0·136	*m s* 15 0·143	*m s* 15 3·124

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Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882	s	s	s	s	s	s	s	s
February 25	37·06	30·79	42·80	40·76	0·41	4·11	1·35	6·36
	·07	·79	·78	·80	·40	·10	·33	·36
	·09	·78	·81	·80	·39	·11	·33	·35
	·05	·77	·78	·73	·38	·11	·38	·44
	·05	·79	·80	·85	·35	·10	·34	·46
	·06	·81	·74	·75	·39	·11	·33	·45
	·11	·80	·79	·83	·38	·13	·33	·39
	·10	·79	·89	·85	·36	·11	·30	·40
	·10	·79	·80	·78	·36	·12	·31	·38
	·09	·80	·79	·77	·38	·12	·31	·42
	·09	·81	·80	·75	·38	·14	·33	·40
	·10	·81	·80	·73	·40	·16	·35	·40
	·08	·81	·71	·77	·39	·15	·34	·39
	·08	·80	·71	·80	·40	·13	·30	·33
	·06	·80	·80	·71	·40	·14	·31	·40
	·07	·80	·73	·76	·39	·15	·33	·40
	·07	·79	·80	·73	·40	·16	·32	·48
	·07	·79	·80	·75	·41	·13	·31	·38
	·07	·80	·76	·75	·40	·15	·30	·40
	·06	·80	·80	·74	·41	·14	·30	·40
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	9 41 24	9 43 15	9 45 52	9 42 50	10 47 47	10 50 48	10 55 11	10 49 16
			s	s			s	s
			+0·785	+0·771			+0·325	+0·400
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	9 26 47	9 28 40	9 31 16	9 28 16	10 33 10	10 36 14	10 40 35	10 34 42
	s	s			s	s		
	+0·077	+0·796			+0·389	+0·129		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	14 36·923	14 34·204	14 36·785	14 34·771	14 36·611	14 33·871	14 36·325	14 34·400

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Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882 March 1	s	s	s	s	s	s	s	s
	49·14	5·83	38·61	8·62	1·36	14·20	18·37	16·35
	·11	·81	·61	·67	·34	·19	·38	·36
	·11	·85	·61	·65	·35	·20	·36	·37
	·14	·80	·63	·65	·35	·19	·35	·36
	·14	·80	·63	·61	·38	·20	·35	·34
	·12	·80	·62	·62	·36	·16	·35	·35
	·14	·84	·61	·61	·39	·15	·35	·34
	·15	·82	·60	·66	·37	·11	·35	·35
	·14	·81	·60	·64	·40	·14	·36	·36
	·11	·81	·60	·61	·38	·16	·35	·34
	·11	·84	·64	·62	·40	·15	·35	·34
	·13	·82	·63	·63	·38	·15	·35	·31
	·15	·85	·62	·61	·39	·15	·34	·32
	·11	·85	·65	·63	·37	·16	·37	·33
	·13	·86	·64	·60	·39	·18	·32	·34
	·12	·88	·63	·61	·36	·16	·35	·33
	·11	·89	·64	·60	·35	·16	·35	·31
	·11	·89	·65	·63	·35	·14	·35	·33
	·11	·89	·65	·62	·36	·17	·35	·33
	·10	·88	·65	·61	·37	·18	·35	·35
Corresponding Mean Observed Times at E	h m s 9 40 8	h m s 9 43 22	h m s 9 44 48 s +0·626	h m s 9 42 18 s +0·625	h m s 10 47 20	h m s 10 49 30	h m s 10 51 28 s +0·353	h m s 10 48 26 s +0·341
Corresponding Mean Observed Times at W	h m s 9 25 59 s +0·124	h m s 9 29 15 s +0·841	h m s 9 30 40	h m s 9 28 12	h m s 10 33 11 s +0·365	h m s 10 35 24 s +0·165	h m s 10 37 20	h m s 10 34 20
Difference	m s 14 8·876	m s 14 6·159	m s 14 8·626	m s 14 6·625	m s 14 8·635	m s 14 5·835	m s 14 8·353	m s 14 6·341

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri and Hazaribagh.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882	s	s	s	s	s	s	s	s
March 2	6·96	15·66	4·82	5·81	42·16	4·95	40·55	38·53
	·96	·67	·83	·85	·18	·96	·53	·52
	·96	·68	·83	·83	·19	·95	·54	·50
	·95	·69	·83	·86	·18	·95	·53	·54
	·95	·70	·83	·83	·18	·94	·51	·51
	·96	·69	·85	·82	·17	·94	·51	·52
	·96	·70	·83	·80	·16	·93	·51	·52
	·97	·70	·81	·82	·19	·95	·53	·55
	·96	·70	·84	·84	·18	·95	·53	·53
	·96	·70	·81	·80	·16	·97	·54	·53
	·96	·70	·81	·82	·18	·95	·51	·51
	·96	·69	·80	·82	·19	·96	·55	·53
	·96	·70	·81	·89	·18	·96	·54	·51
	·96	·66	·80	·80	·17	·99	·55	·53
	·96	·68	·79	·81	·16	·96	·52	·53
	·96	·68	·83	·80	·16	·97	·55	·51
	·98	·68	·80	·83	·16	·95	·54	·52
	·98	·70	·80	·83	·17	·96	·54	·55
	·97	·70	·80	·84	·15	·98	·54	·50
	·98	·68	·82	·80	·16	·98	·54	·52
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	9 40 20	9 43 26	9 45 14	9 42 15	10 46 55	10 50 15	10 51 50	10 48 48
			s	s			s	s
			+0·817	+0·825			+0·533	+0·523
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	9 26 16	9 29 25	9 31 12	9 28 15	10 32 52	10 36 14	10 37 48	10 34 48
	s	s			s	s		
	+0·963	+0·688			+0·172	+0·958		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	14 3·037	14 0·312	14 2·817	14 0·825	14 2·828	14 0·042	14 2·533	14 0·523

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri and Hazaribagh.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882	s	s	s	s	s	s	s	s
March 3	37·75	30·54	17·05	33·01	18·05	10·76	6·76	19·75
	·75	·56	·03	·03	·09	·76	·75	·76
	·75	·54	·05	·01	·05	·75	·77	·74
	·74	·52	·01	·04	·05	·79	·77	·74
	·74	·50	·02	·03	·09	·78	·75	·74
	·76	·50	·04	·04	·03	·78	·78	·75
	·76	·53	·03	·03	·01	·76	·75	·73
	·76	·52	·05	·03	·00	·75	·79	·70
	·75	·50	·04	·03	·01	·79	·74	·75
	·76	·50	·01	·06	·02	·73	·75	·73
	·75	·50	·04	·04	·02	·76	·75	·75
	·76	·52	·05	·04	·01	·74	·75	·75
	·75	·51	·00	·05	·03	·79	·75	·75
	·74	·50	·05	·04	·05	·75	·75	·74
	·72	·50	·06	·05	·05	·79	·74	·75
	·74	·52	·02	·04	·07	·78	·75	·73
	·71	·50	·01	·04		·78	·75	·75
	·77	·50	·01	·04		·75	·75	·72
	·70	·49	·01	·04		·79	·75	·73
	·76	·49	·08	·04		·80	·75	·73
Corresponding Mean Observed Times at E	h m s 9 40 45	h m s 9 43 35	h m s 9 45 27 s +0·033	h m s 9 42 43 s +0·037	h m s 10 48 25	h m s 10 51 15	h m s 10 52 16 s +0·755	h m s 10 49 29 s +0·740
Corresponding Mean Observed Times at W	h m s 9 26 47 s +0·746	h m s 9 29 40 s +0·512	h m s 9 31 30	h m s 9 28 48	h m s 10 34 28 s +0·040	h m s 10 37 20 s +0·769	h m s 10 38 20	h m s 10 35 35
Difference	m s 13 57·254	m s 13 54·488	m s 13 57·033	m s 13 55·037	m s 13 56·960	m s 13 54·231	m s 13 56·755	m s 13 54·740

Arc Jalpaiguri and Hazaribagh.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882 March 4	s	s	s	s	s	s	s	s
	48·40	43·11	4·40	25·39	11·76	51·55	53·98	21·99
	·38	·11	·40	·39	·79	·54	·99	·99
	·39	·10	·40	·38	·79	·55	·98	·99
	·35	·11	·40	·39	·80	·55	·00	·97
	·39	·11	·40	·38	·79	·54	·98	·97
	·36	·09	·39	·39	·80	·53	·99	·97
	·37	·10	·40	·38	·80	·54	·99	·97
	·35	·10	·37	·40	·81	·55	·00	·96
	·37	·10	·40	·40	·81	·54	·98	·97
	·35	·10	·39	·40	·82	·54	·00	·97
	·35	·11	·38	·39	·80	·51	·99	·98
	·35	·11	·36	·40	·81	·53	·98	·99
	·36	·12	·38	·40	·81	·53	·96	·98
	·35	·11	·39	·40	·84	·53	·96	·99
	·35	·10	·40	·39	·80	·52	·96	·99
	·33	·10	·38	·40	·80	·54	·97	·99
	·35	·11	·41	·39	·80	·55	·97	·99
	·36	·10	·39	·38	·80	·52	·96	·99
	·38	·10	·40	·39	·79	·54	·95	·99
	·39	·10	·39	·40	·81	·55	·96	·98
Corresponding Mean Observed Times at E	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	9 40 48	9 43 40	9 45 14	9 42 35	10 45 11	10 49 48	10 51 3	10 47 31
			s	s			s	s
			+0·392	+0·392			+0·978	+0·981
Corresponding Mean Observed Times at W	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	9 26 58	9 29 53	9 31 25	9 28 48	10 31 21	10 36 1	10 37 15	10 33 45
	s	s			s	s		
	+0·364	+0·105			+0·803	+0·538		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	13 49·636	13 46·895	13 49·392	13 47·392	13 49·197	13 46·462	13 48·978	13 46·981

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri and Hazaribagh.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882 March 5	s	s	s	s	s	s	s	s
	54·34	4·17	41·45	56·44	29·71	45·43	14·03	40·05
	·34	·16	·45	·45	·70	·45	·04	·05
	·33	·18	·45	·45	·70	·44	·03	·03
	·38	·19	·44	·43	·70	·45	·04	·03
	·38	·20	·44	·43	·69	·46	·02	·04
	·39	·19	·45	·42	·70	·45	·04	·01
	·31	·16	·43	·40	·71	·48	·02	·03
	·32	·19	·45	·45	·71	·48	·05	·03
	·32	·18	·42	·41	·72	·49	·03	·05
	·33	·15	·43	·45	·71	·50	·03	·04
	·32	·16	·43	·41	·74	·49	·02	·02
	·32	·14	·44	·43	·74	·50	·04	·05
	·30	·11	·41	·41	·76	·49	·04	·05
	·32	·11	·42	·44	·75	·49	·06	·04
	·34	·10	·42	·42	·77	·49	·05	·04
	·30	·10	·42	·44	·75	·45	·05	·02
	·30	·10	·44	·41	·76	·42	·04	·02
	·32	·09	·44	·43	·74	·42	·05	·04
	·33	·11	·44	·41	·73	·41	·04	·03
	·33	·11	·43	·45	·72	·42	·04	·02
Corresponding Mean Observed Times at E	h m s 9 40 45	h m s 9 43 52	h m s 9 44 51 s +0·435	h m s 9 42 6 s +0·429	h m s 10 46 20	h m s 10 48 33	h m s 10 50 24 s +0·038	h m s 10 47 50 s +0·035
Corresponding Mean Observed Times at W	h m s 9 27 4 s +0·331	h m s 9 30 14 s +0·145	h m s 9 31 11	h m s 9 28 28	h m s 10 32 39 s +0·726	h m s 10 34 55 s +0·461	h m s 10 36 44	h m s 10 34 12
Difference	m s 13 40·669	m s 13 37·855	m s 13 40·435	m s 13 38·429	m s 13 40·274	m s 13 37·539	m s 13 40·038	m s 13 38·035

Arc Jalpaiguri and Calcutta.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882	s	s	s	s	s	s	s	s
March 17	21·69	10·80	37·29	15·31	35·09	35·20	17·90	56·89
	·69	·79	·30	·30	·08	·21	·91	·90
	·69	·80	·30	·30	·08	·21	·92	·90
	·69	·80	·30	·30	·09	·20	·94	·90
	·69	·80	·30	·31	·10	·20	·93	·90
	·69	·80	·30	·32	·11	·22	·90	·90
	·68	·80	·30	·30	·12	·20	·90	·91
	·68	·81	·30	·30	·10	·20	·91	·90
	·69	·82	·31	·29	·10	·19	·91	·91
	·66	·81	·31	·31	·10	·20	·90	·91
	·68	·82	·30	·30	·09	·19	·90	·91
	·68	·83	·31	·30	·04	·19	·89	·90
	·69	·85	·30	·31	·04	·19	·90	·91
	·70	·85	·30	·30	·03	·19	·90	·90
	·66	·85	·30	·29	·02	·20	·90	·91
	·71	·85	·32	·29	·02	·20	·90	·91
	·70	·84	·31	·29	·02	·20	·90	·90
	·73	·85	·32	·30	·02	·20	·90	·90
	·70	·85	·30	·29	·04	·20	·90	·90
	·71	·84	·30	·30	·02	·20	·89	·91
Corresponding Mean Observed Times at E	h m s 10 40 46	h m s 10 43 33	h m s 10 45 47 s +0·304	h m s 10 42 25 s +0·301	h m s 11 42 59	h m s 11 45 57	h m s 11 47 27 s +0·905	h m s 11 45 6 s +0·904
Corresponding Mean Observed Times at W	h m s 10 39 31 s +0·691	h m s 10 42 20 s +0·823	h m s 10 44 33	h m s 10 41 13	h m s 11 41 45 s +0·066	h m s 11 44 45 s +0·200	h m s 11 46 14	h m s 11 43 55
Difference	m s 1 14·309	m s 1 12·177	m s 1 14·304	m s 1 12·301	m s 1 13·934	m s 1 11·800	m s 1 13·905	m s 1 11·904

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri and Calcutta.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882 March 19	s	s	s	s	s	s	s	s
	45·43	30·69	2·45	3·44	15·90	20·07	1·12	4·04
	·45	·69	·47	·42	·94	·10	·10	·06
	·45	·70	·45	·43	·90	·09	·10	·05
	·45	·70	·46	·43	·94	·11	·08	·06
	·44	·70	·45	·44	·90	·09	·10	·04
	·44	·70	·48	·43	·92	·10	·08	·06
	·44	·70	·45	·44	·90	·09	·09	·04
	·46	·69	·47	·45	·94	·09	·08	·05
	·46	·70	·46	·44	·91	·07	·10	·02
	·47	·69	·45	·44	·92	·07	·07	·04
	·45	·70	·46	·43	·91	·06	·11	·03
	·48	·69	·46	·44	·95	·10	·09	·05
	·50	·69	·45	·44	·95	·09	·10	·04
	·50	·68	·45	·42	·95	·10	·08	·04
	·50	·69	·45	·44	·92	·11	·10	·04
	·50	·68	·46	·44	·94	·12	·09	·05
	·50	·68	·45	·44	·92	·12	·09	·05
	·52	·69	·46	·43	·92	·11	·08	·05
	·49	·70	·45	·44	·91	·11	·09	·05
	·46	·68	·45	·44	·91	·10	·06	·05
Corresponding Mean Observed Times at E	h m s 10 40 51	h m s 10 43 34	h m s 10 45 12 s +0·457	h m s 10 42 13 s +0·436	h m s 11 43 21	h m s 11 45 23	h m s 11 47 11 s +0·091	h m s 11 44 14 s +0·046
Corresponding Mean Observed Times at W	h m s 10 39 55 s +0·470	h m s 10 42 40 s +0·692	h m s 10 44 17	h m s 10 41 20	h m s 11 42 25 s +0·923	h m s 11 44 30 s +0·095	h m s 11 46 16	h m s 11 43 21
Difference	m s 0 55·530	m s 0 53·308	m s 0 55·457	m s 0 53·436	m s 0 55·077	m s 0 52·905	m s 0 55·091	m s 0 53·046

Arc Jalpaiguri and Calcutta.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1882	s	s	s	s	s	s	s	s
March 22	50·94	5·11	4·05	55·04	41·28	40·56	35·64	29·65
	·95	·10	·05	·04	·28	·56	·67	·68
	·94	·11	·04	·04	·30	·59	·64	·66
	·95	·10	·06	·03	·29	·55	·67	·63
	·94	·11	·05	·06	·30	·55	·64	·65
	·96	·10	·05	·05	·30	·55	·68	·68
	·95	·10	·04	·05	·30	·55	·66	·65
	·94	·10	·06	·03	·29	·54	·69	·68
	·95	·12	·04	·03	·30	·55	·66	·65
	·94	·11	·07	·01	·29	·55	·69	·67
	·95	·12	·05	·04	·30	·56	·65	·65
	·94	·12	·07	·02	·30	·56	·67	·68
	·93	·12	·04	·06	·30	·55	·65	·65
	·93	·12	·04	·04	·29	·56	·69	·66
	·95	·14	·05	·05	·30	·54	·65	·65
	·95	·13	·05	·05	·29	·54	·65	·65
	·97	·14	·04	·05	·30	·55	·64	·64
	·97	·14	·05	·03	·29	·55	·65	·66
	·98	·14	·04	·05	·30	·55	·65	·63
	·96	·12	·05	·03	·29	·54	·66	·64
Corresponding Mean Observed Times at E	h m s 10 40 30	h m s 10 42 42	h m s 10 44 14 s +0·050	h m s 10 42 5 s +0·040	h m s 11 42 20	h m s 11 45 17	h m s 11 46 45 s +0·660	h m s 11 43 39 s +0·658
Corresponding Mean Observed Times at W	h m s 10 40 0 s +0·950	h m s 10 42 15 s +0·118	h m s 10 43 45	h m s 10 41 38	h m s 11 41 51 s +0·295	h m s 11 44 50 s +0·553	h m s 11 46 17	h m s 11 43 13
Difference	m s 0 29·050	m s 0 26·882	m s 0 29·050	m s 0 27·040	m s 0 28·705	m s 0 26·447	m s 0 28·660	m s 0 26·658

Arc Jalpaiguri and Calcutta.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* −	*Q* +
1882 April 4	*s* 4·71	*s* 15·76	*s* 40·63	*s* 55·05			*s* 29·54	*s* 24·11
	·70	·76	·60	·05			·54	·11
	·70	·76	·64	·05			·55	·11
	·70	·76	·60	·05			·54	·11
	·71	·79	·66	·06			·56	·13
	·70	·78	·60	·05			·55	·12
	·70	·78	·60	·07			·56	·12
	·70	·77	·60	·06			·54	·15
	·71	·76	·61	·08			·56	·14
	·72	·78	·60	·05			·54	·13
	·70	·78	·61	·05			·56	·10
	·70	·78	·60	·05			·55	·11
	·70	·79	·62	·06			·55	·12
	·70	·79	·60	·05			·55	·11
	·70	·78	·61	·06			·55	·12
	·71	·78	·60	·05			·54	·10
	·71	·77	·60	·06			·55	·11
	·71	·79	·60	·05			·55	·10
	·72	·80	·60	·06			·53	·14
	·72	·80	·61	·08			·53	·11
Corresponding Mean Observed Times at E	*h m s* 11 43 45	*h m s* 11 45 54	*h m s* 11 47 50	*h m s* 11 45 5			*h m s* 12 51 39	*h m s* 12 52 34
			s +0·610	*s* +0·057			*s* +0·547	*s* +0·118
Corresponding Mean Observed Times at W	*h m s* 11 42 14	*h m s* 11 44 25	*h m s* 11 46 20	*h m s* 11 43 37			*h m s* 12 50 12	*h m s* 12 51 4
	s +0·706	*s* +0·778						
Difference	*m s* 1 30·294	*m s* 1 28·222	*m s* 1 30·610	*m s* 1 28·057			*m s* 1 27·547	*m s* 1 30·118

Arc Jalpaiguri and Calcutta.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
April 5	38·55	4·82	38·06	5·70	32·96	45·20	51·69	35·35
	·55	·80	·07	·70	·96	·18	·70	·31
	·54	·82	·06	·70	·95	·18	·69	·31
	·55	·80	·07	·70	·96	·18	·70	·31
	·54	·83	·08	·71	·96	·20	·70	·32
	·56	·80	·08	·71	·97	·20	·69	·33
	·55	·82	·08	·70	·96	·20	·70	·31
	·56	·80	·07	·70	·95	·20	·70	·30
	·55	·82	·07	·70	·97	·22	·69	·30
	·55	·80	·08	·70	·95	·20	·71	·32
	·53	·83	·08	·70	·96	·21	·70	·33
	·53	·80	·09	·70	·95	·20	·70	·31
	·55	·83	·08	·71	·98	·22	·70	·31
	·54	·82	·08	·70	·95	·19	·70	·32
	·52	·84	·07	·70		·20	·70	·31
	·55	·81	·09	·70		·20	·71	·31
	·53	·83	·09	·71		·19	·71	·31
	·53	·80	·10	·70		·20	·71	·31
	·54	·83	·09	·70		·19	·71	·31
	·54	·82	·09	·70		·20	·71	·30
Corresponding Mean Observed Times at E	h m s 11 44 8	h m s 11 46 32	h m s 11 44 48 s +0·079	h m s 11 48 15 s +0·702	h m s 12 40 0	h m s 12 42 12	h m s 12 41 1 s +0·701	h m s 12 43 45 s +0·314
Corresponding Mean Observed Times at W	h m s 11 42 48 s +0·543	h m s 11 45 14 s +0·816	h m s 11 43 31	h m s 11 46 56	h m s 12 38 40 s +0·959	h m s 12 40 55 s +0·198	h m s 12 39 45	h m s 12 42 26
Difference	m s 1 19·457	m s 1 17·184	m s 1 17·079	m s 1 19·702	m s 1 19·041	m s 1 16·802	m s 1 16·701	m s 1 19·314

Arc Jalpaiguri and Calcutta.

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
April 6	59·96	35·34	30·65	5·28	28·33	5·60	45·28	29·90
	·96	·35	·64	·29	·35	·61	·29	·91
	·95	·33	·64	·30	·36	·60	·29	·91
	·96	·32	·64	·30	·34	·61	·30	·90
	·96	·29	·64	·30	·36	·61	·29	·90
	·96	·29	·64	·26	·34	·64	·26	·90
	·95	·29	·64	·28	·35	·64	·28	·91
	·95	·28	·65	·30	·35	·63	·30	·90
	·93	·26	·64	·30	·35	·62	·29	·91
	·92	·27	·65	·26	·35	·64	·30	·90
	·90	·30	·64	·30	·35	·65	·29	·91
	·91	·30	·65	·26	·35	·67	·29	·90
	·93	·27	·64	·30	·35	·66	·30	·91
	·94	·28	·64	·29	·35	·69	·30	·91
	·95	·28	·65	·30	·34	·70	·30	·90
	·95	·30	·65	·26	·34	·70	·29	·90
	·96	·26	·64	·26	·35	·69	·29	·90
	·96	·26	·65	·28	·36	·69	·30	·90
	·95	·27	·65	·28	·35	·70	·30	·91
	·96	·26	·65	·25	·36	·69	·30	·91
Corresponding Mean Observed Times at E	h m s 11 43 20	h m s 11 45 53	h m s 11 44 40 s +0·645	h m s 11 48 15 s +0·283	h m s 12 39 48	h m s 12 42 23	h m s 12 40 55 s +0·292	h m s 12 43 39 s +0·905
Corresponding Mean Observed Times at W	h m s 11 42 9 s +0·946	h m s 11 44 45 s +0·290	h m s 11 43 33	h m s 11 47 5	h m s 12 38 38 s +0·349	h m s 12 41 15 s +0·652	h m s 12 39 48	h m s 12 42 30
Difference	m s 1 10·054	m s 1 7·710	m s 1 7·645	m s 1 10·283	m s 1 9·651	m s 1 7·348	m s 1 7·292	m s 1 9·905

Arc Fyzabad and Agra

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1881	*h m s*	*m s*				*m s*				
November 25	2 47 0	16 39·805	E		s − 0·531 at 2h 47m 48s	16 39·798	α	s at E, Q = 2·022		
	48 35	36·427	E	s −0·553 at 3h 40m		36·434	γ			m s D = 16 37·464
	2 47 48	16 38·116								h m s
»	4 31 17	16 38·858	E		s − 0·575 at 4h 32m 6s	16 38·850	α	at W, Q = 1·682		T_E = 3 59 54
	32 55	35·450	E			35·458	γ		s + 0·019	
	4 32 6	16 37·154								
»	5 5 12	16 38·893	W		s − 0·589 at 5h 5m 44s	16 38·888	δ	at E, Q = 2·025		
	6 16	34·840	W	s −0·606 at 5h 45m		34·845	β			m s D = 16 36·907
	5 5 44	16 36·867								h m s
»	6 23 50	16 38·104	W		s − 0·623 at 6h 24m 19s	16 38·099	δ	at W, Q = 1·696		T_E = 4 57 35
	24 47	34·044	W			34·049	β			
	6 24 19	16 36·074								
November 28	2 41 44	15 58·828	E			15 58·808	α	at E, Q = 1·660		
	42 38	55·466	E		s − 0·585 at 2h 43m 47s	55·455	γ		+ 0·040	
	44 39	58·862	W			58·870	δ	at W, Q = 1·677		
	46 8	55·528	W	s −0·575 at 3h 38m		55·551	β			m s D = 15 56·446
	2 43 47	15 57·171								h m s
»	4 31 15	15 57·795	E			15 57·777	α	at E, Q = 1·672		T_E = 3 59 26
	32 35	54·379	E		s − 0·565 at 4h 33m 3s	54·374	γ		+ 0·049	
	33 46	54·493	W			54·500	β	at W, Q = 1·700		
	34 36	57·830	W	s −0·556 at 5h 21m		57·845	δ			m s D = 15 55·909
	4 33 3	15 56·124								h m s
»	6 7 20	15 56·933	E			15 56·917	α	at E, Q = 1·666		T_E = 4 56 19
	8 35	53·497	E		s − 0·547 at 6h 9m 4s	53·493	γ		+ 0·030	
	9 43	53·592	W			53·598	β	at W, Q = 1·712		
	10 36	56·916	W			56·930	δ			
	6 9 4	15 55·235								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Fyzabad and Agra.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1881	h m s	m s				m s				
November 29	2 41 12	15 45·351	E			15 45·333	α	at E, Q = 1·745		
	42 15	41·985	E		s −0·577 at 2h 43m 5s	41·977	γ		s +0·082	
	43 57	42·066	W			42·074	β	at W, Q = 1·678		
	44 57	45·546	W	s −0·573 at 3h 38m		45·564	δ			m s D = 15 43·010
	2 43 5	15 43·737								h m s T_E = 3 59 16
„	4 31 15	15 44·328	E			15 44·311	α	at E, Q = 1·683		
	32 8	40·983	E		s −0·569 at 4h 33m 1s	40·975	γ		+0·045	
	33 45	41·044	W			41·051	β	at W, Q = 1·668		
	34 55	44·398	W	s −0·565 at 5h 21m		44·416	δ			m s D = 15 42·468
	4 33 1	15 42·688								h m s T_E = 4 56 23
„	6 8 12	15 43·453	E			15 43·438	α	at E, Q = 1·682		
	8 45	40·056	E		s −0·561 at 6h 9m 46s	40·047	γ		+0·033	
	10 25	40·120	W			40·126	β	at W, Q = 1·695		
	11 42	43·473	W			43·491	δ			
	6 9 46	15 41·776								
November 30	2 41 31	15 31·915	E			15 31·898	α	at E, Q = 1·679		
	42 11	28·508	E		s −0·575 at 2h 43m 17s	28·497	γ		+0·051	
	44 24	28·609	W			28·620	β	at W, Q = 1·701		
	45 2	31·960	W	s −0·573 at 3h 38m		31·977	δ			m s D = 15 29·518
	2 43 17	15 30·248								h m s T_E = 3 59 45
„	4 30 35	15 30·858	E			15 30·838	α	at E, Q = 1·689		
	31 34	27·484	E		s −0·571 at 4h 32m 39s	27·474	γ		+0·047	
	33 42	27·550	W			27·560	β	at W, Q = 1·682		
	34 46	30·919	W	s −0·570 at 5h 20m		30·939	δ			m s D = 15 28·978
	4 32 39	15 29·203								h m s T_E = 4 56 18
„	6 4 46	15 29·978	E			15 29·959	α	at E, Q = 1·682		
	5 44	26·595	E		s −0·569 at 6h 6m 46s	26·585	γ		+0·037	
	7 45	26·654	W			26·663	β	at W, Q = 1·687		
	8 47	30·008	W			30·027	δ			
	6 6 46	15 28·309								

Arc Fyzabad and Agra.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1881	*h m s*	*m s*				*m s*				
December 1	2 41 15	15 18·311	E			15 18·291	α	at E, $Q = 1{\cdot}676$		
	42 27	14·891	E		s −0·607 at 2h 43m 14s	14·883	γ		s +0·033	
	44 7	14·969	W			14·978	β	at W, $Q = 1{\cdot}704$		
	45 6	18·310	W			18·329	δ			m s D = 15 15·858
	2 43 14	15 16·620		s −0·604 at 3h 38m						h m s T_E = 3 58 57
„	4 31 15	15 17·187	E			15 17·170	α	at E, $Q = 1{\cdot}669$		
	31 48	13·768	E		s −0·601 at 4h 33m 1s	13·755	γ		+0·052	
	34 4	13·887	W			13·898	β	at W, $Q = 1{\cdot}708$		
	34 57	17·217	W			17·836	δ			m s D = 15 15·285
	4 33 1	15 15·515		s −0·598 at 5h 20m						h m s T_E = 4 56 8
„	6 4 50	15 16·283	E			15 16·264	α	at E, $Q = 1{\cdot}679$		
	5 48	12·827	E		s −0·595 at 6h 6m 45s	12·818	γ		+0·040	
	7 41	12·933	W			12·942	β	at W, $Q = 1{\cdot}723$		
	8 41	16·281	W			16·300	δ			
	6 6 45	15 14·581								
December 2	2 41 8	15 4·094	E			15 4·075	α	at E, $Q = 1{\cdot}688$		
	41 46	0·709	E		s −0·585 at 2h 43m 6s	0·696	γ		+0·047	
	43 41	0·786	W			0·792	β	at W, $Q = 1{\cdot}690$		
	45 50	4·140	W			4·167	δ			m s D = 15 1·677
	2 43 6	15 2·432		s −0·599 at 3h 38m						h m s T_E = 3 58 47
„	4 29 57	15 3·028	E			14 63·007	α	at E, $Q = 1{\cdot}676$		
	31 20	14 59·626	E		s −0·612 at 4h 31m 58s	59·620	γ		+0·033	
	32 48	59·694	W			59·703	β	at W, $Q = 1{\cdot}693$		
	33 48	15 3·036	W			63·055	δ			m s D = 15 1·096
	4 31 58	15 1·346		s −0·625 at 5h 20m						h m s T_E = 4 55 58
„	6 5 15	15 2·001	E			14 61·976	α	at E, $Q = 1{\cdot}684$		
	6 23	14 58·630	E		s −0·638 at 6h 7m 34s	58·617	γ		+0·053	
	8 49	15 2·073	W			62·086	δ	at W, $Q = 1{\cdot}680$		
	9 49	14 58·694	W			58·718	β			
	6 7 34	15 0·350								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Fyzabad and Jubbulpore.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1881	*h m s*	*m s*				*m s*				
December 12	4 52 13	8 1·344	E			8 1·340	α	at E, $Q = 0^s\cdot795$		
	53 38	7 58·943	W			7 58·942	β		$+\ 0^s\cdot071$	
	54 42	57·849	E			57·850	γ	at W, $Q = 1^s\cdot745$		
	56 41	8 0·528	W	$-0^s\cdot112$ at $5^h\ 17^m$		8 0·532	δ			D = 7 59·625
	4 54 19	7 59·666								T_E = 5 16 32
»	5 36 59	8 1·216	E			8 1·212	α	at E, $Q = 0^s\cdot806$		
	38 38	7 58·840	W			7 58·839	β		$+\ 0^s\cdot063$	
	40 10	57·824	E			57·826	γ	at W, $Q = 1^s\cdot693$		
	41 3	8 0·448	W			8 0·451	δ			
	5 39 13	7 59·582								
December 13	4 41 45	7 58·247	E			7 58·241	α	at E, $Q = 0^s\cdot799$		
	43 7	55·895	W			55·893	β		$+\ 0^s\cdot078$	
	44 40	54·828	E			54·830	γ	at W, $Q = 1^s\cdot706$		
	46 37	57·483	W	$-0^s\cdot160$ at $5^h\ 11^m$		57·490	δ			D = 7 56·577
	4 44 2	7 56·613								T_E = 4 57 40
»	5 36 11	7 58·091	E			7 58·084	α	at E, $Q = 0^s\cdot790$		
	38 7	55·751	W			55·749	β		$+\ 0^s\cdot073$	
	39 30	54·702	E			54·704	γ	at W, $Q = 1^s\cdot690$		D = 7 56·527
	41 11	57·323	W			57·330	δ			T_E = 5 16 20
	5 38 45	7 56·467								
December 14	4 41 12	7 55·104	E			7 55·099	α	at E, $Q = 0^s\cdot815$		
	42 23	52·728	W			52·726	β		$+\ 0^s\cdot069$	
	43 50	51·707	E			51·708	γ	at W, $Q = 1^s\cdot696$		
	45 44	54·350	W	$-0^s\cdot154$ at $5^h\ 11^m$		54·356	δ			D = 7 53·439
	4 43 17	7 53·472								T_E = 4 56 11
»	5 35 40	7 54·925	E			7 54·919	α	at E, $Q = 0^s\cdot801$		
	36 58	52·604	W			52·601	β		$+\ 0^s\cdot071$	
	39 0	51·599	E			51·601	γ	at W, $Q = 1^s\cdot659$		D = 7 53·388
	40 34	54·197	W			54·203	δ			T_E = 5 16 9
	5 38 3	7 53·331								

Arc Fyzabad and Jubbulpore.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1881	*h m s*	*m s*				*m s*				
December 16	4 41 20	7 49·379	E			7 49·375	α	at E, Q = 1·203		
	43 2	46·605	W			46·604	β		+ 0·059	
	44 10	46·004	E			46·005	γ	at W, Q = 1·685		
	45 39	49·006	W	s −0·116 at 5h 11m		49·010	δ			D = 7 47·723
	4 43 33	7 47·749								T_E = 4 56 54
„	5 35 10	7 49·266	E			7 49·262	α	at E, Q = 1·207		
	36 32	46·502	W			46·500	β		+ 0·062	
	38 20	45·903	E			45·905	γ	at W, Q = 1·679		D = 7 47·687
	39 48	48·910	W			48·913	δ			T_E = 5 15 47
	5 37 28	7 47·645								
December 19	4 42 20	7 45·344	E			7 45·343	α	at E, Q = 1·203		
	44 14	42·604	W			42·604	β		+ 0·071	
	45 20	41·988	E			41·988	γ	at W, Q = 1·678		
	46 55	45·009	W	s −0·025 at 5h 11m		45·010	δ			D = 7 43·731
	4 44 42	7 43·736								T_E = 4 56 23
„	5 35 40	7 45·333	E			7 45·332	α	at E, Q = 1·200		
	37 25	42·567	W			42·567	β		+ 0·053	
	38 40	41·989	E			41·989	γ	at W, Q = 1·671		D = 7 43·723
	40 42	44·966	W			44·967	δ			T_E = 5 15 16
	5 38 7	7 43·714								
December 20	4 40 40	7 45·040	E			7 45·039	α	at E, Q = 1·193		
	42 30	42·349	W			42·349	β		+ 0·063	
	44 6	41·793	E			41·794	γ	at W, Q = 1 623		
	45 19	44·734	W	s −0·033 at 5h 12m		44·735	δ			D = 7 43·472
	4 43 9	7 43·479								T_E = 4 56 14
„	5 37 35	7 44·987	E			7 44·985	α	at E, Q = 1·201		
	39 2	42·305	W			42·304	β		+ 0·057	
	41 43	41·794	E			41·795	γ	at W, Q = 1·595		D = 7 43·461
	42 56	44·704	W			44·705	δ			T_E = 5 15 7
	5 40 19	7 43·448								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Hazaribagh and Fyzabad.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $= \frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
January 4	6 11 41	10 29·912	E			10 29·921	α	at E, Q = 1·435		
	12 46	27·511	W			27·516	β		+ 0·075	
	14 40	27·685	E			27·682	γ	at W, Q = 1·120		
	16 20	30·396	W	s +0·251 at 6h 45m		30·386	δ			D = 10 28·932
	6 13 52	10 28·876								T_E = 6 27 4
„	7 13 12	10 30·201	E			10 30·209	α	at E, Q = 1·416		
	14 49	27·791	W			27·793	β		+ 0·075	
	16 0	27·910	E			27·907	γ	at W, Q = 1·151		D = 10 29·029
	16 50	30·631	W			30·624	δ			T_E = 6 50 20
	7 15 13	10 29·133								
January 5	6 10 48	10 35·070	E			10 35·079	α	at E, Q = 1·430		
	12 13	32·620	W			32·623	β		+ 0·057	
	13 45	32·803	E			32·800	γ	at W, Q = 1·140		
	15 12	35·492	W	s +0·233 at 6h 45m		35·483	δ			D = 10 34·050
	6 13 0	10 33·996								T_E = 6 26 59
„	7 15 13	10 35·301	E			10 35·309	α	at E, Q = 1·427		
	16 23	32·892	W			32·895	β		+ 0·077	
	17 46	33·030	E			33·028	γ	at W, Q = 1·140		D = 10 34·141
	19 16	35·756	W			35·748	δ			T_E = 6 50·15
	7 17 10	10 34·245								
January 6	6 10 26	10 40·545	E			10 40·555	α	at E, Q = 1·443		
	11 49	38·108	W			38·112	β		+ 0·073	
	13 50	38·268	E			38·264	γ	at W, Q = 1·146		
	15 21	41·007	W	s +0·252 at 6h 45m		40·997	δ			D = 10 39·541
	6 12 52	10 39·482								T_E = 6 26 48
„	7 15 11	10 40·806	E			10 40·815	α	at E, Q = 1·414		
	16 28	38·409	W			38·413	β		+ 0·075	
	17 50	38·541	E			38·539	γ	at W, Q = 1·138		D = 10 39·639
	20 11	41·254	W			41·242	δ			T_E = 6 50 10
	7 17 25	10 39·753								

Arc Hazaribagh and Fyzabad.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
January 7	6 10 27	10 46·935	E			10 46·945	α	at E, $Q = 1{\cdot}405^s$		
	11 11	44·480	W			44·486	β		$+ 0{\cdot}048^s$	
	13 12	44·648	E			44·645	γ	at W, $Q = 1{\cdot}150$		
	15 4	47·307	W			47·295	δ			D = 10 45·910
	6 12 29	10 45·842		$+0{\cdot}284^s$ at $6^h\ 45^m$						T_E = 6 26 56
,,	7 15 46	10 47·207	E			10 47·216	α	at E, $Q = 1{\cdot}409$		
	16 31	44·796	W			44·801	β		$+ 0{\cdot}060$	
	18 11	44·966	E			44·964	γ	at W, $Q = 1{\cdot}126$		D = 10 46·021
	20 13	47·631	W			47·619	δ			T_E = 6 50 18
	7 17 40	10 46·150								
January 9	6 10 12	10 58·800	E			10 58·808	α	at E, $Q = 1{\cdot}409$		
	11 36	56·381	W			56·384	β		$+ 0{\cdot}066$	
	13 12	56·518	E			56·515	γ	at W, $Q = 1{\cdot}147$		
	14 12	59·209	W			59·201	δ			D = 10 57·783
	6 12 18	10 57·727		$+0{\cdot}240^s$ at $6^h\ 44^m$						T_E = 6 26 38
,,	7 12 45	10 59·034	E			10 59·044	α	at E, $Q = 1{\cdot}413$		
	14 46	56·630	W			56·631	β		$+ 0{\cdot}066$	
	16 12	56·783	E			56·779	γ	at W, $Q = 1{\cdot}132$		D = 10 57·877
	16 49	59·464	W			59·457	δ			T_E = 6 49 54
	7 15 8	10 57·978								
January 10	6 8 50	11 3·525	E			11 3·532	α	at E, $Q = 1{\cdot}417$		
	9 40	1·101	W			1·105	β		$+ 0{\cdot}071$	
	11 14	1·228	E			1·226	γ	at W, $Q = 1{\cdot}153$		
	12 50	3·946	W			3·938	δ			D = 11 2·509
	6 10 39	11 2·450		$+0{\cdot}221^s$ at $6^h\ 43^m$						T_E = 6 26 33
,,	7 12 50	11 3·701	E			11 3·708	α	at E, $Q = 1{\cdot}411$		
	14 49	1·405	W			1·405	β		$+ 0{\cdot}130$	
	15 17	1·406	E			1·404	γ	at W, $Q = 1{\cdot}152$		D = 11 2·594
	15 50	4·231	W			4·227	δ			T_E = 6 49 49
	7 14 42	11 2·686								

Arc Hazaribagh and Jubbulpore.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = -\frac{\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
January 19	7 22 31	19 45·968	E			19 45·992	α	at E, Q = 1·396		
	24 25	43·356	W			43·362	β		+ 0·087	
	25 40	43·184	E			43·177	γ	at W, Q = 1·408		
	27 6	46·176	W	s +0·619 at 7h 58m		46·154	δ			D = 19 44·768
	7 24 56	19 44·671								T_E = 7 34 17
"	8 29 12	19 46·662	E			19 46 686	α	at E, Q = 1·418		
	31 53	44·035	W			44·033	β		+ 0·091	
	32 4	43·856	E			43·851	γ	at W, Q = 1·417		D = 19 44·978
	33 18	46·885	W			46·868	δ			T_E = 7 54 37
	8 31 37	19 45·359								
January 20	7 22 30	20 0·982	E			19 61·007	α	at E, Q = 1·408		
	24 13	19 58·354	W			58·360	β		+ 0·094	
	25 15	19 58·157	E			58·153	γ	at W, Q = 1·427		
	27 21	20 1·204	W	s +0·638 at 7h 58m		61·177	δ			D = 19 59·835
	7 24 50	19 59·674								T_E = 7 39 56
"	8 29 15	20 1·642	E			19 61·663	α	at E, Q = 1·427		
	30 29	19 59·064	W			59·072	β		+ 0·119	
	31 45	19 58·864	E			58·858	γ	at W, Q = 1·403		D = 20 0·027
	33 23	20 1·949	W			61·926	δ			T_E = 7 57 55
	8 31 13	20 0·380								
January 21	7 22 0	20 15·806	E			20 15·829	α	at E, Q = 1·412		
	23 5	13·194	W			13·206	β		+ 0·094	
	25 20	13·042	E			13·031	γ	at W, Q = 1·399		
	26 30	16·053	W	s +0·624 at 7h 58m		16·029	δ			D = 20 14·654
	7 24 14	20 14·524								T_E = 7 36 46
"	8 29 12	20 16·500	E			20 16·522	α	at E, Q = 1·403		
	30 31	13·906	W			13·914	β		+ 0·095	
	32 12	13·741	E			13·732	γ	at W, Q = 1·395		D = 20 14·859
	33 16	16·742	W			16·721	δ			T_E = 7 56 29
	8 31 18	20 15·222								

Arc Hazaribagh and Jubbulpore.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1 — Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	*h m s*	*m s*				*m s*				
January 24	7 21 48	20 58·024	E			20 58·048	α	at E, $Q = 1{\cdot}382^s$		
	23 30	55·472	W			55·479	β		$+ 0{\cdot}104^s$	$D = 20\ 56{\cdot}884$
	24 50	55·264	E			55·257	γ	at W, $Q = 1{\cdot}396$		
	26 28	58·266	W			58·242	δ			$T_E = 7\ 36\ 30$
	7 24 9	20 56·757		$+0{\cdot}617^s$ at $7^h\ 57^m$						
,,	8 28 11	20 58·723	E			20 58·748	α	at E, $Q = 1{\cdot}378$		
	29 56	56·143	W			56·150	β		$+ 0{\cdot}087$	$D = 20\ 57{\cdot}087$
	30 45	55·960	E			55·959	γ	at W, $Q = 1{\cdot}394$		
	33 44	58·938	W			58·906	δ			$T_E = 7\ 56\ 14$
	8 30 39	20 57·441								
January 25	7 22 15	21 12·927	E			21 12·948	α	at E, $Q = 1{\cdot}374$		
	23 25	10·365	W			10·373	β		$+ 0{\cdot}098$	
	24 40	10·161	E			10·155	γ	at W, $Q = 1{\cdot}397$		$D = 21\ 11{\cdot}795$
	26 3	13·143	W			13·121	δ			
	7 24 6	21 11·649		$+0{\cdot}669^s$ at $7^h\ 57^m$						$T_E = 7\ 37\ 11$
,,	8 28 30	21 13·706	E			21 13·730	α	at E, $Q = 1{\cdot}375$		
	30 22	11·097	W			11·100	β		$+ 0{\cdot}084$	$D = 21\ 12{\cdot}006$
	31 2	10·890	E			10·885	γ	at W, $Q = 1{\cdot}422$		
	32 34	13·872	W			13·850	δ			$T_E = 7\ 56\ 10$
	8 30 37	21 12·391								
January 26	7 22 12	21 28·569	E			21 28·593	α	at E, $Q = 1{\cdot}387$		
	23 46	26·035	W			26·041	β		$+ 0{\cdot}118$	
	24 50	25·799	E			25·792	γ	at W, $Q = 1{\cdot}401$		$D = 21\ 27{\cdot}451$
	26 12	28·838	W			28·815	δ			
	7 24 15	21 27·310		$+0{\cdot}606^s$ at $7^h\ 58^m$						$T_E = 7\ 36\ 21$
,,	8 28 49	21 29·340	E			21 29·367	α	at E, $Q = 1{\cdot}391$		
	30 39	26·801	W			26·807	β		$+ 0{\cdot}112$	
	32 5	26·590	E			26·580	γ	at W, $Q = 1{\cdot}393$		$D = 21\ 27{\cdot}680$
	33 12	29·611	W			29·588	δ			
	8 31 11	21 28·086								$T_E = 7\ 56\ 5$

Arc Calcutta and Hazaribagh.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $= \frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
February 8	8 50 37	16 14·712	E			16 14·699	α	at E, Q = 1·476		
	51 50	11·941	W			11·936	β		+ 0·057	D = 16 13·253
	53 24	11·893	E			11·898	γ	at W, Q = 1·401		
	54 50	14·873	W	s −0·384 at 9h 23m		14·887	δ			T_E = 9 8 33
	8 52 40	16 13·355								
,,	9 51 47	16 14·310	E			16 14·294	α	at E, Q = 1·485		
	53 24	11·539	W			11·534	β		+ 0·058	D = 16 13·124
	54 50	11·507	E			11·511	γ	at W, Q = 1·391		
	56 50	14·487	W			14·504	δ			T_E = 9 28 45
	9 54 13	16 12·961								
February 9	8 50 17	16 5·166	E			16 5·152	α	at E, Q = 1·471		
	51 15	2·383	W			2·376	β		+ 0·050	
	52 45	2·338	E			2·341	γ	at W, Q = 1·406		D = 16 3·689
	54 50	5·300	W	s −0·426 at 9h 23m		5·318	δ			
	8 52 17	16 3·797								T_E = 9 7 33
,,	9 50 40	16 4·712	E			16 4·696	α	at E, Q = 1·479		
	52 15	1·956	W			1·951	β		+ 0·063	D = 16 3·543
	53 51	1·904	E			1·911	γ	at W, Q = 1·392		
	54 50	4·895	W			4·909	δ			T_E = 9 28 6
	9 52 54	16 3·367								
February 10	8 48 11	15 55·646	E			15 55·632	α	at E, Q = 1·467		
	49 50	52·884	W			52·880	β		+ 0·064	
	51 11	52·802	E			52·806	γ	at W, Q = 1·413		D = 15 54·174
	52 46	55·800	W	s −0·374 at 9h 21m		55·814	δ			
	8 50 30	15 54·283								T_E = 9 8 2
,,	9 49 12	15 55·258	E			15 55·246	α	at E, Q = 1·471		
	50 32	52·488	W			52·484	β		+ 0·050	D = 15 54·048
	51 40	52·461	E			52·464	γ	at W, Q = 1·391		
	53 15	55·412	W			55·425	δ			T_E = 9 28 14
	9 51 10	15 53·905								

Arc Calcutta and Hazaribagh.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	*h m s*	*m s*				*m s*				
February 13	8 46 19	15 29·800	E			15 29·786	α	at E, $Q = 1{\cdot}493^s$		
	47 51	27·007	W			27·004	β		$+ 0{\cdot}051^s$	
	48 49	27·000	E			27·004	γ	at W, $Q = 1{\cdot}391$		
	50 15	29·976	W			29·990	δ			D = 15 28·320
	8 48 19	15 28·446		$-0{\cdot}425^s$ at $9^h\ 20^m$						T_E = 9 6 8
"	9 48 41	15 29·361	E			15 29·346	α	at E, $Q = 1{\cdot}485$		
	49 50	26·588	W			26·581	β		$+ 0{\cdot}062$	
	51 16	26·533	E			26·537	γ	at W, $Q = 1{\cdot}405$		D = 15 28·168
	53 16	29·532	W			29·550	δ			T_E = 9 27 31
	9 50 46	15 28·004								
February 14	8 44 42	15 19·951	E			15 19·934	α	at E, $Q = 1{\cdot}481$		
	46 49	17·158	W			17·155	β		$+ 0{\cdot}045$	
	47 48	17·154	E			17·157	γ	at W, $Q = 1{\cdot}389$		
	49 49	20·100	W			20·117	δ			D = 15 18·462
	8 47 17	15 18·591		$-0{\cdot}391^s$ at $9^h\ 19^m$						T_E = 9 7 4
"	9 48 31	15 19·554	E			15 19·541	α	at E, $Q = 1{\cdot}488$		
	49 56	16·735	W			16·731	β		$+ 0{\cdot}041$	
	51 2	16·731	E			16·734	γ	at W, $Q = 1{\cdot}403$		D = 15 18·330
	52 50	19·692	W			19·707	δ			T_E = 9 27 17
	9 50 35	15 18·178								
February 16	8 45 50	15 3·296	E			15 3·286	α	at E, $Q = 1{\cdot}507$		
	46 46	0·470	W			0·465	β		$+ 0{\cdot}047$	
	48 17	0·467	E			0·470	γ	at W, $Q = 1{\cdot}408$		
	50 15	3·465	W			3·478	δ			D = 15 1·829
	8 47 47	15 1·925		$-0{\cdot}307^s$ at $9^h\ 19^m$						T_E = 9 6 35
"	9 47 50	15 3·025	E			15 3·014	α	at E, $Q = 1{\cdot}498$		
	49 14	0·143	W			0·139	β		$+ 0{\cdot}030$	
	50 46	0·136	E			0·140	γ	at W, $Q = 1{\cdot}437$		D = 15 1·726
	52 15	3·124	W			3·135	δ			T_E = 9 26 48
	9 50 1	15 1·607								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Jalpaiguri and Hazaribagh.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
February 25	9 41 24	14 36·923	E			14 36·913	α	at E, $Q = 1{\cdot}015^s$		
	42 51	34·771	W			34·769	β		$+ 0{\cdot}112^s$	$D = 14^m\ 35{\cdot}563^s$
	43 15	34·204	E			34·202	γ	at W, $Q = 1{\cdot}357$		
	45 53	36·785	W	$-0{\cdot}328^s$ at $10^h\ 17^m$		36·798	δ			$T_E = 10^h\ 3^m\ 9^s$
	9 43 21	14 35·671								
,,	10 47 47	14 36·611	E			14 36·595	α	at E, $Q = 0{\cdot}978$		
	49 16	34·400	W			34·392	β		$+ 0{\cdot}069$	$D = 14^m\ 35{\cdot}423^s$
	50 48	33·871	E			33·872	γ	at W, $Q = 1{\cdot}361$		
	55 11	36·325	W			36·349	δ			$T_E = 10^h\ 28^m\ 42^s$
	10 50 46	14 35·302								
March 1	9 40 8	14 8·876	E			14 8·866	α	at E, $Q = 1{\cdot}006$		
	42 19	6·625	W			6·623	β		$+ 0{\cdot}058$	
	43 22	6·159	E			6·162	γ	at W, $Q = 1{\cdot}352$		$D = 14^m\ 7{\cdot}481^s$
	44 49	8·626	W	$-0{\cdot}253^s$ at $10^h\ 16^m$		8·635	δ			
	9 42 39	14 7·572								$T_E = 10^h\ 4^m\ 14^s$
,,	10 47 20	14 8·635	E			14 8·627	α	at E, $Q = 1{\cdot}013$		
	48 26	6·341	W			6·338	β		$+ 0{\cdot}060$	
	49 30	5·835	E			5·836	γ	at W, $Q = 1{\cdot}396$		$D = 14^m\ 7{\cdot}398^s$
	51 28	8·353	W			8·363	δ			
	10 49 11	14 7·291								$T_E = 10^h\ 23^m\ 58^s$
March 2	9 40 20	14 3·037	E			14 3·028	α	at E, $Q = 1{\cdot}002$		
	42 16	0·825	W			0·823	β		$+ 0{\cdot}077$	
	43 26	0·312	E			0·314	γ	at W, $Q = 1{\cdot}357$		
	45 15	2·817	W	$-0{\cdot}240^s$ at $10^h\ 16^m$		2·827	δ			$D = 14^m\ 1{\cdot}664^s$
	9 42 49	14 1·748								$T_E = 10^h\ 4^m\ 2^s$
,,	10 46 55	14 2·828	E			14 2·818	α	at E, $Q = 1{\cdot}011$		
	48 49	0·523	W			0·520	β		$+ 0{\cdot}050$	
	50 15	0·042	E			0·045	γ	at W, $Q = 1{\cdot}387$		$D = 14^m\ 1{\cdot}585^s$
	51 51	2·533	W			2·543	δ			
	10 49 27	14 1·482								$T_E = 10^h\ 23^m\ 46^s$

Arc Jalpaiguri and Hazaribagh.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$ at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $= \frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
March 3	9 40 45	13 57·254	E			13 57·244	α	at E, $Q = 1{\cdot}004$		
	42 43	55·037	W			55·035	β		+ 0·086	$D = 13\ 55{\cdot}867$
	43 35	54·488	E			54·490	γ	at W, $Q = 1{\cdot}377$		
	45 27	57·033	W	s −0·251 at 10h 17m		57·043	δ			$T_E = 10\ 3\ 50$
	9 43 8	13 55·953								
,,	10 48 25	13 56·960	E			13 56·952	α	at E, $Q = 1{\cdot}014$		
	49 30	54·740	W			54·736	β		+ 0·078	$D = 13\ 55{\cdot}785$
	51 15	54·231	E			54·235	γ	at W, $Q = 1{\cdot}359$		
	52 17	56·755	W			56·763	δ			$T_E = 10\ 23\ 24$
	10 50 21	13 55·672								
March 4	9 40 48	13 49·636	E			13 49·621	α	at E, $Q = 1{\cdot}008$		
	42 35	47·392	W			47·389	β		+ 0·069	
	43 40	46·895	E			46·899	γ	at W, $Q = 1{\cdot}361$		$D = 13\ 48{\cdot}196$
	45 14	49·392	W	s −0·389 at 10h 16m		49·406	δ			$T_E = 10\ 3\ 37$
	9 43 4	13 48·329								
,,	10 45 11	13 49·197	E			13 49·176	α	at E, $Q = 1{\cdot}010$		
	47 32	46·981	W			46·975	β		+ 0·081	$D = 13\ 48{\cdot}068$
	49 48	46·462	E			46·471	γ	at W, $Q = 1{\cdot}353$		
	51 4	48·978	W			48·995	δ			$T_E = 10\ 23\ 21$
	10 48 24	13 47·905								
March 5	9 40 45	13 40·669	E			13 40·657	α	at E, $Q = 1{\cdot}011$		
	42 6	38·429	W			38·424	β		+ 0·088	
	43 52	37·855	E			37·861	γ	at W, $Q = 1{\cdot}398$		$D = 13\ 39{\cdot}229$
	44 51	40·435	W	s −0·344 at 10h 16m		40·446	δ			$T_E = 10\ 3\ 24$
	9 42 54	13 39·347								
,,	10 46 20	13 40·274	E			13 40·263	α	at E, $Q = 1{\cdot}009$		
	47 50	38·035	W			38·032	β		+ 0·070	$D = 13\ 39{\cdot}116$
	48 33	37·539	E			37·541	γ	at W, $Q = 1{\cdot}361$		
	50 24	40·038	W			40·050	δ			$T_E = 10\ 23\ 8$
	10 48 17	13 38·972								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Jalpaiguri and Calcutta.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $= \frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	*h m s*	*m s*				*m s*				
March 17	10 40 46	1 14·309	E			1 14·294	α	at E, $Q = 1{\cdot}012^s$		
	42 25	12·301	W			12·297	β		$+ 0{\cdot}036^s$	
	43 33	12·177	E			12·179	γ	at W, $Q = 1{\cdot}058^s$		
	45 47	14·304	W	$-0{\cdot}373^s$ at $11^h\ 14^m$		14·320	δ			$D = 1^m\ 13{\cdot}125^s$
	10 43 8	1 13·273								$T_E = 11^h\ 6^m\ 57^s$
,,	11 42 59	1 13·934	E			1 13·919	α	at E, $Q = 1{\cdot}008^s$		
	45 7	11·904	W			11·902	β		$+ 0{\cdot}024^s$	
	45 57	11·800	E			11·804	γ	at W, $Q = 1{\cdot}057^s$		$D = 1^m\ 12{\cdot}970^s$
	47 28	13·905	W			13·918	δ			
	11 45 23	1 12·886								$T_E = 11^h\ 31^m\ 50^s$
March 19	10 40 51	0 55·530	E			0 55·516	α	at E, $Q = 1{\cdot}020^s$		
	42 13	53·436	W			53·431	β		$+ 0{\cdot}019^s$	
	43 34	53·308	E			53·312	γ	at W, $Q = 1{\cdot}102^s$		
	45 12	55·457	W	$-0{\cdot}390^s$ at $11^h\ 14^m$		55·472	δ			$D = 0^m\ 54{\cdot}280^s$
	10 42 58	0 54·433								$T_E = 11^h\ 6^m\ 32^s$
,,	11 43 21	0 55·077	E			0 55·066	α	at E, $Q = 1{\cdot}032^s$		
	44 14	53·046	W			53·041	β		$+ 0{\cdot}043^s$	
	45 23	52·905	E			52·907	γ	at W, $Q = 1{\cdot}080^s$		$D = 0^m\ 54{\cdot}118^s$
	47 11	55·091	W			55·105	δ			
	11 45 2	0 54·030								$T_E = 11^h\ 31^m\ 25^s$
March 22	10 40 30	0 29·050	E			0 29·038	α	at E, $Q = 1{\cdot}012^s$		
	42 5	27·040	W			27·038	β		$+ 0{\cdot}044^s$	
	42 42	26·882	E			26·884	γ	at W, $Q = 1{\cdot}077^s$		
	44 14	29·050	W	$-0{\cdot}375^s$ at $11^h\ 13^m$		29·062	δ			$D = 0^m\ 27{\cdot}867^s$
	10 42 23	0 28·006								$T_E = 11^h\ 4^m\ 40^s$
,,	11 42 20	0 28·705	E			0 28·691	α	at E, $Q = 1{\cdot}011^s$		
	43 40	26·658	W			26·653	β		$+ 0{\cdot}046^s$	
	45 17	26·447	E			26·452	γ	at W, $Q = 1{\cdot}120^s$		$D = 0^m\ 27{\cdot}698^s$
	46 46	28·660	W			28·674	δ			
	11 44 31	0 27·618								$T_E = 11^h\ 31^m\ 39^s$

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Jalpaiguri and Calcutta.

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R_1: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
April 4	11 43 45	1 30·294	E			1 30·280	α	at E, $Q = 1^s\cdot287$		
	45 5	28·057	W			28·053	β		$+\ 0^s\cdot044$	
	45 54	28·222	E			28·224	γ	at W, $Q = 1^s\cdot028$		
	47 51	30·610	W	$-0^s\cdot455$ at $12^h\ 19^m$		30·627	δ			D = 1 29·103
	11 45 39	1 29·296								T_E = 12 11 5
"	12 51 40	1 27·547	W			1 27·543	β	at E, $Q = 1^s\cdot289$		
	52 34	30·118	W			30·121	δ			
	12 52 7	1 28·833								D = 1 28·965
		1 28·793*								T_E = 12 29 17
April 5	11 44 8	1 19·457	E			1 19·444	α	at E, $Q = 1^s\cdot324$		
	44 48	17·079	W			17·071	β		$+\ 0^s\cdot039$	
	46 32	17·184	E			17·188	λ	at W, $Q = 1^s\cdot128$		
	48 16	19·702	W	$-0^s\cdot420$ at $12^h\ 14^m$		19·718	δ			D = 1 18·188
	11 45 56	1 18·356								T_E = 12 10 1
"	12 40 0	1 19·041	E			1 19·028	α	at E, $Q = 1^s\cdot316$		
	41 2	16·701	W			16·696	β		$+\ 0^s\cdot048$	
	42 12	16·802	E			16·805	γ	at W, $Q = 1^s\cdot112$		D = 1 18·058
	43 45	19·314	W			19·328	δ			
	12 41 45	1 17·965								T_E = 12 28 34
April 6	11 43 20	1 10·054	E			1 10·039	α	at E, $Q = 1^s\cdot331$		
	44 41	7·645	W			7·639	β		$+\ 0^s\cdot047$	
	45 53	7·710	E			7·712	γ	at W, $Q = 1^s\cdot163$		
	48 15	10·283	W	$-0^s\cdot400$ at $12^h\ 14^m$		10·301	δ			D = 1 8·761
	11 45 32	1 8·923								T_E = 12 9 48
"	12 39 48	1 9·651	E			1 9·638	α	at E, $Q = 1^s\cdot316$		
	40 55	7·292	W			7·287	β		$+\ 0^s\cdot054$	
	42 23	7·348	E			7·353	γ	at W, $Q = 1^s\cdot143$		D = 1 8·658
	43 40	9·905	W			9·918	δ			
	12 41 42	1 8·549								T_E = 12 25 18

* Corrected for mean retardation $+\ 0^s\cdot040$ as determined on this arc.

TABLE V. ABSTRACT OF OBSERVED VALUES OF PERSONAL EQUATION

Between Majors Strahan and Heaviside.

By Stars of	Observed with Telescope No. 2.						Observed with Telescope No. 1.								
	At AGRA						At AGRA								
	November 5, 1881			November 6, 1881			November 11, 1881			November 13, 1881			November 14, 1881		
	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H
North Aspect		° ′	s		° ′	s		° ′	s		° ′	s		° ′	s
	349	+ 29 28	+ 0·10	510	+ 42 1	+ 0·05	432	+ 44 48	0·00	404	+ 44 45	− 0·08	404	+ 44 45	+ 0·03
	404	+ 44 55	− ·15	558	+ 54 34	+ ·04	441	+ 46 24	− ·03	432	+ 44 49	− ·11	432	+ 44 49	+ ·05
	432	+ 44 48	+ ·01	569	+ 29 0	− ·12	487	+ 48 2	+ ·07	441	+ 46 24	− ·04	441	+ 46 24	− ·06
	441	+ 46 24	+ ·08	579	+ 36 42	+ ·02	510	+ 42 1	+ ·01	487	+ 48 2	− ·08	487	+ 48 2	+ ·02
	487	+ 48 2	+ ·05	628	+ 41 46	+ ·11 + ·04	558	+ 54 34	− ·10	510	+ 42 1	− ·03	510	+ 42 1	+ ·01
	510	+ 42 1	+ ·06	667	+ 30 58	− ·01	569	+ 29 0	·00	558	+ 54 34	− ·04	558	+ 54 34	+ ·11
	727	+ 40 52	+ ·04	692	+ 25 14	− ·03	575	+ 40 7	·00	569	+ 29 0	+ ·03	569	+ 29 0	+ ·03
	858	+ 56 35	+ ·14	727	+ 40 52	− ·04	628	+ 41 46	− ·02 − ·14	579	+ 36 42	− ·06	579	+ 36 42	+ ·03
	897	+ 46 41	+ ·03	772	+ 35 37	+ ·03	667	+ 30 58	− ·02	628	+ 41 46	− ·02 − ·01	628	+ 41 42	·00 − ·09
	962	+ 49 10	+ ·08	785	+ 51 27	− ·10	772	+ 35 37	− ·09	667	+ 30 58	− ·02	667	+ 30 58	+ ·07
	Mean ($S_N - H_N$)		+ 0·044 ± 0·017			− 0·001 ± 0·014			− 0·029 ± 0·012			− 0·042 ± 0·008			+ 0·018 ± 0·011
South Aspect	307	+ 20 51	− 0·06	542	+ 10 15	+ 0·06	η Pisc.	+ 14 44	+ 0·06	388	+ 3 0	− 0·06	388	+ 3 0	− 0·02
	370	+ 15 31	+ ·06	593	+ 23 1	+ ·06	470	+ 11 57	− ·06	413	+ 17 12	− ·03	413	+ 17 12	− ·12
	388	+ 3 0	− ·04	641	+ 7 10	− ·03	542	+ 10 15	− ·04	η Pisc.	+ 14 44	− ·08	η Pisc.	+ 14 44	− ·03
	413	+ 17 12	+ ·08	650	+ 17 28	− ·09	593	+ 23 1	+ ·08	470	+ 11 57	− ·02	470	+ 11 57	− ·02
	η Pisc.	+ 14 44	− ·05	704	− 6 58	− ·03	641	+ 7 10	·00	533	+ 19 30	·00	533	+ 19 30	+ ·15
	470	+ 11 57	− ·02	760	+ 7 56	− ·05	650	+ 17 28	+ ·01	542	+ 10 15	− ·04	542	+ 10 15	+ ·01
	813	+ 26 33	− ·11	813	+ 26 33	+ ·16	732	− 1 25	+ ·02	593	+ 23 1	− ·04	593	+ 23 1	·00
	837	+ 2 44	− ·08	837	+ 2 44	− ·05	760	+ 7 56	+ ·08	650	+ 17 28	+ ·05	641	+ 7 10	− ·02
	870	+ 16 58	+ ·03	870	+ 16 58	+ ·01	837	+ 2 44	+ ·02	692	+ 25 14	+ ·03	650	+ 17 28	+ ·01
	881	+ 14 36	+ ·08				800	+ 7 13	·00				692	+ 25 14	+ ·03
	921	+ 20 52	+ ·01												
	949	+ 3 38	− ·12												
	Mean ($S_S - H_S$)		− 0·018 ± 0·014			+ 0·004 ± 0·017			+ 0·017 ± 0·010			− 0·021 ± 0·009			− 0·001 ± 0·014

TABLE. V. ABSTRACT OF OBSERVED VALUES OF PERSONAL EQUATION

Between Majors Strahan and Heaviside.

Observed with Telescope No. 2.			Observed with Telescope No. 1.			Observed with Telescope No. 2.						Observed with Telescope No. 1.					
By Stars of	At FYZABAD		At FYZABAD			At HAZARIBAGH						At JALPAIGURI					
	December 28, 1881		December 29, 1881			January 31, 1882			February 1, 1882			April 1, 1882			April 2, 1882		
	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H
		° ′	s		° ′	s		° ′	s		° ′	s		° ′	s		° ′	s
North Aspect	173	+38 49	+0·02	1269	+37 44	−0·01	1017	+33 48	−0·03	1017	+33 48	−0·08	2429	+40 54	+0·02	2340	+30 26	−0·02
	189	+46 23	− ·01	1326	+27 4	− ·07	1029	+25 13	− ·06	1029	+25 13	− ·06	2442	+28 2	− ·02	2374	+28 6	− ·04
	285	+31 10	+ ·01	1361	+31 10	− ·02	1040	+27 12	− ·09	1040	+27 12	− ·02	2493	+27 10	− ·02	2416	+36 59	− ·01
	310	+31 33	+ ·01	1398	+42 49	+ ·01	1097	+31 37	− ·10	1097	+31 37	·00	2504	+35 19	·00	2429	+40 54	− ·04
	321	+31 23	+ ·04	1408	+28 43	− ·07	1132	+33 35	+ ·01	1132	+33 35	− ·03	2563	+33 43	− ·02	2442	+28 2	− ·06
	337	+41 27	+ ·01	1445	+43 8	+ ·03	1138	+31 55	− ·04	1138	+31 55	− ·06	2576	+54 25	− ·07	2493	+27 10	·00
	404	+44 55	+ ·19	1475	+32 23	·00	1154	+24 0	− ·05	1154	+24 0	− ·06	2617	+27 5	− ·05	2504	+35 19	·00
	432	+44 48	− ·05	1492	+36 30	+ ·04	1192	+25 13	− ·06	1192	+25 13	− ·02	6 Canc.	+28 8	− ·07	2563	+33 43	− ·04
	510	+42 1	− ·07	1602	+38 21	− ·01	1219	+39 40	+ ·06	1219	+39 40	− ·05	2786	+27 36	·00	2576	+54 25	+ ·07
	1398	+42 49	− ·03	1629	+33 38	+ ·05	1269	+37 44	− ·03	1269	+37 44	·00	2793	+43 34	+ ·02	2592	+33 32	·00
	1408	+28 43	+ ·07	1663	+37 16	+ ·03	2275	+26 14	− ·05	2239	+38 35	+ ·08	2798	+42 23	− ·01	2617	+27 5	− ·06
	1445	+43 8	− ·01	1681	+28 30	+ ·09	2301	+29 33	− ·03	2275	+26 14	+ ·01	3572	+37 19	+ ·03	6 Canc.	+28 8	− ·01
	1475	+32 23	− ·04				2364	+25 5	− ·03	2301	+29 33	− ·06	3584	+39 32	− ·07	2730	+25 52	+ ·07
	1492	+36 30	+ ·06				2383	+26 54	− ·04	2364	+25 5	− ·06	3610	+35 36	+ ·04	3584	+39 32	+ ·02
	1541	+40 54	− ·06				2440	+27 52	− ·10	2383	+26 54	+ ·04	3710	+28 36	+ ·01	3602	+32 59	+ ·02
	1577	+28 7	− ·05				2464	+32 1	− ·03	2440	+27 52	− ·02	3757	+41 4	− ·09	3610	+35 36	+ ·03
	1602	+38 21	+ ·01				2472	+28 10	− ·01	2464	+32 1	− ·03	3784	+38 53	− ·03	3633	+34 41	+ ·05
	1629	+33 38	+ ·06				2493	+27 10	− ·03	2472	+28 10	− ·02	3812	+45 8	− ·03	3685	+31 18	+ ·03
	1663	+37 16	+ ·02				2514	+24 30	·00	2493	+27 10	+ ·03	3846	+50 7	+ ·08	3710	+28 36	+ ·04
	1681	+28 30	− ·03				2617	+27 5	− ·02	2514	+24 30	− ·10	3851	+32 12	− ·02	3742	+25 23	+ ·11
													3913	+43 49	− ·04			
	Mean $(S_N - H_N)$		+0·005			−0·006			−0·037			−0·026			−0·016			+0·008
			±0·009			±0·010			±0·006			±0·006			±0·006			±0·007

TABLE V. ABSTRACT OF OBSERVED VALUES OF PERSONAL EQUATION

Between Majors Strahan and Heaviside.

Observed with Telescope No. 2.			Observed with Telescope No. 1.			Observed with Telescope No. 2.						Observed with Telescope No. 1.					
By Stars of	At FYZABAD			At FYZABAD			At HAZARIBAGH						At JALPAIGURI					
	December 28, 1881			December 29, 1881			January 31, 1882			February 1, 1882			April 1, 1882			April 2, 1882		
	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H	Star	Decl.	Equation S−H
		° ′	s		° ′	s		° ′	s		° ′	s		° ′	s		° ′	s
South Aspect	205	− 5 17	−0·01	1244	+ 9 40	+0·03	999	+20 36	−0·01	999	+20 36	−0·06	2462	+ 8 32	−0·03	2358	− 0 18	−0·02
	217	+20 17	+ ·01	1257	+21 46	+ ·03	1053	+20 23	·00	1053	+20 23	− ·07	2473	+12 15	+ ·05	2398	+16 45	·00
	237	+ 2 45	+ ·12	1279	+26 10	+ ·09	1069	+22 24	− ·04	1069	+22 24	− ·05	2480	+ 2 10	+ ·07	2462	+ 8 32	+ ·04
	247	+18 33	+ ·02	1289	+22 7	− ·05	1107	+22 49	+ ·07	1084	+10 56	− ·05	2519	+17 57	+ ·04	2473	+12 15	+ ·04
	263	+26 22	+ ·08	1302	+15 6	+ ·03	1119	+16 9	− ·10	1107	+22 49	− ·06	2537	+13 46	− ·02	2519	+17 57	− ·06
	274	+ 5 51	− ·04	1341	+25 21	− ·01	1166	+23 44	− ·09	1119	+16 9	− ·02	2549	+26 4	− ·02	2537	+13 46	+ ·06
	370	+15 31	+ ·12	1380	+15 42	+ ·04	1206	+16 59	− ·07	1166	+23 44	− ·01	2636	+ 9 11	+ ·02	2549	+26 4	− ·01
	388	+ 3 0	+ ·12	1421	+ 9 55	− ·01	1238	+22 52	− ·05	1206	+16 59	·00	2659	+17 38	+ ·01	2636	+ 9 11	+ ·02
	413	+17 12	+ ·08	1434	+12 16	+ ·03	1257	+21 46	+ ·02	1238	+22 52	+ ·05	2700	+22 59	·00	2700	+22 59	·00
	η Pisc.	+14 44	− ·01	1460	+10 55	+ ·05	2313	+22 49	− ·02	1257	+21 46	− ·05	2720	+13 59	+ ·04	2720	+13 59	+ ·01
	470	+11 57	+ ·05	1508	+ 2 19	+ ·10	2330	+16 7	+ ·01	2228	+16 19	− ·05	2744	+18 1	+ ·04	3621	+ 7 34	− ·01
	533	+19 30	− ·03	1620	+22 9	− ·03	2347	+15 31	− ·01	2255	+13 20	− ·07	2759	+18 2	+ ·07	3663	− 1 7	+ ·08
	542	+10 15	+ ·12	1701	+15 46	+ ·02	2410	+22 12	+ ·07	2313	+22 49	− ·06	2778	+ 9 33	+ ·06	3672	+ 5 22	+ ·06
	1421	+ 9 55	− ·04	1711	+20 27	+ ·07	2483	+15 54	+ ·11	2330	+16 7	− ·08	3621	+ 7 34	+ ·08			
	1434	+12 16	+ ·06				2537	+13 46	− ·04	2347	+15 31	+ ·03	3646	−16 16	+ ·03			
	1460	+10 55	+ ·05				2556	+20 36	+ ·07	2410	+22 12	·00	3672	+ 5 22	+ ·04			
	1508	+ 2 19	− ·03				2578	+23 26	+ ·01	2483	+15 54	− ·04	3726	+ 1 39	+ ·07			
	1528	+24 52	+ ·10				2659	+17 38	− ·05	2537	+13 46	·00	3775	− 1 51	+ ·02			
	1562	+26 16	+ ·11							2556	+20 36	+ ·06	3778	+ 2 36	− ·03			
	1620	+22 9	− ·04							2578	+23 26	− ·03	3824	+15 2	+ ·13			
	1648	+27 50	+ ·15										3834	+21 11	·00			
	1701	+15 46	+ ·02										3871	+ 7 14	+ ·03			
	1711	+20 27	+ ·11										3886	+17 6	+ ·01			
													3900	+ 3 30	+ ·06			
	Mean $(S_S - H_S)$		+0·049			+0·028			+0·005			−0·027			+0·032			+0·017
			±0·009			±0·008			±0·008			±0·006			±0·005			±0·007

TABLE VI. DEDUCTION OF THE FINAL VALUES OF THE RELATIVE PERSONAL EQUATION

Between Majors Strahan and Heaviside.

Season	By Stars of North Aspect					By Stars of South Aspect				
	Astronomical Date	Telescope in use	Mean Value of Equation $S_N - H_N$	Combination Weight	General Mean $S_N - H_N$	Astronomical Date	Telescope in use	Mean Value of Equation $S_S - H_S$	Combination Weight	General Mean $S_S - H_S$
	1881		s			1881		s		
1881	November 5	No. 2	+ 0·044	35		November 5	No. 2	− 0·018	51	
	„ 6	„ 2	− ·001	51	s	„ 6	„ 2	+ ·004	35	s
	„ 11	„ 1	− ·029	69	− 0·014	„ 11	„ 1	+ ·017	100	− 0·005
	„ 13	„ 1	− ·042	156		„ 13	„ 1	− ·021	123	
	„ 14	„ 1	+ ·018	83		„ 14	„ 1	− ·001	51	
	December 28	No. 2	+ 0·005	123	0·000	December 28	No. 2	+ 0·049	123	+ 0·037
	„ 29	„ 1	− ·006	100		„ 29	„ 1	+ ·028	156	
	1882					1882				
1882	January 31	No. 2	− 0·037	278	− 0·032	January 31	No. 2	+ 0·005	156	− 0·015
	February 1	„ 2	− ·026	278		February 1	„ 2	− ·027	278	
	April 1	No. 1	− 0·016	278	− 0·006	April 1	No. 1	+ 0·032	400	+ 0·027
	„ 2	„ 1	+ ·008	204		„ 2	„ 1	+ ·017	204	

Final Values of the Equation adopted.

For the first two arcs of the season, *viz.*, Fyzabad–Agra and Fyzabad–Jubbulpore, the following values were adopted.

$S_N - H_N = -0^s{\cdot}007$, and $S_S - H_S = +0^s{\cdot}016$, being the means of the November and December values.

For the third and fourth arcs, *viz.*, Hazaribagh–Fyzabad and Hazaribagh–Jubbulpore, the following values were adopted.

$S_N - H_N = -0^s{\cdot}016$, and $S_S - H_S = +0^s{\cdot}011$, being the means of the December and January values.

For the fifth, sixth and seventh arcs, *viz.*, Calcutta–Hazaribagh, Jalpaiguri–Hazaribagh and Jalpaiguri–Calcutta, the following values were adopted.

$S_N - H_N = -0^s{\cdot}019$, and $S_S - H_S = +0^s{\cdot}006$, being the means of the January and April values.

TABLE VII. ABSTRACT OF OBSERVED VALUES OF THE ABSOLUTE (N − S) EQUATIONS

Of Majors Strahan and Heaviside, Season 1881-82.

Arc Fyzabad-Agra						Arc Fyzabad-Jubbulpore						Arc Hazaribagh-Fyzabad					
Heaviside at Fyzabad			Strahan at Agra			Heaviside at Fyzabad			Strahan at Jubbulpore			Strahan at Hazaribagh			Heaviside at Fyzabad		
Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed
	s			s			s			s			s			s	
1279	0·00	N	1279	−0·12	N	1279	−0·03	N	1289	−0·10	S	1742	−0·03	S	1754	+0·03	S
	+ ·01	„		+ ·05	„		+ ·06	„		+ ·02	„		− ·01	„		+ ·01	„
	− ·07	„		− ·01	„		+ ·09	„		− ·08	„		+ ·03	„		− ·04	„
	+ ·08	„		+ ·05	„		+ ·06	„		+ ·04	„		+ ·03	„		·00	„
	·00	„		− ·03	„		+ ·06	„		− ·14	„		+ ·04	„		+ ·03	„
	+ ·07	„		+ ·03	„	1326	− ·03	S		+ ·12	N		+ ·07	„		+ ·05	„
1562	·00	S	1562	+ ·05	S		− ·04	„	1371	− ·02	N	1829	+ ·04	N	1863	+ ·10	S
	− ·05	„		− ·03	„		+ ·02	„		+ ·03	„		+ ·06	„		+ ·02	„
	·00	„		− ·02	„		+ ·01	„		+ ·01	„		+ ·08	„		− ·02	„
	+ ·08	„		− ·16	„		+ ·01	„		+ ·05	„		+ ·07	„		+ ·18	„
	+ ·01	„		+ ·04	„	1528	− ·08	S		+ ·02	„		+ ·05	„		− ·01	„
1648	+ ·02	N	1040	− ·04	S		− ·03	„	1528	− ·01	S	2514	+ ·02	N		+ ·02	„
	+ ·03	„		− ·01	„	1562	+ ·01	S		− ·11	„		+ ·03	„	2493	+ ·07	S
	− ·04	„		+ ·04	„		+ ·05	„		+ ·04	„		− ·03	„		+ ·04	„
	+ ·02	„		− ·07	„		+ ·05	„		− ·03	„		+ ·16	„		·00	„
	·00	„		− ·01	„		− ·04	„		− ·02	„		+ ·07	„		+ ·05	„
	− ·02	„	1648	− ·03	N		+ ·01	„	1620	− ·03	S		+ ·04	„		+ ·02	„
1040	+ ·02	S		− ·02	„	1648	− ·02	N		·00	„	2700	− ·02	S		− ·01	„
	− ·13	„		− ·01	„		+ ·04	„		+ ·07	„		− ·04	„	2617	+ ·06	N
	+ ·01	„		+ ·02	„		+ ·05	„		+ ·02	„		− ·07	„		+ ·01	„
	+ ·02	„		− ·06	„		+ ·18	„		− ·01	„		− ·02	„		+ ·11	„
	+ ·07	„		+ ·06	„		+ ·04	„		− ·06	„		+ ·06	„		+ ·04	„
1746	− ·06	S	1746	− ·05	S	1896	− ·08	N	1925	− ·08	S		− ·04	„		+ ·03	„
	+ ·03	„		− ·02	„		·00	„		·00	„	2154	− ·08	S		+ ·01	„
	− ·02	„		+ ·01	„		+ ·08	„		·00	„		− ·01	„	2097	+ ·06	N
	+ ·02	„		− ·02	„		− ·01	„		− ·05	„		− ·07	„		+ ·05	„
	+ ·10	„		− ·08	„		+ ·03	„		− ·04	„		+ ·04	„		+ ·05	„
				− ·02	„	2154	+ ·04	N		+ ·01	„		+ ·02	„		+ ·07	„
Mean	+0·007 ±0·007						+ ·19	„	2047	− ·12	S		+ ·01	„		+ ·04	„
			Mean	−0·016 ±0·007			+ ·09	„		+ ·02	„	2313	+ ·06	S		− ·03	„
							+ ·04	„		− ·04	„		− ·04	„	2275	− ·02	N
							− ·07	„		+ ·07	„		− ·02	„		+ ·05	„
							− ·01	„		+ ·05	„		− ·01	„		+ ·03	„
										+ ·03	„		+ ·05	„		+ ·01	„
						Mean	+0·023 ±0·007		2154	+ ·05	N		− ·04	„		+ ·04	„
										+ ·04	„	Mean	+0·014 ±0·006			·00	„
										+ ·05	„				Mean	+0·032 ±0·005	
										+ ·03	„						
										+ ·02	„						
										+ ·12	„						
									Mean	−0·001 ±0·006							

Note.—The symbol, N − S, signifies a quantity which must be added to the times observed for Stars of South Aspect, before they can be compared with those for Stars of North Aspect, by the same observer.

TABLE VII. ABSTRACT OF OBSERVED VALUES OF THE ABSOLUTE (N−S) EQUATIONS

Of Majors Strahan and Heaviside, Season 1881-82.

ARC HAZARIBAGH–JUBBULPORE

Strahan at Hazaribagh			Heaviside at Jubbulpore		
Star	Equation N−S	Aspect first observed	Star	Equation N−S	Aspect first observed
	s			s	
2154	+0·04	N	2154	+0·02	N
	− ·01	,,		+ ·08	,,
	+ ·04	,,		+ ·04	,,
	+ ·03	,,		− ·02	,,
	+ ·09	,,		+ ·07	,,
2813	+ ·10	N	2313	+ ·06	N
	+ ·07	,,		+ ·03	,,
	+ ·07	,,		− ·04	,,
	+ ·06	,,		·00	,,
	+ ·01	,,		+ ·05	,,
	− ·02	,,		+ ·03	,,
2514	+ ·05	N	2514	+ ·01	N
	+ ·01	,,		+ ·01	,,
	− ·03	,,		+ ·13	,,
	+ ·04	,,		+ ·03	,,
	+ ·07	,,		+ ·06	,,
2578	+ ·05	N	2578	·00	S
	+ ·05	,,		− ·05	,,
	− ·01	,,		+ ·02	,,
	+ ·08	,,		+ ·04	,,
	+ ·09	,,		− ·01	,,
2700	+ ·04	S	2700	+ ·03	N
	− ·03	,,		+ ·02	,,
	·00	,,		+ ·03	,,
	+ ·01	,,		·00	,,
	+ ·06	,,		+ ·01	,,
	·00	,,		+ ·02	,,
2937	+ ·04	N	2937	+ ·02	N
3079	+ ·01	N	3079	·00	N
	+ ·01	,,		+ ·06	,,
	+ ·04	,,		+ ·05	,,
	+ ·05	,,		+ ·05	,,
	− ·02	,,		+ ·06	,,
3117	+ ·01	S	3117	+ ·03	S
	− ·04	,,		+ ·03	,,
	− ·03	,,		+ ·08	,,
	+ ·02	,,		+ ·01	,,
	+ ·03	,,		+ ·01	,,
	+ ·05	,,		− ·02	,,
Mean	+0·029 ±0·004		Mean	+0·027 ±0·004	

ARC CALCUTTA–HAZARIBAGH

Heaviside at Calcutta			Strahan at Hazaribagh		
Star	Equation N−S	Aspect first observed	Star	Equation N−S	Aspect first observed
	s			s	
2714	+0·05	N	2714	+0·08	N
	·00	,,		+ ·07	,,
	+ ·06	,,		+ ·03	,,
	+ ·09	,,		+ ·02	,,
	+ ·09	,,		+ ·13	,,
2788	·00	S		+ ·09	,,
	+ ·05	,,	2833	− ·05	S
	+ ·02	,,		− ·02	,,
	+ ·07	,,		− ·05	,,
	+ ·01	,,		+ ·01	,,
3485	− ·02	S		− ·05	,,
	·00	,,		− ·02	,,
	+ ·08	,,	3508	− ·09	S
	+ ·04	,,		− ·03	,,
	·00	,,		− ·01	,,
	+ ·02	,,		+ ·02	,,
3671	+ ·12	N		+ ·06	,,
	− ·10	,,		+ ·01	,,
	− ·01	,,	3671	+ ·07	N
	− ·01	,,		+ ·07	,,
	+ ·09	,,		+ ·09	,,
	− ·04	,,		+ ·07	,,
3117	+ ·03	S		+ ·07	,,
	− ·01	,,		+ ·09	,,
	+ ·01	,,	3079	− ·03	S
	− ·01	,,		+ ·02	,,
	− ·07	,,		+ ·06	N
	+ ·08	,,		− ·03	S
3138	+ ·02	S		− ·02	,,
	+ ·02	,,		+ ·01	,,
	− ·01	,,	3246	+ ·08	N
	+ ·08	,,		+ ·04	,,
	+ ·03	,,		+ ·08	,,
	− ·06	,,		+ ·05	,,
Mean	+0·021 ±0·006			+ ·04	,,
				+ ·07	,,
			Mean	+0·029 ±0·006	

ARC JALPAIGURI–HAZARIBAGH

Heaviside at Jalpaiguri			Strahan at Hazaribagh		
Star	Equation N−S	Aspect first observed	Star	Equation N−S	Aspect first observed
	s			s	
3079	+0·01	N	3079	+0·06	N
	+ ·02	,,		+ ·12	,,
	+ ·04	,,		− ·02	,,
	+ ·01	,,		− ·01	,,
	− ·01	,,		+ ·09	,,
3170	+ ·05	S	3204	+ ·13	N
	+ ·04	,,		+ ·02	,,
	+ ·01	,,		+ ·03	,,
	+ ·03	,,		+ ·12	,,
3194	+ ·03	S		+ ·10	,,
	− ·10	,,	3787	− ·07	S
	− ·03	,,		·00	,,
	+ ·09	,,		− ·03	,,
	+ ·08	,,	Mean	+0·042 ±0·012	
	− ·04	,,			
3787	+ ·13	S			
	+ ·03	,,			
3797	+ ·09	N			
	+ ·12	,,			
	− ·01	,,			
Mean	+0·030 ±0·008				

ARC JALPAIGURI–CALCUTTA

Heaviside at Jalpaiguri			Strahan at Calcutta		
Star	Equation N−S	Aspect first observed	Star	Equation N−S	Aspect first observed
	s			s	
3666	+0·08	N	3485	0·00	S
	+ ·03	,,		+ ·02	,,
	+ ·11	,,	3834	+ ·03	S
3787	+ ·06	S		+ ·04	,,
	+ ·08	,,		+ ·13	,,
3797	+ ·01	N	3964	+ ·01	S
	+ ·04	,,		·00	,,
4107	− ·02	N		+ ·03	,,
	+ ·06	,,		− ·07	,,
	·00	,,		− ·08	,,
4139	+ ·03	N		− ·08	,,
	+ ·03	,,	4240	− ·05	S
	+ ·08	,,		·00	,,
	+ ·04	,,		+ ·07	,,
	+ ·01	,,		+ ·03	,,
	+ ·12	,,		− ·05	,,
4169	+ ·02	S		− ·01	,,
	+ ·05	,,	4566	− ·02	N
	+ ·05	,,		+ ·10	,,
	+ ·04	,,		+ ·04	,,
	− ·02	,,	Mean	+0·007 ±0·009	
	+ ·05	,,			
4205	+ ·04	N			
	+ ·10	,,			
	+ ·14	,,			
	+ ·07	,,			
	+ ·09	,,			
4594	+ ·05	N			
	+ ·09	,,			
	+ ·04	,,			
Mean	+0·052 ±0·005				

NOTE.—The symbol, N−S, signifies a quantity which must be added to the times observed for Stars of South Aspect, before they can be compared with those for Stars of North Aspect, by the same observer.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.007$, $S_N - S_S = -0^s.016$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	s				
Nov.25	1228	+35 27	N	*I. P. E.*	3 52 8·71	+2·03	10·74	N	*I. P. W.*	3 51 59·25	+1·83	61·08	− 9·66				
	1238	+22 52	S	d c − 2·4 b + 4·2 a + 8·1	54 46·24	+2·07	48·31	S	d c + 5·4 b − 2·8 a −18·8	54 36·98	+1·71	38·69	9·62				
	1244	+ 9 40	S		56 9·53	+2·10	11·63	S		56 0·41	+1·62	2·03	9·60				
	1257	+21 46	S	s Q +2·02	58 33·01	+2·08	35·09	S	s Q +1·69	58 23·80	+1·71	25·51	9·58				
	1260	+21 41	S		59 10·87	+2·08	12·95	S		59 1·68	+1·71	3·39	9·56	s −9·567			
	1269	+37 44	N		4 1 35·03	+2·03	37·06	N		4 1 25·64	+1·86	27·50	9·56		− 0·047	− 0·013	− 9·627
	1279	+26 10	N		4 28·56	+2·07	30·63	N		4 19·32	+1·75	21·07	9·56				
	1279	+26 10	S		4 28·56	+2·07	30·63	S		4 19·44	+1·75	21·19	9·44				
	1291	+40 11	N		7 41·80	+2·01	43·81	N		7 32·40	+1·89	34·29	9·52				
				Mean, T_E	3 59 54												
	1525	+13 20	S	*I. P. E.*	4 50 37·47	−1·95	35·52	S	*I. P. W.*	4 50 28·17	−1·74	26·43	− 9·09				
	1534	+39 13	N	d c − 2·4 b + 4·2 a + 8·1	53 5·54	−2·02	3·52	N	d c + 5·4 b − 2·8 a −18·8	52 56·02	−1·50	54·52	9·00				
	1541	+40 54	N		55 7·69	−2·03	5·66	N		54 58·19	−1·48	56·71	8·95				
	1551	+21 25	S	s Q −2·02	56 55·87	−1·96	53·91	S	s Q −1·69	56 46·57	−1·68	44·89	9·02	s −8·978			
	1562	+26 16	S		59 28·59	−1·97	26·62	S		59 19·28	−1·63	17·65	8·97		− 0·047	− 0·012	− 9·037
	1562	+26 16	N		59 28·59	−1·97	26·62	N		59 19·33	−1·63	17·70	8·92				
	1577	+28 7	N		5 2 4·08	−1·97	2·11	N		1 54·78	−1·61	53·17	8·94				
	1591	+15 27	S		3 49·89	−1·94	47·95	S		3 40·74	−1·72	39·02	8·93				
				Mean, T_E	4 57 35												
Nov.28	1228	+35 27	N	*I. P. E.*	3 51 40·86	+1·71	42·57	N	*I. P. W.*	3 52 11·70	+1·85	13·55	+ 30·98				
	1238	+22 52	S	d c − 1·1 b + 4·3 a +11·4	54 18·13	+1·76	19·89	S	d c + 1·8 b − 0·7 a −31·7	54 49·29	+1·66	50·95	31·06				
	1244	+ 9 40	S		55 41·50	+1·81	43·31	S		56 12·84	+1·50	14·34	31·03				
	1257	+21 46	S	s Q +1·67	58 4·97	+1·76	6·73	S	s Q +1·70	58 36·16	+1·65	37·81	31·08	s +31·112			
	1260	+21 41	S		58 42·86	+1·76	44·62	S		59 14·11	+1·65	15·76	31·14		− 0·047	− 0·013	+31·048
	1269	+37 44	N		4 1 7·04	+1·70	8·74	N		4 1 38·01	+1·89	39·90	31·16				
	1279	+26 10	N		4 0·54	+1·75	2·29	N		4 31·77	+1·72	33·49	31·20				
	1279	+26 10	S		4 0·53	+1·75	2·28	S		4 31·72	+1·72	33·44	31·16				
	1291	+40 11	N		7 13·81	+1·68	15·49	N		7 44·75	+1·94	46·69	31·20				
				Mean, T_E	3 59 26												

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.007$, $S_N - S_S = -0^s.016$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Nov.28	1525	+13 20	S	*I. P. E.*	4 50 8·71	−1·54	7·17	S	*I. P. W.*	4 50 40·67	−1·86	38·81	+0 31·64				
	1534	+39 13	N	*d* c − 1·1	52 36·92	−1·65	35·27	N	*d* c + 1·8	53 8·28	−1·48	6·80	31·53				
	1535	+39 28	N	b + 4·3 a + 11·4	52 40·55	−1·65	38·90	N	b − 0·7 a − 31·7	53 11·96	−1·47	10·49	31·59				
	1541	+40 54	N	*s* Q − 1·67	54 39·02	−1·66	37·36	N	*s* Q − 1·70	55 10·50	−1·45	9·05	31·69	m s +0 31·673	0·047	− 0·011	+0 31·615
	1551	+21 25	S		56 27·17	−1·57	25·60	S		56 59·06	−1·76	57·30	31·70				
	1562	+26 16	S		58 59·89	−1·59	58·30	S		59 31·74	−1·68	30·06	31·76		1	−	
	1577	+28 7	N		5 1 35·41	−1·60	33·81	N		5 2 7·18	−1·65	5·53	31·72				
	1591	+15 27	S		3 21·18	−1·55	19·63	S		3 53·21	−1·83	51·38	31·75				
				Mean, T_E	4 56 19												
Nov.29	1228	+35 27	N	*I. P. E.*	3 51 31·15	+1·82	32·97	N	*I. P. W.*	3 52 15·84	+1·78	17·62	+0 44·65				
	1238	+22 52	S	*d* c + 0·2	54 8·68	+1·86	10·54	S	*d* c − 0·6	54 53·51	+1·60	55·11	44·57				
	1244	+9 40	S	b + 5·9 a + 12·5	55 32·00	+1·91	33·91	S	b − 0·3 a − 33·2	56 16·97	+1·43	18·40	44·49				
	1257	+21 46	S	*s* Q + 1·70	57 55·46	+1·87	57·33	S	*s* Q + 1·68	58 40·24	+1·58	41·82	44·49	m s +0 44·583	0·048	− 0·013	+0 44·522
	1260	+21 41	S		58 33·40	+1·87	35·27	S		59 18·25	+1·58	19·83	44·56				
	1269	+37 44	N		4 0 57·49	+1·80	59·29	N		4 1 42·08	+1·82	43·90	44·61		1	−	
	1279	+26 10	N		3 50·97	+1·86	52·83	N		4 35·85	+1·64	37·49	44·66				
			S		3 51·04	+1·86	52·90	S		4 35·86	+1·64	37·50	44·60				
	1291	+40 11	N		7 4·39	+1·79	6·18	N		7 48·93	+1·87	50·80	44·62				
				Mean, T_E	3 59 16												
Nov.29	1525	+13 20	S	*I. P. E.*	4 49 59·39	−1·50	57·89	S	*I. P. W.*	4 50 44·83	−1·89	42·94	+0 45·05				
	1534	+39 13	N	*d* c + 0·2	52 27·47	−1·60	25·87	N	*d* c − 0·6	53 12·41	−1·51	10·90	45·03				
	1535	+39 28	N	b + 5·9 a + 12·5	52 31·08	−1·60	29·48	N	b − 0·3 a − 33·2	53 16·09	−1·50	14·59	45·11				
	1551	+21 25	S	*s* Q − 1·70	56 17·80	−1·53	16·27	S	*s* Q − 1·68	57 3·15	−1·78	1·37	45·10	m s +0 45·097	0·048	− 0·013	+0 45·036
	1562	+26 16	S		58 50·60	−1·54	49·06	S		59 35·87	−1·72	34·15	45·09		1	−	
	1577	+28 7	N		5 1 25·95	−1·55	24·40	N		5 2 11·28	−1·69	9·59	45·19				
	1591	+15 27	S		3 11·82	−1·50	10·32	S		3 57·29	−1·86	55·43	45·11				
				Mean, T_E	4 56 23												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.007$ $S_N - S_S = -0^s.016$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Nov.30	1228	+35 27	N	*I. P. W.*	3 51 21·97	+1·58	23·55	N	*I. P. E.*	3 52 20·49	+1·76	22·25	+0 58·70				
	1244	+ 9 40	S	d c − 2·8 b + 2·0 a +17·2	55 22·58	+1·78	24·36	S	d c − 3·9 b + 4·0 a −18·6	56 21·51	+1·56	23·07	58·71				
	1257	+21 46	S		57 46·16	+1·70	47·86	S		58 44·88	+1·66	46·54	58·68				
	1260	+21 41	S	s Q +1·68	58 24·02	+1·70	25·72	S	s Q +1·69	59 22·88	+1·66	24·54	58·82	m s +0 58·731	−0·047	−0·012	+0 58·672
	1269	+37 44	N		4 0 48·30	+1·57	49·87	N		4 1 46·86	+1·79	48·65	58·78				
	1279	+26 10	N		3 41·82	+1·67	43·49	N		4 40·55	+1·68	42·23	58·74				
			S		3 41·74	+1·67	43·41	S		4 40·50	+1·68	42·18	58·77				
	1291	+40 11	N		6 55·23	+1·54	56·77	N		7 53·61	+1·81	55·42	58·65				
				Mean, T_E	3 59 45												
Nov.30	1525	+13 20	S	*I. P. W.*	4 49 49·95	−1·60	48·35	S	*I. P. E.*	4 50 49·38	−1·79	47·59	+0 59·24				
	1534	+39 13	N	d c − 2·8 b + 2·0 a +17·2	52 18·12	−1·81	16·31	N	d c − 3·9 b + 4·0 a −18·6	53 17·27	−1·58	15·69	59·38				
	1535	+39 28	N		52 21·75	−1·81	19·94	N		53 20·89	−1·57	19·32	59·38				
	1541	+40 54	N	s Q −1·68	54 20·38	−1·82	18·56	N	s Q −1·69	55 19·50	−1·56	17·94	59·38	m s +0 59·332	−0·047	−0·010	+0 59·275
	1551	+21 25	S		56 8·44	−1·66	6·78	S		57 7·81	−1·72	6·09	59·31				
	1562	+26 16	S		58 41·21	−1·70	39·51	S		59 40·57	−1·70	38·87	59·36				
			N		58 41·21	−1·70	39·51	N		59 40·55	−1·70	38·85	59·34				
	1577	+28 7	N		5 1 16·73	−1·71	15·02	N		5 2 15·97	−1·68	14·29	59·27				
	1591	+15 27	S		3 2·46	−1·61	0·85	S		4 1·96	−1·78	0·18	59·33				
				Mean, T_E	4 56 18												
Dec. 1	1228	+35 27	N	*I. P. W.*	3 51 12·20	+1·66	13·86	N	*I. P. E.*	3 52 24·51	+1·64	26·15	+1 12·29				
	1238	+22 52	S	d c − 0·2 b + 3·0 a +20·0	53 49·60	+1·77	51·37	S	d c − 7·6 b + 2·3 a −21·3	55 2·21	+1·55	3·76	12·39				
	1244	+ 9 40	S		55 12·83	+1·87	14·70	S		56 25·57	+1·44	27·01	12·31				
	1257	+21 46	S	s Q +1·67	57 36·41	+1·78	38·19	S	s Q +1·71	58 48·93	+1·54	50·47	12·28				
	1260	+21 41	S		58 14·35	+1·78	16·13	S		59 26·95	+1·54	28·49	12·36	m s +1 12·357	−0·047	−0·013	+1 12·297
	1269	+37 44	N		4 0 38·55	+1·63	40·18	N		4 1 50·84	+1·67	52·51	12·33				
	1279	+26 10	N		3 31·98	+1·75	33·73	N		4 44·55	+1·57	46·12	12·39				
			S		3 31·98	+1·75	33·73	S		4 44·58	+1·57	46·15	12·42				
	1291	+40 11	N		6 45·34	+1·61	46·95	N		7 57·69	+1·70	59·39	12·44				
				Mean, T_E	3 58 57												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.007$, $S_N - S_S = -0^s.016$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 1	1525	+13 20	S	*I. P. W.*	4 49 40·22	−1·49	38·73	S	*I. P. E.*	4 50 53·56	−1·95	51·61	+1 12·88				
	1534	+39 13	N	d c − 0·2	52 8·39	−1·71	6·68	N	d c − 7·6	53 21·35	−1·73	19·62	12·94				
	1535	+39 28	N	b + 3·0 a + 20·0	52 12·07	−1·72	10·35	N	b + 2·3 a − 21·3	53 25·00	−1·73	23·27	12·92				
	1541	+40 54	N	s Q −1·67	54 10·63	−1·73	8·90	N	s Q −1·71	55 23·59	−1·72	21·87	12·97	m s +1 12·970			
	1551	+21 25	S		55 58·65	−1·56	57·09	S		57 11·99	−1·88	10·11	13·02				
	1562	+26 16	S		58 31·40	−1·60	29·80	S		59 44·78	−1·85	42·93	13·13				
			N		58 31·48	−1·60	29·88	N		59 44·62	−1·85	42·77	12·89				
	1577	+28 7	N		5 1 6·94	−1·61	5·33	N		5 2 20·10	−1·84	18·26	12·93				
	1591	+15 27	S		2 52·65	−1·51	51·14	S		4 6·11	−1·92	4·19	13·05				
				Mean, T_E	4 56 8												
Dec. 2	1228	+35 27	N	*I. P. W.*	3 51 2·30	+1·71	4·01	N	*I. P. E.*	3 52 28·83	+1·62	30·45	+1 26·44				
	1238	+22 52	S	d c + 2·0	53 39·58	+1·85	41·43	S	d c − 8·1	55 6·37	+1·50	7·87	26·44				
	1244	+9 40	S	b + 3·1 a + 24·1	55 2·79	+1·96	4·75	S	b + 2·2 a − 25·4	56 29·83	+1·37	31·20	26·45				
	1257	+21 46	S	s Q +1·68	57 26·35	+1·86	28·21	S	s Q +1·69	58 53·15	+1·49	54·64	26·43	m s +1 26·531			
	1260	+21 41	S		58 4·31	+1·85	6·16	S		59 31·25	+1·49	32·74	26·58				
	1269	+37 44	N		4 0 28·52	+1·69	30·21	N		4 1 55·19	+1·65	56·84	26·63				
	1279	+26 10	N		3 22·00	+1·82	23·82	N		4 48·84	+1·54	50·38	26·56				
			S		3 21·93	+1·82	23·75	S		4 48·81	+1·54	50·35	26·60				
	1291	+40 11	N		6 35·37	+1·67	37·04	N		8 2·00	+1·69	3·69	26·65				
				Mean, T_E	3 58 47												
Dec. 2	1525	+13 20	S	*I. P. W.*	4 49 30·13	−1·43	28·70	S	*I. P. E.*	4 50 57·73	−1·97	55·76	+1 27·06				
	1534	+39 13	N	d c + 2·0	51 58·47	−1·68	56·79	N	d c − 8·1	53 25·62	−1·71	23·91	27·12				
	1535	+39 28	N	b + 3·1 a + 24·1	52 2·10	−1·68	0·42	N	b + 2·2 a − 25·4	53 29·27	−1·70	27·57	27·15				
	1541	+40 54	N	s Q −1·68	53 60·64	−1·70	58·94	N	s Q −1·69	55 27·85	−1·69	26·16	27·22	m s +1 27·169			
	1551	+21 25	S		55 48·66	−1·51	47·15	S		57 16·18	−1·89	14·29	27·14				
	1562	+26 16	S		58 21·40	−1·55	19·85	S		59 48·84	−1·84	47·00	27·15				
			N		58 21·41	−1·55	19·86	N		59 48·88	−1·84	47·04	27·18				
	1577	+28 7	N		5 0 56·86	−1·56	55·30	N		5 2 24·39	−1·83	22·56	27·26				
	1591	+15 27	S		2 42·61	−1·45	41·16	S		4 10·35	−1·95	8·40	27·24				
				Mean, T_E	4 55 58												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Peral. Equations $H_N - H_S = +0^s.007$, $S_N - S_S = -0^s.016$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Nov.25	1040	+27 12	N	*I. P. E.*	3 15 57·04	+2·07	59·11	N	*I. P. W.*	3 32 25·18	+1·76	26·94	16 27·83				
	1053	+20 23	S	d c − 2·4 b + 4·2 a + 8·1 s Q + 2·02	18 27·80	+2·08	29·88	S	d c + 5·4 b − 2·8 a −18·8 s Q + 1·69	34 56·08	+1·70	57·78	27·90	m s 16 27·865	+ 0·108	− 0·011	16 27·962
Nov.25	1114	+15 2	S	*I. P. E.*	3 32 4·27	−1·94	2·33	S	*I. P. W.*	3 48 31·79	−1·72	30·07	16 27·74				
	1123	+37 12	N	d c − 2·4 b + 4·2 a + 8·1 s Q −2·02	34 21·39	−2·01	19·38	N	d c + 5·4 b − 2·8 a −18·8 s Q −1·69	50 48·71	−1·53	47·18	27·80	m s 16 27·750	+ 0·108	− 0·013	16 27·845
	1132	+33 35	N		35 48·10	−2·00	46·10	N		52 15·39	−1·56	13·83	27·73				
	1138	+31 55	N		37 49·33	−1·99	47·34	N		54 16·71	−1·58	15·13	27·79				
	1151	+24 6	N		39 5·00	−1·97	3·03	S		55 32·47	−1·64	30·83	27·80				
	1154	+24 0	N		39 42·28	−1·97	40·31	S		56 9·70	−1·64	8·06	27·75				
	1166	+23 44	S		41 22·15	−1·97	20·18	S		57 49·53	−1·65	47·88	27·70				
	1192	+25 13	S		44 7·31	−1·97	5·34	S		60 34·67	−1·64	33·03	27·69				
Nov.28	953	+38 23	N	*I. P. E.*	2 57 59·52	+1·69	61·21	N	*I. P. W.*	3 14 26·94	+1·91	28·85	16 27·64				
	963	+40 30	N	d c − 1·1 b + 4·3 a +11·4 s Q +1·67	3 0 52·14	+1·68	53·82	N	d c + 1·8 b − 0·7 a −31·7 s Q +1·70	17 19·53	+1·95	21·48	27·66	m s 16 27·512	+ 0·108	− 0·013	16 27·607
	999	+20 36	S		8 29·12	+1·77	30·89	S		24 56·80	+1·63	58·43	27·54				
	1017	+33 47	N		11 43·44	+1·72	45·16	N		28 10·88	+1·83	12·71	27·55				
	1029	+25 14	S		13 48·01	+1·76	49·77	S		30 15·52	+1·70	17·22	27·45				
	1040	+27 12	S		15 29·04	+1·75	30·79	S		31 56·52	+1·73	58·25	27·46				
			N		15 29·06	+1·75	30·81	N		31 56·48	+1·73	58·21	27·40				
	1053	+20 23	S		17 59·86	+1·77	61·63	S		34 27·41	+1·63	29·04	27·41				
	1069	+22 24	S		21 54·65	+1·76	56·41	S		38 22·25	+1·66	23·91	27·50				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.007$, $\delta_N - \delta_S = -0^s.016$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Nov.28	1114	+15 2	S	*I. P. E.*	3 31 35·56	−1·55	34·01	S	*I. P. W.*	3 48 3·23	−1·84	1·39	16 27·38				
	1123	+37 12	N	d c − 1·1 b + 4·3 a +11·4	33 52·72	−1·64	51·08	N	d c + 1·8 b − 0·7 a −31·7	50 20·07	−1·51	18·56	27·48				
	1132	+33 35	N		35 19·43	−1·62	17·81	N		51 46·86	−1·57	45·29	27·48				
	1138	+31 55	N	s Q −1·67	37 20·70	−1·62	19·08	N	s Q −1·70	53 48·11	−1·60	46·51	27·43	m s 16 27·413	+ 0·108	− 0·013	16 27·508
	1151	+24 6	N		38 36·30	−1·58	34·72	S		55 3·83	−1·71	2·12	27·40				
	1154	+24 0	N		39 13·61	−1·58	12·03	S		55 41·07	−1·71	39·36	27·33				
	1166	+23 44	S		40 53·42	−1·58	51·84	S		57 20·94	−1·72	19·22	27·38				
	1192	+25 13	S		43 38·53	−1·58	36·95	S		60 6·07	−1·70	4·37	27·42				
Nov.29	953	+38 23	N	*I. P. E.*	2 57 50·02	+1·81	51·83	N	*I. P. W.*	3 14 17·61	+1·84	19·45	16 27·62				
	963	+40 30	N	d c + 0·2 b + 5·9 a +12·5	3 0 42·64	+1·79	44·43	N	d c − 0·6 b − 0·3 a −33·2	17 10·26	+1·88	12·14	27·71				
	999	+20 36	S		8 19·73	+1·87	21·60	S		24 47·48	+1·57	49·05	27·45				
	1017	+33 47	N	s Q +1·70	11 33·89	+1·83	35·72	N	s Q +1·68	28 1·52	+1·75	3·27	27·55				
	1029	+25 14	S		13 38·50	+1·87	40·37	S		30 6·25	+1·62	7·87	27·50	m s 16 27·546	+ 0·106	− 0·013	16 27·639
	1040	+27 12	S		15 19·55	+1·86	21·41	S		31 47·22	+1·65	48·87	27·46				
			N		15 19·42	+1·86	21·28	N		31 47·21	+1·65	48·86	27·58				
	1053	+20 23	S		17 50·31	+1·87	52·18	S		34 18·15	+1·57	19·72	27·54				
	1069	+22 24	S		21 45·22	+1·86	47·08	S		38 12·99	+1·59	14·58	27·50				
Nov.29	1114	+15 2	S	*I. P. E.*	3 31 26·13	−1·51	24·62	S	*I. P. W.*	3 47 53·93	−1·86	52·07	16 27·45				
	1123	+37 12	N	d c + 0·2 b + 5·9 a +12·5	33 43·25	−1·59	41·66	N	d c − 0·6 b − 0·3 a −33·2	50 10·68	−1·55	9·13	27·47				
	1132	+33 35	N		35 9·95	−1·57	8·38	N		51 37·46	−1·61	35·85	27·47				
	1138	+31 55	N	s Q −1·70	37 11·18	−1·56	9·62	N	s Q −1·68	53 38·73	−1·64	37·09	27·47	m s 16 27·478	+ 0·106	− 0·013	16 27·571
	1151	+24 6	N		38 26·84	−1·52	25·32	S		54 54·55	−1·75	52·80	27·48				
	1154	+24 0	N		39 4·06	−1·52	2·54	S		55 31·81	−1·75	30·06	27·52				
	1166	+23 44	S		40 43·98	−1·53	42·45	S		57 11·68	−1·76	9·92	27·47				
	1192	+25 13	S		43 29·09	−1·53	27·56	S		59 56·79	−1·74	55·05	27·49				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s: AND AGRA (W) *Lat.* 27° 10′, *Long.* 5h 12m 14s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.007$, $S_N - S_S = -0^s.016$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Nov. 30	953	+38 23	N	*I. P. W.*	2 57 40·70	+1·56	42·26	N	*I. P. E.*	3 14 8·37	+1·79	10·16	16 27·90				
	963	+40 30	N	d c − 2·8 b + 2·0 a + 17·2	3 0 33·38	+1·54	34·92	N	d c − 3·9 b + 4·0 a − 18·6	17 1·09	+1·82	2·91	27·99				
	999	+20 36	S		8 10·34	+1·70	12·04	S		24 38·38	+1·65	40·03	27·99				
	1017	+33 47	N	s Q +1·68	11 24·62	+1·59	26·21	N	s Q +1·69	27 52·36	+1·75	54·11	27·90	m s 16 27·921	+ 0·107	− 0·012	16 28·016
	1029	+25 14	S		13 29·21	+1·67	30·88	S		29 57·04	+1·68	58·72	27·84				
	1040	+27 12	S		15 10·21	+1·66	11·87	S		31 38·05	+1·69	39·74	27·87				
			N		15 10·22	+1·66	11·88	N		31 38·09	+1·69	39·78	27·90				
	1053	+20 23	S		17 41·00	+1·70	42·70	S		34 9·03	+1·65	10·68	27·98				
Nov. 30	1114	+15 2	S	*I. P. W.*	3 31 16·73	−1·61	15·12	S	*I. P. E.*	3 47 45·02	−1·78	43·24	16 28·12				
	1123	+37 12	N	d c − 2·8 b + 2·0 a + 17·2	33 33·99	−1·79	32·20	N	d c − 3·9 b + 4·0 a − 18·6	50 1·94	−1·60	0·34	28·14				
	1132	+33 35	N		34 60·73	−1·77	58·96	N		51 28·70	−1·63	27·07	28·11				
	1138	+31 55	N	s Q −1·68	37 1·94	−1·74	0·20	N	s Q −1·69	53 29·91	−1·64	28·27	28·07	m s 16 28·113	+ 0·107	− 0·014	16 28·206
	1151	+24 6	S		38 17·48	−1·68	15·80	S		54 45·63	−1·71	43·92	28·12				
	1154	+24 0	S		38 54·72	−1·68	53·04	S		55 22·88	−1·71	21·17	28·13				
	1166	+23 44	S		40 34·70	−1·68	33·02	S		57 2·79	−1·72	1·07	28·05				
	1192	+25 13	S		43 19·79	−1·69	18·10	S		59 47·96	−1·70	46·26	28·16				
Dec. 1	963	+40 30	N	*I. P. W.*	3 0 23·71	+1·61	25·32	N	*I. P. E.*	3 16 51·45	+1·69	53·14	16 27·82				
	1017	+33 47	N	d c − 0·2 b + 3·0 a + 20·0	11 14·94	+1·67	16·61	N	d c − 7·6 b + 2·3 a − 21·3	27 42·95	+1·63	44·58	27·97				
	1029	+25 14	S		13 19·50	+1·74	21·24	S		29 47·65	+1·56	49·21	27·97				
	1040	+27 12	S	s Q +1·67	15 0·48	+1·74	2·22	S	s Q +1·71	31 28·60	+1·58	30·18	27·96	m s 16 27·934	+ 0·112	− 0·013	16 28·033
			N		15 0·50	+1·74	2·24	N		31 28·53	+1·58	30·11	27·87				
	1053	+20 23	S		17 31·29	+1·79	33·08	S		33 59·56	+1·52	61·08	28·00				
	1069	+22 24	S		21 26·13	+1·78	27·91	S		37 54·31	+1·55	55·86	27·95				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*; AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl Equations $H_N - H_S = +0^s.007$ $S_N - S_S = -0^s.016$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 1	1114	+15 2	S	*I. P. W.*	3 31 6·99	−1·50	5·49	S	*I. P. E.*	3 47 35·45	−1·93	33·52	16 28·03				
	1123	+37 12	N	*d* c − 0·2 b + 3·0 *a* +20·0	33 24·31	−1·70	22·61	N	*d* c − 7·6 b + 2·3 *a* −21·3	49 52·24	−1·76	50·48	27·87				
	1132	+33 35	N		34 50·99	−1·66	49·33	N		51 18·94	−1·80	17·14	27·81				
	1138	+31 55	N	*s* *Q* −1·67	36 52·16	−1·65	50·51	N	*s* *Q* −1·71	53 20·23	−1·80	18·43	27·92	m s 16 27·919	+ 0·112	− 0·014	16 28·017
	1151	+24 6	S		38 7·85	−1·59	6·26	S		54 35·98	−1·87	34·11	27·85				
	1154	+24 0	S		38 45·11	−1·59	43·52	S		55 13·32	−1·87	11·45	27·93				
	1166	+23 44	S		40 24·94	−1·58	23·36	S		56 53·20	−1·87	51·33	27·97				
	1192	+25 13	S		43 10·08	−1·60	8·48	S		59 38·31	−1·86	36·45	27·97				
Dec. 2	953	+38 23	N	*I. P. W.*	2 57 21·05	+1·69	22·74	N	*I. P. E.*	3 13 48·94	+1·66	50·60	16 27·86				
	963	+40 30	N	*d* c + 2·0 b + 3·1 *a* +24·1	3 0 13·68	+1·66	15·34	N	*d* c − 8·1 b + 2·2 *a* −25·4	16 41·63	+1·68	43·31	27·97				
	999	+20 36	S		7 50·55	+1·86	52·41	S		24 18·82	+1·48	20·30	27·89				
	1017	+33 47	N	*s* *Q* +1·68	11 4·89	+1·73	6·62	N	*s* *Q* +1·69	27 33·00	+1·61	34·61	27·99	m s 16 27·939	+ 0·113	− 0·013	16 28·039
	1029	+25 14	S		13 9·38	+1·83	11·21	S		29 37·68	+1·52	39·20	27·99				
	1040	+27 12	S		14 50·37	+1·81	52·18	S		31 18·64	+1·55	20·19	28·01				
			N		14 50·44	+1·81	52·25	N		31 18·63	+1·55	20·18	27·93				
	1053	+20 23	S		17 21·25	+1·86	23·11	S		33 49·53	+1·48	51·01	27·90				
	1069	+22 24	S		21 16·10	+1·85	17·95	S		37 44·36	+1·50	45·86	27·91				
Dec. 2	1114	+15 2	S	*I. P. W.*	3 30 56·93	−1·44	55·49	S	*I. P. E.*	3 47 25·46	−1·95	23·51	16 28·02				
	1123	+37 12	N	*d* c + 2·0 b + 3·1 *a* +24·1	33 14·27	−1·65	12·62	N	*d* c − 8·1 b + 2·2 *a* −25·4	49 42·36	−1·74	40·62	28·00				
	1132	+33 35	N		34 41·01	−1·63	39·38	N		51 9·08	−1·77	7·31	27·93				
	1138	+31 55	N	*s* *Q* −1·68	36 42·21	−1·61	40·60	N	*s* *Q* −1·69	53 10·34	−1·78	8·56	27·96	m s 16 27·965	+ 0·113	− 0·014	16 28·064
	1151	+24 6	S		37 57·74	−1·52	56·22	S		54 26·08	−1·87	24·21	27·99				
	1154	+24 0	S		38 35·06	−1·52	33·54	S		55 3·34	−1·87	1·47	27·93				
	1166	+23 44	S		40 14·95	−1·52	13·43	S		56 43·27	−1·88	41·39	27·96				
	1192	+25 13	S		42 60·10	−1·53	58·57	S		59 28·36	−1·86	26·50	27·93				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns for Persl. Equations $H_N - H_S = +0^s.007$ $S_N - S_S = -0^s.016$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Nov.25	1620	+22 9	S	*I. P. E.*	4 52 34·50	+2·08	36·58	S	*I. P. W.*	5 9 2·86	+1·71	4·57	16 27·99				
	1629	+33 38	N	*d* c − 2·4 b + 4·2 a + 8·1	54 45·67	+2·04	47·71	N	*d* c + 5·4 b − 2·8 a −18·8	11 13·93	+1·82	15·75	28·04				
	1632	+33 37	N		55 26·86	+2·04	28·90	N		11 55·06	+1·82	56·88	27·98				
	1648	+27 50	N	*s* Q +2·02	57 47·35	+2·07	49·42	N	*s* Q +1·69	14 15·63	+1·77	17·40	27·98	m s 16 28·002	0·047	−0·010	16 27·945
			S		57 47·33	+2·07	49·40	S		14 15·66	+1·77	17·43	28·03				
	1663	+37 16	N		5 0 50·80	+2·03	52·83	N		17 18·94	+1·85	20·79	27·96				
	1681	+28 30	N		3 2·41	+2·06	4·47	N		19 30·73	+1·77	32·50	28·03				
	1701	+15 46	S		5 11·12	+2·10	13·22	S		21 39·52	+1·66	41·18	27·96				
	1711	+20 27	S		7 26·50	+2·08	28·58	S		23 54·93	+1·70	56·63	28·05				
Nov.25	1746	+27 35	S	*I. P. E.*	5 12 47·85	−1·97	45·88	S	*I. P. W.*	5 29 15·32	−1·62	13·70	16 27·82				
			N	*d* c − 2·4 b + 4·2 a + 8·1	12 47·79	−1·97	45·82	N	*d* c + 5·4 b − 2·8 a −18·8	29 15·27	−1·62	13·65	27·83				
	1768	+30 25	N		15 20·07	−1·98	18·09	N		31 47·65	−1·59	46·06	27·97				
	1792	+16 28	S	*s* Q −2·02	18 44·90	−1·95	42·95	S	*s* Q −1·69	35 12·53	−1·71	10·82	27·87	m s 16 27·879	0·047	−0·010	16 27·822
	1805	+14 7	S		20 32·61	−1·95	30·66	S		36 60·31	−1·73	58·58	27·92				
	1811	+18 39	S		22 32·14	−1·95	30·19	S		38 59·81	−1·70	58·11	27·92				
	1824	+39 30	N		24 56·39	−2·02	54·37	N		41 23·71	−1·49	22·22	27·85				
	1830	+39 8	N		25 16·87	−2·02	14·85	N		41 44·22	−1·50	42·72	27·87				
	1845	+39 7	N		27 35·64	−2·02	33·62	N		44 2·98	−1·50	1·48	27·86				
Nov.28	1620	+22 9	S	*I. P. E.*	4 52 47·51	+1·76	49·27	S	*I. P. W.*	5 9 15·19	+1·65	16·84	16 27·57				
	1629	+33 38	N	*d* c − 1·1 b + 4·3 a +11·4	54 58·71	+1·72	60·43	N	*d* c + 1·8 b − 0·7 a −31·7	11 26·20	+1·83	28·03	27·60				
	1632	+33 37	N		55 39·86	+1·72	41·58	N		12 7·44	+1·83	9·27	27·69				
	1648	+27 50	N	*s* Q +1·67	58 0·36	+1·74	2·10	N	*s* Q +1·70	14 27·92	+1·74	29·66	27·56	m s 16 27·606	0·047	−0·012	16 27·547
			S		58 0·33	+1·74	2·07	S		14 27·94	+1·74	29·68	27·61				
	1681	+28 30	N		5 3 15·55	+1·74	17·29	N		19 43·14	+1·75	44·89	27·60				
	1701	+15 46	S		5 24·12	+1·79	25·91	S		21 51·90	+1·57	53·47	27·56				
	1711	+20 27	S		7 39·51	+1·77	41·28	S		24 7·31	+1·63	8·94	27·66				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.007$ $S_N - S_S = -0^s.016$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Nov.28	1746	+27 35	S	*I. P. E.*	5 12 60·10	−1·59	58·51	S	*I. P. W.*	5 29 27·78	−1·66	26·12	16 27·61				
	1768	+30 25	N	*d* c − 1·1 b + 4·3 *a* +11·4	15 32·50	−1·61	30·89	N	*d* c + 1·8 b − 0·7 *a* −31·7	31 60·05	−1·62	58·43	27·54				
	1792	+16 28	S		18 57·15	−1·55	55·60	S		35 25·03	−1·82	23·21	27·61				
	1805	+14 7	S	*s* *Q* −1·67	20 44·89	−1·54	43·35	S	*s* *Q* −1·70	37 12·78	−1·85	10·93	27·58	m s 16 27·601	0·047	0·010	16 27·544
	1824	+39 30	N		25 8·72	−1·65	7·07	N		41 36·10	−1·47	34·63	27·56		—	—	
	1830	+39 8	N		25 29·20	−1·65	27·55	N		41 56·64	−1·48	55·16	27·61				
	1845	+39 7	N		27 47·88	−1·65	46·23	N		44 15·41	−1·48	13·93	27·70				
Nov.29	1620	+22 9	S	*I. P. E.*	4 52 51·50	+1·86	53·36	S	*I. P. W.*	5 9 19·38	+1·59	20·97	16 27·61				
	1629	+33 38	N	*d* c + 0·2 b + 5·9 *a* +12·5	55 2·67	+1·83	4·50	N	*d* c − 0·6 b − 0·3 *a* −33·2	11 30·28	+1·75	32·03	27·53				
	1632	+33 37	N		55 43·85	+1·83	45·68	N		12 11·45	+1·75	13·20	27·52				
	1648	+27 50	N	*s* *Q* +1·70	58 4·34	+1·85	6·19	N	*s* *Q* +1·68	14 32·06	+1·66	33·72	27·53	m s 16 27·530	0·048	0·010	16 27·472
			S		58 4·38	+1·85	6·23	S		14 32·07	+1·66	33·73	27·50				
	1663	+37 16	N		5 1 7·76	+1·81	9·57	N		17 35·38	+1·81	37·19	27·62		—	—	
	1681	+28 30	N		3 19·45	+1·85	21·30	N		19 47·16	+1·67	48·83	27·53				
	1701	+15 46	S		5 28·13	+1·90	30·03	S		21 55·98	+1·51	57·49	27·46				
	1711	+20 27	S		7 43·58	+1·87	45·45	S		24 11·35	+1·57	12·92	27·47				
Nov.29	1746	+27 35	S	*I. P. E.*	5 13 4·00	−1·55	2·45	S	*I. P. W.*	5 29 31·88	−1·70	30·18	16 27·73				
			N	*d* c + 0·2 b + 5·9 *a* +12·5	13 4·03	−1·55	2·48	N	*d* c − 0·6 b − 0·3 *a* −33·2	29 31·89	−1·70	30·19	27·71				
	1768	+30 25	N		15 36·39	−1·56	34·83	N		32 4·16	−1·66	2·50	27·67				
	1792	+16 28	S	*s* *Q* −1·70	18 6·28	−1·51	59·77	S	*s* *Q* −1·68	35 29·18	−1·85	27·33	27·56	m s 16 27·645	0·048	0·012	16 27·585
	1805	+14 7	S		20 48·92	−1·51	47·41	S		37 16·90	−1·88	15·02	27·61		—	—	
	1811	+18 39	S		22 48·51	−1·52	46·99	S		39 16·43	−1·82	14·61	27·62				
	1824	+39 30	N		25 12·68	−1·60	11·08	N		41 40·24	−1·50	38·74	27·66				
	1845	+39 7	N		27 51·97	−1·60	50·37	N		44 19·48	−1·51	17·97	27·60				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.007$, $S_N - S_S = -0^s.016$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Nov. 30	1620	+22 9	S	*I. P. W.*	4 52 55·59	+1·69	57·28	S	*I. P. E.*	5 9 24·07	+1·66	25·73	16 28·45				
	1629	+33 38	N	*d* c − 2·8 b + 2·0 *a* +17·2	55 6·88	+1·59	8·47	N	*d* c − 3·9 b + 4·0 *a* −18·6	11 35·20	+1·75	36·95	28·48				
	1632	+33 37	N		55 48·00	+1·59	49·59	N		12 16·33	+1·75	18·08	28·49				
	1648	+27 50	N	*s* *Q* +1·68	58 8·50	+1·65	10·15	N	*s* *Q* +1·69	14 36·86	+1·70	38·56	28·41	m s 16 28·429	− 0·047	− 0·010	16 28·372
			S		58 8·48	+1·65	10·13	S		14 36·84	+1·70	38·54	28·41				
	1663	+37 16	N		5 1 12·06	+1·57	13·63	N		17 40·26	+1·78	42·04	28·41				
	1681	+28 30	N		3 23·67	+1·65	25·32	N		19 52·02	+1·70	53·72	28·40				
	1701	+15 46	S		5 32·22	+1·75	33·97	S		22 0·72	+1·60	2·32	28·35				
	1711	+20 27	S		7 47·68	+1·70	49·38	S		24 16·19	+1·65	17·84	28·46				
Nov. 30	1746	+27 35	S	*I. P. W.*	5 13 8·33	−1·71	6·62	S	*I. P. E.*	5 29 36·68	−1·69	34·99	16 28·37				
			N	*d* c − 2·8 b + 2·0 *a* +17·2	13 8·31	−1·71	6·60	N	*d* c − 3·9 b + 4·0 *a* −18·6	29 36·66	−1·69	34·97	28·37				
	1768	+30 25	N		15 40·72	−1·73	38·99	N		32 8·95	−1·66	7·29	28·30				
	1792	+16 28	S	*s* *Q* −1·68	19 5·39	−1·62	3·77	S	*s* *Q* −1·69	35 33·92	−1·77	32·15	28·38	m s 16 28·388	− 0·047	− 0·010	16 28·331
	1805	+14 7	S		20 53·08	−1·60	51·48	S		37 21·58	−1·79	19·79	28·31				
	1811	+18 39	S		22 52·65	−1·64	51·01	S		39 21·16	−1·76	19·40	28·39				
	1824	+39 30	N		25 16·96	−1·81	15·15	N		41 45·22	−1·57	43·65	28·50				
	1830	+39 8	N		25 37·50	−1·81	35·69	N		42 5·65	−1·58	4·07	28·38				
	1845	+39 7	N		27 56·18	−1·81	54·37	N		44 24·44	−1·58	22·86	28·49				
Dec. 1	1620	+22 9	S	*I. P. W.*	4 52 59·66	+1·78	61·44	S	*I. P. E.*	5 9 28·21	+1·55	29·76	16 28·32				
	1629	+33 38	N	*d* c − 0·2 b + 3·0 *a* +20·0	55 10·95	+1·68	12·63	N	*d* c − 7·6 b + 2·3 *a* −21·3	11 39·25	+1·62	40·87	28·24				
	1632	+33 37	N		55 52·10	+1·68	53·78	N		12 20·42	+1·62	22·04	28·26				
	1648	+27 50	N	*s* *Q* +1·67	58 12·52	+1·73	14·25	N	*s* *Q* +1·71	14 40·91	+1·59	42·50	28·25	m s 16 28·296	− 0·047	− 0·012	16 28·237
			S		58 12·52	+1·73	14·25	S		14 40·97	+1·59	42·56	28·31				
	1681	+28 30	N		5 3 27·64	+1·72	29·36	N		19 56·04	+1·58	57·62	28·26				
	1701	+15 46	S		5 36·19	+1·83	38·02	S		22 4·87	+1·49	6·36	28·34				
	1711	+20 27	S		7 51·64	+1·79	53·43	S		24 20·30	+1·52	21·82	28·39				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Pers. Equations $H_N - H_S = +0^s.007$, $S_N - S_S = -0^s.016$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
		° ′			h m s	s	s			h m s	s	s	m s				
1881																	
Dec. 1	1746	+27 35	S	*I. P. W.*	5 13 12·23	−1·61	10·62	S	*I. P. E.*	5 29 40·80	−1·84	38·96	16 28·34				
			N	*d* c − 0·2 b + 3·0 *a* + 20·0	13 12·25	−1·61	10·64	N	*d* c − 7·6 b + 2·3 *a* −21·3	29 40·72	−1·84	38·88	28·24				
	1768	+30 25	N		15 44·58	−1·63	42·95	N		32 13·06	−1·82	11·24	28·29				
	1792	+16 28	S	*s* *Q* −1·67	19 9·34	−1·52	7·82	S	*s* *Q* −1·71	35 38·06	−1·92	36·14	28·32				
	1805	+14 7	S		20 57·00	−1·50	55·50	S		37 25·72	−1·94	23·78	28·28	*m s* 16 28·287	0·047	0·010	16 28·230
	1811	+18 39	S		22 56·63	−1·53	55·10	S		39 25·26	−1·91	23·35	28·25		−	−	
	1824	+39 30	N		25 20·90	−1·72	19·18	N		41 49·22	−1·73	47·49	28·31				
	1830	+39 8	N		25 41·36	−1·72	39·64	N		42 9·68	−1·73	7·95	28·31				
	1845	+39 7	N		27 60·18	−1·72	58·46	N		44 28·43	−1·73	26·70	28·24				
Dec. 2	1620	+22 9	S	*I. P. W.*	4 53 3·75	+1·86	5·61	S	*I. P. E.*	5 9 32·42	+1·50	33·92	16 28·31				
	1629	+33 38	N	*d* c + 2·0 b + 3·1 *a* + 24·1	55 15·03	+1·73	16·76	N	*d* c − 8·1 b + 2·2 *a* −25·4	11 43·53	+1·61	45·14	28·38				
	1632	+33 37	N		55 56·17	+1·73	57·90	N		12 24·66	+1·61	26·27	28·37				
	1648	+27 50	N	*s* *Q* +1·68	58 16·62	+1·80	18·42	N	*s* *Q* +1·69	14 45·22	+1·56	46·78	28·36				
			S		58 16·64	+1·80	18·44	S		14 45·16	+1·56	46·72	28·28	*m s* 16 28·341	0·048	0·010	16 28·283
	1663	+37 16	N		5 1 20·16	+1·71	21·87	N		17 48·57	+1·64	50·21	28·34		−	−	
	1681	+28 30	N		3 31·80	+1·79	33·59	N		20 0·38	+1·56	1·94	28·35				
	1701	+15 46	S		5 40·33	+1·91	42·24	S		22 9·11	+1·43	10·54	28·30				
	1711	+20 27	S		7 55·76	+1·86	57·62	S		24 24·52	+1·48	26·00	28·38				
Dec. 2	1746	+27 35	S	*I. P. W.*	5 13 16·38	−1·56	14·82	S	*I. P. E.*	5 29 45·02	−1·82	43·20	16 28·38				
			N	*d* c + 2·0 b + 3·1 *a* + 24·1	13 16·48	−1·56	14·92	N	*d* c − 8·1 b + 2·2 *a* −25·4	29 45·00	−1·82	43·18	28·26				
	1768	+30 25	N		15 48·78	−1·59	47·19	N		32 17·36	−1·80	15·56	28·37				
	1792	+16 28	S	*s* *Q* −1·68	19 13·46	−1·46	12·00	S	*s* *Q* −1·69	35 42·26	−1·94	40·32	28·32				
	1805	+14 7	S		20 61·14	−1·44	59·70	S		37 30·01	−1·96	28·05	28·35	*m s* 16 28·343	0·048	0·010	16 28·285
	1811	+18 39	S		22 60·77	−1·48	59·29	S		39 29·48	−1·92	27·56	28·27		−	−	
	1824	+39 30	N		25 25·09	−1·68	23·41	N		41 53·51	−1·70	51·81	28·40				
	1830	+39 8	N		25 45·54	−1·68	43·86	N		42 13·97	−1·71	12·26	28·40				
	1845	+39 7	N		28 4·36	−1·68	2·68	N		44 32·73	−1·71	31·02	28·34				

NOTE. $1^d = 0^s.0225$ Transcribing Equation *nil*, all records having been transcribed by the same person.
* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.023$ $S_N - S_S = -0^s.001$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 12	1620	+22 9	S	*I. P. W.*	5 9 27·97	−0·65	27·32	S	*I. P. W.*	5 10 13·98	−1·75	12·23	+0 44·91				
	1629	+33 38	N	*d* c + 0·4 b + 5·5 a + 5·8	11 39·12	−0·66	38·46	N	*d* c + 0·8 b − 2·5 a + 16·4	12 25·26	−1·85	23·41	44·95				
	1632	+33 37	N		12 20·29	−0·66	19·63	N		13 6·39	−1·85	4·54	44·91				
	1648	+27 50	N	*s* Q − 0·80	14 40·76	−0·65	40·11	N	*s* Q − 1·72	15 26·75	−1·79	24·96	44·85	m s +0 44·955	+ 0·048	− 0·009	+0 44·994
	1663	+37 16	N		17 44·15	−0·67	43·48	N		18 30·42	−1·88	28·54	45·06				
	1681	+28 30	N		19 55·75	−0·65	55·10	N		20 41·98	−1·80	40·18	45·08				
	1701	+15 46	S		22 4·37	−0·63	3·74	S		22 50·40	−1·71	48·69	44·95				
	1711	+20 27	S		24 19·89	−0·64	19·25	S		25 5·92	−1·74	4·18	44·93				
				Mean, T_E	5 16 32												
Dec. 13	1528	+24 52	S	*I. P. W.*	4 51 49·53	+0·93	50·46	S	*I. P. W.*	4 52 36·90	+1·70	38·60	+0 48·14				
			N	*d* c − 1·1 b + 6·3 a + 11·3	51 49·45	+0·93	50·38	N	*d* c − 0·1 b + 1·0 a + 33·5	52 36·79	+1·70	38·49	48·11				
	1551	+21 25	S		56 55·81	+0·93	56·74	S		57 43·18	+1·74	44·92	48·18	m s +0 48·208	+ 0·049	− 0·012	+0 48·245
	1562	+26 16	N	*s* Q + 0·79	59 28·50	+0·92	29·42	N	*s* Q + 1·70	5 0 15·98	+1·68	17·66	48·24				
	1577	+28 7	N		5 2 3·99	+0·91	4·90	N		2 51·55	+1·66	53·21	48·31				
	1591	+15 27	S		3 49·78	+0·95	50·73	S		4 37·18	+1·82	39·00	48·27				
				Mean, T_E	4 57 40												
Dec. 13	1620	+22 9	S	*I. P. W.*	5 9 16·81	−0·65	16·16	S	*I. P. W.*	5 10 6·10	−1·67	4·43	+0 48·27				
	1629	+33 38	N	*d* c − 1·1 b + 6·3 a + 11·3	11 27·98	−0·69	27·29	N	*d* c − 0·1 b + 1·0 a + 33·5	12 17·50	−1·83	15·67	48·38				
	1632	+33 37	N		12 9·06	−0·69	8·37	N		12 58·64	−1·83	56·81	48·44				
	1648	+27 50	N	*s* Q − 0·79	14 29·62	−0·67	28·95	N	*s* Q − 1·70	15 18·97	−1·74	17·23	48·28	m s +0 48·345	+ 0·049	− 0·009	+0 48·385
	1663	+37 16	N		17 33·10	−0·70	32·40	N		18 22·64	−1·90	20·74	48·34				
	1681	+28 30	N		19 44·75	−0·67	44·08	N		20 34·15	−1·75	32·40	48·32				
	1701	+15 46	S		21 53·28	−0·63	52·65	S		22 42·55	−1·58	40·97	48·32				
	1711	+20 27	S		24 8·69	−0·64	8·05	S		24 58·10	−1·64	56·46	48·41				
				Mean, T_E	5 16 20												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Peral. Equations $H_N - H_S = +0^s.023$ $S_N - S_S = -0^s.001$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 14	1528	+24 52	S N	*I. P. W.* *d* c − 1·5 b − 2·0 *a* +14·2	4 51 38·39 51 38·36	+0·73 +0·73	39·12 39·09	S N	*I. P. W.* *d* c + 0·7 b + 0·6 *a* +43·0	4 52 28·61 52 28·60	+1·68 +1·68	30·29 30·28	+0 51·17 51·19				
	1534	+39 13	N		52 54·41	+0·62	55·03	N		53 44·93	+1·38	46·31	51·28				
	1535	+39 28	N	*s* *Q* +0·81	52 58·01	+0·62	58·63	N	*s* *Q* +1·68	53 48·60	+1·37	49·97	51·34	m s +0 51·249	+0·052	−0·008	
	1541	+40 54	N		54 56·60	+0·60	57·20	N		55 47·20	+1·33	48·53	51·33				
	1551	+21 25	S		56 44·67	+0·75	45·42	S		57 34·89	+1·74	36·63	51·21		+	−	+0 51·293
	1562	+26 16	N		59 17·39	+0·72	18·11	N		5 0 7·72	+1·66	9·38	51·27				
	1577	+28 7	N		5 1 52·89	+0·71	53·60	N		2 43·23	+1·63	44·86	51·26				
	1591	+15 27	S		3 38·67	+0·80	39·47	S		4 28·82	+1·84	30·66	51·19				
				Mean, T_E	4 56 11												
Dec. 14	1620	+22 9	S	*I. P. W.*	5 9 5·75	−0·87	4·88	S	*I. P. W.*	5 9 57·77	−1·63	56·14	+0 51·26				
	1629	+33 38	N	*d* c − 1·5 b − 2·0 *a* +14·2	11 16·97	−0·95	16·02	N	*d* c + 0·7 b + 0·6 *a* +43·0	12 9·28	−1·85	7·43	51·41				
	1632	+33 37	N		11 58·13	−0·95	57·18	N		12 50·41	−1·85	48·56	51·38				
	1648	+27 50	N	*s* *Q* −0·81	14 18·56	−0·91	17·65	N	*s* *Q* −1·68	15 10·79	−1·73	9·06	51·41	m s +0 51·386	+0·052	−0·009	
	1663	+37 16	N		17 22·03	−0·98	21·05	N		18 14·45	−1·94	12·51	51·46				
	1681	+28 30	N		19 33·65	−0·91	32·74	N		20 25·85	−1·74	24·11	51·37		+	−	+0 51·429
	1701	+15 46	S		21 42·16	−0·83	41·33	S		22 34·22	−1·52	32·70	51·37				
	1711	+20 27	S		23 57·59	−0·86	56·73	S		24 49·76	−1·60	48·16	51·43				
				Mean, T_E	5 16 9												
Dec. 16	1528	+24 52	S	*I. P. E.*	4 51 14·71	+1·24	15·95	S	*I. P. E.*	4 52 11·85	+0·87	12·72	+0 56·77				
	1534	+39 13	N	*d* c − 0·5 b + 1·6 *a* − 3·3	52 30·64	+1·27	31·91	N	*d* c −22·6 b − 8·9 *a* +34·9	53 28·31	+0·49	28·80	56·89				
	1541	+40 54	N		54 32·84	+1·26	34·10	N		55 30·49	+0·44	30·93	56·83				
	1551	+21 25	S	*s* *Q* +1·21	56 21·13	+1·23	22·36	S	*s* *Q* +1·68	57 18·08	+0·95	19·03	56·67	m s +0 56·751	+0·054	−0·010	
	1562	+26 16	N		58 53·82	+1·24	55·06	N		59 50·97	+0·84	51·81	56·75		+	−	+0 56·795
	1577	+28 7	N		5 1 29·38	+1·24	30·62	N		5 2 26·51	+0·78	27·29	56·67				
	1591	+15 27	S		3 15·19	+1·22	16·41	S		4 12·03	+1·06	13·09	56·68				
				Mean, T_E	4 56 54												

NOTE. $1^d = 0^s.0235$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.023$ $S_N - S_S = -0^s.001$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec.16	1620	+22 9	S	*I. P. E.*	5 8 43·06	−1·19	41·87	S	*I. P. E.*	5 9 41·02	−2·43	38·59	+0 56·72				
	1629	+33 38	N	*d* c − 0·5 b + 1·6 *a* − 3·3	10 54·23	−1·17	53·06	N	*d* c −22·6 b − 8·9 *a* +34·9	11 52·46	−2·70	49·76	56·70				
	1632	+33 37	N		11 35·38	−1·17	34·21	N		12 33·70	−2·70	31·00	56·79				
	1648	+27 50	N	*s* *Q* − 1·21	13 55·83	−1·18	54·65	N	*s* *Q* − 1·68	14 53·92	−2·55	51·37	56·72	m s +0 56·756	+ 0·054	− 0·009	+0 56·801
	1663	+37 16	N		16 59·24	−1·16	58·08	N		17 57·69	−2·79	54·90	56·82				
	1681	+28 30	N		19 10·91	−1·18	9·73	N		20 9·10	−2·58	6·52	56·79				
	1701	+15 46	S		21 19·54	−1·19	18·35	S		22 17·42	−2·31	15·11	56·76				
	1711	+20 27	S		23 34·99	−1·19	33·80	S		24 32·94	−2·39	30·55	56·75				
				Mean, T_E	5 15 47												
Dec.19	1528	+24 52	S	*I. P. E.*	4 50 44·38	+1·09	45·47	S	*I. P. E.*	4 51 45·28	+0·89	46·17	+1 0·70				
	1534	+39 13	N	*d* c − 1·6 b − 2·6 *a* − 9·3	52 0·22	+1·14	1·36	N	*d* c −23·1 b − 7·2 *a* +33·7	53 1·55	+0·53	2·08	0·72				
	1541	+40 54	N		54 2·31	+1·14	3·45	N		55 3·83	+0·48	4·31	0·86				
	1551	+21 25	S	*s* *Q* + 1·20	55 50·61	+1·08	51·69	S	*s* *Q* + 1·67	56 51·45	+0·97	52·42	0·73	m s +1 0·773	+ 0·055	− 0·010	+1 0·818
	1562	+26 16	N		58 23·25	+1·09	24·34	N		59 24·32	+0·86	25·18	0·84				
	1577	+28 7	N		5 0 58·79	+1·10	59·89	N		5 1 59·85	+0·82	60·67	0·78				
	1591	+15 27	S		2 44·58	+1·06	45·64	S		3 45·35	+1·07	46·42	0·78				
				Mean, T_E	4 56 23												
Dec.19	1620	+22 9	S	*I. P. E.*	5 8 12·44	−1·32	11·12	S	*I. P. E.*	5 9 14·45	−2·38	12·07	+1 0·95				
	1629	+33 38	N	*d* c − 1·6 b − 2·6 *a* − 9·3	10 23·60	−1·28	22·32	N	*d* c −23·1 b − 7·2 *a* +33·7	11 25·93	−2·65	23·28	0·96				
	1632	+33 37	N		11 4·77	−1·28	3·49	N		12 7·00	−2·65	4·35	0·86				
	1648	+27 50	N	*s* *Q* − 1·20	13 25·30	−1·31	23·99	N	*s* *Q* − 1·67	14 27·31	−2·50	24·81	0·82	s +1 0·900	+ 0·055	− 0·009	+1 0·946
	1663	+37 16	N		16 28·57	−1·26	27·31	N		17 31·04	−2·75	28·29	0·98				
	1681	+28 30	N		18 40·34	−1·30	39·04	N		19 42·44	−2·53	39·91	0·87				
	1701	+15 46	S		20 48·96	−1·34	47·62	S		21 50·76	−2·27	48·49	0·87				
	1711	+20 27	S		23 4·40	−1·32	3·08	S		24 6·32	−2·35	3·97	0·89				
				Mean, T_E	5 15 16												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.023$ $S_N - S_S = -0^s.001$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 20	1528	+24 52	S	*I. P. E.*	4 50 34·78	+1·15	35·93	S	*I. P. E.*	4 51 36·14	+0·77	36·91	+1 0·98				
	1534	+39 13	N	*d* c − 0·7 b − 0·7 *a* −10·1	51 50·67	+1·22	51·89	N	*d* c −23·2 b − 9·6 *a* +33·3	52 52·50	+0·40	52·90	1·01				
	1541	+40 54	N		53 52·83	+1·23	54·06	N		54 54·72	+0·34	55·06	1·00				
	1551	+21 25	S	*s* *Q* +1·20	55 41·13	+1·14	42·27	S	*s* *Q* +1·61	56 42·35	+0·84	43·19	0·92	m s +1 0·990			
	1562	+26 16	N		58 13·80	+1·16	14·96	N		59 15·25	+0·74	15·99	1·03		+ 0·056	− 0·010	+1 1·036
	1577	+28 7	N		5 0 49·30	+1·17	50·47	N		5 1 50·79	+0·70	51·49	1·02				
	1591	+15 27	S		2 35·16	+1·11	36·27	S		3 36·28	+0·96	37·24	0·97				
				Mean, T_E	4 56 14												
Dec. 20	1620	+22 9	S	*I. P. E.*	5 8 3·03	−1·26	1·77	S	*I. P. E.*	5 9 5·20	−2·39	2·81	+1 1·04				
	1629	+33 38	N	*d* c − 0·7 b − 0·7 *a* −10·1	10 14·10	−1·21	12·89	N	*d* c −23·2 b − 9·6 *a* +33·3	11 16·67	−2·65	14·02	1·13				
	1632	+33 37	N		10 55·30	−1·21	54·09	N		11 57·80	−2·65	55·15	1·06				
	1648	+27 50	N	*s* *Q* −1·20	13 15·73	−1·23	14·50	N	*s* *Q* −1·61	14 18·10	−2·51	15·59	1·09	m s +1 1·036	+ 0·056	− 0·009	+1 1·083
	1663	+37 16	N		16 19·27	−1·19	18·08	N		17 21·85	−2·75	19·10	1·02				
	1681	+28 30	N		18 30·93	−1·23	29·70	N		19 33·21	−2·54	30·67	0·97				
	1701	+15 46	S		20 39·59	−1·29	38·30	S		21 41·52	−2·26	39·26	0·96				
	1711	+20 27	S		22 54·98	−1·27	53·71	S		23 57·09	−2·36	54·73	1·02				
				Mean, T_E	5 15 7												

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s; AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.023$ $S_N - S_S = -0^s.001$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec.12	1289	+22 7	S	*I. P. W.*	4 6 56·17	+0·95	57·12	S	*I. P. W.*	4 15 39·98	+1·69	41·67	8 44·55	m s 8 44·523	+ 0·067	− 0·016	8 44·574
	1302	+15 6	S	d c + 0·4 b + 5·5 a + 5·8	10 8·87	+0·97	9·84	S	d c + 0·8 b − 2·5 a +16·4	18 52·62	+1·73	54·35	44·51				
	1326	+27 4	N	s Q +0·80	14 10·56	+0·95	11·51	N	s Q +1·72	22 54·37	+1·65	56·02	44·51				
Dec.12	1364	+31 10	N	*I. P. W.*	4 19 42·14	−0·66	41·48	N	*I. P. W.*	4 28 27·69	−1·83	25·86	8 44·38				
	1371	+22 44	S	d c + 0·4 b + 5·5 a + 5·8	21 20·29	−0·65	19·64	S	d c + 0·8 b − 2·5 a +16·4	30 5·83	−1·76	4·07	44·43				
	1380	+15 42	S	s Q −0·80	22 56·18	−0·63	55·55	S	s Q −1·72	31 41·52	−1·71	39·81	44·26				
	1381	+15 37	S		23 1·62	−0·63	0·99	S		31 47·05	−1·71	45·34	44·35	m s 8 44·401	+ 0·067	− 0·012	8 44·456
	1397	+42 47	N		26 10·28	−0·68	9·60	N		34 56·03	−1·94	54·09	44·49				
	1398	+42 49	N		26 13·66	−0·68	12·98	N		34 59·33	−1·94	57·39	44·41				
	1408	+28 43	N		28 21·33	−0·66	20·67	N		37 6·93	−1·80	5·13	44·46				
	1417	+19 38	S		29 53·65	−0·64	53·01	S		38 39·18	−1·74	37·44	44·43				
Dec.13	1269	+37 44	N	*I. P. W.*	4 1 38·73	+0·88	39·61	N	*I. P. W.*	4 10 22·91	+1·49	24·40	8 44·79				
	1279	+26 10	N	d c − 1·1 b + 6·3 a +11·3	4 32·38	+0·92	33·30	N	d c − 0·1 b + 1·0 a +33·5	13 16·30	+1·69	17·99	44·69	m s 8 44·702	+ 0·068	− 0·016	8 44·754
	1289	+22 7	S	s Q +0·79	6 45·01	+0·93	45·94	S	s Q +1·70	15 28·88	+1·73	30·61	44·67				
	1302	+15 6	S		9 57·77	+0·95	58·72	S		18 41·57	+1·82	43·39	44·67				
	1326	+27 4	N		13 59·46	+0·92	60·38	N		22 43·40	+1·67	45·07	44·69				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.023$ $\delta_N - \delta_S = -0^s.001$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 13	1364	+31 10	N	*I. P. W.*	4 19 30·92	−0·67	30·25	N	*I. P. W.*	4 28 16·82	−1·79	15·03	8 44·78				
	1371	+22 44	S	*d* c − 1·1 b + 6·3 *a* +11·3	21 9·12	−0·65	8·47	S	*d* c − 0·1 b + 1·0 *a* +33·5	29 54·85	−1·67	53·18	44·71				
	1380	+15 42	S		22 45·00	−0·63	44·37	S		31 30·57	−1·58	28·99	44·62				
	1381	+15 37	S	*s* *Q* −0·79	22 50·46	−0·63	49·83	S	*s* *Q* −1·70	31 36·08	−1·58	34·50	44·67	m s 8 44·705	+ 0·068	− 0·012	8 44·761
	1397	+42 47	N		25 59·13	−0·72	58·41	N		34 45·22	−2·02	43·20	44·79				
	1398	+42 49	N		26 2·53	−0·72	1·81	N		34 48·57	−2·02	46·55	44·74				
	1408	+28 43	N		28 10·17	−0·67	9·50	N		36 55·97	−1·75	54·22	44·72				
	1417	+19 38	S		29 42·51	−0·64	41·87	S		38 28·11	−1·63	26·48	44·61				
Dec. 14	1244	+ 9 40	S	*I. P. W.*	3 56 2·14	+0·84	2·98	S	*I. P. W.*	4 4 45·64	+1·94	47·58	8 44·60				
	1257	+21 46	S	*d* c − 1·5 b − 2·0 *a* +14·2	58 25·68	+0·75	26·43	S	*d* c + 0·7 b + 0·6 *a* +43·0	7 9·33	+1·74	11·07	44·64				
	1260	+21 41	S		59 3·63	+0·75	4·38	S		7 47·31	+1·74	49·05	44·67				
	1269	+37 44	N	*s* *Q* +0·81	4 1 27·86	+0·63	28·49	N	*s* *Q* +1·68	10 11·69	+1·42	13·11	44·62	m s 8 44·650	+ 0·070	− 0·015	8 44·705
	1279	+26 10	N		4 21·31	+0·72	22·03	N		13 5·04	+1·66	6·70	44·67				
	1289	+22 7	S		6 33·91	+0·75	34·66	S		15 17·61	+1·72	19·33	44·67				
	1302	+15 6	S		9 46·64	+0·80	47·44	S		18 30·28	+1·84	32·12	44·68				
	1326	+27 4	N		13 48·41	+0·72	49·13	N		22 32·13	+1·65	33·78	44·65				
Dec. 14	1364	+31 10	N	*I. P. W.*	4 19 19·93	−0·93	19·00	N	*I. P. W.*	4 28 5·44	−1·79	3·65	8 44·65				
	1371	+22 44	S	*d* c − 1·5 b − 2·0 *a* +14·2	20 58·06	−0·87	57·19	S	*d* c + 0·7 b + 0·6 *a* +43·0	29 43·49	−1·64	41·85	44·66				
	1380	+15 42	S		22 33·84	−0·83	33·01	S		31 19·12	−1·52	17·60	44·59				
	1381	+15 37	S	*s* *Q* −0·81	22 39·31	−0·82	38·49	S	*s* *Q* −1·68	31 24·65	−1·52	23·13	44·64	m s 8 44·663	+ 0·070	− 0·012	8 44·721
	1397	+42 47	N		25 48·18	−1·04	47·14	N		34 33·93	−2·08	31·85	44·71				
	1398	+42 49	N		25 51·49	−1·04	50·45	N		34 37·27	−2·08	35·19	44·74				
	1408	+28 43	N		27 59·14	−0·91	58·23	N		36 44·63	−1·74	42·89	44·66				
	1417	+19 38	S		29 31·39	−0·86	30·53	S		38 16·77	−1·59	15·18	44·65				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 59s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.023$ $S_N - S_S = -0^s.001$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 16	1244	+ 9 40	S	*I. P. E.*	3 55 38·69	+1·22	39·91	S	*I. P. E.*	4 4 22·98	+1·15	24·13	8 44·22				
	1257	+21 46	S	d c − 0·5 b + 1·6 a − 3·3	58 2·06	+1·23	3·29	S	d c −22·6 b − 8·9 a +34·9	6 46·65	+0·94	47·59	44·30				
	1260	+21 41	S		58 40·04	+1·23	41·27	S		7 24·65	+0·94	25·59	44·32	m s 8 44·324	+ 0·066	− 0·014	8 44·376
	1269	+37 44	N	s Q +1·21	4 1 4·14	+1·26	5·40	N	s Q +1·68	9 49·12	+0·55	49·67	44·27				
	1279	+26 10	N		3 57·71	+1·24	58·95	N		12 42·39	+0·84	43·23	44·28				
	1302	+15 6	S		9 23·07	+1·22	24·29	S		18 7·67	+1·06	8·73	44·44				
	1326	+27 4	N		13 24·75	+1·24	25·99	N		22 9·60	+0·83	10·43	44·44				
Dec. 16	1364	+31 10	N	*I. P. E.*	4 18 57·05	−1·17	55·88	N	*I. P. E.*	4 27 42·94	−2·63	40·31	8 44·43				
	1371	+22 44	S	d c − 0·5 b + 1·6 a − 3·3	20 35·37	−1·19	34·18	S	d c −22·6 b − 8·9 a +34·9	29 20·91	−2·43	18·48	44·30				
	1380	+15 42	S		22 11·18	−1·19	9·99	S		30 56·63	−2·30	54·33	44·34				
	1381	+15 37	S	s Q −1·21	22 16·68	−1·20	15·48	S	s Q −1·68	30 62·11	−2·30	59·81	44·33	m s 8 44·366	+ 0·066	− 0·012	8 44·420
	1397	+42 47	N		25 25·25	−1·15	24·10	N		34 11·54	−3·00	8·54	44·44				
	1398	+42 49	N		25 28·52	−1·15	27·37	N		34 14·85	−3·00	11·85	44·48				
	1408	+28 43	N		27 36·38	−1·18	35·20	N		36 22·12	−2·58	19·54	44·34				
	1417	+19 38	S		29 8·77	−1·19	7·58	S		37 54·23	−2·38	51·85	44·27				
Dec. 19	1257	+21 46	S	*I. P. E.*	3 57 31·43	+1·08	32·51	S	*I. P. E.*	4 6 16·04	+0·97	17·01	8 44·50				
	1260	+21 41	S	d c − 1·6 b − 2·6 a − 9·3	58 9·39	+1·08	10·47	S	d c −23·1 b − 7·2 a +33·7	6 53·97	+0·97	54·94	44·47				
	1269	+37 44	N		4 0 33·40	+1·14	34·54	N		9 18·48	+0·58	19·06	44·52				
	1279	+26 10	N	s Q +1·20	3 27·08	+1·09	28·17	N	s Q +1·67	12 11·77	+0·87	12·64	44·47	m s 8 44·506	+ 0·060	− 0·014	8 44·552
	1289	+22 7	S		5 39·69	+1·08	40·77	S		14 24·41	+0·96	25·37	44·60				
	1302	+15 6	S		8 52·49	+1·06	53·55	S		17 36·92	+1·07	37·99	44·44				
	1326	+27 4	N		12 54·14	+1·09	55·23	N		21 38·92	+0·85	39·77	44·54				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.023$ $S_N - S_S = -0^s.001$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 19	1364	+31 10	N	*I. P. E.*	4 18 26·40	−1·29	25·11	N	*I. P. E.*	4 27 12·29	−2·58	9·71	8 44·60				
	1371	+22 44	S	d c − 1·6 b − 2·6 a − 9·3	20 4·73	−1·32	3·41	S	d c −23·1 b − 7·2 a +33·7	28 50·29	−2·39	47·90	44·49				
	1380	+15 42	S		21 40·51	−1·34	39·17	S		30 25·88	−2·27	23·61	44·44				
	1381	+15 37	S	s Q −1·20	21 46·05	−1·34	44·71	S	s Q −1·67	30 31·44	−2·27	29·17	44·46	m s 8 44·523	+ 0·060	− 0·012	8 44·571
	1397	+42 47	N		24 54·57	−1·25	53·32	N		33 40·85	−2·95	37·90	44·58				
	1398	+42 49	N		24 57·94	−1·25	56·69	N		33 44·15	−2·95	41·20	44·51				
	1408	+28 43	N		27 5·69	−1·30	4·39	N		35 51·48	−2·53	48·95	44·56				
	1417	+19 38	S		28 38·04	−1·33	36·71	S		37 23·59	−2·34	21·25	44·54				
Dec. 20	1244	+ 9 40	S	*I. P. E.*	3 54 58·57	+1·09	59·66	S	*I. P. E.*	4 3 42·96	+1·05	44·01	8 44·35				
	1257	+21 46	S	d c − 0·7 b − 0·7 a −10·1	57 21·95	+1·14	23·09	S	d c −23·2 b − 9·6 a +33·3	6 6·65	+0·84	7·49	44·40				
	1260	+21 41	S		57 59·96	+1·14	61·10	S		6 44·64	+0·84	45·48	44·38	m s 8 44·370	+ 0·058	− 0·016	8 44·412
	1269	+37 44	N	s Q +1·20	4 0 23·95	+1·21	25·16	N	s Q +1·61	9 9·11	+0·46	9·57	44·41				
	1279	+26 10	N		3 17·61	+1·16	18·77	N		12 2·38	+0·75	3·13	44·36				
	1289	+22 7	S		5 30·28	+1·14	31·42	S		14 14·91	+0·83	15·74	44·32				
Dec. 20	1408	+28 43	N	*I. P. E.*	4 26 56·32	−1·23	55·09	N	*I. P. E.*	4 35 41·89	−2·53	39·36	8 44·27				
	1417	+19 38	S	d c − 0·7 b − 0·7 a −10·1 s Q −1·20	28 28·72	−1·27	27·45	S	d c −23·2 b − 9·6 a +33·3 s Q −1·61	37 14·06	−2·35	11·71	44·26	m s 8 44·265	+ 0·058	− 0·012	8 44·311

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.023$ $\delta_N - \delta_S = -0^s.001$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 12	1896	+25 56	N	*I. P. W.*	5 43 44·82	+0·95	45·77	N	*I. P. W.*	5 52 28·63	+1·66	30·29	8 44·52				
	1907	+12 48	S	*d* c + 0·4 b + 5·5 a + 5·8	45 19·13	+0·96	20·09	S	*d* c + 0·8 b − 2·5 a + 16·4	54 2·80	+1·75	4·55	44·46				
	1925	+22 24	S		47 38·50	+0·95	39·45	S		56 22·31	+1·68	23·99	44·54				
	1935	+37 58	N	*s* Q +0·80	50 1·72	+0·93	2·65	N	*s* Q +1·72	58 45·71	+1·55	47·26	44·61	m s 8 44·534	+ 0·048	− 0·013	8 44·569
	1942	+38 30	N		51 31·76	+0·94	32·70	N		6 0 15·72	+1·55	17·27	44·57				
	1947	+38 6	N		52 30·05	+0·93	30·98	N		1 14·04	+1·55	15·59	44·61				
	1958	+14 47	S		53 54·30	+0·96	55·26	S		2 37·97	+1·74	39·71	44·45				
	1971	+23 8	S		55 38·36	+0·95	39·31	S		4 22·15	+1·68	23·83	44·52				
	1975	+23 2	S		56 24·71	+0·95	25·66	S		5 8·51	+1·68	10·19	44·53				
Dec. 12	2047	+22 34	S	*I. P. W.*	6 8 55·07	−0·65	54·42	S	*I. P. W.*	6 17 40·72	−1·76	38·96	8 44·54				
	2063	+23 31	S	*d* c + 0·4 b + 5·5 a + 5·8	11 27·61	−0·65	26·96	S	*d* c + 0·8 b − 2·5 a + 16·4	20 13·18	−1·76	11·42	44·46				
	2064	+23 24	S		11 28·38	−0·65	27·73	S		20 13·99	−1·76	12·23	44·50				
	2082	+30 34	N	*s* Q −0·80	14 4·96	−0·66	4·30	N	*s* Q −1·72	22 50·60	−1·81	48·79	44·49				
	2097	+28 17	N		16 1·14	−0·65	0·49	N		24 46·72	−1·80	44·92	44·43	m s 8 44·481	+ 0·048	− 0·012	8 44·517
	2110	+32 32	N		17 51·14	−0·66	50·48	N		26 36·80	−1·84	34·96	44·48				
	2129	+14 15	S		19 59·69	−0·64	59·05	S		28 45·22	−1·70	43·52	44·47				
	2139	+38 33	N		21 32·18	−0·66	31·52	N		30 17·93	−1·90	16·03	44·51				
	2154	+24 42	N		23 18·96	−0·64	18·32	N		32 4·55	−1·76	2·79	44·47				
			S		23 18·92	−0·64	18·28	S		32 4·50	−1·76	2·74	44·46				
Dec. 13	1896	+25 56	N	*I. P. W.*	5 43 36·79	+0·92	37·71	N	*I. P. W.*	5 52 20·84	+1·69	22·53	8 44·82				
	1907	+12 48	S	*d* c − 1·1 b + 6·3 a +11·3	45 11·03	+0·96	11·99	S	*d* c − 0·1 b + 1·0 a +33·5	53 54·89	+1·86	56·75	44·76				
	1925	+22 24	S		47 30·40	+0·93	31·33	S		56 14·41	+1·73	16·14	44·81				
	1935	+37 58	N	*s* Q +0·79	49 53·67	+0·88	54·55	N	*s* Q +1·70	58 38·03	+1·49	39·52	44·97	m s 8 44·867	+ 0·049	− 0·013	8 44·903
	1942	+38 30	N		51 23·71	+0·87	24·58	N		6 0 8·13	+1·48	9·61	45·03				
	1947	+38 6	N		52 21·94	+0·88	22·82	N		1 6·30	+1·48	7·78	44·96				
	1958	+14 47	S		53 46·17	+0·96	47·13	S		2 30·08	+1·83	31·91	44·78				
	1971	+23 8	S		55 30·35	+0·93	31·28	S		4 14·39	+1·72	16·11	44·83				
	1975	+23 2	S		56 16·69	+0·93	17·62	S		5 0·74	+1·72	2·46	44·84				

Note. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl Equations $H_N - H_S = +0^s.023$ $\delta_N - \delta_S = -0^s.001$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 13	2047	+22 34	S	*I. P. W.*	6 8 46·94	−0·65	46·29	S	*I. P. W.*	6 17 32·84	−1·67	31·17	8 44·88				
	2063	+23 31	S	*d* c − 1·1 b + 6·3 *a* +11·3	11 19·47	−0·65	18·82	S	*d* c − 0·1 b + 1·0 *a* +33·5	20 5·40	−1·68	3·72	44·90				
	2064	+23 24	S		11 20·27	−0·65	19·62	S		20 6·16	−1·68	4·48	44·86				
	2082	+30 34	N	*s* *Q* −0·79	13 56·93	−0·68	56·25	N	*s* *Q* −1·70	22 42·89	−1·78	41·11	44·86				
	2097	+28 17	N		15 53·07	−0·67	52·40	N		24 39·01	−1·75	37·26	44·86	m s 8 44·877	+ 0·049	− 0·012	8 44 914
	2110	+32 32	N		17 43·04	−0·68	42·36	N		26 29·07	−1·82	27·25	44·89				
	2129	+14 15	S		19 51·59	−0 62	50·97	S		28 37·34	−1·56	35·78	44·81				
	2139	+38 33	N		21 24·04	−0·71	23·33	N		30 10·24	−1·93	8·31	44·98				
	2154	+24 42	N		23 10 89	−0·65	10·24	N		31 56·73	−1·70	55·03	44·79				
			S		23 10·70	−0·65	10·05	S		31 56·69	−1·70	54·99	44·94				
Dec. 14	1896	+25 56	N	*I. P. W.*	5 43 28·76	+0·73	29·49	N	*I. P. W.*	5 52 12·57	+1·67	14·24	8 44·75				
	1907	+12 48	S	*d* c − 1·5 b − 2·0 *a* +14·2	45 2·95	+0·82	3·77	S	*d* c + 0·7 b + 0·6 *a* +43·0	53 46·61	+1·89	48·50	44·73				
	1925	+28 24	S		47 22·37	+0·75	23·12	S		56 6·17	+1·72	7·89	44·77				
	1935	+37 58	N	*s* *Q* +0·81	49 45·69	+0·63	46·32	N	*s* *Q* +1·68	58 29·77	+1·41	31·18	44·86	m s 8 44·816	+ 0·052	− 0·013	8 44·855
	1942	+38 30	N		51 15·71	+0·63	16·34	N		59 59·86	+1·40	61·26	44·92				
	1947	+38 6	N		52 13·99	+0·63	14·62	N		6 0 58·11	+1·40	59·51	44·89				
	1958	+14 47	S		53 38·09	+0·80	38·89	S		2 21·80	+1·86	23·66	44·77				
	1971	+23 8	S		55 22·26	+0·74	23·00	S		4 6·10	+1·71	7·81	44·81				
	1975	+23 2	S		56 8·61	+0·74	9·35	S		4 52·48	+1·71	54·19	44·84				
Dec. 14	2047	+22 34	S	*I. P. W.*	6 8 39·01	−0·87	38·14	S	*I. P. W.*	6 17 24·53	−1·64	22·89	8 44·75				
	2063	+23 31	S	*d* c − 1·5 b − 2·0 *a* +14·2	11 11·52	−0·88	10·64	S	*d* c + 0·7 b + 0·6 *a* +43·0	19 57·10	−1·65	55·45	44·81				
	2064	+23 24	S		11 12·29	−0·88	11·41	S		19 57·91	−1·65	56·26	44·85				
	2082	+30 34	N	*s* *Q* −0·81	13 48·95	−0·92	48·03	N	*s* *Q* −1·68	22 34·62	−1·78	32·84	44·81				
	2097	+28 17	N		15 45·08	−0·91	44·17	N		24 30·74	−1·74	29·00	44·83	m s 8 44·810	+ 0·052	− 0·012	8 44 850
	2110	+32 32	N		17 35·11	−0·94	34·17	N		26 20·82	−1·82	19·00	44·83				
	2129	+14 15	S		19 43·62	−0·82	42·80	S		28 29·06	−1·50	27·56	44·76				
	2139	+38 33	N		21 16·23	−0·99	15·24	N		30 2·01	−1·97	0·04	44·80				
	2154	+24 42	N		23 2·92	−0·89	2·03	N		31 48·52	−1·68	46·84	44·81				
			S		23 2·83	−0·89	1·94	S		31 48·47	−1·68	46·79	44·85				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Hearnside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}023$ $S_N - S_S = -0^s{\cdot}001$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 16	1896	+25 56	N	*I. P. E.*	5 43 10·94	+1·24	12·18	N	*I. P. E.*	5 51 55·71	+0·85	56·56	8 44·38				
	1907	+12 48	S	*d* c − 0·5 b + 1·6 *a* − 3·3	44 45·28	+1·22	46·50	S	*d* c −22·6 b − 8·9 *a* +34·9	53 29·73	+1·11	30·84	44·34				
	1925	+22 24	S		47 4·63	+1·23	5·86	S		55 49·35	+0·93	50·28	44·42				
	1935	+37 58	N	*s* *Q* +1·21	49 27·82	+1·26	29·08	N	*s* *Q* +1·68	58 13·00	+0·52	13·52	44·44	m s 8 44·402	+ 0·054	− 0·013	8 44·443
	1942	+38 30	N		50 57·87	+1·27	59·14	N		59 43·06	+0·50	43·56	44·42				
	1947	+38 6	N		51 56·09	+1·27	57·36	N		6 0 41·30	+0·51	41·81	44·45				
	1958	+14 47	S		53 20·42	+1·22	21·64	S		2 4·92	+1·07	5·99	44·35				
	1971	+23 8	S		55 4·58	+1·24	5·82	S		3 49·29	+0·92	50·21	44·39				
	1975	+23 2	S		55 50·86	+1·23	52·09	S		4 35·60	+0·92	36·52	44·43				
Dec. 16	2047	+22 34	S	*I. P. E.*	6 8 22·03	−1·19	20·84	S	*I. P. E.*	6 17 7·78	−2·43	5·35	8 44·51				
	2063	+23 31	S	*d* c − 0·5 b + 1·6 *a* − 3·3	10 54·53	−1·18	53·35	S	*d* c −22·6 b − 8·9 *a* +34·9	19 40·33	−2·47	37·86	44·51				
	2064	+23 24	S		10 55·33	−1·18	54·15	S		19 41·13	−2·44	38·69	44·54				
	2082	+30 34	N	*s* *Q* −1·21	13 31·95	−1·17	30·78	N	*s* *Q* −1·68	22 17·87	−2·62	15·25	44·47	m s 8 44·490	+ 0·054	− 0·012	8 44·532
	2097	+28 17	N		15 28·13	−1·18	26·95	N		24 13·95	−2·58	11·37	44·42				
	2110	+32 32	N		17 18·06	−1·17	16·89	N		26 4·02	−2·67	1·35	44·46				
	2129	+14 15	S		19 26·72	−1·20	25·52	S		28 12·25	−2·28	9·97	44·45				
	2139	+38 33	N		20 59·08	−1·15	57·93	N		29 45·36	−2·86	42·50	44·57				
	2154	+24 42	N		22 45·92	−1·18	44·74	N		31 31·71	−2·49	29·22	44·48				
			S		22 45·88	−1·18	44·70	S		31 31·68	−2·49	29·19	44·49				
Dec. 19	1896	+25 56	N	*I. P. E.*	5 42 44·37	+1·09	45·46	N	*I. P. E.*	5 51 29·29	+0·87	30·16	8 44·70				
	1907	+12 48	S	*d* c − 1·6 b − 2·6 *a* − 9·3	44 18·70	+1·05	19·75	S	*d* c −23·1 b − 7·2 *a* +33·7	53 3·32	+1·12	4·44	44·69				
	1925	+22 24	S		46 38·08	+1·08	39·16	S		55 22·87	+0·95	23·82	44·66				
	1935	+37 58	N	*s* *Q* +1·20	49 1·22	+1·13	2·35	N	*s* *Q* +1·67	57 46·53	+0·55	47·08	44·73	m s 8 44·729	+ 0·055	− 0·013	8 44·771
	1942	+38 30	N		50 31·25	+1·13	32·38	N		59 16·62	+0·54	17·16	44·78				
	1947	+38 6	N		51 29·49	+1·13	30·62	N		6 0 14·92	+0·55	15·47	44·85				
	1958	+14 47	S		52 53·82	+1·05	54·87	S		1 38·50	+1·08	39·58	44·71				
	1971	+23 8	S		54 37·93	+1·09	39·02	S		3 22·78	+0·94	23·72	44·70				
	1975	+23 2	S		55 24·28	+1·09	25·37	S		4 9·17	+0·94	10·11	44·74				

NOTE. 1d = 0s·0225. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s; AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perpl. Equations $H_N - H_S = +0^s.023$ $S_N - S_S = -0^s.001$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1881		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 19	2047	+22 34	S	*I. P. E.*	6 7 55·39	−1·32	54·07	S	*I. P. E*	6 16 41·01	−2·39	38·62	8 44·55				
	2063	+23 31	S	*d* c − 1·6 b − 2·6 *a* − 9·3	10 27·89	−1·31	26·58	S	*d* c −23·1 b − 7·2 *a* +33·7	19 13·63	−2·43	11·20	44·62				
	2082	+30 34	N		13 5·28	−1·29	3·99	N		21 51·14	−2·57	48·57	44 58				
	2097	+28 17	N	*s* *Q* −1·20	15 1·51	−1·30	0·21	N	*s* *Q* −1·67	23 47·25	−2·53	44·72	44·51	m s 8 44·558	+ 0·055	− 0·011	8 44·602
	2110	+32 32	N		16 51·44	−1·28	50·16	N		25 37·31	−2·63	34·68	44·52				
	2129	+14 15	S		18 60·06	−1·35	58·71	S		27 45·55	−2·24	43·31	44·60				
	2139	+38 33	N		20 32·53	−1·27	31·26	N		29 18·63	−2·80	15·83	44·57				
	2154	+24 42	N		22 19·28	−1·31	17·97	N		31 5·00	−2·45	2·55	44·58				
			S		22 19·35	−1·31	18·04	S		31 4·98	−2·45	2·53	44·49				
Dec. 20	1896	+25 56	N	*I. P. E.*	5 42 35·13	+1·16	36·29	N	*I. P. E.*	5 51 20·09	+0·75	20·84	8 44·55				
	1907	+12 48	S	*d* c − 0·7 b − 0·7 *a* −10·1	44 9·44	+1·10	10·54	S	*d* c −23·2 b − 9·6 *a* +33·3	52 54·10	+1·00	55·10	44·56				
	1925	+22 24	S		46 28·80	+1·14	29·94	S		55 13·68	+0·83	14·51	44·57				
	1935	+37 58	N	*s* *Q* +1·20	48 51·83	+1·22	53·05	N	*s* *Q* +1·61	57 37·32	+0·44	37·76	44·71				
	1942	+38 30	N		50 21·87	+1·22	23·09	N		59 7·39	+0·42	7·81	44·72	m s 8 44·603	+ 0·056	− 0·013	8 44·646
	1947	+38 6	N		51 20·17	+1·22	21·39	N		6 0 5·56	+0·42	5·98	44·59				
	1958	+14 47	S		52 44·62	+1·11	45·73	S		1 29·28	+0·97	30·25	44·52				
	1971	+23 8	S		54 28·63	+1·14	29·77	S		3 13·54	+0·82	14·36	44·59				
	1975	+23 2	S		55 15·00	+1·14	16·14	S		3 59·94	+0·82	60·76	44·62				
Dec. 20	2047	+22 34	S	*I. P. E.*	6 7 46·18	−1·26	44·92	S	*I. P. E.*	6 16 31·88	−2·39	29·49	8 44·57				
	2063	+23 31	S	*d* c − 0·7 b − 0·7 *a* −10·1	10 18·66	−1·25	17·41	S	*d* c −23·2 b − 9·6 *a* +33·3	19 4·51	−2·43	2·08	44·67				
	2064	+23 24	S		10 19·48	−1·25	18·23	S		19 5·27	−2·41	2·86	44·63				
	2082	+30 34	N	*s* *Q* −1·20	12 55·97	−1·22	54·75	N	*s* *Q* −1·61	21 41·98	−2·57	39·41	44·66				
	2097	+28 17	N		14 52·23	−1·23	51·00	N		23 38·12	−2·53	35·59	44·59	m s 8 44·636	+ 0·056	− 0·012	8 44·680
	2110	+32 32	N		16 42·15	−1·21	40·94	N		25 28·18	−2·64	25·54	44·60				
	2129	+14 15	S		18 50·86	−1·29	49·57	S		27 36·37	−2·24	34·13	44·56				
	2139	+38 33	N		20 23·15	−1·18	21·97	N		29 9·50	−2·80	6·70	44·73				
	2154	+24 42	N		22 9·97	−1·25	8·72	N		30 55·91	−2·45	53·46	44·74				
			S		22 9·98	−1·25	8·73	S		30 55·79	−2·45	53·34	44·61				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s:* AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.014$, $H_N - H_S = +0^s.032$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 4	2082	+30 34	N	*I. P. E.*	6 20 19·57	+1·28	20·85	N	*I. P. W.*	6 22 46·37	+1·15	47·52	+2 26·67				
	2097	+28 17	N	*d* c − 6·8	22 15·76	+1·28	17·04	N	*d* c − 3·2	24 42·63	+1·13	43·76	26·72				
	2110	+32 32	N	b + 0·7 *a* − 3·6	24 5·78	+1·28	7·06	N	b + 2·1 *a* −23·1	26 32·55	+1·17	33·72	26·66				
	2129	+14 15	S	*s* *Q* +1·43	26 14·28	+1·28	15·56	S	*s* *Q* +1·14	28 41·26	+1·00	42·26	26·70	m s +2 26·679	+0·091	+0·009	+2 26·779
	2139	+38 33	N		27 46·87	+1·28	48·15	N		30 13·56	+1·25	14·81	26·66		+	+	
	2154	+24 42	S		29 33·56	+1·28	34·84	S		32 0·39	+1·09	1·48	26·64				
	2173	+19 46	S		32 24·06	+1·28	25·34	S		34 50·97	+1·04	52·01	26·67				
	2184	+16 31	S		33 53·62	+1·28	54·90	S		36 20·59	+1·02	21·61	26·71				
				Mean, T_E	6 27 4												
Jan. 4	2239	+38 35	N	*I. P. E.*	6 44 31·43	−1·58	29·85	N	*I. P. W.*	6 46 57·36	−1·03	56·33	+2 26·48				
	2241	+38 39	N	*d* c − 6·8	45 15·29	−1·58	13·71	N	*d* c − 3·2	47 41·21	−1·03	40·18	26·47				
	2255	+13 20	S	b + 0·7 *a* − 3·6	47 22·20	−1·59	20·61	S	b + 2·1 *a* −23·1	49 48·55	−1·28	47·27	26·66				
	2265	+17 53	S	*s* *Q* −1·43	48 47·81	−1·58	46·23	S	*s* *Q* −1·14	51 14·08	−1·25	12·83	26·60	m s +2 26·546	+0·091	+0·009	+2 26·646
	2275	+26 14	N		50 54·27	−1·58	52·69	N		53 20·42	−1·17	19·25	26·56		+	+	
	2285	+16 15	S		52 51·95	−1·58	50·37	S		55 18·19	−1·26	16·93	26·56				
	2301	+29 33	N		55 23·68	−1·58	22·10	N		57 49·79	−1·14	48·65	26·55				
	2313	+22 49	S		57 35·24	−1·57	33·67	S		7 0 1·37	−1·21	0·16	26·49				
				Mean, T_E	6 50 20												
Jan. 5	2082	+30 34	N	*I. P. E.*	6 20 14·57	+1·20	15·77	N	*I. P. W.*	6 22 36·24	+1·20	37·44	+2 21·67				
	2097	+28 17	N	*d* c − 7·1	22 10·73	+1·20	11·93	N	*d* c − 3·2	24 32·44	+1·18	33·62	21·69				
	2110	+32 32	N	b − 1·9 *a* + 0·7	24 0·77	+1·19	1·96	N	b + 4·2 *a* −17·6	26 22·38	+1·21	23·59	21·63				
	2129	+14 15	S	*s* *Q* +1·43	26 9·30	+1·23	10·53	S	*s* *Q* +1·14	28 31·08	+1·08	32·16	21·63	m s +2 21·625	+0·094	+0·009	+2 21·728
	2139	+38 33	N		27 41·90	+1·16	43·06	N		30 3·42	+1·27	4·69	21·63		+	+	
	2154	+24 42	S		29 28·57	+1·20	29·77	S		31 50·21	+1·15	51·36	21·59				
	2173	+19 46	S		32 19·05	+1·21	20·26	S		34 40·76	+1·11	41·87	21·61				
	2184	+16 31	S		33 48·66	+1·23	49·89	S		36 10·34	+1·10	11·44	21·55				
				Mean, T_E	6 26 59												

NOTE $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s:* AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.014$ $H_N - H_S = +0^s.032$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 5	2239	+38 35	N	*I. P. E.*	6 44 26·43	−1·70	24·73	N	*I. P. W.*	6 46 47·17	−1·01	46·16	+2 21·43				
	2241	+38 39	N	d c − 7·1 b − 1·9 a + 0·7	45 10·26	−1·70	8·56	N	d c − 3·2 b + 4·2 a − 17·6	47 31·10	−1·01	30·09	21·53				
	2255	+13 20	S		47 17·20	−1·63	15·57	S		49 38·30	−1·21	37·09	21·52				
	2265	+17 53	S	s Q − 1·43	48 42·80	−1·64	41·16	S	s Q − 1·14	51 3·84	−1·18	2·66	21·50	m s +2 21·484	+0·094	+0·009	+2 21·587
	2275	+26 14	N		50 49·28	−1·66	47·62	N		53 10·23	−1·11	9·12	21·50		+	+	
	2285	+16 15	S		52 46·96	−1·63	45·33	S		55 8·00	−1·19	6·81	21·48				
	2301	+29 33	N		55 18·71	−1·66	17·05	N		57 39·65	−1·09	38·56	21·51				
	2313	+22 49	S		57 30·27	−1·65	28·62	S		59 51·17	−1·15	50·02	21·40				
				Mean, T_E	6 50 15												
Jan. 6	2082	+30 34	N	*I. P. E.*	6 20 9·18	+1·32	10·50	N	*I. P. W.*	6 22 25·48	+1·01	26·49	+2 15·99				
	2097	+28 17	N	d c + 0·1 b − 4·9 a − 5·9	22 5·31	+1·32	6·63	N	d c − 1·0 b − 5·5 a − 22·4	24 21·71	+0·99	22·70	16·07				
	2110	+32 32	N		23 55·36	+1·32	56·68	N		26 11·63	+1·02	12·65	15·97	m s +2 15·993	+0·100	+0·010	+2 16·103
	2129	+14 15	S	s Q + 1·43	26 3·88	+1·30	5·18	S	s Q + 1·14	28 20·32	+0·89	21·21	16·03				
	2154	+24 42	S		29 23·19	+1·31	24·50	S		31 39·51	+0·95	40·46	15·96		+	+	
	2173	+19 46	S		32 13·72	+1·30	15·02	S		34 30·04	+0·93	30·97	15·95				
	2184	+16 31	S		33 43·25	+1·30	44·55	S		35 59·63	+0·90	60·53	15·98				
				Mean, T_E	6 26 48												
Jan. 6	2239	+38 35	N	*I. P. E.*	6 44 21·02	−1·53	19·49	N	*I. P. W.*	6 46 36·57	−1·20	35·37	+2 15·88				
	2241	+38 39	N	d c + 0·1 b − 4·9 a − 5·9	45 4·85	−1·53	3·32	N	d c − 1·0 b − 5·5 a − 22·4	47 20·43	−1·20	19·23	15·91				
	2255	+13 20	S		47 11·83	−1·57	10·26	S		49 27·60	−1·40	26·20	15·94				
	2265	+17 53	S	s Q − 1·43	48 37·44	−1·56	35·88	S	s Q − 1·14	50 53·13	−1·37	51·76	15·88	m s +2 15·866	+0·100	+0·009	+2 15·975
	2275	+26 14	N		50 43·93	−1·54	42·39	N		52 59·50	−1·31	58·19	15·80		+	+	
	2285	+16 15	S		52 41·62	−1·56	40·06	S		54 57·28	−1·39	55·89	15·83				
	2301	+29 33	N		55 13·33	−1·55	11·78	N		57 28·91	−1·28	27·63	15·85				
	2313	+22 49	S		57 24·85	−1·55	23·30	S		59 40·47	−1·33	39·14	15·84				
				Mean, T_E	6 50 10												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* 5h 41m 39s: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.014$ $H_N - H_S = +0^s.032$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 7	2082	+30 34	N	*I. P. W.*	6 20 4·13	+1·48	5·61	N	*I. P. E.*	6 22 14·06	+1·11	15·17	+2 9·56				
	2097	+28 17	N	*d* c + 0·2 b + 2·6 a + 1·8	22 0·35	+1·49	1·84	N	*d* c − 2·3 b − 1·2 a − 35·4	24 10·24	+1·07	11·31	9·47				
	2110	+32 32	N		23 50·29	+1·48	51·77	N		26 0·25	+1·15	1·40	9·63	m s +2 9·603	+ 0·100	+ 0·008	
	2139	+38 33	N	*s* Q +1·41	27 31·35	+1·48	32·83	N	*s* Q +1·14	29 41·25	+1·25	42·50	9·67				
	2154	+24 42	S		29 18·04	+1·48	19·52	S		31 28·07	+1·02	29·09	9·57				+2 9·711
	2173	+19 46	S		32 8·51	+1·47	9·98	S		34 18·68	+0·95	19·63	9·65				
	2184	+16 31	S		33 38·12	+1·48	39·60	S		35 48·36	+0·91	49·27	9·67				
				Mean, T_E	6 26 56												
Jan. 7	2239	+38 35	N	*I. P. W.*	6 44 15·96	−1·34	14·62	N	*I. P. E.*	6 46 25·00	−1·03	23·97	+2 9·35				
	2241	+38 39	N	*d* c + 0·2 b + 2·6 a + 1·8	44 59·79	−1·34	58·45	N	*d* c − 2·3 b − 1·2 a − 35·4	47 8·86	−1·03	7·83	9·38				
	2255	+13 20	S		47 6·71	−1·34	5·37	S		49 16·30	−1·41	14·89	9·52				
	2275	+26 14	N	*s* Q −1·41	50 38·76	−1·33	37·43	N	*s* Q −1·14	52 48·03	−1·24	46·79	9·36	m s +2 9·397	+ 0·100	+ 0·008	
	2285	+16 15	S		52 36·44	−1·34	35·10	S		54 45·94	−1·37	44·57	9·47				+2 9·505
	2301	+29 33	N		55 8·23	−1·33	6·90	N		57 17·43	−1·19	16·24	9·34				
	2313	+22 49	S		57 19·73	−1·35	18·38	S		59 29·03	−1·29	27·74	9·36				
				Mean, T_E	6 50 18												
Jan. 9	2082	+30 34	N	*I. P. W.*	6 19 53·80	+1·49	55·29	N	*I. P. E.*	6 21 51·98	+1·20	53·18	+1 57·89				
	2097	+28 17	N	*d* c + 4·0 b − 0·8 a − 1·0	21 49·91	+1·49	51·40	N	*d* c − 2·4 b + 2·2 a − 38·0	23 48·17	+1·17	49·34	57·94				
	2110	+32 32	N		23 39·88	+1·50	41·38	N		25 38·05	+1·24	39·29	57·91				
	2129	+14 15	S	*s* Q +1·41	25 48·42	+1·48	49·90	S	*s* Q +1·14	27 46·86	+0·94	47·80	57·90	m s +1 57·883	+ 0·096	+ 0·009	
	2139	+38 33	N		27 20·95	+1·52	22·47	N		29 19·06	+1·35	20·41	57·94				+1 57·988
	2154	+24 42	S		29 7·69	+1·49	9·18	S		31 5·96	+1·10	7·06	57·88				
	2173	+19 46	S		31 58·20	+1·49	59·69	S		33 56·49	+1·02	57·51	57·82				
	2184	+16 31	S		33 27·84	+1·48	29·32	S		35 26·13	+0·97	27·10	57·78				
				Mean, T_E	6 26 38												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *sil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s:* AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s{\cdot}014$ $H_N - H_S = +0^s{\cdot}032$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 9	2239	+38 35	N	*I. P. W.*	6 44 5·52	−1·30	4·22	N	*I. P. E.*	6 46 2·95	−0·93	2·02	+1 57·80				
	2241	+38 39	N	*d* c + 4·0 b − 0·8 a − 1·0	44 49·39	−1·30	48·09	N	*d* c − 2·4 b + 2·2 a −38·0	46 46·81	−0·93	45·88	57·79				
	2255	+13 20	S		46 56·37	−1·34	55·03	S		48 54·13	−1·36	52·77	57·74				
	2265	+17 53	S	*s* Q −1·41	48 21·94	−1·33	20·61	S	*s* Q −1·14	50 19·68	−1·29	18·39	57·78	*s*			
	2275	+26 14	N		50 28·36	−1·33	27·03	N		52 25·99	−1·15	24·84	57·81	m +1 57·770			
	2285	+16 15	S		52 26·08	−1·34	24·74	S		54 23·87	−1·31	22·56	57·82		+ 0·096	+ 0·009	
	2301	+29 33	N		54 57·90	−1·33	56·57	N		56 55·35	−1·09	54·26	57·69				
	2313	+22 49	S		57 9·39	−1·33	8·06	S		59 7·00	−1·21	5·79	57·73				
				Mean, T_E	6 49 54												+1 57·875
Jan. 10	2082	+30 34	N	*I. P. W.*	6 19 48·13	+1·46	49·59	N	*I. P. E.*	6 21 41·62	+1·27	42·89	+1 53·30				
	2097	+28 17	N	*d* c + 6·6 b − 5·2 a − 7·7	21 44·30	+1·46	45·76	N	*d* c − 1·4 b + 3·4 a −42·2	23 37·83	+1·23	39·06	53·30				
	2110	+32 32	N		23 34·27	+1·48	35·75	N		25 27·78	+1·31	29·09	53·34				
	2129	+14 15	S	*s* Q +1·41	25 42·87	+1·41	44·28	S	*s* Q +1·15	27 36·61	+0·98	37·59	53·31	*s*			
	2139	+38 33	N		27 15·33	+1·51	16·84	N		29 8·72	+1·46	10·18	53·34	m +1 53·304	+ 0·092	+ 0·009	
	2154	+24 42	S		29 2·10	+1·45	3·55	S		30 55·63	+1·15	56·78	53·23				
	2173	+19 46	S		31 52·61	+1·44	54·05	S		33 46·29	+1·08	47·37	53·32				
	2184	+16 31	S		33 22·23	+1·42	23·65	S		35 15·92	+1·02	16·94	53·29				
				Mean, T_E	6 26 33												+1 53·405
Jan. 10	2239	+38 35	N	*I. P. W.*	6 43 59·80	−1·31	58·49	N	*I. P. E.*	6 45 52·66	−0·84	51·82	+1 53·33				
	2241	+38 39	N	*d* c + 6·6 b − 5·2 a − 7·7	44 43·67	−1·31	42·36	N	*d* c − 1·4 b + 3·4 a −42·2	46 36·51	−0·84	35·67	53·31				
	2255	+13 20	S		46 50·75	−1·41	49·34	S		48 43·93	−1·33	42·60	53·26				
	2265	+17 53	S	*s* Q −1·41	48 16·36	−1·39	14·97	S	*s* Q −1·15	50 9·42	−1·25	8·17	53·20	*s*			
	2275	+26 14	N		50 22·69	−1·36	21·33	N		52 15·71	−1·11	14·60	53·27	m +1 53·258	+ 0·092	+ 0·009	
	2285	+16 15	S		52 20·42	−1·40	19·02	S		54 13·57	−1·28	12·29	53·27				
	2301	+29 33	N		54 52·14	−1·35	50·79	N		56 45·05	−1·05	44·00	53·21				
	2313	+22 49	S		57 3·73	−1·38	2·35	S		58 56·73	−1·17	55·56	53·21				
				Mean, T_E	6 49 49												+1 53·359

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* 5h 41m 39s; AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perel. Equations $S_N - S_S = +0^s.014$, $H_N - H_S = +0^s.032$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 4	1681	+28 30	N	*I. P. E.*	5 18 10·44	+1·28	11·72	N	*I. P. W.*	5 31 6·25	+1·13	7·38	12 55·66				
	1701	+15 46	S	d c − 6·8 b + 0·7 a − 3·6	20 19·00	+1·28	20·28	S	d c − 3·2 b + 2·1 a −23·1	33 14·94	+1·02	15·96	55·68				
	1711	+20 27	S		22 34·52	+1·28	35·80	S		35 30·32	+1·05	31·37	55·57	m s 12 55·581	+ 0·045	+ 0·008	12 55·634
	1723	+32 6	N	s Q +1·43	24 23·51	+1·28	24·79	N	s Q +1·14	37 19·10	+1·17	20·27	55·48				
	1727	+32 12	N		24 54·87	+1·28	56·15	N		37 50·58	+1·17	51·75	55·60				
	1742	+23 58	S		27 35·18	+1·28	36·46	S		40 30·92	+1·08	32·00	55·54				
	1754	+26 51	N		29 7·21	+1·28	8·49	N		42 2·92	+1·11	4·03	55·54				
Jan. 4	1810	+16 2	S	*I. P. E.*	5 37 28·51	−1·58	26·93	S	*I. P. W.*	5 50 23·76	−1·26	22·50	12 55·57				
	1829	+24 39	S	d c − 6·8 b + 0·7 a − 3·6	40 4·56	−1·58	2·98	S	d c − 3·2 b + 2·1 a −23·1	52 59·73	−1·19	58·54	55·56				
	1837	+24 32	S		41 9·73	−1·58	8·15	S		54 4·90	−1·19	3·71	55·56	m s 12 55·606	+ 0·045	+ 0·010	12 55·661
	1850	+32 5	N	s Q −1·43	43 7·69	−1·58	6·11	N	s Q −1·14	56 2·83	−1·11	1·72	55·61				
	1863	+27 35	N		45 17·94	−1·57	16·37	N		58 13·17	−1·16	12·01	55·64				
	1875	+31 41	N		46 42·88	−1·58	41·30	N		59 38·08	−1·11	36·97	55·67				
	1907	+12 48	S		51 37·87	−1·59	36·28	S		6 4 33·20	−1·29	31·91	55·63				
Jan. 5	1663	+37 16	N	*I. P. E.*	5 15 53·88	+1·18	55·06	N	*I. P. W.*	5 28 49·43	+1·26	50·69	12 55·63				
	1681	+28 30	N	d c − 7·1 b − 1·9 a + 0·7	18 5·47	+1·20	6·67	N	d c − 3·2 b + 4·2 a −17·6	31 1·25	+1·18	2·43	55·76				
	1701	+15 46	S		20 14·08	+1·23	15·31	S		33 9·88	+1·09	10·97	55·66				
	1711	+20 27	S	s Q +1·43	22 29·53	+1·21	30·74	S	s Q +1·14	35 25·35	+1·11	26·46	55·72	m s 12 55·700	+ 0·046	+ 0·007	12 55·753
	1723	+32 6	N		24 18·51	+1·19	19·70	N		37 14·21	+1·20	15·41	55·71				
	1727	+32 12	N		24 49·88	+1·19	51·07	N		37 45·61	+1·20	46·81	55·74				
	1742	+23 58	S		27 30·17	+1·20	31·37	S		40 25·92	+1·15	27·07	55·70				
	1754	+26 51	N		29 2·23	+1·20	3·43	N		41 57·94	+1·17	59·11	55·68				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* 5ʰ 41ᵐ 39ˢ: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5ʰ 28ᵐ 42ˢ.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.014$, $H_N - H_S = +0^s.032$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			ʰ ᵐ ˢ	ˢ	ˢ			ʰ ᵐ ˢ	ˢ	ˢ	ᵐ ˢ				
Jan. 5	1810	+16 2	S	*I. P. E.*	5 37 23·57	−1·63	21·94	S	*I. P. W.*	5 50 18·75	−1·19	17·56	12 55·62				
	1829	+24 39	S	^{d} c − 7·1 b − 1·9 a + 0·7	39 59·58	−1·66	57·92	S	^{d} c − 3·2 b + 4·2 a −17·6	52 54·76	−1·13	53·63	55·71				
	1837	+24 32	S		41 4·78	−1·66	3·12	S		53 59·91	−1·13	58·78	55·66				
	1850	+32 5	N	^{s} Q −1·43	43 2·85	−1·67	1·18	N	^{s} Q −1·14	55 57·88	−1·08	56·80	55·62	ᵐ ˢ 12 55·645	+ 0·046	+ 0·011	12 55·702
	1863	+27 35	N		45 13·04	−1·66	11·38	N		58 8·11	−1·10	7·01	55·63				
	1875	+31 41	N		46 38·03	−1·66	36·37	N		59 33·08	−1·07	32·01	55·64				
	1893	+ 9 29	S		49 17·10	−1·63	15·47	S		6 2 12·33	−1·24	11·09	55·62				
	1907	+12 48	S		51 32·96	−1·63	31·33	S		4 28·20	−1·21	26·99	55·66				
Jan. 6	1663	+37 16	N	*I. P. E.*	5 15 48·27	+1·34	49·61	N	*I. P. W.*	5 28 44·33	+1·07	45·40	12 55·79				
	1681	+28 30	N	^{d} c + 0·1 b − 4·9 a − 5·9	17 59·93	+1·32	61·25	N	^{d} c − 1·0 b − 5·5 a −22·4	30 56·11	+0·99	57·10	55·85				
	1701	+15 46	S		20 8·59	+1·30	9·89	S		33 4·76	+0·89	5·65	55·76				
	1711	+20 27	S	^{s} Q +1·43	22 24·06	+1·30	25·36	S	^{s} Q +1·14	35 20·16	+0·93	21·09	55·73	ᵐ ˢ 12 55·786	+ 0·046	+ 0·007	12 55·839
	1723	+32 6	N		24 13·00	+1·32	14·32	N		37 9·07	+1·02	10·09	55·77				
	1727	+32 12	N		24 44·39	+1·32	45·71	N		37 40·51	+1·02	41·53	55·82				
	1742	+23 58	S		27 24·62	+1·31	25·93	S		40 20·84	+0·94	21·78	55·85				
	1754	+26 51	N		28 56·74	+1·32	58·06	N		41 52·81	+0·97	53·78	55·72				
Jan. 6	1810	+16 2	S	*I. P. E.*	5 37 18·11	−1·56	16·55	S	*I. P. W.*	5 50 13·66	−1·39	12·27	12 55·72				
	1829	+24 39	S	^{d} c + 0·1 b − 4·9 a − 5·9	39 54·14	−1·55	52·59	S	^{d} c − 1·0 b − 5·5 a −22·4	52 49·67	−1·33	48·34	55·75				
	1837	+24 32	S		40 59·34	−1·55	57·79	S		53 54·83	−1·33	53·50	55·71				
	1850	+32 5	N	^{s} Q −1·43	42 57·32	−1·54	55·78	N	^{s} Q −1·14	55 53·70	−1·27	51·43	55·65	ᵐ ˢ 12 55·646	+ 0·046	+ 0·011	12 55·703
	1863	+27 35	N		45 7·59	−1·54	6·05	N		58 2·95	−1·30	1·65	55·60				
	1875	+31 41	N		46 32·53	−1·54	30·99	N		59 27·89	−1·27	26·62	55·63				
	1893	+ 9 29	S		49 11·68	−1·57	10·11	S		6 2 7·13	−1·43	5·70	55·59				
	1907	+12 48	S		51 27·61	−1·57	26·04	S		4 22·97	−1·41	21·56	55·52				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s:* AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.014$, $H_N - H_S = +0^s.032$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 7	1663	+37 16	N	*I. P. W.*	5 15 43·49	+1·48	44·97	N	*I. P. E.*	5 28 39·17	+1·23	40·40	12 55·43				
	1681	+28 30	N	d c + 0·2 b + 2·6 a + 1·8	17 55·10	+1·49	56·59	N	d c − 2·3 b − 1·2 a −35·4	30 50·97	+1·08	52·05	55·46				
	1701	+15 46	S		20 3·69	+1·48	5·17	S		32 59·67	+0·90	60·57	55·40	m s 12 55·394	+ 0·045	+ 0·007	12 55·446
	1711	+20 27	S	s Q +1·41	22 19·15	+1·47	20·62	S	s Q +1·14	35 15·03	+0·96	15·99	55·37				
	1723	+32 6	N		24 8·16	+1·48	9·64	N		37 3·86	+1·14	5·00	55·36				
	1727	+32 12	N		24 39·52	+1·48	41·00	N		37 35·26	+1·14	36·40	55·40				
	1742	+23 58	S		27 19·78	+1·48	21·26	S		40 15·60	+1·01	16·61	55·35				
	1754	+26 51	N		28 51·82	+1·49	53·31	N		41 47·64	+1·05	48·69	55·38				
Jan. 7	1837	+24 32	S	*I. P. W.*	5 40 54·39	−1·34	53·05	S	*I. P. E.*	5 53 49·69	−1·27	48·42	12 55·37				
	1850	+32 5	N	d c + 0·2 b + 2·6 a + 1·8	42 52·39	−1·34	51·05	N	d c − 2·3 b − 1·2 a −35·4	55 47·57	−1·15	46·42	55·37				
	1863	+27 35	N		45 2·61	−1·33	1·28	N		57 57·99	−1·22	56·77	55·49	m s 12 55·408	+ 0·045	+ 0·009	12 55·462
	1875	+31 41	N	s Q −1·41	46 27·59	−1·34	26·25	N	s Q −1·14	59 22·78	−1·15	21·63	55·38				
	1893	+ 9 29	S		49 6·62	−1·34	5·28	S		6 2 2·19	−1·46	0·73	55·45				
	1907	+12 48	S		51 22·49	−1·34	21·15	S		4 17·96	−1·42	16·54	55·39				
Jan. 9	1663	+37 16	N	*I. P. W.*	5 15 33·16	+1·51	34·67	N	*I. P. E.*	5 28 28·90	+1·32	30·22	12 55·55				
	1681	+28 30	N	d c + 4·0 b − 0·8 a − 1·0	17 44·86	+1·49	46·35	N	d c − 2·4 b + 2·2 a −38·0	30 40·72	+1·17	41·89	55·54				
	1701	+15 46	S		19 53·39	+1·48	54·87	S		32 49·48	+0·96	50·44	55·57	m s 12 55·575	+ 0·048	+ 0·007	12 55·630
	1711	+20 27	S	s Q +1·41	22 8·84	+1·49	10·33	S	s Q +1·14	35 4·89	+1·03	5·92	55·59				
	1723	+32 6	N		23 57·84	+1·50	59·34	N		36 53·64	+1·24	54·88	55·54				
	1727	+32 12	N		24 29·13	+1·50	30·63	N		37 24·95	+1·24	26·19	55·56				
	1742	+23 58	S		27 9·38	+1·49	10·87	S		40 5·34	+1·08	6·42	55·55				
	1754	+26 51	N		28 41·41	+1·49	42·90	N		41 37·46	+1·14	38·60	55·70				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* 5h 41m 39s: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.014$, $H_N - H_S = +0^s.032$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 9	1810	+16 2	S	*I. P. W.*	5 37 2·75	−1·34	1·41	S	*I. P. E.*	5 49 58·35	−1·32	57·03	12 55·62				
	1829	+24 39	S	d c + 4·0 b − 0·8 a − 1·0	39 38·82	−1·33	37·49	S	d c − 2·4 b + 2·2 a −38·0	52 34·28	−1·18	33·10	55·61				
	1837	+24 32	S		40 44·04	−1·33	42·71	S		53 39·45	−1·19	38·26	55·55				
	1850	+32 5	N	s Q −1·41	42 42·00	−1·32	40·68	N	s Q −1·14	55 37·30	−1·05	36·25	55·57	m s 12 55·608	+ 0·048	+ 0·011	12 55·667
	1863	+27 35	N		44 52·33	−1·33	51·00	N		57 47·63	−1·12	46·51	55·51				
	1875	+31 41	N		46 17·24	−1·33	15·91	N		59 12·57	−1·06	11·51	55·60				
	1893	+ 9 29	S		48 56·31	−1·35	54·96	S		6 1 52·06	−1·41	50·65	55·69				
	1907	+12 48	S		51 12·16	−1·34	10·82	S		4 7·89	−1·36	6·53	55·71				
Jan. 10	1663	+37 16	N	*I. P. W.*	5 15 27·46	+1·50	28·96	N	*I. P. E.*	5 28 23·33	+1·42	24·75	12 55·79				
	1681	+28 30	N	d c + 6·6 b − 5·2 a − 7·7	17 39·22	+1·47	40·69	N	d c − 1·4 b + 3·4 a −42·2	30 35·15	+1·23	36·38	55·69				
	1701	+15 46	S		19 47·77	+1·41	49·18	S		32 43·88	+1·01	44·89	55·71				
	1711	+20 27	S	s Q +1·41	22 3·24	+1·44	4·68	S	s Q +1·15	34 59·23	+1·09	60·32	55·64	m s 12 55·726	+ 0·050	+ 0·007	12 55·783
	1723	+32 6	N		23 52·17	+1·48	53·65	N		36 48·10	+1·31	49·41	55·76				
	1727	+32 12	N		24 23·56	+1·48	25·04	N		37 19·45	+1·31	20·76	55·72				
	1742	+23 58	S		27 3·76	+1·45	5·21	S		39 59·81	+1·14	60·95	55·74				
	1754	+26 51	N		28 35·86	+1·46	37·32	N		41 31·88	+1·20	33·08	55·76				
Jan. 10	1810	+16 2	S	*I. P. W.*	5 36 57·14	−1·40	55·74	S	*I. P. E.*	5 49 52·76	−1·29	51·47	12 55·73				
	1829	+24 39	S	d c + 6·6 b − 5·2 a − 7·7	39 33·16	−1·37	31·79	S	d c − 1·4 b + 3·4 a −42·2	52 28·67	−1·15	27·52	55·73				
	1837	+24 32	S		40 38·41	−1·37	37·04	S		53 33·87	−1·15	32·72	55·68				
	1850	+32 5	N	s Q −1·41	42 36·34	−1·34	35·00	N	s Q −1·15	55 31·74	−1·00	30·74	55·74	m s 12 55·735	+ 0·050	+ 0·011	12 55·796
	1863	+27 35	N		44 46·59	−1·36	45·23	N		57 42·09	−1·08	41·01	55·78				
	1875	+31 41	N		46 11·56	−1·35	10·21	N		59 6·98	−1·01	5·97	55·76				
	1893	+ 9 29	S		48 50·71	−1·41	49·30	S		6 1 46·45	−1·40	45·05	55·75				
	1907	+12 48	S		51 6·61	−1·41	5·20	S		4 2·25	−1·34	0·91	55·71				

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.014$ $H_N - H_S = +0^s.032$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 4	2483	+15 54	S	*I. P. E.*	7 15 31·80	+1·28	33·08	S	*I. P. W.*	7 28 27·72	+1·02	28·74	12 55·66				
	2486	+16 5	S	d c − 6·8 b + 0·7 a − 3·6	15 43·13	+1·28	44·41	S	d c − 3·2 b + 2·1 a −23·1	28 39·05	+1·02	40·07	55·66				
	2493	+27 10	N		17 29·98	+1·29	31·27	N		30 25·78	+1·11	26·89	55·62				
	2504	+35 19	N	s Q + 1·43	19 39·25	+1·28	40·53	N	s Q + 1·14	32 34·84	+1·20	36·04	55·51	m s 12 55·609	+ 0·091	+ 0·009	12 55·709
	2514	+24 30	S		20 55·04	+1·28	56·32	S		33 50·85	+1·09	51·94	55·62				
	2537	+13 46	S		24 5·47	+1·28	6·75	S		37 1·41	+1·00	2·41	55·66				
	2549	+26 4	N		25 45·92	+1·28	47·20	N		38 41·71	+1·10	42·81	55·61				
	2563	+33 43	N		28 44·83	+1·29	46·12	N		41 40·46	+1·19	41·65	55·53				
Jan. 4	2617	+27 5	N	*I. P. E.*	7 35 10·13	−1·58	8·55	N	*I. P. W.*	7 48 5·34	−1·17	4·17	12 55·62				
	2632	+20 13	S	d c − 6·8 b + 0·7 a − 3·6	37 40·13	−1·58	38·55	S	d c − 3·2 b + 2·1 a −23·1	50 35·48	−1·23	34·25	55·70				
	2700	+22 59	S		48 12·34	−1·57	10·77	S		8 1 7·60	−1·21	6·39	55·62				
	2718	+27 50	N	s Q − 1·43	50 30·05	−1·57	28·48	N	s Q − 1·14	3 25·24	−1·16	24·08	55·60	m s 12 55·645	+ 0·091	+ 0·009	12 55·745
	2734	+32 50	N		53 8·35	−1·58	6·77	N		6 3·54	−1·11	2·43	55·66				
	2744	+18 1	S		54 19·91	−1·58	18·33	S		7 15·25	−1·25	14·00	55·67				
Jan. 5	2483	+15 54	S	*I. P. E.*	7 15 21·69	+1·23	22·92	S	*I. P. W.*	7 28 17·52	+1·09	18·61	12 55·69				
	2486	+16 5	S	d c − 7·1 b − 1·9 a + 0·7	15 33·07	+1·23	34·30	S	d c − 3·2 b + 4·2 a −17·6	28 28·86	+1·09	29·95	55·65				
	2493	+27 10	N		17 19·81	+1·20	21·01	N		30 15·61	+1·17	16·78	55·77				
	2504	+35 19	N	s Q + 1·43	19 29·15	+1·18	30·33	N	s Q + 1·14	32 24·68	+1·24	25·92	55·59	m s 12 55·651	+ 0·094	+ 0·009	12 55·754
	2514	+24 30	S		20 44·96	+1·20	46·16	S		33 40·61	+1·15	41·76	55·60				
	2537	+13 46	S		23 55·37	+1·23	56·60	S		36 51·17	+1·08	52·25	55·65				
	2549	+26 4	N		25 35·81	+1·20	37·01	N		38 31·51	+1·16	32·67	55·66				
	2563	+33 43	N		28 34·73	+1·19	35·92	N		41 30·29	+1·23	31·52	55·60				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.
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TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* $5^h\ 41^m\ 39^s$; AND FYZABAD (W) *Lat.* 26° 47′, *Long.* $5^h\ 28^m\ 42^s$.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Pers. Equations $S_N - S_S = +0^s.014$, $H_N - H_S = +0^s.032$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 5	2617	+27 5	N	*I. P. E.*	7 34 60·06	−1·66	58·40	N	*I. P. W.*	7 47 55·07	−1·11	53·96	12 55·56				
	2632	+20 13	S	*d* c − 7·1 b − 1·9 a + 0·7	37 30·13	−1·65	28·48	S	*d* c − 3·2 b + 4·2 a −17·6	50 25·23	−1·17	24·06	55·58				
	2672	+28 8	N		44 59·67	−1·66	58·01	N		57 54·79	−1·10	53·69	55·68	m s 12 55·607	+ 0·094	+ 0·008	12 55·709
	2700	+22 59	S	*s* Q −1·43	48 2·27	−1·65	0·62	S	*s* Q −1·14	8 0 57·31	−1·15	56·16	55·54				
	2718	+27 50	N		50 19·96	−1·66	18·30	N		3 15·07	−1·10	13·97	55·67				
	2734	+32 50	N		52 58·32	−1·67	56·65	N		5 53·29	−1·07	52·22	55·57				
	2744	+18 1	S		54 9·84	−1·64	8·20	S		7 5·03	−1·18	3·85	55·65				
Jan. 6	2483	+15 54	S	*I. P. E.*	7 15 10·83	+1·30	12·13	S	*I. P. W.*	7 28 6·82	+0·89	7·71	12 55·58				
	2486	+16 5	S	*d* c + 0·1 b − 4·9 a − 5·9	15 22·08	+1·30	23·38	S	*d* c − 1·0 b − 5·5 a −22·4	28 18·14	+0·89	19·03	55·65				
	2493	+27 10	N		17 8·90	+1·32	10·22	N		30 4·89	+0·97	5·86	55·64				
	2504	+35 19	N	*s* Q +1·43	19 18·20	+1·33	19·53	N	*s* Q +1·14	32 14·06	+1·05	15·11	55·58	m s 12 55·610	+ 0·100	+ 0·009	12 55·719
	2514	+24 30	S		20 34·00	+1·31	35·31	S		33 29·96	+0·95	30·91	55·60				
	2537	+13 46	S		23 44·45	+1·30	45·75	S		36 40·49	+0·88	41·37	55·62				
	2549	+26 4	N		25 24·84	+1·32	26·16	N		38 20·85	+0·96	21·81	55·65				
	2563	+33 43	N		28 23·77	+1·33	25·10	N		41 19·63	+1·03	20·66	55·56				
Jan. 6	2617	+27 5	N	*I. P. E.*	7 34 49·07	−1·54	47·53	N	*I. P. W.*	7 47 44·48	−1·31	43·17	12 55·64				
	2632	+20 13	S	*d* c + 0·1 b − 4·9 a − 5·9	37 19·11	−1·56	17·55	S	*d* c − 1·0 b − 5·5 a −22·4	50 14·56	−1·35	13·21	55·66				
	2659	+17 38	S		42 33·92	−1·57	32·35	S		55 29·36	−1·37	27·99	55·64				
	2672	+28 8	N	*s* Q −1·43	44 48·66	−1·54	47·12	N	*s* Q −1·14	57 44·06	−1·30	42·76	55·64	m s 12 55·618	+ 0·100	+ 0·009	12 55·727
	2700	+22 59	S		47 51·28	−1·55	49·73	S		8 0 46·66	−1·33	45·33	55·60				
	2718	+27 50	N		50 9·03	−1·54	7·49	N		3 4·36	−1·30	3·06	55·57				
	2734	+32 50	N		52 47·31	−1·54	45·77	N		5 42·57	−1·26	41·31	55·54				
	2744	+18 1	S		53 58·84	−1·56	57·28	S		6 54·30	−1·37	52·93	55·65				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* 5h 41m 39s; AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Peral. Equations $S_N - S_S = +0^s{\cdot}014$, $H_N - H_S = +0^s{\cdot}032$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 7	2483	+15 54	S	*I. P. W.*	7 14 59·27	+1·48	60·75	S	*I. P. E.*	7 27 55·36	+0·90	56·26	12 55·51				
	2486	+16 5	S	d c + 0·2 b + 2·6 a + 1·8	15 10·61	+1·48	12·09	S	d c − 2·3 b − 1·2 a − 35·4	28 6·68	+0·90	7·58	55·49				
	2493	+27 10	N		16 57·43	+1·49	58·92	N		29 53·45	+1·06	54·51	55·59				
	2504	+35 19	N	s Q +1·41	19 6·70	+1·48	8·18	N	s Q +1·14	32 2·56	+1·20	3·76	55·58	m s 12 55·571	+ 0·100	+ 0·009	12 55·680
	2514	+24 30	S		20 22·43	+1·48	23·91	S		33 18·56	+1·01	19·57	55·66				
	2537	+13 46	S		23 32·93	+1·48	34·41	S		36 29·10	+0·88	29·98	55·57				
	2549	+26 4	N		25 13·32	+1·49	14·81	N		38 9·35	+1·04	10·39	55·58				
	2563	+33 43	N		28 12·28	+1·48	13·76	N		41 8·18	+1·17	9·35	55·59				
Jan. 7	2617	+27 5	N	*I. P. W.*	7 34 37·54	−1·33	36·21	N	*I. P. E.*	7 47 32·96	−1·23	31·73	12 55·52				
	2632	+20 13	S	d c + 0·2 b + 2·6 a + 1·8	37 7·59	−1·35	6·24	S	d c − 2·3 b − 1·2 a − 35·4	50 3·07	−1·33	1·74	55·50				
	2659	+17 38	S		42 22·33	−1·35	20·98	S		55 17·85	−1·36	16·49	55·51				
	2672	+28 8	N	s Q −1·41	44 37·18	−1·33	35·85	N	s Q −1·14	57 32·56	−1·21	31·35	55·50	m s 12 55·523	+ 0·100	+ 0·009	12 55·632
	2700	+22 59	S		47 39·69	−1·35	38·34	S		8 0 35·12	−1·29	33·83	55·49				
	2718	+27 50	N		49 57·42	−1·33	56·09	N		2 52·82	−1·21	51·61	55·52				
	2734	+32 50	N		52 35·70	−1·34	34·36	N		5 31·02	−1·13	29·89	55·53				
	2744	+18 1	S		53 47·27	−1·35	45·92	S		6 42·89	−1·36	41·53	55·61				
Jan. 9	2483	+15 54	S	*I. P. W.*	7 14 37·15	+1·48	38·63	S	*I. P. E.*	7 27 33·36	+0·96	34·32	12 55·69				
	2486	+16 5	S	d c + 4·0 b − 0·8 a − 1.0	14 48·49	+1·48	49·97	S	d c − 2·4 b + 2·2 a − 38·0	27 44·71	+0·96	45·67	55·70				
	2493	+27 10	N		16 35·31	+1·49	36·80	N		29 31·42	+1·15	32·57	55·77				
	2504	+35 19	N	s Q +1·41	18 44·55	+1·51	46·06	N	s Q +1·14	31 40·56	+1·29	41·85	55·79	m s 12 55·755	+ 0·096	+ 0·009	12 55·860
	2514	+24 30	S		20 0·27	+1·49	1·76	S		32 56·50	+1·09	57·59	55·83				
	2537	+13 46	S		23 10·87	+1·48	12·35	S		36 7·12	+0·93	8·05	55·70				
	2549	+26 4	N		24 51·22	+1·49	52·71	N		37 47·34	+1·13	48·47	55·76				
	2563	+33 43	N		27 50·08	+1·50	51·58	N		40 46·11	+1·27	47·38	55·80				

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s{\cdot}014$ $H_N - H_S = +0^s{\cdot}032$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 9	2617	+27 5	N	*I. P. W.*	7 34 15·43	−1·33	14·10	N	*I. P. E.*	7 47 10·96	−1·14	9·82	12 55·72				
	2632	+20 13	S	d c + 4·0 b − 0·8 a − 1·0	36 45·42	−1·33	44·09	S	d c − 2·4 b + 2·2 a −38·0	49 41·09	−1·25	39·84	55·75				
	2659	+17 38	S		41 60·19	−1·33	58·86	S		54 55·91	−1·29	54·62	55·76				
	2672	+28 8	N	s Q −1·41	44 15·02	−1·33	13·69	N	s Q −1·14	57 10·63	−1·12	9·51	55·82	m s 12 55·756	+ 0·096	+ 0·009	12 55·861
	2700	+22 59	S		47 17·55	−1·33	16·22	S		8 0 13·17	−1·21	11·96	55·74				
	2718	+27 50	N		49 35·32	−1·33	33·99	N		2 30·89	−1·12	29·77	55·78				
	2734	+32 50	N		52 13·61	−1·32	12·29	N		5 9·08	−1·03	8·05	55·76				
	2744	+18 1	S		53 25·23	−1·33	23·90	S		6 20·91	−1·29	19·62	55·72				
Jan. 10	2483	+15 54	S	*I. P. W.*	7 14 26·82	+1·41	28·23	S	*I. P. E.*	7 27 23·05	+1·01	24·06	12 55·83				
	2486	+16 5	S	d c + 6·6 b − 5·2 a − 7·7	14 38·21	+1·42	39·63	S	d c − 1·4 b + 3·4 a −42·2	27 34·41	+1·01	35·42	55·79				
	2493	+27 10	N		16 24·92	+1·46	26·38	N		29 21·05	+1·21	22·26	55·88				
	2504	+35 19	N	s Q +1·41	18 34·19	+1·49	35·68	N	s Q +1·15	31 30·16	+1·37	31·53	55·85	m s 12 55·853	+ 0·092	+ 0·009	12 55·954
	2514	+24 30	S		19 50 06	+1·45	51·51	S		32 46·16	+1·15	47·31	55·80				
	2537	+13 46	S		23 0·53	+1·41	1·94	S		35 56·83	+0·98	57·81	55·87				
	2549	+26 4	N		24 40·84	+1·46	42·30	N		37 37·00	+1·19	38·19	55·89				
	2563	+33 43	N		27 39·78	+1·49	41·27	N		40 35·84	+1·34	37·18	55·91				
Jan. 10	2617	+27 5	N	*I. P. W.*	7 34 5·09	−1·36	3·73	N	*I. P. E.*	7 46 60·71	−1·10	59·61	12 55·88				
	2632	+20 13	S	d c + 6·6 b − 5·2 a − 7·7	36 35·18	−1·38	33·80	S	d c − 1·4 b + 3·4 a −42·2	49 30·90	−1·21	29·69	55·89				
	2659	+17 38	S		41 49·93	−1·39	48·54	S		54 45·70	−1·26	44·44	55·90				
	2672	+28 8	N	s Q −1·41	44 4·73	−1·36	3·37	N	s Q −1·15	56 60·37	−1·07	59·30	55·93	m s 12 55·868	+ 0·092	+ 0·009	12 55·969
	2700	+22 59	S		47 7·30	−1·38	5·92	S		8 0 2·95	−1·17	1·78	55·86				
	2718	+27 50	N		49 25·04	−1·36	23·68	N		2 20·60	−1·08	19·52	55·84				
	2734	+32 50	N		52 3·32	−1·34	1·98	N		4 58·81	−0·98	57·83	55·85				
	2744	+18 1	S		53 14·96	−1·39	13·57	S		6 10·61	−1·25	9·36	55·79				

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* 5ʰ 41ᵐ 39ˢ: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5ʰ 19ᵐ 58ˢ.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.029$, $H_N - H_S = +0^s.027$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 19	2499	+20 25	S	*I. P. W.*	7 30 2·75	+1·33	4·08	S	*I. P. W.*	7 31 58·71	+1·22	59·93	+1 55·85				
	2514	+24 30	N	*d* c + 2·3	31 57·78	+1·39	59·17	N	*d* c − 4·6	33 53·79	+1·21	55·00	55·83	m s +1 55·848	+ 0·297	− 0·001	+1 56·144
			S	b − 3·8 a −35·6	31 57·73	+1·39	59·12	S	b − 3·4 a − 0·9	33 53·78	+1·21	54·99	55·87				
	2537	+13 46	S	*s* Q +1·41	35 8·30	+1·22	9·52	S	*s* Q +1·41	37 4·21	+1·22	5·43	55·91				
	2549	+26 4	N		36 48·59	+1·40	49·99	N		38 44·62	+1·20	45·82	55·83				
	2563	+33 43	N		39 47·38	+1·53	48·91	N		41 43·51	+1·20	44·71	55·80				
				Mean, T_E	7 34 17												
Jan. 19	2617	+27 5	N	*I. P. W.*	7 46 12·84	−1·40	11·44	N	*I. P. W.*	7 48 8·70	−1·62	7·08	+1 55·64				
	2632	+20 13	S	*d* c + 2·3	48 42·95	−1·50	41·45	S	*d* c − 4·6	50 38·68	−1·60	37·08	55·63				
	2649	+16 50	S	b − 3·8 a −35·6	51 43·82	−1·56	42·26	S	b − 3·4 a − 0·9	53 39·46	−1·60	37·86	55·60				
	2659	+17 38	S	*s* Q −1·41	53 57·81	−1·54	56·27	S	*s* Q −1·41	55 53·40	−1·60	51·80	55·53	m s +1 55·563	+ 0·297	− 0·001	+1 55·859
	2672	+28 8	N		56 12·51	−1·38	11·13	N		58 8·27	−1·62	6·65	55·52				
	2700	+22 59	S		59 15·09	−1·45	13·64	S		8 1 10·79	−1·60	9·19	55·55				
			N		59 15·13	−1·45	13·68	N		1 10·82	−1·60	9·22	55·54				
	2718	+27 50	N		8 1 32·79	−1·39	31·40	N		3 28·51	−1·62	26·89	55·49				
				Mean, T_E	7 54 37												
Jan. 20	2549	+26 4	N	*I. P. W.*	7 36 44·02	+1·31	45·33	N	*I. P. W.*	7 38 24·80	+1·27	26·07	+1 40·74				
	2556	+20 36	S	*d* c + 0·1	38 2·51	+1·31	3·82	S	*d* c − 2·2	39 43·29	+1·29	44·58	40·76				
	2563	+33 43	N	b − 4·5 a − 3·2	39 42·94	+1·31	44·25	N	b − 3·4 a − 0·4	41 23·74	+1·27	25·01	40·76	m s +1 40·772	+ 0·295	− 0·001	+1 41·066
	2578	+23 26	N	*s* Q +1·42	41 19·14	+1·31	20·45	N	*s* Q +1·42	42 59·95	+1·29	61·24	40·79				
			S		41 19·09	+1·31	20·40	S		42 59·95	+1·29	61·24	40·84				
	2586	+28 30	N		42 27·32	+1·32	28·64	N		44 8·11	+1·27	9·38	40·74				
				Mean, T_E	7 39 56												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s:* AND JUBBULPORE (W) *Lat. 25° 10′, Long. 5h 19m 58s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.029$ $H_N - H_S = +0^s.027$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 20	2632	+20 13	S	*I. P. W.*	7 48 38·26	−1·54	36·72	S	*I. P. W.*	7 50 18·92	−1·55	17·37	+1 40·65				
	2649	+16 50	S	d c + 0·1	51 39·05	−1·54	37·51	S	d c − 2·2	53 19·75	−1·55	18·20	40·69				
	2659	+17 38	S	b − 4·5 a − 3·2	53 53·07	−1·54	51·53	S	b − 3·4 a − 0·4	55 33·75	−1·55	32·20	40·67				
	2700	+22 59	S	s Q −1·42	59 10·40	−1·53	8·87	S	s Q −1·42	8 0 51·07	−1·55	49·52	40·65	m s +1 40·615	+0·295	−0·001	+1 40·909
			N		59 10·37	−1·53	8·84	N		0 51·09	−1·55	49·54	40·70				
	2718	+27 50	N		8 1 28·15	−1·52	26·63	N		3 8·70	−1·57	7·13	40·50				
	2734	+32 50	N		4 6·48	−1·53	4·95	N		5 47·02	−1·57	45·45	40·50				
	2744	+18 1	S		5 18·03	−1·54	16·49	S		6 58·60	−1·55	57·05	40·56				
				Mean, T_E	7 57 55												
Jan. 21	2499	+20 25	S	*I. P. W.*	7 29 53·49	+1·31	54·80	S	*I. P. W.*	7 31 19·53	+1·35	20·88	+1 26·08				
	2514	+24 30	N	d c + 1·8	31 48·57	+1·33	49·90	N	d c + 0·1	33 14·65	+1·35	16·00	26·10				
			S	b − 5·4 a − 3·9	31 48·56	+1·33	49·89	S	b − 2·0 a + 3·6	33 14·64	+1·35	15·99	26·10				
	2537	+13 46	S	s Q +1·41	34 59·05	+1·31	60·36	S	s Q +1·40	36 24·99	+1·36	26·35	25·99				
	2549	+26 4	N		36 39·47	+1·32	40·79	N		38 5·39	+1·35	6·74	25·95	m s +1 25·986	+0·290	−0·001	+1 26·275
	2556	+20 36	S		37 57·97	+1·30	59·27	S		39 23·91	+1·35	25·26	25·99				
	2563	+33 43	N		39 38·42	+1·34	39·76	N		41 4·39	+1·33	5·72	25·96				
	2578	+23 26	N		41 14·67	+1·32	15·99	N		42 40·47	+1·35	41·82	25·83				
			S		41 14·62	+1·32	15·94	S		42 40·52	+1·35	41·87	25·93				
	2586	+28 30	N		42 22·82	+1·33	24·15	N		43 48·74	+1·34	50·08	25·93				
				Mean, T_E	7 36 46												
Jan. 21	2617	+27 5	N	*I. P. W.*	7 46 3·65	−1·49	2·16	N	*I. P. W.*	7 47 29·51	−1·46	28·05	+1 25·89				
	2632	+20 13	S	d c + 1·8	48 33·74	−1·51	32·23	S	d c + 0·1	49 59·54	−1·45	58·09	25·86				
	2649	+16 50	S	b − 5·4 a − 3·9	51 34·55	−1·51	33·04	S	b − 2·0 a + 3·6	52 60·40	−1·44	58·96	25·92				
	2659	+17 38	S	s Q −1·41	53 48·50	−1·51	46·99	S	s Q −1·40	55 14·33	−1·44	12·89	25·90				
	2672	+28 8	N		56 3·36	−1·49	1·87	N		57 29·20	−1·46	27·74	25·87	m s +1 25·812	+0·290	−0·001	+1 26·101
	2700	+22 59	S		59 5·89	−1·50	4·39	S		8 0 31·61	−1·45	30·16	25·77				
			N		59 5·89	−1·50	4·39	N		0 31·64	−1·45	30·19	25·80				
	2718	+27 50	N		8 1 23·68	−1·49	22·19	N		2 49·34	−1·46	47·88	25·69				
	2734	+32 50	N		4 2·01	−1·48	0·53	N		5 27·72	−1·47	26·25	25·72				
	2744	+18 1	S		5 13·58	−1·51	12·07	S		6 39·21	−1·44	37·77	25·70				
				Mean, T_E	7 56 29												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 89s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Peral. Equations $S_N - S_S = +0^s.029$ $H_N - H_S = +0^s.027$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 24	2499	+20 25	S	*I. P. E.*	7 29 38·16	+1·22	39·38	S	*I. P. E.*	7 30 21·76	+1·46	23·22	+0 43·84				
	2514	+24 30	N	*d* c − 2·7 b − 3·5 a −13·1	31 33·24	+1·22	34·46	N	*d* c − 1·6 b + 4·2 a − 1·4	32 16·89	+1·46	18·35	43·89				
			S		31 33·27	+1·22	34·49	S		32 16·76	+1·46	18·22	43·73				
	2537	+13 46	S	*s* Q +1·38	34 43·72	+1·19	44·91	S	*s* Q +1·40	35 27·18	+1·45	28·63	43·72				
	2549	+26 4	N		36 24·20	+1·23	25·43	N		37 7·63	+1·47	9·10	43·67	m s +0 43·724	+0·294	−0·001	+0 44·017
	2556	+20 36	S		37 42·71	+1·18	43·89	S		38 26·11	+1·46	27·57	43·68				
	2563	+33 43	N		39 23·13	+1·28	24·41	N		40 6·58	+1·48	8·06	43·65				
	2578	+23 26	N		40 59·33	+1·23	60·56	N		41 42·79	+1·46	44·25	43·69				
			S		40 59·34	+1·23	60·57	S		41 42·77	+1·46	44·23	43·66				
	2586	+28 30	N		42 7·52	+1·25	8·77	N		42 51·01	+1·47	52·48	43·71				
				Mean, T_E	7 36 30												
Jan. 24	2617	+27 5	N	*I. P. E.*	7 45 48·37	−1·52	46·85	N	*I. P. E.*	7 46 31·77	−1·33	30·44	+0 43·59				
	2632	+20 13	S	*d* c − 2·7 b − 3·5 a −13·1	48 18·39	−1·54	16·85	S	*d* c − 1·6 b + 4·2 a − 1·4	49 1·81	−1·34	0·47	43·62				
	2649	+16 50	S		51 19·25	−1·56	17·69	S		52 2·61	−1·34	1·27	43·58				
	2659	+17 38	S	*s* Q −1·38	53 33·24	−1·56	31·68	S	*s* Q −1·40	54 16·55	−1·34	15·21	43·53				
	2672	+28 8	N		55 48·12	−1·52	46·60	N		56 31·37	−1·33	30·04	43·44	m s +0 43·475	+0·294	−0·001	+0 43·768
	2700	+22 59	S		58 50·63	−1·54	49·09	S		59 33·90	−1·34	32·56	43·47				
			N		58 50·64	−1·54	49·10	N		59 33·90	−1·34	32·56	43·46				
	2718	+27 50	N		8 1 8·38	−1·52	6·86	N		8 1 51·60	−1·33	50·27	43·41				
	2734	+32 50	N		3 46·72	−1·49	45·23	N		4 29·90	−1·32	28·58	43·35				
	2744	+18 1	S		4 58·32	−1·55	56·77	S		5 41·41	−1·34	40·07	43·30				
				Mean, T_E	7 56 14												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* 5h 41m 39s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.029$ $H_N - H_S = +0^s.027$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 25	2514	+24 30	N	*I. P. E.*	7 31 28·49	+1·06	29·55	N	*I. P. E.*	7 31 57·03	+1·44	58·47	+0 28·92				
			S	*d* c − 5·9 b − 6·9 a −20·0	31 28·45	+1·06	29·51	S	*d* c − 2·1 b + 3·1 a − 4·3	31 57·00	+1·44	58·44	28·93				
	2537	+13 46	S		34 39·04	+0·99	40·03	S		35 7·43	+1·41	8·84	28·81				
	2549	+26 4	N	*s* Q +1·37	36 19·35	+1·07	20·42	N	*s* Q +1·41	36 47·81	+1·45	49·26	28·84	m s +0 28·831	0·304	0·001	+0 29·134
	2556	+20 36	S		37 37·90	+0·97	38·87	S		38 6·37	+1·43	7·80	28·93				
	2563	+33 43	N		39 18·30	+1·12	19·42	N		39 46·69	+1·45	48·14	28·72		+	−	
	2578	+23 26	N		40 54·58	+1·05	55·63	N		41 22·98	+1·44	24·42	28·79				
			S		40 54·50	+1·05	55·55	S		41 22·94	+1·44	24·38	28·83				
	2586	+28 30	N		42 2·77	+1·08	3·85	N		42 31·11	+1·45	32·56	28·71				
				Mean, T_E	7 37 11												
Jan. 25	2617	+27 5	N	*I. P. E.*	7 45 43·60	−1·66	41·94	N	*I. P. E.*	7 46 11·92	−1·37	10·55	+0 28·61				
	2632	+20 13	S	*d* c − 5·9 b − 6·9 a −20·0	48 13·66	−1·70	11·96	S	*d* c − 2·1 b + 3·1 a − 4·3	48 41·91	−1·40	40·51	28·55				
	2649	+16 50	S		51 14·52	−1·73	12·79	S		51 42·72	−1·40	41·32	28·53				
	2659	+17 38	S	*s* Q −1·37	53 28·49	−1·72	26·77	S	*s* Q −1·41	53 56·68	−1·40	55·28	28·51				
	2672	+28 8	N		55 43·27	−1·66	41·61	N		56 11·52	−1·37	10·15	28·54	m s +0 28·496	0·304	0·001	+0 28·799
	2700	+22 59	S		58 45·84	−1·69	44·15	S		59 14·02	−1·38	12·64	28·49		+	−	
			N		58 45·90	−1·69	44·21	N		59 14·03	−1·38	12·65	28·44				
	2718	+27 50	N		8 1 3·57	−1·66	1·91	N		8 1 31·74	−1·37	30·37	28·46				
	2734	+32 50	N		3 41·84	−1·63	40·21	N		4 10·02	−1·37	8·65	28·44				
	2744	+18 1	S		4 53·56	−1·72	51·84	S		5 21·63	−1·40	20·23	28·39				
				Mean, T_E	7 56 10												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s;* AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.029$, $H_N - H_S = +0.027$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 26	2499	+20 25	S	*I. P. E.*	7 29 28·63	+0·95	29·58	S	*I. P. E.*	7 29 41·48	+1·52	43·00	+0 13·42				
	2514	+24 30	N	d c − 7·8	31 23·72	+0·97	24·69	N	d c − 0·6	31 36·56	+1·51	38·07	13·38				
			S	b − 9·5 a −22·8	31 23·65	+0·97	24·62	S	b + 5·4 a − 1·6	31 36·50	+1·51	38·01	13·39				
	2537	+13 46	S	s Q +1·39	34 34·18	+0·90	35·08	S	s Q +1·40	34 46·89	+1·50	48·39	13·31				
	2549	+26 4	N		36 14·56	+0·97	15·53	N		36 27·33	+1·52	28·85	13·32	m s +0 13·323	+ 0·307	− 0·001	+0 13·629
	2556	+20 36	S		37 33·12	+0·87	33·99	S		37 45·81	+1·52	47·33	13·34				
	2563	+33 43	N		39 13·47	+1·03	14·50	N		39 26·22	+1·53	27·75	13·25				
	2578	+23 26	N		40 49·79	+0·96	50·75	N		41 2·47	+1·52	3·99	13·24				
			S		40 49·70	+0·96	50·66	S		41 2·48	+1·52	4·00	13·34				
	2586	+28 30	N		41 57·99	+1·00	58·99	N		42 10·71	+1·52	12·23	13·24				
				Mean, T_E	7 36 21												
Jan. 26	2617	+27 5	N	*I. P. E.*	7 45 38·85	−1·80	37·05	N	*I. P. E.*	7 45 51·44	−1·28	50·16	+0 13·11				
	2632	+20 13	S	d c − 7·8	48 8·92	−1·85	7·07	S	d c − 0·6	48 21·48	−1·28	20·20	13·13				
	2649	+16 50	S	b − 9·5 a −22·8	51 9·71	−1·86	7·85	S	b + 5·4 a − 1·6	51 22·25	−1·28	20·97	13·12				
	2659	+17 38	S	s Q −1·39	53 23·72	−1·86	21·86	S	s Q −1·40	53 36·24	−1·28	34·96	13·10				
	2672	+28 8	N		55 38·51	−1·79	36·72	N		55 51·06	−1·28	49·78	13·06	m s +0 13·050	+ 0·307	− 0·001	+0 13·356
	2700	+22 59	S		58 41·07	−1·82	39·25	S		58 53·61	−1·28	52·33	13·08				
			N		58 41·07	−1·82	39·25	N		58 53·63	−1·28	52·35	13·10				
	2718	+27 50	N		8 0 58·86	−1·79	57·07	N		8 1 11·28	−1·28	10·00	12·93				
	2734	+32 50	N		3 37·15	−1·76	35·39	N		3 49·59	−1·27	48·32	12·93				
	2744	+18 1	S		4 48·78	−1·86	46·92	S		4 61·14	−1·28	59·86	12·94				
				Mean, T_E	7 56 5												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s·1* AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s{\cdot}029$ $H_N - H_S = +0^s{\cdot}027$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 19	2082	+30 34	N	*I. P. W.*	6 20 52·90	+1·48	54·38	N	*I. P. W.*	6 42 33·70	+1·20	34·90	21 40·52				
	2097	+28 17	N	d c + 2·3 b − 3·8 a −35·6	22 49·11	+1·44	50·55	N	d c − 4·6 b − 3·4 a − 0·9	44 29·85	+1·20	31·05	40·50				
	2110	+32 32	N		24 39·02	+1·51	40·53	N		46 19·89	+1·20	21·09	40·56				
	2129	+14 15	S	s Q +1·41	26 47·84	+1·23	49·07	S	s Q +1·41	48 28·44	+1·22	29·66	40·59	m s 21 40·573	+ 0·071	− 0·001	21 40·643
	2140	+16 18	S		27 59·28	+1·26	60·54	S		49 39·92	+1·22	41·14	40·60				
	2154	+24 42	N		30 6·98	+1·39	8·37	N		51 47·75	+1·21	48·96	40·59				
			S		30 6·94	+1·39	8·33	S		51 47·73	+1·21	48·94	40·61				
	2173	+19 46	S		32 57·57	+1·32	58·89	S		54 38·26	+1·22	39·48	40·59				
	2184	+16 31	S		34 27·18	+1·26	28·44	S		56 7·82	+1·22	9·04	40·60				
Jan. 19	2239	+38 35	N	*I. P. W.*	6 45 4·52	−1·20	3·32	N	*I. P. W.*	7 6 45·56	−1·62	43·94	21 40·62				
	2241	+38 39	N	d c + 2·3 b − 3·8 a −35·6	45 48·37	−1·20	47·17	N	d c − 4·6 b − 3·4 a − 0·9	7 29·44	−1·62	27·82	40·65				
	2255	+13 20	S		47 55·73	−1·60	54·13	S		9 36·38	−1·60	34·78	40·65				
	2275	+26 14	N	s Q −1·41	51 27·52	−1·42	26·10	N	s Q −1·41	13 8·42	−1·62	6·80	40·70	m s 21 40·663	+ 0·071	− 0·001	21 40·733
	2285	+16 15	S		53 25·38	−1·56	23·82	S		15 6·09	−1·60	4·49	40·67				
	2301	+29 33	N		55 56·97	−1·36	55·61	N		17 37·88	−1·62	36·26	40·65				
	2313	+22 49	N		58 8·67	−1·46	7·21	N		19 49·47	−1·60	47·87	40·66				
			S		58 8·57	−1·46	7·11	S		19 49·41	−1·60	47·81	40·70				
Jan. 20	2173	+19 46	S	*I. P. W.*	6 32 52·90	+1·30	54·20	S	*I. P. W.*	6 54 33·49	+1·29	34·78	21 40·58				
	2184	+16 31	S	d c + 0·1 b − 4·5 a − 3·2 s Q +1·42	34 22·43	+1·31	23·74	S	d c − 2·2 b − 3·4 a − 0·4 s Q +1·42	56 3·06	+1·29	4·35	40·61	m s 21 40·595	+ 0·070	− 0·002	21 40·663

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.029$, $H_N - H_S = +0^s.027$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 20	2239	+38 35	N	*I. P. W.*	6 44 60·19	−1·53	58·66	N	*I. P. W.*	7 6 40·91	−1·57	39·34	21 40·68				
	2241	+38 39	N	d c + 0·1 b − 4·5 a − 3·2	45 44·09	−1·53	42·56	N	d c − 2·2 b − 3·4 a − 0·4	7 24·74	−1·57	23·17	40·61				
	2255	+13 20	S		47 50·95	−1·53	49·42	S		9 31·62	−1·55	30·07	40·65				
	2265	+17 53	S	s Q −1·42	49 16·53	−1·54	14·99	S	s Q −1·42	10 57·18	−1·55	55·63	40·64	m s 21 40·642	+ 0·070	− 0·001	21 40·711
	2275	+26 14	N		51 23·03	−1·53	21·50	N		13 3·66	−1·57	2·09	40·59				
	2285	+16 15	S		53 20·70	−1·54	19·16	S		14 61·33	−1·55	59·78	40·62				
	2301	+29 33	N		55 52·51	−1·53	50·98	N		17 33·14	−1·57	31·57	40·59				
	2313	+22 49	N		58 4·02	−1·53	2·49	N		19 44·72	−1·55	43·17	40·68				
			S		58 3·95	−1·53	2·42	S		19 44·69	−1·55	43·14	40·72				
Jan. 21	2082	+30 34	N	*I. P. W.*	6 20 43·75	+1·33	45·08	N	*I. P. W.*	6 42 24·51	+1·34	25·85	21 40·77				
	2097	+28 17	N	d c + 1·8 b − 5·4 a − 3·9	22 39·96	+1·33	41·29	N	d c + 0·1 b − 2·0 a + 3·6	44 20·69	+1·34	22·03	40·74				
	2110	+32 32	N		24 30·02	+1·34	31·36	N		46 10·67	+1·33	12·00	40·64				
	2129	+14 15	S	s Q +1·41	26 38·49	+1·32	39·81	S	s Q +1·40	48 19·17	+1·36	20·53	40·72	m s 21 40·720	+ 0·072	− 0·001	21 40·791
	2140	+16 18	S		27 49·95	+1·31	51·26	S		49 30·64	+1·36	32·00	40·74				
	2154	+24 42	N		29 57·76	+1·33	59·09	N		51 38·53	+1·35	39·88	40·79				
			S		29 57·77	+1·33	59·10	S		51 38·45	+1·35	39·80	40·70				
	2173	+19 46	S		32 48·29	+1·32	49·61	S		54 28·95	+1·36	30·31	40·70				
	2184	+16 31	S		34 17·87	+1·31	19·18	S		55 58·52	+1·36	59·88	40·70				
Jan. 21	2239	+38 35	N	*I. P. W.*	6 44 55·67	−1·48	54·19	N	*I. P. W.*	7 6 36·28	−1·49	34·79	21 40·60				
	2241	+38 39	N	d c + 1·8 b − 5·4 a − 3·9	45 39·46	−1·48	37·98	N	d c + 0·1 b − 2·0 a + 3·6	7 20·12	−1·49	18·63	40·65				
	2255	+13 20	S		47 46·37	−1·51	44·86	S		9 27·03	−1·44	25·59	40·73				
	2265	+17 53	S	s Q −1·41	49 11·96	−1·51	10·45	S	s Q −1·40	10 52·60	−1·44	51·16	40·71	m s 21 40·721	+ 0·072	− 0·001	21 40·792
	2275	+26 14	N		51 18·36	−1·50	16·86	N		12 59·10	−1·46	57·64	40·78				
	2285	+16 15	S		53 16·08	−1·51	14·57	S		14 56·78	−1·44	55·34	40·77				
	2301	+29 33	N		55 47·91	−1·49	46·42	N		17 28·60	−1·46	27·14	40·72				
	2313	+22 49	N		57 59·45	−1·50	57·95	N		19 40·11	−1·45	38·66	40·71				
			S		57 59·38	−1·50	57·88	S		19 40·15	−1·45	38·70	40·82				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s*; AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.029$, $H_N - H_S = +0^s.027$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 24	2082	+30 34	N	*I. P. E.*	6 20 28·26	+1·26	29·52	N	*I. P. E.*	6 42 8·95	+1·47	10·42	21 40·90				
	2097	+28 17	N	*d* c − 2·7 b − 3·5 *a* −13·1	22 24·49	+1·25	25·74	N	*d* c − 1·6 b + 4·2 *a* − 1·4	44 5·12	+1·47	6·59	40·85				
	2110	+32 32	N		24 14·53	+1·27	15·80	N		45 55·14	+1·48	56·62	40·82				
	2129	+14 15	S	*s* *Q* +1·38	26 23·12	+1·19	24·31	S	*s* *Q* +1·40	48 3·64	+1·45	5·09	40·78	m s 21 40·797	+ 0·076	− 0·001	21 40·872
	2140	+16 18	S		27 34·60	+1·20	35·80	S		49 15·11	+1·46	16·57	40·77				
	2154	+24 42	N		29 42·40	+1·22	43·62	N		51 22·91	+1·46	24·37	40·75				
			S		29 42·36	+1·22	43·58	S		51 22·87	+1·46	24·33	40·75				
	2173	+19 46	S		32 32·95	+1·22	34·17	S		54 13·42	+1·46	14·88	40·71				
	2184	+16 31	S		34 2·46	+1·20	3·66	S		55 43·04	+1·46	44·50	40·84				
Jan. 24	2239	+38 35	N	*I. P. E.*	6 44 40·14	−1·46	38·68	N	*I. P. E.*	7 6 20·78	−1·32	19·46	21 40·78				
	2241	+38 39	N	*d* c − 2·7 b − 3·5 *a* −13·1	45 24·00	−1·46	22·54	N	*d* c − 1·6 b + 4·2 *a* − 1·4	7 4·58	−1·32	3·26	40·72				
	2255	+13 20	S		47 31·04	−1·58	29·46	S		9 11·48	−1·35	10·13	40·67				
	2265	+17 53	S	*s* *Q* −1·38	48 56·64	−1·55	55·09	S	*s* *Q* −1·40	10 37·09	−1·34	35·75	40·66	m s 21 40·701	+ 0·076	− 0·001	21 40·776
	2275	+26 14	N		51 3·05	−1·53	1·52	N		12 43·55	−1·33	42·22	40·70				
	2285	+16 15	S		52 60·78	−1·56	59·22	S		14 41·26	−1·34	39·92	40·70				
	2301	+29 33	N		55 32·51	−1·51	31·00	N		17 13·01	−1·33	11·68	40·68				
	2313	+22 49	N		57 44·12	−1·54	42·58	N		19 24·59	−1·34	23·25	40·67				
			S		57 44·06	−1·54	42·52	S		19 24·59	−1·34	23·25	40·73				
Jan. 25	2082	+30 34	N	*I. P. E.*	6 20 23·50	+1·10	24·60	N	*I. P. E.*	6 42 3·96	+1·45	5·41	21 40·81				
	2097	+28 17	N	*d* c − 5·9 b − 6·9 *a* −20·0	22 19·68	+1·08	20·76	N	*d* c − 2·1 b + 3·1 *a* − 4·3	44 0·17	+1·45	1·62	40·86				
	2110	+32 32	N		24 9·69	+1·11	10·80	N		45 50·15	+1·45	51·60	40·80				
	2129	+14 15	S	*s* *Q* +1·37	26 18·36	+0·99	19·35	S	*s* *Q* +1·41	47 58·71	+1·41	60·12	40·77	m s 21 40·782	+ 0·074	− 0·001	21 40·855
	2140	+16 18	S		27 29·84	+1·01	30·85	S		49 10·18	+1·42	11·60	40·75				
	2154	+24 42	N		29 37·56	+1·06	38·62	N		51 17·95	+1·44	19·39	40·77				
			S		29 37·53	+1·06	38·59	S		51 17·97	+1·44	19·41	40·82				
	2173	+19 46	S		32 28·11	+1·03	29·14	S		54 8·46	+1·42	9·88	40·74				
	2184	+16 31	S		33 57·72	+1·01	58·73	S		55 38·03	+1·42	39·45	40·72				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s:* AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.029$, $H_N - H_S = +0^s.027$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 25	2239	+38 35	N	*I. P. E.*	6 44 35·31	−1·58	33·73	N	*I. P. E.*	7 6 15·77	−1·35	14·42	21 40·69				
	2241	+38 39	N	d c − 5·9 b − 6·9 a −20·0	45 19·21	−1·58	17·63	N	d c − 2·1 b + 3·1 a − 4·3	6 59·71	−1·35	58·36	40·73				
	2255	+13 20	S		47 26·26	−1·75	24·51	S		9 6·64	−1·41	5·23	40·72				
	2265	+17 53	S	s Q −1·37	48 51·84	−1·72	50·12	S	s Q −1·41	10 32·23	−1·40	30·83	40·71	m s 21 40·733	+ 0·074	− 0·001	21 40·806
	2275	+26 14	N		50 58·17	−1·67	56·50	N		12 38·62	−1·37	37·25	40·75				
	2285	+16 15	S		52 55·95	−1·73	54·22	S		14 36·38	−1·40	34·98	40·76				
	2301	+29 33	N		55 27·66	−1·65	26·01	N		17 8·16	−1·37	6·79	40·78				
	2313	+22 49	N		57 39·26	−1·69	37·57	N		19 19·70	−1·38	18·32	40·75				
			S		57 39·25	−1·69	37·56	S		19 19·65	−1·38	18·27	40·71				
Jan. 26	2082	+30 34	N	*I. P. E.*	6 20 18·61	+1·01	19·62	N	*I. P. E.*	6 41 59·18	+1·53	60·71	21 41·09				
	2097	+28 17	N	d c − 7·8 b − 9·5 a −22·8	22 14·81	+1·00	15·81	N	d c − 0·6 b + 5·4 a − 1·6	43 55·40	+1·52	56·92	41·11				
	2110	+32 32	N		24 4·79	+1·02	5·81	N		45 45·35	+1·53	46·88	41·07				
	2129	+14 15	S	s Q +1·39	26 13·45	+0·90	14·35	S	s Q +1·40	47 53·92	+1·51	55·43	41·08	m s 21 41·075	+ 0·071	− 0·001	21 41·145
	2140	+16 18	S		27 24·99	+0·92	25·91	S		49 5·44	+1·52	6·96	41·05				
	2154	+24 42	N		29 32·75	+0·97	33·72	N		51 13·24	+1·51	14·75	41·03				
			S		29 32·66	+0·97	33·63	S		51 13·17	+1·51	14·68	41·05				
	2184	+16 31	S		33 52·83	+0·92	53·75	S		55 33·35	+1·52	34·87	41·12				
Jan. 26	2239	+38 35	N	*I. P. E.*	6 44 30·51	−1·72	28·79	N	*I. P. E.*	7 6 10·98	−1·26	9·72	21 40·93				
	2241	+38 39	N	d c − 7·8 b − 9·5 a −22·8	45 14·33	−1·72	12·61	N	d c − 0·6 b + 5·4 a − 1·6	6 54·90	−1·26	53·64	41·03				
	2265	+17 53	S		48 47·02	−1·86	45·16	S		10 27·41	−1·28	26·13	40·97				
	2275	+26 14	N	s Q −1·39	50 53·42	−1·81	51·61	N	s Q −1·40	12 33·80	−1·28	32·52	40·91	m s 21 40·931	+ 0·071	− 0·001	21 41·001
	2285	+16 15	S		52 51·18	−1·86	49·32	S		14 31·53	−1·28	30·25	40·93				
	2301	+29 33	N		55 22·93	−1·78	21·15	N		17 3·26	−1·28	1·98	40·83				
	2313	+22 49	N		57 34·46	−1·82	32·64	N		19 14·87	−1·28	13·59	40·95				
			S		57 34·48	−1·82	32·66	S		19 14·84	−1·28	13·56	40·90				

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Hearnside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns for Persl. Equations $S_N - S_S = +0^s.029$ $H_N - H_S = +0^s.027$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 19	2937	+21 54	N	*I. P. W.*	8 16 35·19	+1·35	36·54	N	*I. P. W.*	8 38 15·94	+1·22	17·16	21 40·62				
			S	*d* c + 2·3 b − 3·8 a −35·6	16 35·15	+1·35	36·50	S	*d* c − 4·6 b − 3·4 a − 0·9	38 15·92	+1·22	17·14	40·64				
	2958	+10 31	S		18 28·40	+1·19	29·59	S		40 9·04	+1·22	10·26	40·67				
	2970	+12 33	S	*s* Q +1·41	20 35·57	+1·21	36·78	S	*s* Q +1·41	42 16·24	+1·22	17·46	40·68	m s 21 40·682	+0·297	−0·001	21 40·978
	2984	+33 44	N		23 19·93	+1·53	21·48	N		45 0·97	+1·20	2·17	40·69				
	2999	+32 55	N		25 24·71	+1·52	26·23	N		47 5·69	+1·20	6·89	40·66				
	3017	+20 25	S		27 17·80	+1·33	19·13	S		48 58·61	+1·22	59·83	40·70				
	3033	+33 22	N		29 47·05	+1·53	48·58	N		51 28·15	+1·20	29·35	40·77				
	3056	+32 53	N		32 25·21	+1·52	26·73	N		54 6·24	+1·20	7·44	40·71				
Jan. 19	3107	+15 41	S	*I. P. W.*	8 40 22·98	−1·57	21·41	S	*I. P. W.*	9 2 3·58	−1·60	1·98	21 40·57				
	3117	+22 31	S	*d* c + 2·3 b − 3·8 a −35·6	42 44·55	−1·46	43·09	S	*d* c − 4·6 b − 3·4 a − 0·9	4 25·36	−1·60	23·76	40·67				
			N		42 44·56	−1·46	43·10	N		4 25·39	−1·60	23·79	40·69				
	3129	+18 32	S	*s* Q −1·41	45 29·28	−1·52	27·76	S	*s* Q −1·41	7 10·04	−1·60	8·44	40·68	m s 21 40·674	+0·297	−0·001	21 40·970
	3138	+21 47	S		47 2 88	−1·47	1·41	S		8 43·72	−1·60	42·12	40·71				
	3147	+15 26	S		48 52·98	−1·57	51·41	S		10 33·68	−1·60	32·08	40·67				
	3170	+26 45	N		52 31·24	−1·41	29·83	N		14 12·17	−1·62	10·55	40·72				
	3183	+25 40	N		54 28·76	−1·42	27·34	N		16 9·60	−1·61	7·99	40·65				
	3194	+25 41	N		56 51·93	−1·42	50·51	N		18 32·83	−1·61	31·22	40·71				
Jan. 20	2958	+10 31	S	*I. P. W.*	8 18 8·55	+1·30	9·85	S	*I. P. W.*	8 39 49·23	+1·29	50·52	21 40·67				
	2970	+12 33	S	*d* c + 0·1 b − 4·5 a − 3·2	20 15·75	+1·31	17·06	S	*d* c − 2·2 b − 3·4 a − 0·4	41 56·32	+1·29	57·61	40·55				
	2984	+33 44	N		23 0·43	+1·31	1·74	N		44 41·19	+1·27	42·46	40·72				
	2999	+32 55	N	*s* Q +1·42	25 5·23	+1·31	6·54	N	*s* Q +1·42	46 46·02	+1·27	47·29	40·75				
	3017	+20 25	S		26 58·09	+1·31	59·40	S		48 38·88	+1·29	40·17	40·77	m s 21 40·726	+0·295	−0·001	21 41·020
	3033	+33 22	N		29 27·63	+1·31	28·94	N		51 8·47	+1·27	9·74	40·80				
	3056	+32 53	N		32 5·77	+1·31	7·08	N		53 46·51	+1·27	47·78	40·70				
	3079	+24 55	N		35 38·02	+1·31	39·33	N		57 18·83	+1·28	20·11	40·78				
			S		35 38·01	+1·31	39·32	S		57 18·83	+1·28	20·11	40·79				

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

HAZARIBAGH (E) *Lat. 24° 0′, Long. 5h 41m 39s;* AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.029$ $H_N - H_S = +0^s.027$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 20	3117	+22 31	S	*I. P. W.*	8 42 24·89	−1·53	23·36	S	*I. P. W.*	9 4 5·60	−1·55	4·05	21 40·69				
			N	*d* c + 0·1	42 24·85	−1·53	23·32	N	*d* c − 2·2	4 5·63	−1·55	4·08	40·76				
	3129	+18 32	S	b − 4·5 a − 3·2	45 9·53	−1·54	7·99	S	b − 3·4 a − 0·4	6 50·24	−1·55	48·69	40·70				
	3138	+21 47	S	*s* Q −1·42	46 43·22	−1·53	41·69	S	*s* Q −1·42	8 23·95	−1·55	22·40	40·71	m s 21 40·700	+ 0·295	− 0·001	21 40·994
	3147	+15 26	S		48 33·19	−1·53	31·66	S		10 13·86	−1·55	12·31	40·65				
	3170	+26 45	N		52 11·67	−1·53	10·14	N		13 52·40	−1·57	50·83	40·69				
	3183	+25 40	N		54 9·06	−1·53	7·53	N		15 49·83	−1·56	48·27	40·74				
	3194	+25 41	N		56 32·34	−1·53	30·81	N		18 13·03	−1·56	11·47	40·66				
Jan. 21	2958	+10 31	S	*I. P. W.*	8 17 49·28	+1·31	50·59	S	*I. P. W.*	8 39 29·91	+1·38	31·29	21 40·70				
	2970	+12 33	S	*d* c + 1·8	19 56·33	+1·31	57·64	S	*d* c + 0·1	41 37·14	+1·37	38·51	40·87				
	2984	+33 44	N	b − 5·4 a − 3·9	22 41·03	+1·34	42·37	N	b − 2·0 a + 3·6	44 21·90	+1·33	23·23	40·86				
	2999	+32 55	N	*s* Q +1·41	24 45·86	+1·34	47·20	N	*s* Q +1·40	46 26·68	+1·33	28·01	40·81	m s 21 40·802	+ 0·290	− 0·001	21 41·091
	3017	+20 25	S		26 38·71	+1·31	40·02	S		48 19·51	+1·35	20·86	40·84				
	3033	+33 22	N		29 8·23	+1·34	9·57	N		50 49·04	+1·33	50·37	40·80				
	3056	+32 53	N		31 46·36	+1·34	47·70	N		53 27·16	+1·33	28·49	40·79				
	3079	+24 55	N		35 18·70	+1·33	20·03	N		56 59·48	+1·35	60·83	40·80				
			S		35 18·69	+1·33	20·02	S		56 59·42	+1·35	60·77	40·75				
Jan. 21	3117	+22 31	S	*I. P. W.*	8 42 5·49	−1·50	3·99	S	*I. P. W.*	9 3 46·14	−1·45	44·69	21 40·70				
			N	*d* c + 1·8	42 5·46	−1·50	3·96	N	*d* c + 0·1	3 46·22	−1·45	44·77	40·81				
	3129	+18 32	S	b − 5·4 a − 3·9	44 50·16	−1·51	48·65	S	b − 2·0 a + 3·6	6 30·89	−1·44	29·45	40·80				
	3138	+21 47	S	*s* Q −1·41	46 23·80	−1·50	22·30	S	*s* Q −1·40	8 4·51	−1·45	3·06	40·76	m s 21 40·746	+ 0·290	− 0·001	21 41·035
	3147	+15 26	S		48 13·83	−1·50	12·33	S		9 54·47	−1·44	53·03	40·70				
	3170	+26 45	N		51 52·29	−1·50	50·79	N		13 33·03	−1·46	31·57	40·78				
	3183	+25 40	N		53 49·76	−1·49	48·27	N		15 30·42	−1·45	28·97	40·70				
	3194	+25 41	N		56 12·96	−1·49	11·47	N		17 53·64	−1·45	52·19	40·72				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* 5h 41m 39s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.029$ $H_N - H_S = +0^s.027$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 24	2958	+10 31	S	*I. P. E.*	8 16 51·91	+1·17	53·08	S	*I. P. E.*	8 38 32·24	+1·44	33·68	21 40·60				
	2970	+12 33	S	*d* c − 2·7 b − 3·5 *a* −13·1	18 59·00	+1·18	60·18	S	*d* c − 1·6 b + 4·2 *a* − 1·4	40 39·39	+1·44	40·83	40·65				
	2984	+33 44	N		21 43·67	+1·28	44·95	N		43 24·16	+1·48	25·64	40·69				
	2999	+32 55	N	*s* *Q* +1·38	23 48·42	+1·28	49·70	N	*s* *Q* +1·40	45 28·92	+1·48	30·40	40·70	m s 21 40·656	+ 0·294	− 0·001	21 40·949
	3017	+20 25	S		25 41·37	+1·22	42·59	S		47 21·80	+1·46	23·26	40·67				
	3033	+33 22	N		28 10·91	+1·28	12·19	N		49 51·36	+1·48	52·84	40·65				
	3056	+32 53	N		30 49·01	+1·27	50·28	N		52 29·47	+1·48	30·95	40·67				
	3079	+24 55	N		34 21·36	+1·23	22·59	N		56 1·77	+1·46	3·23	40·64				
			S		34 21·32	+1·23	22·55	S		56 1·72	+1·46	3·18	40·63				
Jan. 24	3117	+22 31	S	*I. P. E.*	8 41 8·06	−1·54	6·52	S	*I. P. E.*	9 2 48·51	−1·34	47·17	21 40·65				
			N	*d* c − 2·7 b − 3·5 *a* −13·1	41 8·08	−1·54	6·54	N	*d* c − 1·6 b + 4·2 *a* − 1·4	2 48·52	−1·34	47·18	40·64				
	3129	+18 32	S		43 52·77	−1·55	51·22	S		5 33·19	−1·34	31·85	40·63				
	3138	+21 47	S	*s* *Q* −1·38	45 26·37	−1·53	24·84	S	*s* *Q* −1·40	7 6·82	−1·34	5·48	40·64	m s 21 40·613	+ 0·294	− 0·001	21 40·906
	3147	+15 26	S		47 16·43	−1·56	14·87	S		8 56·80	−1·34	55·46	40·59				
	3170	+26 45	N		50 54·88	−1·52	53·36	N		12 35·27	−1·33	33·94	40·58				
	3183	+25 40	N		52 52·31	−1·53	50·78	N		14 32·69	−1·34	31·35	40·57				
	3194	+25 41	N		55 15·56	−1·53	14·03	N		16 55·97	−1·34	54·63	40·60				
Jan. 25	2958	+10 31	S	*I. P. E.*	8 16 32·14	+0·97	33·11	S	*I. P. E.*	8 38 12·34	+1·41	13·75	21 40·64				
	2970	+12 33	S	*d* c − 5·9 b − 6·9 *a* −20·0	18 39·30	+0·98	40·28	S	*d* c − 2·1 b + 3·1 *a* − 4·3	40 19·50	+1·41	20·91	40·63				
	2984	+33 44	N		21 23·85	+1·12	24·97	N		43 4·24	+1·45	5·69	40·72				
	2999	+32 55	N	*s* *Q* +1·37	23 28·68	+1·11	29·79	N	*s* *Q* +1·41	45 9·05	+1·45	10·50	40·71	m s 21 40·666	+ 0·304	− 0·001	21 40·969
	3017	+20 25	S		25 21·60	+1·04	22·64	S		47 1·85	+1·42	3·27	40·63				
	3033	+33 22	N		27 51·13	+1·12	52·25	N		49 31·47	+1·45	32·92	40·67				
	3056	+32 53	N		30 29·22	+1·11	30·33	N		52 9·55	+1·45	11·00	40·67				
	3079	+24 55	N		34 1·61	+1·06	2·67	N		55 41·89	+1·44	43·33	40·66				
			S		34 1·56	+1·06	2·62	S		55 41·84	+1·44	43·28	40·66				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

HAZARIBAGH (E) *Lat.* 24° 0′, *Long.* 5h 41m 39s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $S_N - S_S = +0^s{\cdot}029$ $H_N - H_S = +0^s{\cdot}027$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 25	3117	+22 31	S	*I. P. E.*	8 40 48·33	−1·69	46·64	S	*I. P. E.*	9 2 28·69	−1·38	27·31	21 40·67				
			N	*d* c − 5·9 b − 6·9 *a* −20·0	40 48·36	−1·69	46·67	N	*d* c − 2·1 b + 3·1 *a* − 4·3	2 28·70	−1·38	27·32	40·65				
	3129	+18 32	S		43 32·97	−1·72	31·25	S		5 13·32	−1·40	11·92	40·67				
	3138	+21 47	S	*s* *Q* −1·37	45 6·64	−1·70	4·94	S	*s* *Q* −1·41	6 46·96	−1·38	45·58	40·64	m s 21 40·626	+ 0·304	− 0·001	21 40·929
	3147	+15 26	S		46 56·72	−1·74	54·98	S		8 36·98	−1·40	35·58	40·60				
	3170	+26 45	N		50 35·18	−1·67	33·51	N		12 15·46	−1·37	14·09	40·58				
	3183	+25 40	N		52 32·60	−1·68	30·92	N		14 12·92	−1·38	11·54	40·62				
	3194	+25 41	N		54 55·83	−1·68	54·15	N		16 36·11	−1·38	34·73	40·58				
Jan. 26	2958	+10 31	S	*I. P. E.*	8 16 11·65	+0·88	12·53	S	*I. P. E.*	8 37 51·85	+1·50	53·35	21 40·82				
	2970	+12 33	S	*d* c − 7·8 b − 9·5 *a* −22·8	18 18·77	+0·90	19·67	S	*d* c − 0·6 b + 5·4 *a* − 1·6	39 59·03	+1·50	60·53	40·86				
	2984	+33 44	N		21 3·43	+1·03	4·46	N		42 43·75	+1·53	45·28	40·82				
	2999	+32 55	N	*s* *Q* +1·39	23 8·25	+1·03	9·28	N	*s* *Q* +1·40	44 48·51	+1·53	50·04	40·76	m s 21 40·817	+ 0·307	− 0·001	21 41·123
	3017	+20 25	S		25 1·14	+0·94	2·08	S		46 41·38	+1·52	42·90	40·82				
	3033	+33 22	N		27 30·67	+1·03	31·70	N		49 10·97	+1·53	12·50	40·80				
	3056	+32 53	N		30 8·72	+1·02	9·74	N		51 49·02	+1·53	50·55	40·81				
	3079	+24 55	N		33 41·05	+0·96	42·01	N		55 21·37	+1·51	22·88	40·87				
			S		33 41·07	+0·96	42·03	S		55 21·31	+1·51	22·82	40·79				
Jan. 26	3117	+22 31	S	*I. P. E.*	8 40 27·87	−1·82	26·05	S	*I. P. E.*	9 2 8·16	−1·28	6·88	21 40·83				
			N	*d* c − 7·8 b − 9·5 *a* −22·8	40 27·92	−1·82	26·10	N	*d* c − 0·6 b + 5·4 *a* − 1·6	2 8·14	−1·28	6·86	40·76				
	3129	+18 32	S		43 12·62	−1·86	10·76	S		4 52·77	−1·28	51·49	40·73				
	3138	+21 47	S	*s* *Q* −1·39	44 46·20	−1·83	44·37	S	*s* *Q* −1·40	6 26·36	−1·28	25·08	40·71	m s 21 40·745	+ 0·307	− 0·001	21 41·051
	3147	+15 26	S		46 36·24	−1·87	34·37	S		8 16·41	−1·29	15·12	40·75				
	3170	+26 45	N		50 14·63	−1·80	12·83	N		11 54·84	−1·28	53·56	40·73				
	3183	+25 40	N		52 12·11	−1·80	10·31	N		13 52·30	−1·28	51·02	40·71				
	3194	+25 41	N		54 35·34	−1·80	33·54	N		16 15·54	−1·28	14·26	40·72				

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = +0^s.029$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 8	3079	+24 55	N	*I. P. W.*	9 0 18·39	+1·50	19·89	N	*I. P. E.*	8 56 2·02	+1·38	3·40	−4 16·49				
	3093	+25 5	N	d c − 2·6	2 25·82	+1·50	27·32	N	d c − 1·3	58 9·46	+1·38	10·84	16·48				
	3107	+15 41	S	b + 3·6 a + 2·0	4 40·80	+1·51	42·31	S	b 0·0 a −22·7	9 0 24·46	+1·29	25·75	16·56				
	3117	+22 31	S	s Q +1·48	7 2·41	+1·51	3·92	S	s Q +1·40	2 46·06	+1·36	47·42	16·50	m s −4 16·434	+ 0·050	+ 0·004	−4 16·380
	3129	+18 32	S		9 47·08	+1·51	48·59	S		5 30·91	+1·32	32·23	16·36				
	3138	+21 46	S		11 20·76	+1·51	22·27	S		7 4·53	+1·35	5·88	16·39				
	3162	+37 18	N		15 58·10	+1·50	59·60	N		11 41·80	+1·51	43·31	16·29				
	3170	+26 45	N		16 49·29	+1·50	50·79	N		12 32·99	+1·40	34·39	16·40				
				Mean, T_E	9 8 33												
Feb. 8	3206	+20 18	S	*I. P. W.*	9 22 37·50	−1·46	36·04	S	*I. P. E.*	9 18 21·26	−1·47	19·79	−4 16·25				
	3209	+17 6	S	d c − 2·6	23 30·76	−1·46	29·30	S	d c − 1·3	19 14·71	−1·50	13·21	16·09				
	3227	+ 9 34	S	b + 3·6 a + 2·0	26 38·72	−1·45	37·27	S	b 0·0 a −22·7	22 22·67	−1·56	21·11	16·16				
	3238	+34 10	N	s Q −1·48	28 6·10	−1·46	4·64	N	s Q −1·40	23 49·76	−1·33	48·43	16·21	m s −4 16·164	+ 0·050	+ 0·004	−4 16·110
	3246	+23 29	N		29 29·80	−1·45	28·35	N		25 13·65	−1·43	12·22	16·13				
	3261	+36 55	N		31 30·40	−1·46	28·94	N		27 14·03	−1·30	12·73	16·21				
	3268	+36 21	N		33 5·59	−1·46	4·13	N		28 49·29	−1·30	47·99	16·14				
	3278	+16 58	S		35 2·37	−1·46	0·91	S		30 46·29	−1·50	44·79	16·12				
				Mean, T_E	9 28 45												
Feb. 9	3079	+24 55	N	*I. P. W.*	9 0 2·66	+1·60	4·26	N	*I. P. E.*	8 55 55·97	+1·30	57·27	−4 6·99				
	3093	+25 5	N	d c − 1·5	2 10·17	+1·60	11·77	N	d c − 2·1	58 3·35	+1·30	4·65	7·12				
	3117	+15 41	S	b + 6·6 a + 3·8	6 46·71	+1·60	48·31	S	b − 2·4 a −30·2	9 2 40·09	+1·27	41·36	6·95	m s −4 6·963	+ 0·051	+ 0·004	−4 6·908
	3129	+18 32	S	s Q +1·48	9 31·35	+1·61	32·96	S	s Q +1·40	5 24·80	+1·22	26·02	6·94				
	3138	+21 46	S		11 4·97	+1·60	6·57	S		6 58·41	+1·26	59·67	6·90				
	3162	+37 18	N		15 42·43	+1·59	44·02	N		11 35·67	+1·47	37·14	6·88				
				Mean, T_E	9 7 33												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *sil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = +0^s.029$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 9	3206	+20 18	S	*I. P. W.*	9 22 21·82	−1·36	20·46	N	*I. P. E.*	9 18 15·16	−1·56	13·60	−4 6·86				
	3209	+17 6	S	d c − 1·5 b + 6·6 a + 3·8	23 15·23	−1·36	13·87	S	d c − 2·1 b − 2·4 a − 30·2	19 8·66	−1·60	7·06	6·81				
	3227	+ 9 34	S		26 23·20	−1·34	21·86	S		22 16·62	−1·67	14·95	6·91	m s −4 6·890		+ 0·003	−4 6·836
	3238	+34 10	N	s Q − 1·48	27 50·57	−1·36	49·21	N	s Q − 1·40	23 43·60	−1·38	42·22	6·99				
	3246	+23 29	N		29 14·34	−1·36	12·98	N		25 7·38	−1·52	6·06	6·92		+		
	3268	+36 21	N		32 50·10	−1·37	48·73	N		28 43·17	−1·35	41·82	6·91				
	3278	+16 58	N		34 46·81	−1·35	45·46	S		30 40·23	−1·60	38·63	6·83				
				Mean, T_E	9 28 6												
Feb. 10	3079	+24 55	N	*I. P. W.*	8 59 47·14	+1·55	48·69	N	*I. P. E.*	8 55 49·86	+1·25	51·11	−3 57·58				
	3093	+25 5	N	d c − 2·7 b + 5·9 a − 1·4	9 1 54·54	+1·55	56·09	N	d c − 3·5 b − 3·0 a − 31·6	57 57·24	+1·25	58·49	57·60				
	3107	+15 41	S		4 9·41	+1·55	10·96	S		9 0 12·27	+1·14	13·41	57·55				
	3117	+22 31	S	s Q + 1·47	6 31·17	+1·55	32·72	S	s Q + 1·40	2 33·89	+1·23	35·12	57·60	m s −3 57·559	+ 0·049	+ 0·004	−3 57·506
	3129	+18 32	S		9 15·86	+1·55	17·41	S		5 18·67	+1·18	19·85	57·56				
	3138	+21 46	S		10 49·55	+1·55	51·10	S		6 52·26	+1·22	53·48	57·62				
	3162	+37 18	N		15 26·82	+1·56	28·38	N		11 29·48	+1·43	30·91	57·47				
	3170	+26 45	N		16 18·00	+1·55	19·55	N		12 20·79	+1·27	22·06	57·49				
				Mean, T_E	9 8 2												
Feb. 10	3206	+20 18	S	*I. P. W.*	9 22 6·27	−1·39	4·88	S	*I. P. E.*	9 18 9·06	−1·60	7·46	−3 57·42				
	3209	+17 6	S	d c − 2·7 b + 5·9 a − 1·4	22 59·69	−1·39	58·30	S	d c − 3·5 b − 3·0 a − 31·6	19 2·53	−1·64	0·89	57·41				
	3227	+ 9 34	S		26 7·56	−1·41	6·15	S		22 10·47	−1·73	8·74	57·41				
	3238	+34 10	N	s Q − 1·47	27 34·80	−1·37	33·43	N	s Q − 1·40	23 37·50	−1·42	36·08	57·35	m s −3 57·360	+ 0·049	+ 0·004	−3 57·307
	3246	+23 29	N		28 58·64	−1·39	57·25	N		24 61·49	−1·56	59·93	57·32				
	3261	+36 55	N		30 59·08	−1·38	57·70	N		27 1·81	−1·38	0·43	57·27				
	3268	+36 21	N		32 34·35	−1·38	32·97	N		28 37·03	−1·39	35·64	57·33				
	3278	+16 58	S		34 31·25	−1·39	29·86	S		30 34·13	−1·64	32·49	57·37				
				Mean, T_E	9 28 14												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat. 22° 33', Long. 5h 53m 36s;* AND HAZARIBAGH (W) *Lat. 24° 0', Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = +0^s.029$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb.13	3079	+24 55	N	*I. P. E.*	8 59 4·12	+1·50	5·62	N	*I. P. W.*	8 55 32·53	+1·36	33·89	−3 31·73				
	3093	+25 5	N	d c − 0·6 b + 1·7 a + 5·1	9 1 11·50	+1·50	13·00	N	d c − 1·5 b − 0·8 a −43·3	57 40·04	+1·36	41·40	31·60				
	3107	+15 41	S		3 26·40	+1·53	27·93	S		59 55·03	+1·20	56·23	31·70	m s −3 31·679	+ 0·042	+ 0·025	−3 31·632
	3117	+22 31	S	s Q +1·49	5 48·15	+1·52	49·67	S	s Q +1·40	9 2 16·65	+1·31	17·96	31·71				
	3129	+18 32	S		8 32·85	+1·53	34·38	S		5 1·44	+1·24	2·68	31·70		+	+	
	3138	+21 46	S		10 6·46	+1·52	7·98	S		6 35·06	+1·30	36·36	31·62				
	3162	+37 18	N		14 43·90	+1·48	45·38	N		11 12·07	+1·62	13·69	31·69				
				Mean, T_E	9 6 8												
Feb.13	3206	+20 18	S	*I. P. E.*	9 21 23·31	−1·46	21·85	S	*I. P. W.*	9 17 51·80	−1·53	50·27	−3 31·58				
	3209	+17 6	S	d c − 0·6 b + 1·7 a + 5·1	22 16·75	−1·45	15·30	S	d c − 1·5 b − 0·8 a −43·3	18 45·27	−1·59	43·68	31·62				
	3227	+9 34	S		25 24·65	−1·43	23·22	S		21 53·29	−1·70	51·59	31·63				
	3238	+34 10	N	s Q −1·49	26 51·96	−1·49	50·47	N	s Q −1·40	23 20·11	−1·25	18·86	31·61	m s −3 31·615	+ 0·042	+ 0·004	−3 31·569
	3246	+23 29	N		28 15·78	−1·46	14·32	N		24 44·15	−1·47	42·68	31·64				
	3261	+36 55	N		30 16·34	−1·50	14·84	N		26 44·39	−1·19	43·20	31·64				
	3268	+36 21	N		31 51·57	−1·49	50·08	N		28 19·64	−1·20	18·44	31·64				
	3278	+16 58	S		33 48·30	−1·45	46·85	S		30 16·87	−1·58	15·29	31·56				
				Mean, T_E	9 27 31												
Feb.14	3079	+24 55	N	*I. P. E.*	8 58 49·79	+1·53	51·32	N	*I. P. W.*	8 55 27·92	+1·42	29·34	−3 21·98				
	3093	+25 5	N	d c − 0·7 b + 3·4 a + 8·3	9 0 57·17	+1·53	58·70	N	d c + 0·2 b − 0·5 a −41·9	57 35·43	+1·42	36·85	21·85				
	3107	+15 41	S		3 12·15	+1·56	13·71	S		59 50·48	+1·25	51·73	21·98				
	3117	+22 31	S	s Q +1·48	5 33·95	+1·54	35·49	S	s Q +1·40	9 2 12·04	+1·36	13·40	22·09	m s −3 21·948	+ 0·044	+ 0·004	−3 21·900
	3129	+18 32	S		8 18·51	+1·55	20·06	S		4 56·89	+1·29	58·18	21·88				
	3138	+21 46	S		9 52·19	+1·54	53·73	S		6 30·48	+1·35	31·83	21·90				
	3162	+37 18	N		14 29·63	+1·49	31·12	N		11 7·56	+1·67	9·23	21·89				
	3170	+26 45	N		15 20·81	+1·53	22·34	N		11 58·88	+1·45	60·33	22·01				
				Mean, T_E	9 7 4												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*; AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = +0^s.029$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 14	3206	+20 18	S	*I. P. E.*	9 21 8·97	−1·41	7·56	S	*I. P. W.*	9 17 47·20	−1·48	45·72	−3 21·84				
	3209	+17 6	S	*d* c − 0·7 b + 3·4 a + 8·3	22 2·38	−1·40	0·98	S	*d* c + 0·2 b − 0·5 a −41·9	18 40·61	−1·53	39·08	21·90				
	3227	+ 9 34	S		25 10·23	−1·38	8·85	S		21 48·72	−1·65	47·07	21·78	m s −3 21·784	+ 0·044	+ 0·004	−3 21·736
	3238	+34 10	N	*s* Q −1·48	26 37·55	−1·46	36·09	N	*s* Q −1·40	23 15·56	−1·20	14·36	21·73				
	3246	+23 29	N		27 61·39	−1·42	59·97	N		24 39·58	−1·42	38·16	21·81				
	3261	+36 55	N		30 1·89	−1·47	0·42	N		26 39·87	−1·14	38·73	21·69				
	3268	+36 21	N		31 37·14	−1·46	35·68	N		28 15·11	−1·15	13·96	21·72				
	3278	+16 58	S		33 33·92	−1·40	32·52	S		30 12·25	−1·53	10·72	21·80				
				Mean, T_E	9 27 17												
Feb. 16	3079	+24 55	N	*I. P. E.*	8 58 20·92	+1·54	22·46	N	*I. P. W.*	8 55 15·87	+1·51	17·38	−3 5·08				
	3093	+25 5	N	*d* c − 0·3 b + 2·1 a + 2·9	9 0 28·33	+1·54	29·87	N	*d* c + 1·9 b + 1·4 a −35·1	57 23·22	+1·51	24·73	5·14				
	3107	+15 41	S		2 43·08	+1·55	44·63	S		59 38·24	+1·37	39·61	5·02				
	3117	+22 31	S	*s* Q +1·50	5 4·95	+1·54	6·49	S	*s* Q +1·42	9 1 59·85	+1·48	61·33	5·16	m s −3 5·106	+ 0·051	+ 0·004	−3 5·051
	3129	+18 32	S		7 49·59	+1·54	51·13	S		4 44·61	+1·42	46·03	5·10				
	3138	+21 46	S		9 23·32	+1·54	24·86	S		6 18·20	+1·46	19·66	5·20				
	3162	+37 18	N		14 0·70	+1·53	2·23	N		10 55·37	+1·74	57·11	5·12				
	3170	+26 45	N		14 51·76	+1·53	53·29	N		11 46·71	+1·55	48·26	5·03				
				Mean, T_E	9 6 35												
Feb. 16	3206	+20 18	S	*I. P. E.*	9 20 40·11	−1·46	38·65	S	*I. P. W.*	9 17 35·02	−1·40	33·62	−3 5·03				
	3209	+17 6	S	*d* c − 0·3 b + 2·1 a + 2·9	21 33·51	−1·45	32·06	S	*d* c + 1·9 b + 1·4 a −35·1	18 28·44	−1·44	27·00	5·06				
	3227	+ 9 34	S		24 41·43	−1·44	39·99	S		21 36·50	−1·55	34·95	5·04				
	3238	+34 10	N	*s* Q −1·50	26 8·73	−1·47	7·26	N	*s* Q −1·42	23 3·21	−1·16	2·05	5·21	m s −3 5·100	+ 0·051	+ 0·004	−3 5·045
	3246	+23 29	N		27 32·50	−1·46	31·04	N		24 27·24	−1·35	25·89	5·15				
	3261	+36 55	N		29 33·00	−1·47	31·53	N		26 27·50	−1·11	26·39	5·14				
	3268	+36 21	N		31 8·23	−1·47	6·76	N		28 2·78	−1·12	1·66	5·10				
	3278	+16 58	S		33 5·02	−1·45	3·57	S		29 59·95	−1·45	58·50	5·07				
				Mean, T_E	9 26 48												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s·1 AND HAZARIBAGH (W) *Lat.* 24° 0′, *Long.* 5h 41m 39s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}021$ $\delta_N - \delta_S = +0^s{\cdot}029$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 8	2617	+27 5	N	*I. P. W.*	7 50 45·21	+1·50	46·71	N	*I. P. E.*	8 2 42·03	+1·40	43·43	11 56·72				
	2632	+20 13	S	*d* c − 2·6 b + 3·6 a + 2·0	53 15·18	+1·51	16·69	S	*d* c − 1·3 b 0·0 a −22·7	5 12·14	+1·33	13·47	56·78				
	2639	+16 6	S		54 45·89	+1·51	47·40	S		6 42·90	+1·30	44·20	56·80				
	2649	+16 50	S	*s* Q +1·48	56 15·99	+1·50	17·49	S	*s* Q +1·40	8 13·00	+1·30	14·30	56·81				
	2657	+25 43	N		58 16·04	+1·50	17·54	N		10 12·93	+1·39	14·32	56·78	*m s* 11 56·769	+ 0·139	+ 0·004	11 56·902
	2672	+28 8	N		8 0 44·87	+1·49	46·36	N		12 41·69	+1·41	43·10	56·74				
	2688	+27 52	N		2 51·76	+1·50	53·26	N		14 48·61	+1·41	50·02	56·76				
	2714	+21 56	N		5 17·68	+1·51	19·19	N		17 14·62	+1·35	15·97	56·78				
			S		5 17·63	+1·51	19·14	S		17 14·54	+1·35	15·89	56·75				
Feb. 8	2759	+18 2	S	*I. P. W.*	8 11 57·26	−1·46	55·80	S	*I. P. E.*	8 23 54·01	−1·49	52·52	11 56·72				
	2778	+ 9 33	S	*d* c − 2·6 b + 3·6 a + 2·0	14 38·11	−1·45	36·66	S	*d* c − 1·3 b 0·0 a −22·7	26 35 02	−1·56	33·46	56·80				
	2782	+ 9 14	S		15 39·41	−1·45	37·96	S		27 36·36	−1·56	34·80	56·84				
	2788	+21 7	S	*s* Q −1·48	17 59·32	−1·45	57·87	S	*s* Q −1·40	29 56·08	−1·46	54·62	56·75	*m s* 11 56·734	+ 0·139	+ 0·004	11 56·867
	2798	+42 23	N		21 15·15	−1·48	13·67	N		23 11·56	−1·22	10·34	56·67				
	2815	+28 17	N		23 48·61	−1·47	47·14	N		35 45·20	−1·39	43·81	56·67				
	2833	+24 32	N		26 8·34	−1·46	6·88	N		38 4·99	−1·43	3·56	56·68				
	2840	+24 44	N		27 11·25	−1·46	9·79	N		39 7·95	−1·42	6·53	56·74				
Feb. 9	2617	+27 5	N	*I. P. W.*	7 50 29·65	+1·60	31·25	N	*I. P. E.*	8 2 26·38	+1·33	27·71	11 56·46				
	2632	+20 13	S	*d* c − 1·5 b + 6·6 a + 3·8	52 59·69	+1·60	61·29	S	*d* c − 2·1 b − 2·4 a −30·2	4 56·53	+1·24	57·77	56·48				
	2639	+16 6	S		54 30·32	+1·61	31·93	S		6 27·23	+1·19	28·42	56·49				
	2649	+16 50	S	*s* Q +1·48	56 0·50	+1·61	2·11	S	*s* Q +1·40	7 57·33	+1·20	58·53	56·42	*m s* 11 56·490	+ 0·130	+ 0·004	11 56·624
	2657	+25 43	N		58 0·58	+1·59	2·17	N		9 57·30	+1·31	58·61	56·44				
	2672	+28 8	N		8 0 29·37	+1·60	30·97	N		12 26·12	+1·35	27·47	56·50				
	2688	+27 52	N		2 36·15	+1·60	37·75	N		14 33·04	+1·34	34·38	56·63				
	2714	+21 56	N		5 2·19	+1·60	3·79	N		16 59·06	+1·26	60·32	56·53				
			S		5 2·19	+1·60	3·79	S		16 58·99	+1·26	60·25	56·46				

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s:* AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = +0^s.029$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 9	2759	+18 2	S	*I. P. W.*	8 11 41·59	−1·35	40·24	S	*I. P. E.*	8 23 38·40	−1·59	36·81	11 56·57				
	2778	+ 9 33	S	*d* c − 1·5 b + 6·6 a + 3·8	14 22·58	−1·34	21·24	S	*d* c − 2·1 b − 2·4 a −30·2	26 19·55	−1·67	17·88	56·64				
	2782	+ 9 14	S		15 23·85	−1·34	22·51	S		27 20·80	−1·68	19·12	56·61	m s 11 56·607	+ 0·130	+ 0·005	
	2788	+21 7	S	*s* Q −1·48	17 43·72	−1·36	42·36	S	*s* Q −1·40	29 40·46	−1·55	38·91	56·55				
	2798	+42 23	N		20 59·46	−1·38	58·08	N		32 55·96	−1·24	54·72	56·64				11 56·742
	2815	+28 17	N		23 32·92	−1·36	31·56	N		35 29·64	−1·45	28·19	56·63				
	2833	+24 32	N		25 52·69	−1·36	51·33	N		37 49·44	−1·50	47·94	56·61				
Feb. 10	2617	+27 5	N	*I. P. W.*	7 50 14·03	+1·55	15·58	N	*I. P. E.*	8 2 10·74	+1·27	12·01	11 56·43				
	2632	+20 13	S	*d* c − 2·7 b + 5·9 a − 1·4	52 44·03	+1·55	45·58	S	*d* c − 3·5 b − 3·0 a −31·6	4 40·88	+1·20	42·08	56·50				
	2639	+16 6	S		54 14·74	+1·55	16·29	S		6 11·63	+1·15	12·78	56·49				
	2649	+16 50	S	*s* Q +1·47	55 44·83	+1·55	46·38	S	*s* Q +1·40	7 41·81	+1·16	42·97	56·59	m s 11 56·541	+ 0·124	+ 0·004	
	2657	+25 43	N		57 44·82	+1·55	46·37	N		9 41·69	+1·26	42·95	56·58				11 56·669
	2672	+28 8	N		8 0 13·62	+1·55	15·17	N		12 10·47	+1·29	11·76	56·59				
	2688	+27 52	N		2 20·50	+1·55	22·05	N		14 17·37	+1·28	18·65	56·60				
	2714	+21 56	N		4 46·47	+1·55	48·02	N		16 43·33	+1·22	44·55	56·53				
			S		4 46·41	+1·55	47·96	S		16 43·30	+1·22	44·52	56·56				
Feb. 10	2759	+18 2	S	*I. P. W.*	8 11 25·96	−1·39	24·57	S	*I. P. E.*	8 23 22·79	−1·63	21·16	11 56·59				
	2778	+ 9 33	S	*d* c − 2·7 b + 5·9 a − 1·4	14 6·95	−1·41	5·54	S	*d* c − 3·5 b − 3·0 a −31·6	26 3·81	−1·73	2·08	56·54				
	2782	+ 9 14	S		15 8·23	−1·41	6·82	S		27 5·21	−1·73	3·48	56·66				
	2788	+21 7	S	*s* Q −1·47	17 28·09	−1·39	26·70	S	*s* Q −1·40	29 24·89	−1·59	23·30	56·60	m s 11 56·621	+ 0·124	+ 0·005	
	2798	+42 23	N		20 43·72	−1·37	42·35	N		32 40·37	−1·30	39·07	56·72				11 56·750
	2815	+28 17	N		23 17·26	−1·39	15·87	N		35 13·98	−1·51	12·47	56·60				
	2833	+24 32	N		25 37·00	−1·39	35·61	N		37 33·80	−1·55	32·25	56·64				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s·1 AND HAZARIBAGH (W) *Lat.* 24° 10′, *Long.* 5h 41m 39s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}021$ $S_N - S_S = +0^s{\cdot}029$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 13	2617	+27 5	N	*I. P. E.*	7 49 31·05	+1·50	32·55	N	*I. P. W.*	8 1 27·70	+1·40	29·10	11 56·55				
	2632	+20 13	S	d c − 0·6 b + 1·7 a + 5·1	52 1·00	+1·53	2·53	S	d c − 1·5 b − 0·8 a −43·3	3 57·81	+1·27	59·08	56·55				
	2639	+16 6	S		53 31·73	+1·53	33·26	S		5 28·60	+1·21	29·81	56·55				
	2649	+16 50	S	s Q +1·49	55 1·85	+1·53	3·38	S	s Q +1·40	6 58·66	+1·22	59·88	56·50				
	2657	+25 43	N		57 1·90	+1·50	3·40	N		8 58·49	+1·37	59·86	56·46	s 11 56·473	+ 0·119	+ 0·004	11 56·596
	2672	+28 8	N		59 30·80	+1·50	32·30	N		11 27·24	+1·42	28·66	56·36	m			
	2688	+27 52	N		8 1 37·67	+1·50	39·17	N		13 34·12	+1·41	35·53	56·36				
	2714	+21 56	N		4 3·56	+1·52	5·08	N		16 0·21	+1·30	1·51	56·43				
			S		4 3·47	+1·52	4·99	S		16 0·19	+1·30	1·49	56·50				
Feb. 13	2759	+18 2	S	*I. P. E.*	8 10 42·92	−1·45	41·47	S	*I. P. W.*	8 22 39·63	−1·57	38·06	11 56·59				
	2778	+ 9 33	S	d c − 0·6 b + 1·7 a + 5·1	13 23·95	−1·43	22·52	S	d c − 1·5 b − 0·8 a −43·3	25 20·71	−1·70	19·01	56·49				
	2782	+ 9 14	S		14 25·17	−1·43	23·74	S		26 22·06	−1·70	20·36	56·62				
	2788	+21 7	S	s Q −1·49	16 45·07	−1·46	43·61	S	s Q −1·40	28 41·66	−1·51	40·15	56·54	s 11 56·528	+ 0·119	+ 0·004	11 56·651
	2798	+42 23	N		19 60·93	−1·51	59·42	N		31 56·98	−1·05	55·93	56·51	m			
	2815	+28 17	N		22 34·34	−1·48	32·86	N		34 30·78	−1·38	29·40	56·54				
	2833	+24 32	N		24 54·16	−1·47	52·69	N		36 50·57	−1·45	49·12	56·43				
	2840	+24 44	N		25 57·01	−1·48	55·53	N		37 53·48	−1·45	52·03	56·50				
Feb. 14	2617	+27 5	N	*I. P. E.*	7 49 16·68	+1·53	18·21	N	*I. P. W.*	8 1 13·29	+1·45	14·74	11 56·53				
	2632	+20 13	S	d c − 0·7 b + 3·4 a + 8·3	51 46·65	+1·55	48·20	S	d c + 0·2 b − 0·5 a −41·9	3 43·43	+1·32	44·75	56·55				
	2639	+16 6	S		53 17·35	+1·56	18·91	S		5 14·19	+1·26	15·45	56·54				
	2657	+25 43	N	s Q +1·48	56 47·45	+1·53	48·98	N	s Q +1·40	8 44·12	+1·43	45·55	56·57	s 11 56·540	+ 0·119	+ 0·003	11 56·662
	2688	+27 52	N		8 1 23·24	+1·53	24·77	N		13 19·83	+1·47	21·30	56·53	m			
	2714	+21 56	N		3 49·15	+1·54	50·69	N		15 45·86	+1·35	47·21	56·52				

NOTE. 1s = 0s·0225. Transcribing Equation *sic*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat. 22° 35′, Long. 5h 53m 36s*: AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$, $S_N - S_S = +0^s.029$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 14	2759	+18 2	S	*I. P. E.*	8 10 28·72	−1·40	27·32	S	*I. P. W.*	8 22 25·16	−1·51	23·65	11 56·33				
	2778	+ 9 33	S	*d* c − 0·7 b + 3·4 a + 8·3	13 9·75	−1·38	8·37	S	*d* c + 0·2 b − 0·5 a −41·9	25 6·29	−1·65	4·64	56·27	m s 11 56·320	+ 0·119	+ 0·003	11 56·442
	2798	+42 23	N		19 46·67	−1·49	45·18	N		31 42·53	−1·00	41·53	56·35				
	2833	+24 32	N	*s* Q −1·48	24 40·00	−1·43	38·57	N	*s* Q −1·40	36 36·22	−1·39	34·83	56·26				
	2840	+24 44	N		25 42·75	−1·43	41·32	N		37 39·10	−1·39	37·71	56·39				
Feb. 16	2617	+27 5	N	*I. P. E.*	7 48 47·84	+1·53	49·37	N	*I. P. W.*	8 0 44·45	+1·56	46·01	11 56·64				
	2632	+20 13	S	*d* c − 0·3 b + 2·1 a + 2·9	51 17·89	+1·54	19·43	S	*d* c + 1·9 b + 1·4 a −35·1	3 14·53	+1·44	15·97	56·54				
	2639	+16 6	S		52 48·56	+1·55	50·11	S		4 45·25	+1·38	46·63	56·52				
	2649	+16 50	S	*s* Q +1·50	54 18·69	+1·55	20·24	S	*s* Q +1·42	6 15·30	+1·38	16·68	56·41	m s 11 56·524	+ 0·120	+ 0·004	11 56·648
	2657	+25 43	N		56 18·65	+1·54	20·19	N		8 15·16	+1·52	16·68	56·49				
	2672	+28 8	N		58 47·51	+1·53	49·04	N		10 44·03	+1·58	45·61	56·57				
	2688	+27 52	N		8 0 54·41	+1·53	55·94	N		12 50·99	+1·57	52·56	56·62				
	2714	+21 56	N		3 20·39	+1·54	21·93	N		15 16·91	+1·47	18·38	56·45				
			S		3 20·30	+1·54	21·84	S		15 16·82	+1·47	18·29	56·45				
Feb. 16	2759	+18 2	S	*I. P. E.*	8 9 59·79	−1·45	58·34	S	*I. P. W.*	8 21 56·35	−1·43	54·92	11 56·58				
	2778	+ 9 33	S	*d* c − 0·3 b + 2·1 a + 2·9	12 40·75	−1·44	39·31	S	*d* c + 1·9 b + 1·4 a −35·1	24 37·42	−1·55	35·87	56·56				
	2782	+ 9 14	S		13 42·05	−1·44	40·61	S		25 38·76	−1·55	37·21	56·60				
	2788	+21 7	S	*s* Q −1·50	16 1·98	−1·46	0·52	S	*s* Q −1·42	27 58·41	−1·38	57·03	56·51	m s 11 56·584	+ 0·120	+ 0·004	11 56·708
	2798	+42 23	N		19 17·67	−1·48	16·19	N		31 13·81	−0·98	12·83	56·64				
	2815	+28 17	N		21 51·15	−1·47	49·68	N		33 47·55	−1·26	46·29	56·61				
	2833	+24 32	N		24 10·95	−1·46	9·49	N		36 7·32	−1·33	5·99	56·50				
	2840	+24 44	N		25 13·76	−1·46	12·30	N		37 10·30	−1·33	8·97	56·67				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND HAZARIBAGH (W) *Lat. 24° 0′, Long 5h 41m 39s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = +0^s.029$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 8	3446	+35 49	N	*I. P. W.*	9 48 42·54	+1·50	44·04	N	*I. P. E.*	10 0 39·29	+1·49	40·78	11 56·74				
	3457	+10 35	S	d c − 2·6 b + 3·6 a + 2·0	49 52·66	+1·51	54·17	S	d c − 1·3 b 0·0 a −22·7	1 49·70	+1·25	50·95	56·78				
	3466	+41 15	N		52 6·61	+1·48	8·09	N		4 3·16	+1·56	4·72	56·63				
	3475	+13 56	S	s Q +1·48	53 31·52	+1·51	33·03	S	s Q +1·40	5 28·66	+1·28	29·94	56·91	m s 11 56·824	+ 0·050	+ 0·003	11 56·877
	3485	+21 45	S		56 14·21	+1·51	15·72	S		8 11·24	+1·35	12 59	56·87				
	3508	+24 0	N		58 21·75	+1·50	23·25	N		10 18·73	+1·37	20·10	56·85				
	3530	+41 50	N		10 3 23·96	+1·48	25·44	N		15 20·79	+1·57	22·36	56·92				
	3533	+42 6	N		3 32·25	+1·48	33·73	N		15 29·05	+1·57	30·62	56·89				
Feb. 8	3609	+ 9 55	S	*I. P. W.*	10 14 52·85	−1·45	51·40	S	*I. P. E.*	10 26 49·88	−1·56	48·32	11 56·92				
	3622	+ 9 16	S	d c − 2·6 b + 3·6 a + 2·0	17 7·63	−1·45	6·18	S	d c − 1·3 b 0·0 a −22·7	29 4·66	−1·56	3·10	56·92				
	3633	+34 41	N		19 27·77	−1·46	26·31	N		31 24·46	−1·32	23·14	56·83				
	3640	+32 35	N	s Q −1·48	20 21·91	−1·47	20·44	N	s Q −1·40	32 18·65	−1·35	17·30	56·86	m s 11 56·868	+ 0·050	+ 0·004	11 56·922
	3650	+28 8	N		22 6·16	−1·47	4·69	N		34 3·01	−1·39	1·62	56·93				
	3661	+32 19	N		23 51·76	−1·47	50·29	N		35 48·43	−1·35	47·08	56·79				
	3671	+23 48	N		25 17·15	−1·46	15·69	N		37 13·91	−1·43	12·48	56·79				
			S		25 17·03	−1·46	15·57	S		37 13·84	−1·43	12·41	56·84				
	3687	+ 8 8	S		27 40·84	−1·45	39·39	S		39 37·89	−1·57	36·32	56·93				
Feb. 9	3446	+35 49	N	*I. P. W.*	9 48 36·55	+1·60	38·15	N	*I. P. E.*	10 0 33·33	+1·44	34·77	11 56·62				
	3457	+10 35	S	d c − 1·5 b + 6·6 a + 3·8	49 46·63	+1·62	48·25	S	d c − 2·1 b − 2·4 a −30·2	1 43·79	+1·14	44·93	56·68				
	3466	+41 15	N		52 0·55	+1·58	2·13	N		3 57·26	+1·54	58·80	56·67				
	3475	+13 56	S	s Q +1·48	53 25·64	+1·62	27·26	S	s Q +1·40	5 22·67	+1·18	23·85	56·59	m s 11 56·635	+ 0·051	+ 0·004	11 56·690
	3485	+21 45	S		56 8·32	+1·60	9·92	S		8 5·25	+1·26	6·51	56·59				
	3508	+24 0	N		58 15·80	+1·60	17·40	N		10 12·77	+1·29	14·06	56·66				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = +0^s.029$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 9	3609	+ 9 55	S	*I. P. W.*	10 14 46·86	−1·34	45·52	S	*I. P. E.*	10 26 43·88	−1·67	42·21	11 56·69				
	3622	+ 9 16	S	*d* c − 1·5 b + 6·6 a + 3·8	17 1·58	−1·34	0·24	S	*d* c − 2·1 b − 2·4 a −30·2	28 58·69	−1·68	57·01	56·77				
	3633	+34 41	N		19 21·66	−1·36	20·30	N		31 18·52	−1·37	17·15	56·85				
	3640	+32 35	N	*s* Q −1·48	20 15·77	−1·37	14·40	N	*s* Q −1·40	32 12·65	−1·40	11·25	56·85	m s 11 56·810	+0·051	+0·004	11 56·865
	3650	+28 8	N		21 60·08	−1·36	58·72	N		33 57·01	−1·45	55·56	56·84				
	3661	+32 19	N		23 45·58	−1·37	44·21	N		35 42·49	−1·40	41·09	56·88				
	3671	+23 48	N		25 10·88	−1·36	9·52	N		37 7·95	−1·51	6·44	56·92				
			S		25 10·98	−1·36	9·62	S		37 7·88	−1·51	6·37	56·75				
	3687	+ 8 8	S		27 34·83	−1·34	33·49	S		39 31·92	−1·69	30·23	56·74				
Feb. 10	3446	+35 49	N	*I. P. W.*	9 48 30·36	+1·56	31·92	N	*I. P. E.*	10 0 27·22	+1·40	28·62	11 56·70				
	3457	+10 35	S	*d* c − 2·7 b + 5·9 a − 1·4	49 40·56	+1·53	42·09	S	*d* c − 3·5 b − 3·0 a −31·6	1 37·68	+1·08	38·76	56·67				
	3466	+41 15	N		51 54·28	+1·57	55·85	N		3 51·14	+1·48	52·62	56·77				
	3475	+13 56	S	*s* Q +1·47	53 19·47	+1·55	21·02	S	*s* Q +1·40	5 16·62	+1·12	17·74	56·72	m s 11 56·778	+0·049	+0·003	11 56·830
	3485	+21 45	S		56 2·09	+1·55	3·64	S		7 59·19	+1·22	60·41	56·77				
	3508	+24 0	N		58 9·59	+1·55	11·14	N		10 6·74	+1·24	7·98	56·84				
	3530	+41 50	N		10 3 11·73	+1·57	13·30	N		15 8·67	+1·49	10·16	56·86				
	3533	+42 6	N		3 20·00	+1·57	21·57	N		15 16·96	+1·50	18·46	56·89				
Feb. 10	3609	+ 9 55	S	*I. P. W.*	10 14 40·76	−1·41	39·35	S	*I. P. E.*	10 26 37·77	−1·73	36·04	11 56·69				
	3622	+ 9 16	S	*d* c − 2·7 b + 5·9 a − 1·4	16 55·53	−1·41	54·12	S	*d* c − 3·5 b − 3·0 a −31·6	28 52·62	−1·73	50·89	56·77				
	3633	+34 41	N		19 15·63	−1·37	14·26	N		31 12·40	−1·41	10·99	56·73				
	3640	+32 35	N	*s* Q −1·47	20 9·68	−1·37	8·31	N	*s* Q −1·40	32 6·53	−1·44	5·09	56·78	m s 11 56·756	+0·049	+0·004	11 56·809
	3650	+28 8	N		21 54·04	−1·39	52·65	N		33 50·95	−1·51	49·44	56·79				
	3661	+32 19	N		23 39·53	−1·37	38·16	N		35 36·35	−1·45	34·90	56·74				
	3671	+23 48	N		25 4·84	−1·39	3·45	N		37 1·83	−1·56	0·27	56·82				
			S		25 4·85	−1·39	3·46	S		37 1·74	−1·56	0·18	56·72				
	3687	+ 8 8	S		27 28·74	−1·41	27·33	S		39 25·84	−1·75	24·09	56·76				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 86s·; AND HAZARIBAGH (W) *Lat.* 24° 0′, *Long.* 5h 41m 39s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}021$ $S_N - S_S = +0^s{\cdot}029$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 13	3446	+35 49	N	*I. P. E.*	9 48 13·40	+1·49	14·89	N	*I. P. W.*	10 0 10·05	+1·59	11·64	11 56·75				
	3457	+10 35	S	*d* c − 0·6 b + 1·7 *a* + 5·1	49 23·61	+1·54	25·15	S	*d* c − 1·5 b − 0·8 *a* −43·3	1 20·60	+1·12	21·72	56·57				
	3466	+41 15	N		51 37·40	+1·47	38·87	N		3 33·87	+1·72	35·59	56·72				
	3475	+13 56	S	*s* *Q* +1·49	53 2·40	+1·54	3·94	S	*s* *Q* +1·40	4 59·41	+1·18	60·59	56·65	m s 11 56·631	+ 0·042	+ 0·003	11 56·676
	3485	+21 45	S		55 45·11	+1·52	46·63	S		7 41·96	+1·30	43·26	56·63				
	3508	+24 0	N		57 52·74	+1·51	54·25	N		9 49·49	+1·34	50·83	56·58				
	3530	+41 50	N		10 2 55·01	+1·47	56·48	N		14 51·30	+1·73	53·03	56·55				
	3533	+42 6	N		3 3·25	+1·47	4·72	N		14 59·58	+1·74	61·32	56·60				
Feb. 13	3609	+ 9 55	S	*I. P. E.*	10 14 23·73	−1·43	22·30	S	*I. P. W.*	10 26 20·59	−1·69	18·90	11 56·60				
	3622	+ 9 16	S	*d* c − 0·6 b + 1·7 *a* + 5·1	16 38·52	−1·43	37·09	S	*d* c − 1·5 b − 0·8 *a* −43·3	28 35·42	−1·70	33·72	56·63				
	3633	+34 41	N		18 58·63	−1·49	57·14	N		30 55·07	−1·24	53·83	56·69				
	3640	+32 35	N	*s* *Q* −1·49	19 52·77	−1·49	51·28	N	*s* *Q* −1·40	31 49·17	−1·29	47·88	56·60	m s 11 56·631	+ 0·042	+ 0·004	11 56·677
	3650	+28 8	N		21 37·07	−1·48	35·59	N		33 33·60	−1·38	32·22	56·63				
	3661	+32 19	N		23 22·55	−1·49	21·06	N		35 19·01	−1·29	17·72	56·66				
	3671	+23 48	N		24 47·85	−1·47	46·38	N		36 44·50	−1·46	43·04	56·66				
			S		24 47·86	−1·47	46·39	S		36 44·43	−1·46	42·97	56·58				
	3687	+ 8 8	S		27 11·70	−1·43	10·27	S		39 8·62	−1·72	6·90	56·63				
Feb. 14	3446	+35 49	N	*I. P. E.*	9 48 8·98	+1·50	10·48	N	*I. P. W.*	10 0 5·54	+1·64	7·18	11 56·70				
	3457	+10 35	S	*d* c − 0·7 b + 3·4 *a* + 8·3	49 19·08	+1·58	20·66	S	*d* c + 0·2 b − 0·5 *a* −41·9	1 16·05	+1·17	17·22	56·56				
	3466	+41 15	N		51 32·89	+1·48	34·37	N		3 29·31	+1·77	31·08	56·71				
	3475	+13 56	S	*s* *Q* +1·48	52 57·98	+1·57	59·55	S	*s* *Q* +1·40	4 54·87	+1·22	56·09	56·54	m s 11 56·586	+ 0·044	+ 0·003	11 56·633
	3485	+21 45	S		55 40·67	+1·54	42·21	S		7 37·43	+1·35	38·78	56·57				
	3508	+24 0	N		57 48·18	+1·53	49·71	N		9 44·96	+1·40	46·36	56·65				
	3530	+41 50	N		10 2 50·59	+1·48	52·07	N		14 46·76	+1·79	48·55	56·48				
	3533	+42 6	N		2 58·83	+1·48	60·31	N		14 55·00	+1·79	56·79	56·48				

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $\delta_N - \delta_S = +0^s.029$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 14	3609	+ 9 55	S	*I. P. E.*	10 14 19·27	−1·38	17·89	S	*I. P. W.*	10 26 16·05	−1·64	14·41	11 56·52				
	3622	+ 9 16	S	*d* c − 0·7	16 33·98	−1·38	32·60	S	*d* c + 0·2	28 30·87	−1·65	29·22	56·62				
	3633	+34 41	N	b + 3·4 a + 8·3	18 54·28	−1·46	52·82	N	b − 0·5 a −41·9	30 50·51	−1·19	49·32	56·50				
	3640	+32 35	N	*s* Q −1·48	19 48·39	−1·45	46·94	N	*s* Q −1·40	31 44·60	−1·23	43·37	56·43				
	3650	+28 8	N		21 32·70	−1·43	31·27	N		33 29·06	−1·32	27·74	56·47	m s 11 56·482	+ 0·044	+ 0·004	11 56·530
	3661	+32 19	N		23 18·28	−1·45	16·83	N		35 14·46	−1·24	13·22	56·39				
	3671	+23 48	N		24 43·54	−1·42	42·12	N		36 39·95	−1·40	38·55	56·43				
			S		24 43·45	−1·42	42·03	S		36 39·88	−1·40	38·48	56·45				
	3687	+ 8 8	S		27 7·28	−1·38	5·90	S		39 4·10	−1·67	2·43	56·53				
Feb. 16	3446	+35 49	N	*I. P. E.*	9 47 56·66	+1·53	58·19	N	*I. P. W.*	9 59 53·31	+1·71	55·02	11 56·83				
	3457	+10 35	S	*d* c − 0·3	49 6·64	+1·55	8·19	S	*d* c + 1·9	10 1 3·75	+1·30	5·05	56·86				
	3466	+41 15	N	b + 2·1 a + 2·9	51 20·61	+1·52	22·13	N	b + 1·4 a −35·1	3 17·05	+1·83	18·88	56·75				
	3475	+13 56	S	*s* Q +1·50	52 45·54	+1·55	47·09	S	*s* Q +1·42	4 42·59	+1·35	43·94	56·85	m s 11 56·836	+ 0·051	+ 0·003	11 56·890
	3485	+21 45	S		55 28·26	+1·54	29·80	S		7 25·15	+1·46	26·61	56·81				
	3508	+24 0	N		57 35·76	+1·54	37·30	N		9 32·64	+1·50	34·14	56·84				
	3530	+41 50	N		10 2 37·93	+1·52	39·45	N		14 34·49	+1·84	36·33	56·88				
	3533	+42 6	N		2 46·22	+1·52	47·74	N		14 42·76	+1·85	44·61	56·87				
Feb. 16	3622	+ 9 16	S	*I. P. E.*	10 16 21·73	−1·44	20·29	S	*I. P. W.*	10 28 18·45	−1·55	16·90	11 56·61				
	3633	+34 41	N	*d* c − 0·3	18 41·91	−1·47	40·44	N	*d* c + 1·9	30 38·18	−1·15	37·03	56·59				
	3640	+32 35	N	b + 2·1 a + 2·9	19 35·96	−1·46	34·50	N	b + 1·4 a −35·1	31 32·35	−1·19	31·16	56·66				
	3650	+28 8	N	*s* Q −1·50	21 20·23	−1·47	18·76	N	*s* Q −1·42	33 16·74	−1·26	15·48	56·72	m s 11 56·599	+ 0·051	+ 0·003	11 56·653
	3661	+32 19	N		23 5·84	−1·46	4·38	N		35 2·11	−1·19	0·92	56·54				
	3671	+23 48	N		24 31·07	−1·46	29·61	N		36 27·60	−1·34	26·26	56·65				
			S		24 31·11	−1·46	29·65	S		36 27·51	−1·34	26·17	56·52				
	3687	+ 8 8	S		26 55·10	−1·44	53·66	S		38 51·71	−1·57	50·14	56·48				

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.030$ $S_N - S_S = +0^s.042$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb.25	3434	+12 12	S	*I. P. W.*	9 58 32·79	+0·96	33·75	S	*I. P. W.*	9 57 23·85	+1·29	25·14	−1 8·61				
	3446	+35 49	N	*d* c 0·0 b − 0·3 *a* − 5·7	10 1 11·72	+1·02	12·74	N	*d* c + 0·4 b + 3·4 *a* −33·5	10 0 2·60	+1·65	4·25	8·49	m s −1 8·600	+0·051	+0·005	−1 8·544
	3457	+10 35	S		2 21·99	+0·95	22·94	S		1 13·04	+1·27	14·31	8·63				
	3466	+41 15	N	*s* *Q* +1·00	4 35·77	+1·03	36·80	N	*s* *Q* +1·36	3 26·39	+1·77	28·16	8·64		+	+	
	3490	+32 4	N		9 3·30	+1·00	4·30	N		7 54·09	+1·58	55·67	8·63				
				Mean, T_E	10 3 9												
Feb.25	3602	+32 59	N	*I. P. W.*	10 25 54·77	−0·99	53·78	N	*I. P. W.*	10 24 46·34	−1·12	45·22	−1 8·56				
	3609	+ 9 55	S	*d* c 0·0 b − 0·3 *a* − 5·7	27 21·13	−1·05	20·08	S	*d* c + 0·4 b + 3·4 *a* −33·5	26 13·03	−1·46	11·57	8·51	m s −1 8·538	+0·051	+0·006	−1 8·481
	3622	+ 9 16	S		29 35·91	−1·05	34·86	S		28 27·78	−1·47	26·31	8·55		+	+	
	3633	+34 41	N	*s* *Q* −1·00	31 55·97	−0·99	54·98	N	*s* *Q* −1·36	30 47·54	−1·09	46·45	8·53				
				Mean, T_E	10 28 42												
Mar. 1	3434	+12 12	S	*I. P. W.*	9 57 43·14	+0·90	44·04	S	*I. P. W.*	9 57 2·28	+1·11	3·39	−0 40·65				
	3446	+35 49	N	*d* c + 2·1 b − 2·1 *a* −18·8	10 0 22·00	+1·09	23·09	N	*d* c + 0·1 b − 1·5 *a* −48·2	59 40·95	+1·60	42·55	40·54				
	3457	+10 35	S		1 32·37	+0·89	33·26	S		10 0 51·52	+1·08	52·60	40·66				
	3466	+41 15	N	*s* *Q* +1·01	3 45·93	+1·15	47·08	N	*s* *Q* +1·37	3 4·78	+1·76	6·54	40·54	m s −0 40·608	+0·055	+0·006	−0 40·547
	3475	+13 56	S		5 11·24	+0·91	12·15	S		4 30·40	+1·15	31·55	40·60		+	+	
	3484	+32 1	N		7 17·68	+1·06	18·74	N		6 36·70	+1·51	38·21	40·53				
	3490	+32 4	N		8 13·55	+1·06	14·61	N		7 32·47	+1·51	33·98	40·63				
	3506	+18 20	S		9 44·26	+0·95	45·21	S		9 3·28	+1·22	4·50	40·71				
				Mean, T_E	10 4 14												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *sil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.030$ $S_N - S_S = +0^s.042$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 1	3545	+30 13	N	*I. P. W.*	10 16 56·86	−0·98	55·88	N	*I. P. W.*	10 16 16·56	−1·28	15·28	−0 40·60				
	3560	+34 24	N	*d* c + 2·1 b − 2·1 a −18·8	19 4·66	−0·94	3·72	N	*d* c + 0·1 b − 1·5 a −48·2	18 24·40	−1·17	23·23	40·49				
	3575	+10 22	S		21 20·72	−1·13	19·59	S		20 40·68	−1·66	39·02	40·57				
	3583	+10 46	S	*s* Q −1·01	22 52·90	−1·13	51·77	S	*s* Q −1·37	22 12·91	−1·66	11·25	40·52	m s −0 40·554	+ 0·055	+ 0·006	−0 40·493
	3602	+32 59	N		25 5·06	−0·95	4·11	N		24 24·73	−1·21	23·52	40·59				
	3609	+ 9 55	S		26 31·53	−1·13	30·40	S		25 51·48	−1·67	49·81	40·59				
	3622	+ 9 16	S		28 46·34	−1·14	45·20	S		28 6·33	−1·68	4·65	40·55				
	3633	+34 41	N		31 6·24	−0·94	5·30	N		30 25·94	−1·16	24·78	40·52				
				Mean, T_E	10 23 58												
Mar. 2	3434	+12 12	S	*I. P. W.*	9 57 30·87	+0·99	31·86	S	*I. P. W.*	9 56 55·94	+1·16	57·10	−0 34·76				
	3446	+35 49	N	*d* c + 2·9 b − 0·6 a −14·5	10 0 9·82	+1·14	10·96	N	*d* c + 1·5 b − 0·7 a −46·7	59 34·51	+1·66	36·17	34·79				
	3457	+10 35	S		1 20·16	+0·98	21·14	S		10 0 45·16	+1·13	46·29	34·85				
	3466	+41 15	N	*s* Q +1·01	3 33·82	+1·19	35·01	N	*s* Q +1·37	2 58·38	+1·81	60·19	34·82	m s −0 34·788	+ 0·059	+ 0·006	−0 34·723
	3475	+13 56	S		4 58·98	+1·00	59·98	S		4 24·04	+1·19	25·23	34·75				
	3484	+32 1	N		7 5·48	+1·11	6·59	N		6 30·26	+1·56	31·82	34·77				
	3490	+32 4	N		8 1·36	+1·11	2·47	N		7 26·15	+1·56	27·71	34·76				
	3506	+18 20	S		9 32·01	+1·02	33·03	S		8 56·95	+1·28	58·23	34·80				
				Mean, T_E	10 4 2												
Mar. 2	3545	+30 13	N	*I. P. W.*	10 16 44·58	−0·93	43·65	N	*I. P. W.*	10 16 10·24	−1·22	9·02	−0 34·63				
	3560	+34 24	N	*d* c + 2·9 b − 0·6 a −14·5	18 52·41	−0·89	51·52	N	*d* c + 1·5 b − 0·7 a −46·7	18 18·06	−1·12	16·94	34·58				
	3575	+10 22	S		21 8·46	−1·04	7·42	S		20 34·35	−1·61	32·74	34·68				
	3583	+10 46	S	*s* Q −1·01	22 40·64	−1·04	39·60	S	*s* Q −1·37	22 6·61	−1·61	5·00	34·60	m s −0 34·575	+ 0·059	+ 0·006	−0 34·510
	3602	+32 59	N		24 52·82	−0·91	51·91	N		24 18·47	−1·15	17·32	34·59				
	3609	+ 9 55	S		26 19·23	−1·04	18·19	S		25 45·25	−1·62	43·63	34·56				
	3622	+ 9 16	S		28 33·97	−1·05	32·92	S		27 60·06	−1·63	58·43	34·49				
	3633	+34 41	N		30 53·87	−0·89	52·98	N		30 19·62	−1·11	18·51	34·47				
				Mean, T_E	10 23 46												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *sil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s·1 AND HAZARIBAGH (W) *Lat.* 24° 0′, *Long.* 5h 41m 39s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Pers'l. Equations $H_N - H_S = +0^s{\cdot}930$ $S_N - S_S = +0^s{\cdot}042$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 3	3434	+12 12	S	*I. P. E.*	9 57 18·88	+0·89	19·77	S	*I. P. E.*	9 56 49·97	+0·99	50·96	−0 28·81				
	3446	+35 49	N	d c − 0·8 b − 0·3 a −16·1	59 57·91	+1·05	58·96	N	d c − 5·6 b − 1·5 a −47·8	59 28·68	+1·44	30·12	28·84				
	3457	+10 35	S		10 1 8·12	+0·88	9·00	S		10 0 39·22	+0·96	40·18	28·82				
	3466	+41 15	N	s Q +1·01	3 21·87	+1·10	22·97	N	s Q +1·37	2 52·55	+1·59	54·14	28·83	m s −0 28·806	+0·051	+0·006	−0 28·749
	3475	+13 56	S		4 47·00	+0·90	47·90	S		4 18·09	+1·02	19·11	28·79		+		
	3484	+32 1	N		6 53·54	+1·02	54·56	N		6 24·38	+1·36	25·74	28·82				
	3490	+32 4	N		7 49·41	+1·02	50·43	N		7 20·28	+1·36	21·64	28·79				
	3506	+18 20	S		9 19·96	+0·93	20·89	S		8 51·05	+1·09	52·14	28·75				
				Mean, T_E	10 3 50												
Mar. 3	3545	+30 13	N	*I. P. E.*	10 16 32·54	−1·01	31·53	N	*I. P. E.*	10 16 4·32	−1·43	2·89	−0 28·64				
	3560	+34 24	N	d c − 0·8 b − 0·3 a −16·1	18 40·47	−0·98	39·49	N	d c − 5·6 b − 1·5 a −47·8	18 12·16	−1·32	10·84	28·65				
	3575	+10 22	S		20 56·40	−1·14	55·26	S		20 28·41	−1·79	26·62	28·64				
	3583	+10 46	S	s Q −1·01	22 28·60	−1·14	27·46	S	s Q −1·37	21 60·62	−1·78	58·84	28·62	m s −0 28·597	+0·051	+0·007	−0 28·539
	3609	+9 55	S		26 7·21	−1·14	6·07	S		25 39·24	−1·80	37·44	28·63		+		
	3622	+9 16	S		28 22·00	−1·15	20·85	S		27 54·26	−1·81	52·45	28·40				
	3633	+34 41	N		30 42·04	−0·98	41·06	N		30 13·78	−1·32	12·46	28·60				
				Mean, T_E	10 23 24												
Mar. 4	3434	+12 12	S	*I. P. E.*	9 57 6·39	+0·83	7·22	S	*I. P. E.*	9 56 45·32	+1·02	46·34	−0 20·88				
	3446	+35 49	N	d c − 2·1 b − 0·7 a −18·7	59 45·35	+1·01	46·36	N	d c − 5·6 b + 0·7 a −48·1	59 23·91	+1·49	25·40	20·96				
	3457	+10 35	S		10 0 55·59	+0·82	56·41	S		10 0 34·50	+1·00	35·50	20·91				
	3466	+41 15	N	s Q +1·01	3 9·29	+1·07	10·36	N	s Q +1·36	2 47·84	+1·64	49·48	20·88	m s −0 20·863	+0·043	+0·006	−0 20·814
	3475	+13 56	S		4 34·46	+0·84	35·30	S		4 13·42	+1·06	14·48	20·82		+		
	3484	+32 1	N		6 40·96	+0·98	41·94	N		6 19·69	+1·41	21·10	20·84				
	3490	+32 4	N		7 36·79	+0·98	37·77	N		7 15·57	+1·41	16·98	20·79				
	3506	+18 20	S		9 7·42	+0·88	8·30	S		8 46·34	+1·14	47·48	20·82				
				Mean, T_E	10 3 37												

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s: AND HAZARIBAGH (W) *Lat.* 24° 0′, *Long.* 5h 41m 39s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.030$ $S_N - S_S = +0^s.042$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 4	3545	+30 13	N	*I. P. E.*	10 16 20·19	−1·05	19·14	N	*I. P. E.*	10 15 59·68	−1·36	58·32	−0 20·82				
	3560	+34 24	N	*d* c − 2·1 b − 0·7 *a* −18·7	18 28·02	−1·02	27·00	N	*d* c − 5·6 b + 0·7 *a* −48·1	18 7·46	−1·25	6·21	20·79				
	3575	+10 22	S		20 44·00	−1·20	42·80	S		20 23·77	−1·73	22·04	20·76				
	3583	+10 46	S	*s* *Q* −1·01	22 16·16	−1·19	14·97	S	*s* *Q* −1·36	21 55·95	−1·72	54·23	20·74	m s −0 20·745	+ 0·043	+ 0·006	−0 20·696
	3602	+32 59	N		24 28·36	−1·03	27·33	N		24 7·91	−1·29	6·62	20·71				
	3609	+ 9 55	S		25 54·80	−1·20	53·60	S		25 34·56	−1·74	32·82	20·78				
	3622	+ 9 16	S		28 9·55	−1·21	8·34	S		27 49·41	−1·75	47·66	20·68				
	3633	+34 41	N		30 29·60	−1·02	28·58	N		30 9·14	−1·24	7·90	20·68				
				Mean, T_E	10 23 21												
Mar. 5	3434	+12 12	S	*I. P. E.*	9 56 53·04	+0·90	53·94	S	*I. P. E.*	9 56 40·72	+0·92	41·64	−0 12·30				
	3446	+35 49	N	*d* c − 0·7 b + 0·6 *a* −16·8	59 32·00	+1·09	33·09	N	*d* c − 7·8 b − 2·0 *a* −49·3	59 19·39	+1·39	20·78	12·31				
	3457	+10 35	S		10 0 42·24	+0·89	43·13	S		10 0 29·96	+0·90	30·86	12·27				
	3466	+41 15	N	*s* *Q* +1·01	2 56·01	+1·14	57·15	N	*s* *Q* +1·38	2 43·28	+1·53	44·81	12·34	m s −0 12·230	+ 0·042	+ 0·006	−0 12·182
	3475	+13 56	S		4 21·11	+0·91	22·02	S		4 8·87	+0·95	9·82	12·20				
	3484	+32 1	N		6 27·58	+1·05	28·63	N		6 15·15	+1·30	16·45	12·18				
	3490	+32 4	N		7 23·49	+1·05	24·54	N		7 11·04	+1·30	12·34	12·20				
	3506	+18 20	S		8 54·01	+0·94	54·95	S		8 41·88	+1·03	42·91	12·04				
				Mean, T_E	10 3 24												
Mar. 5	3545	+30 13	N	*I. P. E.*	10 16 6·67	−0·98	5·69	N	*I. P. E.*	10 15 55·14	−1·49	53·65	−0 12·04				
	3560	+34 24	N	*d* c − 0·7 b + 0·6 *a* −16·8	18 14·59	−0·95	13·64	N	*d* c − 7·8 b − 2·0 *a* −49·3	18 2·94	−1·39	1·55	12·09				
	3575	+10 22	S		20 30·49	−1·13	29·36	S		20 19·15	−1·87	17·28	12·08				
	3583	+10 46	S	*s* *Q* −1·01	22 2·70	−1·12	1·58	S	*s* *Q* −1·38	21 51·43	−1·86	49·57	12·01	m s −0 12·015	+ 0·042	+ 0·006	−0 11·967
	3602	+32 59	N		24 14·90	−0·96	13·94	N		24 3·37	−1·43	1·94	12·00				
	3609	+ 9 55	S		25 41·26	−1·13	40·13	S		25 30·01	−1·88	28·13	12·00				
	3622	+ 9 16	S		27 56·07	−1·13	54·94	S		27 44·89	−1·89	43·00	11·94				
	3633	+34 41	N		30 16·04	−0·94	15·10	N		30 4·53	−1·39	3·14	11·96				
				Mean, T_E	10 23 8												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Persl. Equations $H_N - H_S = +0^s.030$, $S_N - S_S = +0^s.042$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 25	3109	+30 8	N	*I. P. W.*	9 1 39·14	+1·00	40·14	N	*I. P. W.*	9 15 5·41	+1·55	6·96	13 26·82				
	3117	+22 31	S	*d* c 0·0 b − 0·3 a − 5·7	3 18·46	+0·98	19·44	S	*d* c + 0·4 b + 3·4 a −33·5	16 44·78	+1·43	46·21	26·77	m s 13 26·823	+ 0·116	+ 0·009	13 26·948
	3123	+22 29	S		4 18·05	+0·98	19·03	S		17 44·43	+1·43	45·86	26·83				
	3129	+18 32	S	*s* Q +1·00	6 3·13	+0·97	4·10	S	*s* Q +1·36	19 29·60	+1·37	30·97	26·87				
Feb. 25	3178	+34 53	N	*I. P. W.*	9 14 37·95	−0·99	36·96	N	*I. P. W.*	9 28 4·95	−1·09	3·86	13 26·90				
	3194	+25 41	N	*d* c 0·0 b − 0·3 a − 5·7	17 28·10	−1·01	27·09	N	*d* c + 0·4 b + 3·4 a −33·5	30 55·11	−1·25	53·86	26·77				
	3204	+26 41	N		18 32·90	−1·01	31·89	N		31 59·92	−1·22	58·70	26·81	m s 13 26·801	+ 0·116	+ 0·005	13 26·922
	3209	+17 6	S	*s* Q −1·00	19 46·17	−1·03	45·14	S	*s* Q −1·36	33 13·27	−1·37	11·90	26·76				
	3227	+ 9 34	S		22 54·05	−1·05	53·00	S		36 21·23	−1·46	19·77	26·77				
	3238	+34 10	N		24 21·25	−0·99	20·26	N		37 48·17	−1·10	47·07	26·81				
	3246	+23 29	S		25 45·06	−1·02	44·04	S		39 12·11	−1·28	10·83	26·79				
Mar. 1	3068	+32 43	N	*I. P. W.*	8 54 4·42	+1·06	5·48	N	*I. P. W.*	9 7 30·83	+1·52	32·35	13 26·87				
	3079	+24 55	N	*d* c + 2·1 b − 2·1 a −18·8	55 44·79	+1·00	45·79	N	*d* c + 0·1 b − 1·5 a −48·2	9 11·23	+1·35	12·58	26·79				
			S		55 44·78	+1·00	45·78	S		9 11·17	+1·35	12·52	26·74				
	3088	+28 22	N	*s* Q +1·01	57 2·36	+1·03	3·39	N	*s* Q +1·37	10 28·73	+1·43	30·16	26·77	m s 13 26·762	+ 0·114	+ 0·005	13 26·881
	3097	+38 55	N		58 55·82	+1·13	56·95	N		12 22·06	+1·69	23·75	26·80				
	3109	+30 8	N		9 0 49·35	+1·04	50·39	N		14 15·73	+1·46	17·19	26·80				
	3117	+22 31	S		2 28·84	+0·98	29·82	S		15 55·22	+1·30	56·52	26·70				
	3123	+22 29	S		3 28·45	+0·98	29·43	S		16 54·86	+1·30	56·16	26·73				
	3129	+18 32	S		5 13·58	+0·95	14·53	S		18 39·97	+1·22	41·19	26·66				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}030$ $S_N - S_S = +0^s{\cdot}042$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 1	3170	+26 45	N	*I. P. W.*	9 12 17·63	−1·01	16·62	N	*I. P. W.*	9 25 44·70	−1·35	43·35	13 26·73				
	3178	+34 53	N	*d* c + 2·1 b − 2·1 *a* −18·8	13 48·18	−0·93	47·25	N	*d* c + 0·1 b − 1·5 *a* −48·2	27 15·24	−1·16	14·08	26·83	m s 13 26·745	+ 0·114	+ 0·003	13 26·862
	3194	+25 41	N		16 38·44	−1·02	37·42	N		30 5·44	−1·38	4·06	26·64				
	3209	+17 6	S	*s* *Q* −1·01	18 56·41	−1·08	55·33	S	*s* *Q* −1·37	32 23·66	−1·55	22·11	26·78				
Mar. 2	3068	+32 43	N	*I. P. W.*	8 53 52·09	+1·11	53·20	N	*I. P. W.*	9 7 18·65	+1·58	20·23	13 27·03				
	3079	+24 55	N S	*d* c + 2·9 b − 0·6 *a* −14·5	55 32·49	+1·06	33·55	N	*d* c + 1·5 b − 0·7 *a* −46·7	8 59·13	+1·41	60·54	26·99				
					55 32·47	+1·06	33·53	S		8 59·01	+1·41	60·42	26 89				
	3088	+28 22	N	*s* *Q* +1·01	56 50·07	+1·08	51·15	N	*s* *Q* +1·37	10 16·59	+1·48	18·07	26·92				
	3097	+38 55	N		58 43·54	+1·16	44·70	N		12 9·94	+1·74	11·68	26·98	m s 13 26·916	+ 0·113	+ 0·009	13 27·038
	3109	+30 8	N		9 0 37·15	+1·09	38·24	N		14 3·59	+1·52	5·11	26·87				
	3117	+22 31	S		2 16·57	+1·05	17·62	S		15 43·06	+1·36	44·42	26·80				
	3123	+22 29	S		3 16·22	+1·05	17·27	S		16 42·75	+1·36	44·11	26·84				
	3129	+18 32	S		5 1·24	+1·02	2·26	S		18 27·90	+1·28	29·18	26·92				
Mar. 2	3170	+26 45	N	*I. P. W.*	9 12 5·43	−0·96	4·47	N	*I. P. W.*	9 25 32·61	−1·29	31·32	13 26·85				
	3178	+34 53	N	*d* c + 2·9 b − 0·6 *a* −14·5	13 36·06	−0·99	35·17	N	*d* c + 1·5 b − 0·7 *a* −46·7	27 3·03	−1·11	1·92	26·75				
	3194	+25 41	N		16 26·14	−0·97	25·17	N		29 53·33	−1·32	52·01	26·84				
	3204	+26 41	N	*s* *Q* −1·01	17 30·95	−0·96	29·99	N	*s* *Q* −1·37	30 58·06	−1·30	56·76	26·77	m s 13 26·803	+ 0·113	+ 0·005	13 26·921
	3209	+17 6	S		18 44·25	−1·01	43·24	S		32 11·56	−1·48	10·08	26·84				
	3227	+9 34	S		21 52·17	−1·05	51·12	S		35 19·57	−1·63	17·94	26·82				
	3238	+34 10	N		23 19·36	−0·90	18·46	N		36 46·38	−1·12	45·26	26·80				
	3246	+23 29	S		24 43·27	−0·97	42·30	S		38 10·41	−1·36	9·05	26·75				

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.030$ $S_N - S_S = +0^s.042$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 3	3068	+32 43	N	*I. P. E.*	8 53 40·16	+1·03	41·19	N	*I. P. E.*	9 7 6·61	+1·37	7·98	13 26·79				
	3079	+24 55	N	d c − 0·8 b − 0·3 a −16·1	55 20·51	+0·97	21·48	N	d c − 5·6 b − 1·5 a −47·8	8 47·00	+1·21	48·21	26·73				
			S		55 20·47	+0·97	21·44	S		8 47·02	+1·21	48·23	26·79				
	3088	+28 22	N	s Q +1·01	56 38·06	+0·99	39·05	N	s Q +1·37	10 4·58	+1·28	5·86	26·81	m s 13 26·826	+ 0·114	+ 0·006	13 26·946
	3109	+30 8	N		9 0 25·16	+1·01	26·17	N		13 51·66	+1·31	52·97	26·80				
	3117	+22 31	S		2 4·43	+0·95	5·38	S		15 31·12	+1·17	32·29	26·91				
	3123	+22 29	S		3 4·12	+0·95	5·07	S		16 30·80	+1·17	31·97	26·90				
	3129	+18 32	S		4 49·20	+0·93	50·13	S		18 15·92	+1·09	17·01	26·88				
Mar. 3	3170	+26 45	N	*I. P. E.*	9 11 53·40	−1·04	52·36	N	*I. P. E.*	9 25 20·72	−1·49	19·23	13 26·87				
	3178	+34 53	N	d c − 0·8 b − 0·3 a −16·1	13 24·04	−0·98	23·06	N	d c − 5·6 b − 1·5 a −47·8	26 51·32	−1·31	50·01	26·95				
	3194	+25 41	N		16 14·17	−1·05	13·12	N		29 41·53	−1·52	40·01	26·89				
	3204	+26 41	N	s Q −1·01	17 18·90	−1·04	17·86	N	s Q −1·37	30 46·26	−1·50	44·76	26·90	m s 13 26·890	+ 0·114	+ 0·005	13 27·009
	3209	+17 6	S		18 32·28	−1·10	31·18	S		31 59·69	−1·68	58·01	26·83				
	3227	+ 9 34	S		21 40·18	−1·15	39·03	S		35 7·75	−1·80	5·95	26·92				
	3238	+34 10	N		23 7·36	−0·98	6·38	N		36 24·63	−1·33	33·30	26·92				
	3246	+23 29	S		24 31·25	−1·06	30·19	S		37 58·56	−1·55	57·01	26·82				
Mar. 4	3068	+32 43	N	*I. P. E.*	8 53 27·75	+0·98	28·73	N	*I. P. E.*	9 6 54·28	+1·42	55·70	13 26·97				
	3079	+24 55	N	d c − 2·1 b − 0·7 a −18·7	55 8·10	+0·93	9·03	N	d c − 5·6 b + 0·7 a −48·1	8 34·71	+1·26	35·97	26·94				
			S		55 8·09	+0·93	9·02	S		8 34·72	+1·26	35·98	26·96				
	3088	+28 22	N	s Q +1·01	56 25·68	+0·96	26·64	N	s Q +1·36	9 52·33	+1·33	53·66	27·02	m s 13 26·993	+ 0·121	+ 0·005	13 27·119
	3097	+38 55	N		58 19·33	+1·05	20·38	N		11 45·70	+1·58	47·28	26·90				
	3109	+30 8	N		9 0 12·77	+0·97	13·74	N		13 39·34	+1·36	40·70	26·96				
	3117	+22 31	S		1 52·17	+0·91	53·08	S		15 18·88	+1·22	20·10	27·02				
	3123	+22 29	S		2 51·80	+0·91	52·71	S		16 18·55	+1·22	19·77	27·06				
	3129	+18 32	S		4 36·85	+0·88	37·73	S		18 3·70	+1·14	4·84	27·11				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s: AND HAZARIBAGH (W) *Lat.* 24° 0′, *Long* 5h 41m 39s

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Persl. Equations $H_N - H_S = +0^s.030$ $S_N - S_S = +0^s.042$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 4	3170	+26 45	N	*I. P. E.*	9 11 40·97	−1·08	39·89	N	*I. P. E.*	9 25 8·46	−1·42	7·04	13 27·15				
	3178	+34 53	N	*d* c − 2·1 b − 0·7 *a* −18·7	13 11·60	−1·02	10·58	N	*d* c − 5·6 b + 0·7 *a* −48·1	26 39·01	−1·24	37·77	27·19				
	3194	+25 41	N		16 1·71	−1·09	0·62	N		29 29·19	−1·45	27·74	27·12				
	3204	+26 41	N	*s* *Q* −1·01	17 6·49	−1·08	5·41	N	*s* *Q* −1·36	30 34·01	−1·43	32·58	27·17	m s 13 27·155	+ 0·121	+ 0·005	13 27·281
	3209	+17 6	S		18 19·75	−1·15	18·60	S		31 47·39	−1·61	45·78	27·18				
	3227	+ 9 34	S		21 27·70	−1·21	26·49	S		34 55·38	−1·74	53·64	27·15				
	3238	+34 10	N		22 54·89	−1·02	53·87	N		36 22·28	−1·25	21·03	27·16				
	3246	+23 29	S		24 18·72	−1·10	17·62	S		37 46·22	−1·48	44·74	27·12				
Mar. 5	3068	+32 43	N	*I. P. E.*	8 53 14·38	+1·06	15·44	N	*I. P. E.*	9 6 40·81	+1·32	42·13	13 26·69				
	3079	+24 55	N	*d* c − 0·7 b + 0·6 *a* −16·8	54 54·66	+0·99	55·65	N	*d* c − 7·8 b − 2·0 *a* −49·3	8 21·26	+1·15	22·41	26·76				
			S		54 54·67	+0·99	55·66	S		8 21·17	+1·15	22·32	26·66				
	3088	+28 22	N	*s* *Q* +1·01	56 12·20	+1·03	13·23	N	*s* *Q* +1·38	9 38·83	+1·23	40·06	26·83	m s 13 26·749	+ 0·126	+ 0·005	13 26·880
	3097	+38 55	N		58 5·79	+1·12	6·91	N		11 32·22	+1·46	33·68	26·77				
	3109	+30 8	N		59 59·33	+1·04	60·37	N		13 25·84	+1·27	27·11	26·74				
	3117	+22 31	S		9 1 38·76	+0·97	39·73	S		15 5·31	+1·11	6·42	26·69				
	3123	+22 29	S		2 38·36	+0·97	39·33	S		16 4·96	+1·11	6·07	26·74				
	3129	+18 32	S		4 23·34	+0·94	24·28	S		17 50·11	+1·03	51·14	26·86				
Mar. 5	3170	+26 45	N	*I. P. E.*	9 11 27·60	−1·01	26·59	N	*I. P. E.*	9 24 54·91	−1·57	53·34	13 26·75				
	3178	+34 53	N	*d* c − 0·7 b + 0·6 *a* −16·8	12 58·22	−0·94	57·28	N	*d* c − 7·8 b − 2·0 *a* −49·3	26 25·49	−1·38	24·11	26·83				
	3194	+25 41	N		15 48·31	−1·02	47·29	N		29 15·68	−1·60	14·08	26·79				
	3204	+26 41	N	*s* *Q* −1·01	16 53·16	−1·01	52·15	N	*s* *Q* −1·38	30 20·46	−1·58	18·88	26·73	m s 13 26·809	+ 0·126	+ 0·005	13 26·940
	3209	+17 6	S		18 6·41	−1·08	5·33	S		31 33·87	−1·76	32·11	26·78				
	3227	+ 9 34	S		21 14·22	−1·13	13·09	S		34 41·86	−1·88	39·98	26·89				
	3238	+34 10	N		22 41·49	−0·95	40·54	N		36 8·76	−1·40	7·36	26·82				
	3246	+23 29	S		24 5·34	−1·04	4·30	S		37 32·81	−1·63	31·18	26·88				

NOTE. 1d = 0s.0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s: AND HAZARIBAGH (W) *Lat.* 24° 0′, *Long* 5h 41m 39s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.030$ $S_N - S_S = +0^s.042$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 25	3824	+15 3	S	*I. P. W.*	10 51 39·98	+0·96	40·94	S	*I. P. W.*	11 5 6·66	+1·33	7·99	13 27·05				
	3834	+21 11	S	*d* c 0·0 b − 0·3 *a* − 5·7	53 57·43	+0·98	58·41	S	*d* c + 0·4 b + 3·4 *a* −33·5	7 24·06	+1·41	25·47	27·06	m s 13 27·044	+ 0·051	+ 0·010	13 27·105
	3842	+23 45	S		55 3·18	+0·98	4·16	S		8 29·82	+1·45	31·27	27·11				
	3851	+32 12	N	*s* *Q* +1·00	58 0·85	+1·00	1·85	N	*s* *Q* +1·36	11 27·25	+1·59	28·84	26·99				
	3863	+ 7 17	S		11 1 30·52	+0·95	31·47	S		14 57·26	+1·22	58·48	27·01				
Feb. 25	3915	+19 4	S	*I. P. W.*	11 10 29·03	−1·03	28·00	S	*I. P. W.*	11 23 56·34	−1·34	55·00	13 27·00				
	3937	+28 26	N	*d* c 0·0 b − 0·3 *a* − 5·7	16 14·93	−1·00	13·93	N	*d* c + 0·4 b + 3·4 *a* −33·5	29 42·03	−1·19	40·84	26·91				
	3952	+44 17	N		18 12·81	−0·95	11·86	N		31 39·77	−0·88	38·89	27·03				
	3964	+22 1	S	*s* *Q* −1·00	20 48·40	−1·02	47·38	S	*s* *Q* −1·36	34 15·65	−1·30	14·35	26·97	m s 13 26·958	+ 0·051	+ 0·006	13 27·015
	3973	+42 23	N		23 31·90	−0·96	30·94	N		36 58·81	−0·93	57·88	26·94				
	3979	+ 8 55	S		25 21·57	−1·05	20·52	S		38 48·92	−1·48	47·44	26·92				
	3990	+20 53	S		28 3·30	−1·02	2·28	S		41 30·54	−1·32	29·22	26·94				
	3998	+35 36	N		29 43·24	−0·98	42·26	N		43 10·28	−1·07	9·21	26·95				
Mar. 1	3797	+26 11	N	*I. P. W.*	10 46 30·29	+1·01	31·30	N	*I. P. W.*	10 59 56·91	+1·37	58·28	13 26·98				
	3824	+15 3	S	*d* c + 2·1 b − 2·1 *a* −18·8	51 18·52	+0·92	19·44	S	*d* c + 0·1 b − 1·5 *a* −48·2	11 4 45·14	+1·17	46·31	26·87				
	3834	+21 11	S		53 35·94	+0·97	36·91	S		7 2·51	+1·27	3·78	26·87	m s 13 26·907	+ 0·055	+ 0·008	13 26·970
	3842	+23 45	S	*s* *Q* +1·01	54 41·65	+0·99	42·64	S	*s* *Q* +1·37	8 8·19	+1·33	9·52	26·88				
	3851	+32 12	N		57 39·16	+1·06	40·22	N		11 5·68	+1·51	7·19	26·97				
	3863	+ 7 17	S		11 1 9·00	+0·88	9·88	S		14 35·72	+1·03	36·75	26·87				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.030$ $S_N - S_S = +0^s.042$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 1	3915	+19 4	S	*I. P. W.*	11 10 7·44	−1·07	6·37	S	*I. P. W.*	11 23 34·79	−1·51	33·28	13 26·91				
	3937	+28 26	N	d c + 2·1 b − 2·1 a −18·8	15 53·14	−0·99	52·15	N	d c + 0·1 b − 1·5 a −48·2	29 20·47	−1·31	19·16	27·01				
	3952	+44 17	N		17 51·02	−0·82	50·20	N		31 18·08	−0·88	17·20	27·00				
	3964	+22 1	S	s Q −1·01	20 26·75	−1·05	25·70	S	s Q −1·37	33 54·00	−1·45	52·55	26·85	m s 13 26·954	+ 0·055	+ 0·006	13 27·015
	3973	+42 23	N		23 10·07	−0·85	9·22	N		36 37·15	−0·94	36·21	26·99				
	3979	+ 8 55	S		24 59·89	−1·14	58·75	S		38 27·40	−1·68	25·72	26·97				
	3990	+20 53	S		27 41·64	−1·06	40·58	S		41 8·97	−1·48	7·49	26·91				
	3998	+35 36	N		29 21·47	−0·93	20·54	N		42 48·67	−1·14	47·53	26·99				
Mar. 2	3834	+21 11	S	*I. P. W.*	10 53 29·52	+1·04	30·56	S	*I. P. W.*	11 6 56·20	+1·33	57·53	13 26·97				
	3842	+23 45	S	d c + 2·9 b − 0·6 a −14·5	54 35·24	+1·05	36·29	S	d c + 1·5 b − 0·7 a −46·7	8 1·92	+1·39	3·31	27·02	m s 13 27·020	+ 0·059	+ 0·009	13 27·088
	3851	+32 12	N		57 32·78	+1·11	33·89	N		10 59·37	+1·57	60·94	27·05				
	3863	+ 7 17	S	s Q +1·01	11 1 2·52	+0·96	3·48	S	s Q +1·37	14 29·44	+1·08	30·52	27·04				
Mar. 2	3915	+19 4	S	*I. P. W.*	11 9 60·96	−0·99	59·97	S	*I. P. W.*	11 23 28·54	−1·45	27·09	13 27·12				
	3952	+44 17	N	d c + 2·9 b − 0·6 a −14·5	17 44·72	−0·80	43·92	N	d c + 1·5 b − 0·7 a −46·7	31 11·85	−0·83	11·02	27·10	m s 13 27·096	+ 0·059	+ 0·007	13 27·162
	3964	+22 1	S		20 20·30	−0·98	19·32	S		33 47·80	−1·39	46·41	27·09				
	3973	+42 23	N	s Q −1·01	23 3·72	−0·82	2·90	N	s Q −1·37	36 30·86	−0·89	29·97	27·07				
	3990	+20 53	S		27 35·20	−0·98	34·22	S		41 2·74	−1·42	1·32	27·10				
Mar. 3	3787	+25 51	S	*I. P. E.*	10 44 30·91	+0·98	31·89	S	*I. P. E.*	10 57 57·87	+1·23	59·10	13 27·21				
			N	d c − 0·8 b − 0·3 a −16·1	44 31·04	+0·98	32·02	N	d c − 5·6 b − 1·5 a −47·8	57 57·80	+1·23	59·03	27·01				
	3797	+26 11	N		46 17·71	+0·98	18·69	N		59 44·59	+1·23	45·82	27·13				
	3811	+36 57	N	s Q +1·01	48 23·03	+1·06	24·09	N	s Q +1·37	11 1 49·81	+1·47	51·28	27·19	m s 13 27·157	+ 0·051	+ 0·007	13 27·215
	3824	+15 3	S		51 5·80	+0·90	6·70	S		4 32·77	+1·04	33·81	27·11				
	3834	+21 11	S		53 23·28	+0·94	24·22	S		6 50·17	+1·14	51·31	27·09				
	3842	+23 45	S		54 29·01	+0·96	29·97	S		7 55·94	+1·19	57·13	27·16				
	3851	+32 12	N		57 26·53	+1·02	27·55	N		10 53·46	+1·36	54·82	27·27				
	3863	+ 7 17	S		11 0 56·29	+0·86	57·15	S		14 23·49	+0·90	24·39	27·24				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.030$ $S_N - S_S = +0^s.042$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 3	3915	+19 4	S	*I. P. E.*	11 9 54·84	−1·09	53·75	S	*I. P. E.*	11 23 22·52	−1·64	20·88	13 27·13				
	3937	+28 26	N	*d* c − 0·8 b − 0·3 *a* −16·1	15 40·68	−1·03	39·65	N	*d* c − 5·6 b − 1·5 *a* −47·8	29 8·16	−1·46	6·70	27·05				
	3952	+44 17	N		17 38·55	−0·88	37·67	N		31 5·89	−1·05	4·84	27·17				
	3964	+22 1	S	*s* *Q* −1·01	20 14·19	−1·07	13·12	S	*s* *Q* −1·37	33 41·77	−1·58	40·19	27·07	m s 13 27·138	+ 0·051	+ 0·006	13 27·195
	3973	+42 23	N		22 57·60	−0·91	56·69	N		36 24·96	−1·12	23·84	27·15				
	3979	+8 55	S		24 47·31	−1·15	46·16	S		38 15·13	−1·81	13·32	27·16				
	3990	+20 53	S		27 29·08	−1·08	28·00	S		40 56·74	−1·61	55·13	27·13				
	3998	+35 36	N		29 8·95	−0·97	7·98	N		42 36·52	−1·30	35·22	27·24				
Mar. 4	3787	+25 51	S	*I. P. E.*	10 44 26·20	+0·94	27·14	S	*I. P. E.*	10 57 53·11	+1·28	54·39	13 27·25				
			N	*d* c − 2·1 b − 0·7 *a* −18·7	44 26·23	+0·94	27·17	N	*d* c − 5·6 b + 0·7 *a* −48·1	57 53·11	+1·28	54·39	27·22				
	3797	+26 11	N		46 12·89	+0·94	13·83	N		59 39·83	+1·28	41·11	27·28				
	3811	+36 57	N	*s* *Q* +1·01	48 18·35	+1·03	19·38	N	*s* *Q* +1·36	11 1 45·04	+1·52	46·56	27·18	m s 13 27·228	+ 0·043	+ 0·007	13 27·278
	3824	+15 3	S		51 1·05	+0·85	1·90	S		4 28·08	+1·08	29·16	27·26				
	3834	+21 11	S		53 18·63	+0·90	19·53	S		6 45·46	+1·19	46·65	27·12				
	3842	+23 45	S		54 24·33	+0·92	25·25	S		7 51·24	+1·24	52·48	27·23				
	3851	+32 12	N		57 21·90	+0·98	22·88	N		10 48·65	+1·41	50·06	27·18				
	3863	+7 17	S		11 0 51·59	+0·81	52·40	S		14 18·79	+0·94	19·73	27·33				
Mar. 4	3915	+19 4	S	*I. P. E.*	11 9 50·04	−1·14	48·90	S	*I. P. E.*	11 23 17·86	−1·57	16·29	13 27·39				
	3937	+28 26	N	*d* c − 2·1 b − 0·7 *a* −18·7	15 35·83	−1·06	34·77	N	*d* c − 5·6 b + 0·7 *a* −48·1	29 3·58	−1·39	2·19	27·42				
	3952	+44 17	N		17 33·76	−0·92	32·84	N		31 1·21	−0·98	0·23	27·39				
	3964	+22 1	S	*s* *Q* −1·01	20 9·30	−1·12	8·18	S	*s* *Q* −1·36	33 37·15	−1·51	35·64	27·46	m s 13 27·444	+ 0·043	+ 0·006	13 27·493
	3973	+42 23	N		22 52·80	−0·93	51·87	N		36 20·36	−1·04	19·32	27·45				
	3979	+8 55	S		24 42·48	−1·21	41·27	S		38 10·54	−1·75	8·79	27·52				
	3990	+20 53	S		27 24·26	−1·12	23·14	S		40 52·18	−1·54	50·64	27·50				
	3998	+35 36	N		29 4·26	−1·01	3·25	N		42 31·90	−1·23	30·67	27·42				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND HAZARIBAGH (W) *Lat. 24° 0′, Long. 5h 41m 39s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.930$ $S_N - S_S = +0^s.042$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 5	3787	+25 51	S	*I. P. E.*	10 44 21·78	+1·01	22·79	S	*I. P. E.*	10 57 48·66	+1·17	49·83	13 27·04				
	3797	+26 11	N	d c − 0·7 b + 0·6 a −16·8	46 8·38	+1·01	9·39	N	d c − 7·8 b − 2·0 a −49·3	59 35·34	+1·17	36·51	27·12				
	3811	+36 57	N		48 13·81	+1·10	14·91	N		11 1 40·59	+1·42	42·01	27·10				
	3824	+15 3	S	s Q +1·01	50 56·52	+0·92	57·44	S	s Q +1·38	4 23·68	+0·97	24·65	27·21	m s 13 27·178	+ 0·042	+ 0·008	13 27·228
	3834	+21 11	S		53 13·90	+0·96	14·86	S		6 41·03	+1·08	42·11	27·25				
	3842	+23 45	S		54 19·69	+0·98	20·67	S		7 46·76	+1·13	47·89	27·22				
	3851	+32 12	N		57 17·32	+1·05	18·37	N		10 44·23	+1·31	45·54	27·17				
	3863	+ 7 17	S		11 0 47·04	+0·87	47·91	S		14 14·38	+0·84	15·22	27·31				
Mar. 5	3915	+19 4	S	*I. P. E.*	11 9 45·64	−1·07	44·57	S	*I. P. E.*	11 23 13·32	−1·72	11·60	13 27·03				
	3937	+28 26	N	d c − 0·7 b + 0·6 a −16·8	15 31·36	−0·99	30·37	N	d c − 7·8 b − 2·0 a −49·3	28 59·04	−1·53	57·51	27·14				
	3952	+44 17	N		17 29·39	−0·85	28·54	N		30 56·72	−1·14	55·58	27·04				
	3964	+22 1	S	s Q −1·01	20 4·87	−1·05	3·82	S	s Q −1·38	33 32·66	−1·66	31·00	27·18	m s 13 27·109	+ 0·042	+ 0·006	13 27·157
	3973	+42 23	N		22 48·43	−0·87	47·56	N		36 15·92	−1·19	14·73	27·17				
	3979	+ 8 55	S		24 38·21	−1·14	37·07	S		38 6·04	−1·89	4·15	27·08				
	3990	+20 53	S		27 19·85	−1·06	18·79	S		40 47·57	−1·69	45·88	27·09				
	3998	+35 36	N		28 59·84	−0·94	58·90	N		42 27·41	−1·37	26·04	27·14				

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5ʰ 55ᵐ 7ˢ*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5ʰ 53ᵐ 36ˢ*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Mar.17	3787	+25 51	N	*I. P. E.*	10 59 18·25	+0·89	19·14	N	*I. P. W.*	10 59 35·13	+1·17	36·30	+0 17·16				
	3797	+26 11	N	*d* c − 3·9 b − 0·6 *a* + 2·4	11 1 4·92	+0·89	5·81	N	*d* c + 3·1 b − 5·0 *a* −110·8	11 1 21·72	+1·18	22·90	17·09				
	3811	+36 57	N		3 10·41	+0·87	11·28	N		3 26·49	+1·79	28·28	17·00				
	3824	+15 3	S	*s* *Q* +1·01	5 52·95	+0·92	53·87	S	*s* *Q* +1·06	6 10·25	+0·67	10·92	17·05	*m s* +0 17·070	+ 0·003	− 0·023	+0 17·050
	3834	+21 11	S		8 10·48	+0·92	11·40	S		8 27·49	+0·95	28·44	17·04				
	3843	+13 57	S		10 2·00	+0·92	2·92	S		10 19·33	+0·64	19·97	17·05				
	3851	+32 12	N		12 13·87	+0·87	14·74	N		12 30·31	+1·50	31·81	17·07				
	3863	+ 7 17	S		15 43·41	+0·93	44·34	S		16 1·08	+0·36	1·44	17·10				
				Mean, T_E	11 6 57												
Mar.17	3913	+43 49	N	*I. P. E.*	11 24 30·55	−1·17	29·38	N	*I. P. W.*	11 24 46·48	+0·15	46·63	+0 17·25				
	3919	+15 1	S	*d* c − 3·9 b − 0·6 *a* + 2·4	26 1·57	−1·10	0·47	S	*d* c + 3·1 b − 5·0 *a* −110·8	26 19·25	−1·45	17·80	17·33				
	3932	+17 27	S		28 56·18	−1·10	55·08	S		29 13·68	−1·34	12·34	17·26				
	3937	+28 26	N	*s* *Q* −1·01	30 27·76	−1·13	26·63	N	*s* *Q* − 1·06	30 44·64	−0·82	43·82	17·19	*m s* +0 17·255	+ 0·003	− 0·023	+0 17·235
	3952	+44 17	N		32 25·81	−1·17	24·64	N		32 41·69	+0·19	41·88	17·24				
	3964	+22 1	S		35 1·26	−1·11	0·15	S		35 18·44	−1·12	17·32	17·17				
	3973	+42 23	N		37 44·84	−1·17	43·67	N		38 0·91	+0·04	0·95	17·28				
	3979	+ 8 55	S		39 34·24	−1·09	33·15	S		39 52·16	−1·69	50·47	17·32				
				Mean, T_E	11 31 50												
Mar.19	3787	+25 51	N	*I. P. E.*	10 58 52·82	+1·14	53·96	N	*I. P. W.*	10 59 28·65	+1·18	29·83	+0 35·87				
	3797	+26 11	N	*d* c − 0·1 b + 3·9 *a* +14·7	11 0 39·46	+1·13	40·59	N	*d* c + 4·3 b − 2·9 *a* − 36·2	11 1 15·26	+1·18	16·44	35·85				
	3811	+36 57	N		2 44·98	+1·07	46·05	N		3 20·47	+1·38	21·85	35·80				
	3824	+15 3	S	*s* *Q* +1·03	5 27·42	+1·19	28·61	S	*s* *Q* +1·09	6 3·44	+1·01	4·45	35·84	*m s* +0 35·863	+ 0·003	− 0·023	+0 35·843
	3834	+21 11	S		7 44·95	+1·15	46·10	S		8 20·81	+1·10	21·91	35·81				
	3843	+13 57	S		9 36·45	+1·19	37·64	S		10 12·56	+1·00	13·56	35·92				
	3851	+32 12	N		11 48·40	+1·09	49·49	N		12 24·08	+1·29	25·37	35·88				
	3863	+ 7 17	S		15 17·88	+1·22	19·10	S		15 54·12	+0·91	55·03	35·93				
				Mean, T_E	11 6 32												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar.19	3913	+43 49	N	*I. P. E.*	11 24 5·24	−1·05	4·19	N	*I. P. W.*	11 24 40·72	−0·63	40·09	+0 35·90				
	3919	+15 1	S	d c − 0·1	25 36·29	−0·87	35·42	S	d c + 4·3	26 12·56	−1·17	11·39	35·97				
	3932	+17 27	S	b + 3·9 a + 14·7	28 30·86	−0·89	29·97	S	b − 2·9 a − 36·2	29 7·04	−1·14	5·90	35·93				
	3937	+28 26	N	s Q − 1·03	30 2·36	−0·94	1·42	N	s Q − 1·09	30 38·33	−0·96	37·37	35·95	m s +0 35·961	+ 0·003	− 0·023	+0 35·941
	3952	+44 17	N		31 60·53	−1·05	59·48	N		32 36·02	−0·62	35·40	35·92				
	3964	+22 1	S		34 35·77	−0·91	34·86	S		35 11·93	−1·06	10·87	36·01				
	3973	+42 23	N		37 19·54	−1·04	18·50	N		37 55·16	−0·66	54·50	36·00				
	3979	+ 8 55	S		39 8·91	−0·85	8·06	S		39 45·31	−1·24	44·07	36·01				
				Mean, T_E	11 31 25												
Mar.22	3787	+25 51	S	*I. P. E.*	10 58 16·71	+0·97	17·68	N	*I. P. W.*	10 59 18·82	+1·25	20·07	+1 2·39				
	3797	+26 11	N	d c − 3·6	11 0 3·41	+0·97	4·38	N	d c + 5·4	11 1 5·48	+1·25	6·73	2·35				
	3811	+36 57	N	b + 1·9 a + 4·8	2 8·88	+0·94	9·82	N	b − 1·1 a − 26·8	3 10·75	+1·41	12·16	2·34				
	3824	+15 3	S	s Q + 1·01	4 51·39	+0·99	52·38	S	s Q + 1·10	5 53·66	+1·11	54·77	2·39	m s +1 2·371	+ 0·003	− 0·027	+1 2·347
	3834	+21 11	S		7 8·95	+0·98	9·93	S		8 11·09	+1·19	12·28	2·35				
	3843	+13 57	S		9 0·41	+0·99	1·40	S		10 2·71	+1·10	3·81	2·41				
	3851	+32 12	N		11 12·34	+0·95	13·29	N		12 14·32	+1·34	15·66	2·37				
				Mean, T_E	11 4 40												
Mar.22	3913	+43 49	N	*I. P. E.*	11 23 29·16	−1·10	28·06	N	*I. P. W.*	11 24 31·10	−0·65	30·45	+1 2·39				
	3932	+17 27	S	d c − 3·6	27 54·74	−1·04	53·70	S	d c + 5·4	28 57·36	−1·06	56·30	2·60				
	3937	+28 26	N	b + 1·9 a + 4·8	29 26·23	−1·05	25·18	N	b − 1·1 a − 26·8	30 28·65	−0·92	27·73	2·55				
	3952	+44 17	N	s Q − 1·01	31 24·42	−1·11	23·31	N	s Q − 1·10	32 26·38	−0·65	25·73	2·42	m s +1 2·510	+ 0·003	− 0·019	+1 2·494
	3964	+22 1	S		33 59·77	−1·04	58·73	S		35 2·20	−1·00	1·20	2·47				
	3973	+42 23	N		36 43·42	−1·10	42·32	N		37 45·50	−0·69	44·81	2·49				
	3979	+ 8 55	S		38 32·81	−1·02	31·79	S		39 35·58	−1·14	34·44	2·65				
				Mean, T_E	11 31 39												

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 4	4100	+27 57	N	*I. P. W.*	12 5 29·99	+1·44	31·43	N	*I. P. E.*	12 5 32·07	+0·81	32·88	+0 1·45				
	4107	+26 32	N	*d* c + 1·6	6 35·50	+1·45	36·95	N	*d* c − 5·8	6 37·50	+0·82	38·32	1·37				
	4114	+10 55	S	b + 4·9 a + 20·0	8 8·83	+1·56	10·39	S	b − 1·3 a + 16·2	8 10·89	+0·94	11·83	1·44	m s +0 1·486	+ 0·003	− 0·019	+0 1·470
	4125	+15 33	S	*s* Q + 1·29	10 44·08	+1·53	45·61	S	*s* Q + 1·03	10 46·17	+0·92	47·09	1·48				
	4139	+26 40	N		13 48·56	+1·45	50·01	N		13 50·71	+0·82	51·53	1·52				
	4156	+18 27	S		15 28·69	+1·52	30·21	S		15 30·88	+0·89	31·77	1·56				
	4169	+26 30	N		17 17·87	+1·45	19·32	N		17 20·08	+0·82	20·90	1·58				
				Mean, T_E	12 11 5												
Apr. 4	4195	+28 56	N	*I. P. W.*	12 21 49·43	−1·14	48·29	N	*I. P. E.*	12 21 51·15	−1·26	49·89	+0 1·60				
	4205	+26 53	N	*d* c + 1·6	23 30·59	−1·13	29·46	N	*d* c − 5·8	23 32·26	−1·24	31·02	1·56				
	4228	+10 57	S	b + 4·9 a + 20·0	27 50·45	−1·02	49·43	S	b − 1·3 a + 16·2	27 52·11	−1·12	50·99	1·56	m s +0 1·637	+ 0·003	− 0·026	+0 1·614
	4240	+23 17	S	*s* Q − 1·29	29 44·19	−1·10	43·09	S	*s* Q − 1·03	29 45·95	−1·21	44·74	1·65				
	4248	+17 45	S		31 49·19	−1·07	48·12	S		31 50·93	−1·17	49·76	1·64				
	4258	+41 31	N		33 51·64	−1·26	50·38	N		33 53·47	−1·40	52·07	1·69				
	4267	+11 5	S		36 23·44	−1·02	22·42	S		36 25·30	−1·12	24·18	1·76				
				Mean, T_E	12 29 17												
Apr. 5	4081	+14 10	S	*I. P. W.*	12 2 4·33	+1·55	5·88	S	*I. P. E.*	12 2 17·23	+1·07	18·30	+0 12·42				
	4100	+27 57	N	*d* c + 1·5	5 16·57	+1·49	18·06	N	*d* c − 4·8	5 29·53	+0·90	30·43	12·37				
	4107	+26 32	N	b + 5·3 a + 15·9	6 22·09	+1·49	23·58	N	b − 1·4 a + 25·3	6 34·94	+0·92	35·86	12·28	m s +0 12·360	+ 0·003	− 0·019	+0 12·344
	4125	+15 33	S	*s* Q + 1·32	10 30·73	+1·54	32·27	S	*s* Q + 1·12	10 43·53	+1·05	44·58	12·31				
	4139	+26 40	N		13 35·14	+1·49	36·63	N		13 48·11	+0·92	49·03	12·40				
	4156	+18 27	S		15 15·29	+1·53	16·82	S		15 28·23	+1·01	29·24	12·42				
	4169	+26 30	N		17 4·52	+1·49	6·01	N		17 17·42	+0·91	18·33	12·32				
				Mean, T_E	12 10 1												

NOTE. 1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}052$ $S_N - S_S = +0^s{\cdot}007$	M_N
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 5	4195	+28 56	N	*I. P. W.*	12 21 36·06	−1·16	34·90	N	*I. P. E.*	12 21 48·69	−1·35	47·34	+0 12·44				
	4205	+26 53	N	d c + 1·5 b + 5·3 a + 15·9	23 17·16	−1·15	16·01	N	d c − 4·8 b − 1·4 a + 25·3	23 29·78	−1·33	28·45	12·44				
	4218	+10 22	S		25 6·47	−1·07	5·40	S		25 19·24	−1·14	18·10	12·70				
	4228	+10 57	S	s Q − 1·32	27 36·93	−1·07	35·86	S	s Q − 1·12	27 49·66	−1·14	48·52	12·66				
	4240	+23 17	S		29 30·70	−1·13	29·57	S		29 43·51	−1·28	42·23	12·66	m s +0 12·610	+ 0·003	− 0·029	+0 12·584
	4248	+17 45	S		31 35·74	−1·10	34·64	S		31 48·47	−1·22	47·25	12·61				
	4258	+41 31	N		33 38·17	−1·25	36·92	N		33 51·08	−1·55	49·53	12·61				
	4267	+11 5	S		36 9·93	−1·07	8·86	S		36 22·76	−1·14	21·62	12·76				
				Mean, T_E	12 28 34												
Apr. 6	4100	+27 57	N	*I. P. W.*	12 5 3·80	+1·41	5·21	N	*I. P. E.*	12 5 26·16	+0·81	26·97	+0 21·76				
	4107	+26 32	N	d c + 0·4 b + 3·5 a + 15·1	6 9·28	+1·42	10·70	N	d c − 6·5 b − 4·3 a + 27·4	6 31·63	+0·83	32·46	21·76				
	4125	+15 33	S		10 17·93	+1·48	19·41	S		10 40·19	+0·98	41·17	21·76				
	4139	+26 40	N	s Q + 1·32	13 22·37	+1·42	23·79	N	s Q + 1·15	13 44·74	+0·83	45·57	21·78	m s +0 21·787	+ 0·003	− 0·015	+0 21·775
	4156	+18 27	S		15 2·52	+1·46	3·98	S		15 24·88	+0·93	25·81	21·83				
	4169	+26 30	N		16 51·71	+1·42	53·13	N		17 14·13	+0·83	14·96	21·83				
				Mean, T_E	12 11 8												
Apr. 6	4195	+28 56	N	*I. P. W.*	12 21 23·38	−1·24	22·14	N	*I. P. E.*	12 21 45·42	−1·51	43·91	+0 21·77				
	4205	+26 53	N	d c + 0·4 b + 3·5 a + 15·1	23 4·46	−1·22	3·24	N	d c − 6·5 b − 4·3 a + 27·4	23 26·56	−1·47	25·09	21·85				
	4228	+10 57	S		27 24·10	−1·14	22·96	S		27 46·33	−1·27	45·06	22·10	m s +0 21·908	+ 0·003	− 0·023	+0 21·888
	4240	+23 17	S	s Q − 1·32	29 18·08	−1·20	16·88	S	s Q − 1·15	29 40·22	−1·43	38·79	21·91				
				Mean, T_E	12 25 18												

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar.17	3446	+35 49	N	*I. P. E.*	10 0 49·31	+0·87	50·18	N	*I. P. W.*	10 2 18·76	+1·71	20·47	1 30·29				
	3457	+10 35	S	*d* c − 3·9 b − 0·6 *a* + 2·4	1 59·48	+0·93	60·41	S	*d* c + 3·1 b − 5·0 *a* − 110·8	3 30·03	+0·49	30·52	30·11				
	3466	+41 15	N		4 13·31	+0·85	14·16	N		5 42·33	+2·07	44·40	30·24	m s 1 30·197	+ 0·013	− 0·019	1 30·191
	3475	+13 56	S	*s* *Q* +1·01	5 38·27	+0·92	39·19	S	*s* *Q* + 1·06	7 8·83	+0·63	9·46	30·27				
	3485	+21 45	S		8 21·05	+0·91	21·96	S		9 51·13	+0·97	52·10	30·14				
	3503	+29 17	N		10 7·92	+0·89	8·81	N		11 37·60	+1·35	38·95	30·14				
	3515	+44 39	N		12 2·10	+0·85	2·95	N		13 30·81	+2·33	33·14	30·19				
Mar.17	3583	+10 46	S	*I. P. E.*	10 23 20·08	−1·10	18·98	S	*I. P. W.*	10 24 50·76	−1·63	49·13	1 30·15				
	3602	+32 59	N	*d* c − 3·9 b − 0·6 *a* + 2·4	25 32·40	−1·15	31·25	N	*d* c + 3·1 b − 5·0 *a* − 110·8	27 1·95	−0·57	1·38	30·13				
	3609	+ 9 55	S		26 58·64	−1·09	57·55	S		28 29·34	−1·65	27·69	30·14	m s 1 30·113	+ 0·013	− 0·019	1 30·107
	3622	+ 9 16	S	*s* *Q* −1·01	29 13·43	−1·09	12·34	S	*s* *Q* − 1·06	30 44·15	−1·69	42·46	30·12				
	3641	+38 32	N		32 45·77	−1·15	44·62	N		34 14·88	−0·23	14·65	30·03				
	3650	+28 8	N		34 11·97	−1·13	10·84	N		35 41·84	−0·84	41·00	30·16				
	3666	+26 57	N		36 55·97	−1·13	54·84	N		38 25·79	−0·89	24·90	30·06				
Mar.19	3434	+12 12	S	*I. P. E.*	9 57 44·76	+1·20	45·96	S	*I. P. W.*	9 59 15·23	+0·97	16·20	1 30·24				
	3446	+35 49	N	*d* c − 0·1 b + 3·9 *a* + 14·7	10 0 23·95	+1·07	25·02	N	*d* c + 4·3 b − 2·9 *a* − 36·2	10 1 53·81	+1·36	55·17	30·15				
	3457	+10 35	S		1 34·01	+1·21	35·22	S		3 4·40	+0·95	5·35	30·13				
	3466	+41 15	N	*s* *Q* +1·03	3 48·02	+1·03	49·05	N	*s* *Q* + 1·09	5 17·66	+1·49	19·15	30·10	m s 1 30·129	+ 0·013	− 0·023	1 30·119
	3475	+13 56	S		5 12·92	+1·19	14·11	S		6 43·27	+1·00	44·27	30·16				
	3485	+21 45	S		7 55·62	+1·15	56·77	S		9 25·75	+1·11	26·86	30·09				
	3503	+29 17	N		9 42·51	+1·11	43·62	N		11 12·44	+1·24	13·68	30·06				
	3515	+44 39	N		11 36·82	+1·01	37·83	N		13 6·35	+1·58	7·93	30·10				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *vii*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar.19	3583	+10 46	S	*I. P. E.*	10 22 54·56	−0·85	53·71	S	*I. P. W.*	10 24 25·08	−1·22	23·86	1 30·15				
	3602	+32 59	N	d c − 0·1 b + 3·9 a + 14·7	25 6·99	−0·97	6·02	N	d c + 4·3 b − 2·9 a − 36·2	26 37·04	−0·87	36·17	30·15				
	3609	+ 9 55	S		26 33·15	−0·84	32·31	S		28 3·66	−1·23	2·43	30·12				
	3622	+ 9 16	S	s Q − 1·03	28 47·95	−0·85	47·10	S	s Q − 1·09	30 18·44	−1·24	17·20	30·10	m s 1 30·120	+ 0·013	− 0·023	1 30·110
	3634	+17 54	S		31 23·64	−0·89	22·75	S		32 54·06	−1·13	52·93	30·18				
	3641	+38 32	N		32 20·40	−1·01	19·39	N		33 50·20	−0·76	49·44	30·05				
	3650	+28 8	N		33 46·55	−0·94	45·61	N		35 16·74	−0·96	15·78	30·17				
	3666	+26 57	N		36 30·53	−0·93	29·60	N		37 60·62	−0·98	59·64	30·04				
Mar.22	3446	+35 49	N	*I. P. E.*	9 59 47·80	+0·94	48·74	N	*I. P. W.*	10 1 17·64	+1·39	19·03	1 30·29				
	3457	+10 35	S	d c − 3·6 b + 1·9 a + 4·8	10 0 57·88	+1·00	58·88	S	d c + 5·4 b − 1·1 a − 26·8	2 28·13	+1·07	29·20	30·32				
	3466	+41 15	N		3 11·93	+0·91	12·84	N		4 41·55	+1·49	43·04	30·20	m s 1 30·213	+ 0·013	− 0·015	1 30·211
	3485	+21 45	S	s Q + 1·01	7 19·51	+0·98	20·49	S	s Q + 1·10	8 49·53	+1·19	50·72	30·23				
	3503	+29 17	N		9 6·45	+0·96	7·41	N		10 36·25	+1·29	37·54	30·13				
	3515	+44 39	N		11 0·67	+0·90	1·57	N		12 30·12	+1·56	31·68	30·11				
Mar.22	3602	+32 59	N	*I. P. E.*	10 24 30·87	−1·07	29·80	N	*I. P. W.*	10 25 60·82	−0·85	59·97	1 30·17				
	3609	+ 9 55	S	d c − 3·6 b + 1·9 a + 4·8	25 57·11	−1·02	56·09	S	d c + 5·4 b − 1·1 a − 26·8	27 27·43	−1·13	26·30	30·21				
	3622	+ 9 16	S		28 11·81	−1·02	10·79	S		29 42·23	−1·14	41·09	30·30	m s 1 30·194	+ 0·013	− 0·018	1 30·189
	3641	+38 32	N	s Q − 1·01	31 44·27	−1·09	43·18	N	s Q − 1·10	33 14·10	−0·76	13·34	30·16				
	3666	+26 57	N		35 54·47	−1·05	53·42	N		37 24·49	−0·94	23·55	30·13				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}052$, $S_N - S_S = +0{\cdot}007$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 4	3798	+ 2 36	S	*I. P. W.*	11 1 37·25	+1·60	38·85	S	*I. P. E.*	11 3 7·95	+0·99	8·94	1 30·09				
	3812	+45 9	N	d c + 1·6 b + 4·9 a +20·0	3 46·28	+1·29	47·57	N	d c − 5·8 b − 1·3 a +16·2	5 17·02	+0·60	17·62	30·05				
	3824	+15 3	S	s Q +1·29	6 16·67	+1·53	18·20	S	s Q +1·03	7 47·38	+0·92	48·30	30·10	m s 1 30·106	+ 0·014	− 0·019	1 30·101
	3834	+21 11	S		8 34·17	+1·49	35·66	S		10 4·89	+0·87	5·76	30·10				
	3846	+50 8	N		10 47·50	+1·23	48·73	N		12 18·26	+0·53	18·79	30·06				
	3851	+32 12	N		12 37·54	+1·41	38·95	N		14 8·34	+0·77	9·11	30·16				
	3868	+44 9	N		17 5·47	+1·30	6·77	N		18 36·33	+0·62	36·95	30·18				
Apr. 4	3932	+17 27	S	*I. P. W.*	11 29 20·34	−1·07	19·27	S	*I. P. E.*	11 30 50·96	−1·17	49·79	1 30·52				
	3937	+28 26	N	d c + 1·6 b + 4·9 a +20·0	30 51·77	−1·14	50·63	N	d c − 5·8 b − 1·3 a +16·2	32 22·50	−1·25	21·25	30·62				
	3952	+44 17	N		32 49·89	−1·28	48·61	N		34 20·66	−1·44	19·22	30·61	m s 1 30·598	+ 0·014	− 0·023	1 30·589
	3964	+22 1	S	s Q −1·29	35 25·21	−1·09	24·12	S	s Q −1·03	36 55·97	−1·20	54·77	30·65				
	3973	+42 23	N		38 8·91	−1·27	7·64	N		39 39·67	−1·41	38·26	30·62				
	3979	+ 8 55	S		39 58·30	−1·00	57·30	S		41 28·97	−1·10	27·87	30·57				
Apr. 5	3788	+ 7 59	S	*I. P. W.*	10 59 26·29	+1·58	27·87	S	*I. P. E.*	11 0 57·12	+1·13	58·25	1 30·38				
	3798	+ 2 36	S	d c + 1·5 b + 5·3 a +15·9	11 1 23·56	+1·59	25·15	S	d c − 4·8 b − 1·4 a +25·3	2 54·34	+1·17	55·51	30·36				
	3812	+45 9	N		3 32·55	+1·37	33·92	N		5 3·71	+0·62	4·33	30·41				
	3824	+15 3	S	s Q +1·32	6 2·94	+1·54	4·48	S	s Q +1·12	7 33·87	+1·06	34·93	30·45	m s 1 30·400	+ 0·014	− 0·023	1 30·391
	3834	+21 11	S		8 20·45	+1·52	21·97	S		9 51·42	+0·98	52·40	30·43				
	3846	+50 8	N		10 33·72	+1·32	35·04	N		12 4·95	+0·50	5·45	30·41				
	3851	+32 12	N		12 23·87	+1·46	25·33	N		13 54·87	+0·84	55·71	30·38				
	3868	+44 9	N		16 51·78	+1·38	53·16	N		18 22·90	+0·64	23·54	30·38				

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	$\delta L_N - \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 5	3913	+43 49	N	*I. P. W.*	11 24 41·30	−1·26	40·04	N	*I. P. E.*	11 26 12·07	−1·60	10·47	1 30·43				
	3919	+15 1	S	*d* c + 1·5 b + 5·3 a +15·9	26 12·34	−1·10	11·24	S	*d* c − 4·8 b − 1·4 a +25·3	27 42·98	−1·18	41·80	30·56				
	3932	+17 27	S		29 6·96	−1·10	5·86	S		30 37·61	−1·22	36·39	30·53				
	3937	+28 26	N	*s* Q −1·32	30 38·42	−1·15	37·27	N	*s* Q −1·12	32 9·08	−1·35	7·73	30·46	m s 1 30·499	+ 0·014	− 0·023	1 30·490
	3952	+44 17	N		32 36·51	−1·26	35·25	N		34 7·34	−1·61	5·73	30·48				
	3964	+22 1	S		35 11·90	−1·12	10·78	S		36 42·56	−1·27	41·29	30·51				
	3973	+42 23	N		37 55·59	−1·24	54·35	N		39 26·33	−1·56	24·77	30·42				
	3979	+ 8 55	S		39 44·94	−1·06	43·88	S		41 15·60	−1·12	14·48	30·60				
Apr. 6	3788	+ 7 59	S	*I. P. W.*	10 59 13·46	+1·52	14·98	S	*I. P. E.*	11 0 44·24	+1·07	45·31	1 30·33				
	3812	+45 9	N	*d* c + 0·4 b + 3·5 a +15·1	3 19·81	+1·29	21·10	N	*d* c − 6·5 b − 4·3 a +27·4	4 50·79	+0·47	51·26	30·16				
	3824	+15 3	S		5 50·03	+1·48	51·51	S		7 20·96	+0·98	21·94	30·43	m s 1 30·290	+ 0·013	− 0·019	1 30·284
	3834	+21 11	S	*s* Q +1·32	8 7·71	+1·44	9·15	S	*s* Q +1·15	9 38·55	+0·90	39·45	30·30				
	3846	+50 8	N		10 21·02	+1·23	22·25	N		11 52·09	+0·34	52·43	30·18				
	3851	+32 12	N		12 11·11	+1·38	12·49	N		13 42·05	+0·74	42·79	30·30				
	3868	+44 9	N		16 38·97	+1·29	40·26	N		18 10·09	+0·50	10·59	30·33				
Apr. 6	3913	+43 49	N	*I. P. W.*	11 24 28·44	−1·35	27·09	N	*I. P. E.*	11 25 59·32	−1·78	57·54	1 30·45				
	3919	+15 1	S	*d* c + 0·4 b + 3·5 a +15·1	25 59·46	−1·16	58·30	S	*d* c − 6·5 b − 4·3 a +27·4	27 30·22	−1·32	28·90	30·60				
	3932	+17 27	S		28 54·08	−1·17	52·91	S		30 24·82	−1·35	23·47	30·56				
	3952	+44 17	N	*s* Q −1·32	32 23·71	−1·36	22·35	N	*s* Q −1·15	33 54·66	−1·80	52·86	30·51	m s 1 30·520	+ 0·013	− 0·026	1 30·507
	3964	+21 1	S		34 59·06	−1·20	57·86	S		36 29·82	−1·41	28·41	30·55				
	3973	+42 23	N		37 42·81	−1·34	41·47	N		39 13·65	−1·75	11·90	30·43				
	3979	+ 8 55	S		39 32·16	−1·13	31·03	S		41 2·82	−1·25	1·57	30·54				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar.17	4100	+27 57	N	*I. P. E.*	12 3 53·67	+0·89	54·56	N	*I. P. W.*	12 5 23·57	+1·28	24·85	1 30·29				
	4107	+26 32	N	*d* c − 3·9 b − 0·6 *a* + 2·4	4 59·18	+0·89	60·07	N	*d* c + 3·1 b − 5·0 *a* −110·8	6 29·09	+1·20	30·29	30·22				
	4114	+10 55	S		6 32·54	+0·92	33·46	S		8 3·27	+0·51	3·78	30·32				
	4125	+15 33	S	*s* *Q* +1·01	9 7·76	+0·92	8·68	S	*s* *Q* +1·06	10 38·27	+0·69	38·96	30·28	m s 1 30·280	+ 0·003	− 0·019	1 30·264
	4139	+26 40	N		12 12·21	+0·89	13·10	N		13 42·20	+1·21	43·41	30·31				
	4156	+18 27	S		13 52·45	+0·92	53·37	S		15 22·80	+0·83	23·63	30·26				
	4169	+26 30	N		15 41·58	+0·89	42·47	N		17 11·54	+1·21	12·75	30·28				
Mar.17	4193	+28 56	N	*I. P. E.*	12 20 12·58	−1·13	11·45	N	*I. P. W.*	12 21 42·51	−0·79	41·72	1 30·27				
	4205	+26 53	N	*d* c − 3·9 b − 0·6 *a* + 2·4	21 53·62	−1·13	52·49	N	*d* c + 3·1 b − 5·0 *a* −110·8	23 23·74	−0·90	22·84	30·35				
	4228	+10 57	S		26 13·57	−1·10	12·47	S		27 44·43	−1·61	42·82	30·35				
	4240	+23 17	S	*s* *Q* −1·01	28 7·38	−1·11	6·27	S	*s* *Q* −1·06	29 37·61	−1·07	36·54	30·27	m s 1 30·297	+ 0·003	− 0·026	1 30·274
	4248	+17 45	S		30 12·44	−1·10	11·34	S		31 42·89	−1·33	41·56	30·22				
	4258	+41 31	N		32 14·80	−1·17	13·63	N		33 43·92	−0·02	43·90	30·27				
	4267	+11 5	S		34 46·66	−1·10	45·56	S		36 17·52	−1·61	15·91	30·35				
Mar.19	4081	+14 10	S	*I. P. E.*	12 0 34·83	+1·19	36·02	S	*I. P. W.*	12 2 5·29	+1·00	6·29	1 30·27				
	4100	+27 57	N	*d* c − 0·1 b + 3·9 *a* +14·7	3 47·07	+1·12	48·19	N	*d* c + 4·3 b − 2·9 *a* −36·2	5 17·24	+1·22	18·46	30·27				
	4107	+26 32	N		4 52·57	+1·13	53·70	N		6 22·73	+1·20	23·93	30·23				
	4114	+10 55	S	*s* *Q* +1·03	6 25·93	+1·21	27·14	S	*s* *Q* +1·09	7 56·44	+0·95	57·39	30·25	m s 1 30·226	+ 0·003	− 0·023	1 30·206
	4125	+15 33	S		9 1·16	+1·19	2·35	S		10 31·58	+1·02	32·60	30·25				
	4139	+26 40	N		12 5·64	+1·13	6·77	N		13 35·74	+1·20	36·94	30·17				
	4156	+18 27	S		13 45·82	+1·17	46·99	S		15 16·14	+1·06	17·20	30·21				
	4169	+26 30	N		15 35·02	+1·13	36·15	N		17 5·11	+1·20	6·31	30·16				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.
* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Mar.19	4195	+28 56	N	*I. P. E.*	12 20 6·02	−0·95	5·07	N	*I. P. W.*	12 21 36·23	−0·95	35·28	1 30·21				
	4205	+26 53	N	d c − 0·1 b + 3·9 a + 14·7	21 47·09	−0·93	46·16	N	d c + 4·3 b − 2·9 a − 36·2	23 17·35	−0·98	16·37	30·21				
	4218	+10 22	S		23 36·59	−0·85	35·74	S		25 7·18	−1·22	5·96	30·22				
	4228	+10 57	S	s Q −1·03	26 6·98	−0·85	6·13	S	s Q −1·09	27 37·58	−1·23	36·35	30·22	m s 1 30·205	+ 0·003	− 0·028	1 30·180
	4240	+23 17	S		27 60·76	−0·91	59·85	S		29 31·10	−1·05	30·05	30·20				
	4248	+17 45	S		30 5·80	−0·89	4·91	S		31 36·24	−1·13	35·11	30·20				
	4258	+41 31	N		32 8·24	−1·04	7·20	N		33 38·02	−0·69	37·33	30·13				
	4267	+11 5	S		34 40·04	−0·85	39·19	S		36 10·67	−1·23	9·44	30·25				
Mar.22	4081	+14 10	S	*I. P. E.*	12 0 25·20	+0·99	26·19	S	*I. P. W.*	12 1 55·54	+1·10	56·64	1 30·45				
	4100	+27 57	N	d c − 3·6 b + 1·9 a + 4·8	3 37·45	+0·97	38·42	N	d c + 5·4 b − 1·1 a − 26·8	5 7·50	+1·27	8·77	30·35				
	4107	+26 32	N		4 42·97	+0·97	43·94	N		6 13·04	+1·26	14·30	30·36				
	4114	+10 55	S	s Q +1·01	6 16·25	+1·00	17·25	S	s Q +1·10	7 46·63	+1·08	47·71	30·46	m s 1 30·369	+ 0·003	− 0·023	1 30·349
	4125	+15 33	S		8 51·52	+0·99	52·51	S		10 21·83	+1·11	22·94	30·43				
	4139	+26 40	N		11 56·02	+0·97	56·99	N		13 25·99	+1·26	27·25	30·26				
	4156	+18 27	S		13 36·20	+0·98	37·18	S		15 6·40	+1·15	7·55	30·37				
	4169	+26 30	N		15 25·43	+0·97	26·40	N		16 55·41	+1·26	56·67	30·27				
Mar.22	4195	+28 56	N	*I. P. E.*	12 19 56·32	−1·06	55·26	N	*I. P. W.*	12 21 26·56	−0·91	25·65	1 30·39				
	4205	+26 53	N	d c − 3·6 b + 1·9 a + 4·8	21 37·49	−1·05	36·44	N	d c + 5·4 b − 1·1 a − 26·8	23 7·66	−0·94	6·72	30·28				
	4218	+10 22	S		23 26·92	−1·02	25·90	S		24 57·45	−1·13	56·32	30·42				
	4228	+10 57	S	s Q −1·01	25 57·34	−1·02	56·32	S	s Q −1·10	27 27·87	−1·12	26·75	30·43	m s 1 30·376	+ 0·003	− 0·028	1 30·351
	4240	+23 17	S		27 51·17	−1·04	50·13	S		29 21·43	−0·99	20·44	30·31				
	4248	+17 45	S		29 56·15	−1·04	55·11	S		31 26·60	−1·05	25·55	30·44				
	4258	+41 31	N		31 58·58	−1·10	57·48	N		33 28·50	−0·71	27·79	30·31				
	4267	+11 5	S		34 30·44	−1·02	29·42	S		35 60·97	−1·12	59·85	30·43				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Ap. 4	4384	+36 26	N	*I. P. W.*	12 59 27·73	+1·36	29·09	N	*I. P. E.*	13 0 59·18	+0·72	59·90	1 30·81				
	4390	+28 16	N	*d* c + 1·6 b + 4·9 *a* + 20·0	13 0 45·32	+1·44	46·76	N	*d* c − 5·8 b − 1·3 *a* + 16·2	2 16·63	+0·81	17·44	30·68				
	4393	+28 11	N		1 29·09	+1·44	30·53	N		3 0·35	+0·81	1·16	30·63				
	4403	+17 29	S	*s* *Q* + 1·29	3 14·00	+1·51	15·51	S	*s* *Q* + 1·03	4 45·33	+0·89	46·22	30·71	m s 1 30·638	+ 0·003	− 0·023	1 30·638
	4406	+18 9	S		3 29·11	+1·51	30·62	S		5 0·27	+0·89	1·16	30·54				
	4423	+12 10	S		5 54·83	+1·55	56·38	S		7 26·11	+0·94	27·05	30·67				
	4433	+40 47	N		7 36·39	+1·33	37·72	N		9 7·67	+0·67	8·34	30·62				
	4440	+10 2	S		10 9·34	+1·57	10·91	S		11 40·56	+0·95	41·51	30·60				
Ap. 4	4499	+14 25	S	*I. P. W.*	13 21 56·28	−1·04	55·24	S	*I. P. E.*	13 23 27·12	−1·14	25·98	1 30·74				
	4504	+11 26	S	*d* c + 1·6 b + 4·9 *a* + 20·0	22 38·96	−1·02	37·94	S	*d* c − 5·8 b − 1·3 *a* + 16·2	24 9·80	−1·12	8·68	30·74				
	4519	+42 43	N		25 25·46	−1·27	24·19	N		26 56·41	−1·42	54·99	30·80				
	4536	+37 47	N	*s* *Q* − 1·29	28 48·55	−1·21	47·34	N	*s* *Q* − 1·03	30 19·39	−1·36	18·03	30·69	m s 1 30·740	+ 0·003	− 0·023	1 30·720
	4552	+36 54	N		31 29·92	−1·21	28·71	N		32 60·82	−1·34	59·48	30·77				
	4566	+23 6	S		34 44·16	−1·10	43·06	S		36 15·01	−1·20	13·81	30·75				
	4594	+26 18	N		40 31·32	−1·13	30·19	N		42 2·15	−1·24	0·91	30·72				
	4615	+16 23	S		43 3·84	−1·06	2·78	S		44 34·64	−1·15	33·49	30·71				
Ap. 5	4384	+36 26	N	*I. P. W.*	12 59 25·18	+1·43	26·61	N	*I. P. E.*	13 0 56·49	+0·78	57·27	1 30·66				
	4390	+28 16	N	*d* c + 1·5 b + 5·3 *a* + 15·9	13 0 42·74	+1·49	44·23	N	*d* c − 4·8 b − 1·4 *a* + 25·3	2 13·90	+0·90	14·80	30·57				
	4393	+28 11	N		1 26·50	+1·49	27·99	N		2 57·71	+0·90	58·61	30·62				
	4403	+17 29	S	*s* *Q* + 1·32	3 11·35	+1·54	12·89	S	*s* *Q* + 1·12	4 42·63	+1·02	43·65	30·76	m s 1 30·688	+ 0·003	− 0·023	1 30·668
	4406	+18 9	S		3 26·44	+1·53	27·97	S		4 57·69	+1·02	58·71	30·74				
	4423	+12 10	S		5 52·18	+1·56	53·74	S		7 23·42	+1·08	24·50	30·76				
	4433	+40 47	N		7 33·72	+1·40	35·12	N		9 5·07	+0·71	5·78	30·66				
	4440	+10 2	S		10 6·67	+1·57	8·24	S		11 37·86	+1·11	38·97	30·73				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

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JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.007$	$\delta L_N + \rho$
	B. A. C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 5	4499	+14 25	S	*I. P. W.*	13 21 53·70	−1·09	52·61	S	*I. P. E.*	13 23 24·56	−1·18	23·38	1 30·77				
	4504	+11 26	S	d c + 1·5 b + 5·3 a + 15·9	22 36·38	−1·08	35·30	S	d c − 4·8 b − 1·4 a + 25·3	24 7·25	−1·15	6·10	30·80				
	4519	+42 43	N		25 22·95	−1·25	21·70	N		26 53·98	−1·58	52·40	30·70	m s 1 30·705	+ 0·003	− 0·023	1 30·685
	4536	+37 47	N	s Q −1·32	28 45·98	−1·22	44·76	N	s Q −1·12	30 16·92	−1·49	15·43	30·67				
	4552	+36 54	N		31 27·41	−1·21	26·20	N		32 58·33	−1·46	56·87	30·67				
	4566	+23 6	S		34 41·65	−1·13	40·52	S		36 12·40	−1·28	11·12	30·60				
	4594	+26 18	N		40 28·79	−1·15	27·64	N		41 59·67	−1·32	58·35	30·71				
	4615	+16 23	S		43 1·30	−1·10	0·20	S		44 32·12	−1·20	30·92	30·72				
Apr. 6	4384	+36 26	N	*I. P. W.*	12 59 21·85	+1·36	23·21	N	*I. P. E.*	13 0 53·25	+0·67	53·92	1 30·71				
	4390	+28 16	N	d c + 0·4 b + 3·5 a + 15·1	13 0 39·40	+1·41	40·81	N	d c − 6·5 b − 4·3 a + 27·4	2 10·63	+0·80	11·43	30·62				
	4393	+28 11	N		1 23·16	+1·41	24·57	N		2 54·40	+0·80	55·20	30·63				
	4403	+17 29	S	s Q +1·32	3 8·06	+1·47	9·53	S	s Q +1·15	4 39·30	+0·95	40·25	30·72	m s 1 30·673	+ 0·003	− 0·023	1 30·653
	4406	+18 9	S		3 23·15	+1·46	24·61	S		4 54·33	+0·94	55·27	30·66				
	4423	+12 10	S		5 48·90	+1·50	50·40	S		7 20·08	+1·01	21·09	30·69				
	4433	+40 47	N		7 30·38	+1·32	31·70	N		9 1·79	+0·59	2·38	30·68				
	4400	+10 2	S		10 3·37	+1·51	4·88	S		11 34·52	+1·03	35·55	30·67				
Apr. 6	4499	+14 25	S	*I. P. W.*	13 21 50·33	−1·16	49·17	S	*I. P. E.*	13 23 21·31	−1·31	20·00	1 30·83				
	4504	+11 26	S	d c + 0·4 b + 3·5 a + 15·1	22 33·09	−1·14	31·95	S	d c − 6·5 b − 4·3 a + 27·4	24 3·96	−1·28	2·68	30·73				
	4519	+42 43	N		25 19·74	−1·34	18·40	N		26 50·74	−1·76	48·98	30·58				
	4536	+37 47	N	s Q −1·32	28 42·74	−1·29	41·45	N	s Q −1·15	30 13·75	−1·66	12·09	30·64	m s 1 30·681	+ 0·003	− 0·023	1 30·661
	4552	+36 54	N		31 24·12	−1·29	22·83	N		32 55·10	−1·64	53·46	30·63				
	4566	+23 6	S		34 38·41	−1·20	37·21	S		36 9·20	−1·42	7·78	30·57				
	4594	+26 18	N		40 25·53	−1·22	24·31	N		41 56·49	−1·46	55·03	30·72				
	4615	+16 23	S		42 58·00	−1·17	56·83	S		44 28·91	−1·33	27·58	30·75				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

Arc	Approximate Difference of Longitude	Intervals between Nights of Observations	Rate Corrections for both Clocks Deduced from Transits Observed at both Stations, *viz.*: α, Corrections for the Intervals between Nights of Observations, and β, Hourly Corrections for Nights of Observations, Interpolated by means of the Quantities α.								
			α at E Station for		α at W Station for		Astronomical Dates of Observations	β for		Correction to Observed Difference of Times of Transit for	
			E Clock	W Clock	E Clock	W Clock		E Clock	W Clock	E Clock	W Clock
Fyzabad (E), and Agra (W)	$16^m\ 28^s$	1881	*s*	*s*	*s*	*s*	1881	*s*	*s*	*s*	*s*
		Nov. 25 to 28	+28·313	−12·695	+28·674	−12·353	Nov. 25	+ 0·396	− 0·173	+ 0·108	− 0·047
		.....	...	...	...	...	„ 26	+ ·396	− ·173	+ ·108	− ·047
		.....	...	...	...	...	„ 27	+ ·396	− ·173	+ ·108	− ·047
		„ 28 „ 29	+ 9·395	− 4·077	+ 9·361	− 4·057	„ 28	+ ·394	− ·172	+ ·108	− ·047
		„ 29 „ 30	+ 9·483	− 4·013	+ 8·990	− 4·770	„ 29	+ ·388	− ·176	+ ·106	− ·048
		„ 30 „ Dec. 1	+ 9·649	− 4·064	+ 9·719	− 3·949	„ 30	+ ·392	− ·173	+ ·107	− ·047
		Dec. 1 „ 2	+ 9·965	− 4·199	+ 9·947	− 4·239	Dec. 1	+ ·409	− ·172	+ ·112	− ·047
		.....	...	...	...	...	„ 2	+ ·414	− ·176	+ ·113	− ·048
Fyzabad (E), and Jubbulpore (W)	$8^m\ 45^s$	Dec. 12 to 13	+11·150	+ 8·110	+10·887	+ 7·744	Dec. 12	+ 0·459	+ 0·330	+ 0·067	+ 0·048
		„ 13 „ 14	+11·301	+ 8·211	+11·324	+ 8·268	„ 13	+ ·465	+ ·337	+ ·068	+ ·049
		„ 14 „ 16	+23·052	+17·259	+23·378	+17·649	„ 14	+ ·478	+ ·354	+ ·070	+ ·052
		.....	...	...	...	...	„ 15	+ ·484	+ ·364	+ ·071	+ ·053
		„ 16 „ 19	+30·736	+26·743	+30·627	+26·568	„ 16	+ ·455	+ ·367	+ ·066	+ ·054
		.....	...	...	...	...	„ 17	+ ·426	+ ·370	+ ·062	+ ·054
		.....	...	...	...	...	„ 18	+ ·426	+ ·370	+ ·062	+ ·054
		„ 19 „ 20	+ 9·380	+ 9·223	+ 9·501	+ 9·233	„ 19	+ ·410	+ ·377	+ ·060	+ ·055
		.....	...	...	...	...	„ 20	+ ·394	+ ·384	+ ·058	+ ·056
Hazaribagh (E), and Fyzabad (W)	$12^m\ 55^s$	1882					1882				
		Jan. 4 to 5	+ 5·052	+10·159	+ 4·928	+10·144	Jan. 4	+ 0·208	+ 0·422	+ 0·045	+ 0·091
		„ 5 „ 6	+ 5·333	+10·864	+ 5·330	+10·891	„ 5	+ ·215	+ ·438	+ ·046	+ ·094
		„ 6 „ 7	+ 4·820	+11·341	+ 5·060	+11·385	„ 6	+ ·214	+ ·463	+ ·046	+ ·100
		„ 7 „ 9	+10·335	+22·117	+10·134	+21·964	„ 7	+ ·210	+ ·466	+ ·045	+ ·100
		.....	...	...	...	...	„ 8	+ ·213	+ ·459	+ ·046	+ ·099
		„ 9 „ 10	+ 5·676	+10·342	+ 5·530	+10·228	„ 9	+ ·223	+ ·445	+ ·048	+ ·096
		.....	...	...	...	...	„ 10	+ ·233	+ ·429	+ ·050	+ ·092

Arc	Approximate Difference of Longitude	Intervals between Nights of Observations	Rate Corrections for both Clocks Deduced from Transits Observed at both Stations, *viz.*: α, Corrections for the Intervals between Nights of Observations, and β, Hourly Corrections for Nights of Observations, Interpolated by means of the Quantities α.								
			α at E Station for		α at W Station for		Astronomical Dates of Observations	β for		Correction to Observed Difference of Times of Transit for	
			E Clock	W Clock	E Clock	W Clock		E Clock	W Clock	E Clock	W Clock
		1882	*s*	*s*	*s*	*s*	1882	*s*	*s*	*s*	*s*
Hazaribagh (E), and Jubbulpore (W)	$21^m\ 41^s$	Jan. 19 to 20	+ 4·705	+ 19·728	+ 4·683	+ 19·705	Jan. 19	+ 0·198	+ 0·822	+ 0·071	+ 0·297
		„ 20 „ 21	+ 4·521	+ 19·351	+ 4·481	+ 19·294	„ 20	+ ·194	+ ·816	+ ·070	+ ·295
		„ 21 „ 24	+ 15·401	+ 57·455	+ 15·424	+ 57·626	„ 21	+ ·201	+ ·802	+ ·072	+ ·290
		.....	...	...	...	...	„ 22	+ ·214	+ ·800	+ ·077	+ ·289
		.....	...	...	...	...	„ 23	+ ·214	+ ·800	+ ·077	+ ·289
		„ 24 „ 25	+ 4·958	+ 19·915	+ 4·975	+ 19·890	„ 24	+ ·211	+ ·814	+ ·076	+ ·294
		„ 25 „ 26	+ 4·918	+ 20·582	+ 4·728	+ 20·411	„ 25	+ ·204	+ ·842	+ ·074	+ ·304
		.....	...	...	...	...	„ 26	+ ·198	+ ·850	+ ·071	+ ·307
Calcutta (E), and Hazaribagh (W)	$11^m\ 57^s$	Feb. 8 to 9	+ 15·502	+ 5·926	+ 15·672	+ 6·100	Feb. 8	+ 0·649	+ 0·251	+ 0·129	+ 0·050
		„ 9 „ 10	+ 15·669	+ 6·171	+ 15·683	+ 6·161	„ 9	+ ·651	+ ·254	+ ·130	+ ·051
		„ 10 „ 13	+ 43·001	+ 17·013	+ 43·078	+ 17·171	„ 10	+ ·626	+ ·247	+ ·124	+ ·049
		.....	...	...	...	...	„ 11	+ ·598	+ ·237	+ ·119	+ ·047
		.....	...	...	...	...	„ 12	+ ·598	+ ·237	+ ·119	+ ·047
		„ 13 „ 14	+ 14·298	+ 4·396	+ 14·333	+ 4·509	„ 13	+ ·597	+ ·212	+ ·119	+ ·042
		„ 14 „ 16	+ 28·912	+ 12·416	+ 28·779	+ 12·194	„ 14	+ ·599	+ ·221	+ ·119	+ ·044
		.....	...	...	...	...	„ 15	+ ·601	+ ·256	+ ·120	+ ·051
		.....	...	...	...	...	„ 16	+ ·601	+ ·256	+ ·120	+ ·051
Jalpaiguri (E), and Hazaribagh (W)	$13^m\ 27^s$	Feb. 25 to Mar. 1	+ 49·683	+ 21·646	+ 49·761	+ 21·696	Feb. 25	+ 0·518	+ 0·226	+ 0·116	+ 0·051
		Mar. 1 „ 2	+ 12·187	+ 6·352	+ 12·072	+ 6·256	Mar. 1	+ ·511	+ ·245	+ ·114	+ ·055
		„ 2 „ 3	+ 12·088	+ 6·270	+ 12·100	+ 6·129	„ 2	+ ·505	+ ·262	+ ·113	+ ·059
		„ 3 „ 4	+ 12·500	+ 4·794	+ 12·237	+ 4·660	„ 3	+ ·510	+ ·228	+ ·114	+ ·051
		„ 4 „ 5	+ 13·346	+ 4·411	+ 13·644	+ 4·634	„ 4	+ ·538	+ ·193	+ ·121	+ ·043
		.....	...	...	...	...	„ 5	+ ·562	+ ·188	+ ·126	+ ·042
Jalpaiguri (E), and Calcutta (W)	$1^m\ 30^s$	Mar. 17 to 19	+ 25·196	+ 6·364	+ 25·236	+ 6·448	Mar. 17	+ 0·525	+ 0·133	+ 0·013	+ 0·003
		.....	...	...	...	...	„ 18	+ ·525	+ ·133	+ ·013	+ ·003
		„ 19 „ 22	+ 36·228	+ 9·787	+ 36·142	+ 9·649	„ 19	+ ·515	+ ·133	+ ·013	+ ·003
		.....	...	...	...	...	„ 20	+ ·515	+ ·134	+ ·013	+ ·003
		.....	...	...	...	...	„ 21	+ ·504	+ ·134	+ ·013	+ ·003
		.....	...	...	...	...	„ 22	+ ·504	+ ·135	+ ·013	+ ·003
		April 4 „ 5	+ 13·470	+ 2·579	+ 13·419	+ 2·557	April 4	+ ·561	+ ·107	+ ·014	+ ·003
		„ 5 „ 6	+ 12·859	+ 3·361	+ 12·936	+ 3·399	„ 5	+ ·549	+ ·124	+ ·014	+ ·003
		.....	...	...	...	...	„ 6	+ ·537	+ ·140	+ ·013	+ ·003

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1881-82.

FYZABAD (E), AND AGRA (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1881			*h m s*	*m s*	*m s*	*m s*	*m s*	*m s*
November 25	*I. P. E.*	*I. P. W.*	3 59 54	− 0 9·627	16 37·464	16 27·837	16 27·962	16 27·945
„ „	„	„	4 57 35	9·037	36·907	27·870	27·845	27·822
„ 28	„	„	3 59 26	+ 0 31·052	15 56·446	27·498	27·607	27·547
„ „	„	„	4 56 19	31·615	55·909	27·524	27·508	27·544
„ 29	„	„	3 59 16	44·522	43·010	27·532	27·639	27·472
„ „	„	„	4 56 23	45·036	42·468	27·504	27·571	27·585
„ 30	*I. P. W.*	*I. P. E.*	3 59 45	58·672	29·518	28·190	28·016	28·372
„ „	„	„	4 56 18	59·275	28·978	28·253	28·206	28·331
December 1	„	„	3 58 57	1 12·297	15·858	28·155	28·033	28·237
„ „	„	„	4 56 8	12·913	15·285	28·198	28 017	28·230
„ 2	„	„	3 58 47	26·470	1·677	28·147	28·039	28·283
„ „	„	„	4 55 58	27·111	1·096	28·207	28·064	28·285
Mean values for instrumental positions	*I. P. E.*	*I. P. W.*	... ...	... ...	... ...	16 27·628	16 27·689	16 27·653
„	*I. P. W.*	*I. P. E.*	... ...	... ...	... ...	28·192	28·063	28·290
					General Means ...	16 27·910	16 27·876	16 27·971

		m s	*m s*
Whence	δL_N =	16 27·910	16 27·924
Correction for Relative Personal Equation,	$H_N - S_N$ =	+ 0·007	+ 0·007
	ΔL_N =	16 27·917	16 27·931
Again	δL_S =	16 27·933	16 27·947
Correction for Relative Personal Equation,	$H_S - S_S$ =	− 0·016	− 0·016
	ΔL_S =	16 27·917	16 27·931

	m s	*m s*
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	16 27·917	16 27·931
ρ =	+ 0·041	+ 0·048

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1881-82.

FYZABAD (E), AND JUBBULPORE (W).

Astronomical Date	Instrumental Position at both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1881		h m s	m s	m s	m s	m s	m s
December 12	*I. P. W.*	...	...	...	...	8 44·574	8 44·569
" "	"	5 16 32	+ 0 44·994	7 59·625	8 44·619	44·456	44·517
" 13	"	4 57 40	48·245	56·577	44·822	44·754	44·903
" "	"	5 16 20	48·385	56·527	44·912	44·761	44·914
" 14	"	4 56 11	51·293	53·439	44·732	44·705	44·855
" "	"	5 16 9	51·429	53·388	44·817	44·721	44·850
" 16	*I. P. E.*	4 56 54	56·795	47·723	44·518	44·376	44·443
" "	"	5 15 47	56·801	47·687	44·488	44·420	44·532
" 19	"	4 56 23	1 0·818	43·731	44·549	44·552	44·771
" "	"	5 15 16	0·946	43·723	44·669	44·571	44·602
" 20	"	4 56 14	1·036	43·472	44·508	44·412	44·646
" "	"	5 15 7	1·083	43·461	44·544	44·311	44·680
Mean values for instrumental positions *I. P. W.* at both stations				...	8 44·780	8 44·662	8 44·768
" "	*I. P. E.*	"		...	44·546	44·440	44·612
General Means				...	8 44·663	8 44·551	8 44·690

		By Clock Comparisons	By Transits at both Stations with the same Clock
		m s	m s
Whence	δL_N =	8 44·663	8 44·621
Correction for Relative Personal Equation,	$H_N - S_N$ =	+ 0·007	+ 0·007
	ΔL_N =	8 44·670	8 44·628
Again	δL_S =	8 44·687	8 44·645
Correction for Relative Personal Equation,	$H_S - S_S$ =	− 0·016	− 0·016
	ΔL_S =	8 44·671	8 44·629
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$	=	m s 8 44·671	m s 8 44·628
	ρ =	+ 0·066	+ 0·070

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1881–82.

HAZARIBAGH (E), AND FYZABAD (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1882			*h m s*	*m s*	*m s*	*m s*	*m s*	*m s*
January 4	*I. P. E.*	*I. P. W.*	6 27 4	+ 2 26·779	10 28·932	12 55·711	12 55·634	12 55·709
„ „	„	„	50 20	26·646	29·029	55·675	55·661	55·745
„ 5	„	„	26 59	21·728	34·050	55·778	55·753	55·754
„ „	„	„	50 15	21·587	34·141	55·728	55·702	55·709
„ 6	„	„	26 48	16·103	39·541	55·644	55·839	55·719
„ „	„	„	50 10	15·975	39·639	55·614	55·703	55·727
„ 7	*I. P. W.*	*I. P. E.*	26 56	9·711	45·910	55·621	55·446	55·680
„ „	„	„	50 18	9·505	46·021	55·526	55·462	55·632
„ 9	„	„	26 38	1 57·988	57·783	55·771	55·630	55·860
„ „	„	„	49 54	57·875	57·877	55·752	55·667	55·861
„ 10	„	„	26 33	53·405	11 2·509	55·914	55·783	55·954
„ „	„	„	49 49	53·359	2·594	55·953	55·796	55·969
Mean values for instrumental positions	*I. P. E.*	*I. P. W.*	... ...	... ...	... ...	12 55·692	12 55·715	12 55·727
„	*I. P. W.*	*I. P. E.*	... ...	... ...	... ...	55·756	55·631	55·826
				General Means ...		12 55·724	12 55·673	12 55·777

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	*m s*
Whence	δL_N = 12 55·724	δL_N = 12 55·725
Correction for Relative Personal Equation,	$S_N - H_N$ = − 0·016	$S_N - H_N$ = − 0·016
	ΔL_N = 12 55·708	ΔL_N = 12 55·709
Again	δL_S = 12 55·706	δL_S = 12 55·707
Correction for Relative Personal Equation,	$S_S - H_S$ = + 0·011	$S_S - H_S$ = + 0·011
	ΔL_S = 12 55·717	ΔL_S = 12 55·718

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	*m s*
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	12 55·713	ΔL = 12 55·714
ρ =	+ 0·073	ρ = + 0·052

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1881-82.

HAZARIBAGH (E), AND JUBBULPORE (W).

Astronomical Date	Instrumental Position at Both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: W Clock $= \delta L_N + \rho$
1882		h m s	m s	m s	m s	m s	m s
January 19	*I. P. W.*	7 34 17	+ 1 56·144	19 44·768	21 40·912	21 40·643	21 40·978
" "	"	54 37	55·859	44·978	40·837	40·733	40·970
" 20	"	39 56	41·066	59·835	40·901	40·663	41·020
" "	"	57 55	40·909	20 0·027	40·936	40·711	40·994
" 21	"	36 46	26·275	14·654	40·929	40·791	41·091
" "	"	56 29	26·101	14·859	40·960	40·792	41·035
" 24	*I. P. E.*	36 30	0 44·017	56·884	40·901	40·872	40·949
" "	"	56 14	43·768	57·087	40·855	40·776	40·906
" 25	"	37 11	29·134	21 11·795	40·929	40·855	40·969
" "	"	56 10	28·799	12·006	40·805	40·806	40·929
" 26	"	36 21	13·629	27·451	41·080	41·145	41·123
" "	"	56 5	13·356	27·680	41·036	41·001	41·051
Mean values for instrumental position *I. P. W.* at both stations ...					21 40·913	21 40·722	21 41·015
" " *I. P. E.* " ...					40·934	40·909	40·988
General Means ...					21 40·923	21 40·816	21 41·002

		By Clock Comparisons	By Transits at both Stations with the same Clock
		m s	m s
Whence	δL_N =	21 40·923	21 40·909
Correction for Relative Personal Equation,	$S_N - H_N$ =	− 0·016	− 0·016
	ΔL_N =	21 40·907	21 40·893
Again	δL_S =	21 40·925	21 40·911
Correction for Relative Personal Equation,	$S_S - H_S$ =	+ 0·011	+ 0·011
	ΔL_S =	21 40·936	21 40·922

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	m s
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	21 40·922	21 40·907
ρ =	+ 0·099	+ 0·093

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1881-82.

CALCUTTA (E), AND HAZARIBAGH (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1882			*h m s*	*m s*	*m s*	*m s*	*m s*	*m s*
February 8	*I. P. W.*	*I. P. E.*	9 8 33	− 4 16·380	16 13·253	11 56·873	11 56·902	11 56·877
„ „	„	„	28 45	16·110	13·124	57·014	56·867	56·922
„ 9	„	„	7 33	6·908	3·689	56·781	56·624	56·690
„ „	„	„	28 6	6·836	3·543	56·707	56·742	56·865
„ 10	„	„	8 2	3 57·506	15 54·174	56·668	56·669	56·830
„ „	„	„	28 14	57·307	54·048	56·741	56·750	56·809
„ 13	*I. P. E.*	*I. P. W.*	6 8	31·632	28·320	56·688	56·596	56·676
„ „	„	„	27 31	31·569	28·168	56·599	56·651	56·677
„ 14	„	„	7 4	21·900	18·462	56·562	56·662	56·633
„ „	„	„	27 17	21·736	18·330	56·594	56·442	56·530
„ 16	„	„	6 35	5·051	1·829	56·778	56·648	56·890
„ „	„	„	26 48	5·045	1·726	56·681	56·708	56·653
Mean values for instrumental positions	*I. P. W.*	*I. P. E.*	... ...	... ...	... ...	11 56·797	11 56·759	11 56·832
„	*I. P. E.*	*I. P. W.*	... ...	... ...	... ...	56·650	56·618	56·677
					General Means ...	11 56·724	11 56·689	11 56·754

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	*m s*
Whence	δL_N = 11 56·724	δL_N = 11 56·721
Correction for Relative Personal Equation,	$H_N - S_N$ = + 0·019	$H_N - S_N$ = + 0·019
	ΔL_N = 11 56·743	ΔL_N = 11 56·740
Again	δL_S = 11 56·716	δL_S = 11 56·713
Correction for Relative Personal Equation,	$H_S - S_S$ = − 0·006	$H_S - S_S$ = − 0·006
	ΔL_S = 11 56·710	ΔL_S = 11 56·707

By Clock Comparisons	By Transits at both Stations with the same Clock
m s	*m s*
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ = 11 56·726	ΔL = 11 56·724
ρ = + 0·052	ρ = + 0·033

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1881-82.

JALPAIGURI (E), AND HAZARIBAGH (W).

Astronomical Date	Instrumental Position at Both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: W Clock $= \delta L_N + \rho$
1882		h m s	m s	m s	m s	m s	m s
February 25	*I. P. W.*	10 3 9	− 1 8·544	14 35·563	13 27·019	13 26·948	13 27·105
„ „	„	28 42	8·481	35·423	26·942	26·922	27·015
March 1	„	4 14	0 40·547	7·481	26·934	26·881	26·970
„ „	„	23 58	40·493	7·398	26·905	26·862	27·015
„ 2	„	4 2	34·723	1·664	26·941	27·038	27·088
„ „	„	23 46	34·510	1·585	27·075	26·921	27·162
„ 3	*I. P. E.*	3 50	28·749	13 55·867	27·118	26·946	27·215
„ „	„	23 24	28·539	55·785	27·246	27·009	27·195
„ 4	„	3 37	20·814	48·196	27·382	27·119	27·278
„ „	„	23 21	20·696	48·068	27·372	27·281	27·493
„ 5	„	3 24	12·182	39·229	27·047	26·880	27·228
„ „	„	23 8	11·967	39·116	27·149	26·940	27·157
Mean values for instrumental position *I. P. W.* at both stations ...					13 26·969	13 26·929	13 27·059
„ „ *I. P. E.* „ ...					27·219	27·029	27·261
General Means ...					13 27·094	13 26·979	13 27·160

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	m s
Whence	δL_N = 13 27·094	δL_N = 13 27·070
Correction for Relative Personal Equation,	$H_N - S_N$ = + 0·019	$H_N - S_N$ = + 0·019
	ΔL_N = 13 27·113	ΔL_N = 13 27·089
Again	δL_S = 13 27·082	δL_S = 13 27·058
Correction for Relative Personal Equation,	$H_S - S_S$ = − 0·006	$H_S - S_S$ = − 0·006
	ΔL_S = 13 27·076	ΔL_S = 13 27·052

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	m s
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	13 27·095	ΔL = 13 27·070
ρ =	+ 0·075	ρ = + 0·091

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1881-82.

JALPAIGURI (E), AND CALCUTTA (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1882			h m s	m s	m s	m s	m s	m s
March 17	*P. E.*	*I. P. W.*	11 6 57	+ 0 17·050	1 13·125	1 30·175	1 30·191	1 30·264
" "	"	"	31 50	17·235	12·970	30·205	30·107	30·274
" 19	"	"	6 32	35·843	0 54·280	30·123	30·119	30·206
" "	"	"	31 25	35·941	54 118	30·059	30 110	30 180
" 22	"	"	4 40	1 2·347	27·867	30·214	30 211	30 349
" "	"	"	31 39	2·494	27·698	30 192	30 189	30·351
April 4	*P. W.*	*I. P. E.*	12 11 5	0 1·470	1 29·103	30·573	30·101	30 638
" "	"	"	29 17	1·614	28·965	30·579	30·589	30·720
" 5	"	"	10 1	12·344	18·188	30·532	30·391	30 668
" "	"	"	28 34	12·584	18·058	30·642	30·490	30·685
" 6	"	"	11 8	21·775	8·752	30·527	30·284	30·653
" "	"	"	25 18	21·888	8·658	30·546	30·507	30·661
Mean values for instrumental positions	*P. E.*	*I. P. W.*	... ...	... ...	... ...	1 30·161	1 30·155	1 30·271
"	*P. W.*	*I. P. E.*	... ...	... ...	... ...	30·567	30·394	30 671
					General Means ...	1 30·364	1 30·274	1 30·471

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	m s
Thence	δL_N = 1 30·364	δL_N 1 30 373
Correction for Relative Personal Equation,	$H_N - S_N$ = + 0·019	$H_N - S_N$ = + 0 019
	ΔL_N = 1 30·383	ΔL_N = 1 30·392
	δL_S = 1 30·409	δL_S = 1 30·418
Again		
Correction for Relative Personal Equation,	$H_S - S_S$ = − 0·006	$H_S - S_S$ = − 0·006
	ΔL_S = 1 30·403	ΔL_S = 1 30·412

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	m s
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	1 30·393	1 30·402
ρ =	+ 0·041	+ 0·099

ELECTRO-TELEGRAPHIC LONGITUDES

1882-83.

INDIAN ARCS

ABSTRACT OF THE OBSERVATIONS

AND

REDUCTION OF THE RESULTS.

NOTE.

An explanation of *Table I, Abstract of Determinations of Collimation and Level Correction-Constants,* will be found at page 2 of the Abstract of the Observations and Reduction of the Results for 1881-82.

During the Recess of 1882 the telescopes were sent to the Mathematical Instrument Office in Calcutta to be overhauled and have the telescope tubes strengthened. Each telescope has two eye-ends denominated respectively A and B, and up to the end of the Season of 1881-82 the eye-ends denominated A had been used with both telescopes. When the telescopes were put together in Calcutta about October 1882, the eye-ends denominated B were attached to both telescopes and have been employed ever since.

The eye-ends carry the wire diaphragms and the telescope micrometers, so it follows that these were also changed, and as the micrometer of Telescope No. 2 has a reverse motion with eye-end B to what it has with eye-end A, the values of $(C_o - C_s)$ and of $(C_o - M)$ in *Table I* have contrary signs for positions *I. P. E.* and *I. P. W.* with this Telescope to what they had in April 1882, but the signs remain unaltered for Telescope No. 1. Hence in *Table I*

with Telescope No. 1 $\left\{\begin{matrix} c_1 = C_o - C_s \\ b = C_o - M \end{matrix}\right\}$ for position *I. P. E.* and $\left\{\begin{matrix} c_1 = C_s - C_o \\ b = M - C_o \end{matrix}\right\}$ for position *I. P. W.*

with Telescope No. 2 $\left\{\begin{matrix} c_1 = C_s - C_o \\ b = M - C_o \end{matrix}\right\}$ for position *I. P. E.* and $\left\{\begin{matrix} c_1 = C_o - C_s \\ b = C_o - M \end{matrix}\right\}$ for position *I. P. W.*

Mean values of c_1 and b have generally been used for each day of observation at each station: sometimes two or even three values of b have been employed and occasionally the mean value of b has been obtained by weighting the single values empirically as explained in the footnotes.

The value of one division of the micrometer of Telescope No. 1 was determined in December 1882 to be $= 0^{s}\cdot02242$.

The value of one division of the micrometer of Telescope No. 2 was determined in November 1881 to be $= 0^{s}\cdot02259$.

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1882			*d*	*d*	*d*	*d*	*d*	*d*	1882			*d*	*d*	*d*	*d*	*d*	*d*
Dec. 2	JALPAIGURI (Telescope No. 2)	*I. P. E.*	31·7	32·7	+ 1·0				Dec. 2	FYZABAD (Telescope No. 1)	*I. P. E.*	30·0	30·0	0·0		31·5	− 1·5
			32·7	32·7	0·0		33·7	+ 1·0				29·6	30·0	− 0·4		32·4	− 2·8
			30·2	32·7	+ 2·5	+ 0·4	33·1	+ 2·9				29·9	30·0	− 0·1	− 1·0	33·2	− 3·3
„ 4		*I. P. W.*	35·0	35·0	0·0		34·4	+ 0·6	„ 4		*I. P. W.*	30·1	30·0	− 0·1		35·0	+ 4·9
			36·1	35·0	+ 1·1		34·7	+ 1·4				29·6	30·0	+ 0·4	− 0·7	35·9	+ 6·3
			36 1	35·0	+ 1·1	− 0·1	35·6	+ 0·5									
„ 5		*I. P. E.*	35·3	35·3	0·0		36·0	+ 0·7	„ 5		*I. P. E.*	29·9	30·0	− 0·1		18·0	+11·9
			34·9	35·3	+ 0·4		34·7	− 0·2				29·7	30·0	− 0·3	− 1·0	17·6	+12·1
			35·1	35·3	+ 0·2	− 0·6	34·9	− 0·2									
„ 6		*I. P. W.*	36·4	36·4	0·0		35·6	+ 0·8	„ 6		*I. P. W.*	29·5	30·0	+ 0·5		28·7	− 0·8
			35·1	36·4	− 1·3		33·9	+ 1·2				29·9	30·0	+ 0·1	− 0·5	30·3	+ 0·4
			35·7	36·4	− 0·7	− 1·5	34·5	+ 1·2									
„ 7		*I. P. E.*	39·2	39·2	0·0		41·5	+ 2·3	„ 7		*I. P. E.*	28·9	30·0	− 1·1		26·7	+ 2·2
			35·2	39·2	+ 4·0		38·8	+ 3·6				29·3	30·0	− 0·7		28·8	+ 0·5
			35·7	39·2	+ 3·5	+ 1·7	39·2	+ 3·5				30·0	30·0	0·0	− 1·4	29·9	+ 0·1
„ 8		*I. P. W.*	35·5	35·5	0·0		35·5	0·0	„ 8		*I. P. W.*	29·9	30·0	+ 0·1		29·2	− 0·7
			33·9	35·5	− 1·6		35·2	− 1·3				29·9	30·0	+ 0·1	− 0·7	29·3	− 0·6
			34·6	35·5	− 0·9	− 1·6	35·2	− 0·6									
„ 9		*I. P. E.*	36·6	36·6	0·0		37·6	+ 1·0	„ 9		*I. P. E.*	29·7	30·0	− 0·3		30·3	− 0·6
			35·7	36·6	+ 0·9		35·4	− 0·3				29·3	30·0	− 0·7	− 1·3	31·2	− 1·9
			35·6	36·6	+ 1·0	− 0·2	35·0	− 0·6									
„ 11		*I. P. W.*	35·0	35·0	0·0		34·7	+ 0·3	„ 11		*I. P. W.*	30·8	30·0	− 0·8		28·6	− 2·2
			33·9	35·0	− 1·1		34·1	− 0·2				30·6	30·0	− 0·6	− 1·5	29·7	− 0·9
			32·7	35·0	− 2·3	− 1·9	34·1	− 1·4									
Dec. 21	JALPAIGURI (Telescope No. 2)	*I. P. W.*	32·0	32·0	0·0		31·0	+ 1·0	Dec. 21	CALCUTTA (Telescope No. 1)	*I. P. W.*	22·7	25·0	+ 2·3			
			34·9	32·0	+ 2·9							21·6	25·0	+ 3·4	+ 1·9	23·4*	+ 1·2†
			33·1	32·0	+ 1·1	+ 0·5	31·5	+ 1·6									
„ 26		*I. P. E.*	31·0	31·0	0·0		31·3	+ 0·3‡	„ 26		*I. P. E.*	26·5	25·0	+ 1·5		25·0	+ 1·5
			28·3	31·0	+ 2·7		32·1	+ 3·8				25·7	25·0	+ 0·7	+ 0·2	26·1	− 0·4
			29·5	31·0	+ 1·5	+ 0·6											
„ 27		*I. P. W.*	36·5	36·5	0·0		37·1	− 0·6	„ 27		*I. P. W.*	21·6	25·0	+ 3·4		24·5	+ 2·9
			35·6	36·5	− 0·9	− 1·3	37·5	− 1·9				18·8	25·0	+ 6·2	+ 3·9	26·0	+ 7·2
„ 28		*I. P. E.*	31·2	31·2	0·0		31·1	− 0·1	„ 28		*I. P. E.*	26·8	25·0	+ 1·8		22·3	+ 4·5
			28·4	31·2	+ 2·8	+ 0·6	29·6	+ 1·2				28·2	25·0	+ 3·2	+ 1·6	19·7	+ 8·5
„ 29		*I. P. W.*	35·9	35·9	0·0		36·5	− 0·6	„ 29		*I. P. W.*	20·9	25·0	+ 4·1		26·9	+ 6·0
			34·3	35·9	− 1·6	− 1·6	35·0	− 0·7				22·7	25·0	+ 2·3	+ 2·3	27·9	+ 5·2
1883									1883								
Jan. 2		*I. P. E.*	31·2	31·2	0·0		31·0	− 0·2	Jan. 2		*I. P. E.*	22·8	25·0	− 2·2		27·2	− 3·6†
			31·5	31·2	− 0·3	− 1·0	29·6	− 1·9				25·4	25·0	+ 0·4			
												22·7	25·0	− 2·3	− 2·3	28·2	− 4·6†

* Owing to the tremor of the ground in Calcutta caused by passing vehicles, the value of M could not, sometimes, be determined until late in the night.
† Using a mean value of C_0. ‡ Half weight is assigned to this value.

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1883			*d*	*d*	*d*	*d*	*d*	*d*	1883			*d*	*d*	*d*	*d*	*d*	*d*
Jan. 12	CHITTAGONG (Telescope No. 1)	*I. P. E.*	3·2	5·0	− 1·8		2·5	+ 0·7	Jan. 12	JALPAIGURI (Telescope No. 2)	*I. P. E.*	31·2	31·2	0·0		31·2	0·0
			5·1	5·0	+ 0·1	− 1·7	3·1	+ 2·0				30·8	31·2	+ 0·4	− 0·6	30·1	− 0·7
							2·7	+ 1·4*									
„ 13		*I. P. W.*	3·8	5·0	+ 1·2		1·3	− 2·5	„ 13		*I. P. W.*	34·5	34·5	0·0		35·1	− 0·6
			5·3	5·0	− 0·3	− 0·5	2·0	− 3·3				31·1	34·5	− 3·4	− 2·5	36·1	− 5·0
„ 14		*I. P. E.*	5·1	5·0	+ 0·1		3·3	+ 1·8	„ 14		*I. P. E.*	32·4	32·4	0·0		32·8	+ 0·4
			5·7	5·0	+ 0·7	− 0·5	4·0	+ 1·7				32·6	32·4	− 0·2	− 0·9	32·3	− 0·3
„ 15		*I. P. W.*	7·1	5·0	− 2·1		3·7	− 3·4	„ 15		*I. P. W.*	31·2	31·0	+ 0·2		31·7	− 0·5
			7·4	5·0	− 2·4	− 3·2	6·0	− 1·4				31·0	31·0	0·0	− 0·7	31·5	− 0·5
„ 17		*I. P. E.*	3·8	5·0	− 1·2		4·7	− 0·9	„ 17		*I. P. E.*	34·6	34·0	− 0·6		34·7	+ 0·1
			4·3	5·0	− 0·7	− 1·8	4·0	+ 0·3				31·7	34·0	+ 2·3	+ 0·1	35·1	+ 3·4
„ 18		*I. P. W.*	3·7	5·0	+ 1·3		4·6	+ 0·9	„ 18		*I. P. W.*	30·1	30·0	+ 0·1		31·2	− 1·1
			5·8	5·0	− 0·8	− 0·7	6·0	+ 0·2				29·5	30·0	− 0·5	− 1·0	29·6	− 0·1
Jan. 23	CHITTAGONG (Telescope No. 1)	*I. P. W.*	5·4	5·0	− 0·4		2·2	− 3·2	Jan. 23	CALCUTTA (Telescope No. 2)	*I. P. W.*	22·4	22·0	+ 0·4		25·3	− 2·9
			4·4	5·0	+ 0·6	− 0·8	3·2	− 1·2				21·0	22·0	− 1·0	− 1·1	25·4	− 4·4
„ 24		*I. P. E.*	5·0	5·0	0·0		4·0	+ 1·0	„ 24		*I. P. E.*	28·3	28·0	− 0·3		32·5	+ 4·2
			6·6	5·0	+ 1·6	− 0·1	4·8	+ 1·8				23·2	28·0	+ 4·8			
												25·7	28·0	+ 2·3	+ 1·5	32·2	+ 6·5
„ 25		*I. P. W.*	3·7	5·0	+ 1·3		4·9	+ 1·2	„ 25		*I. P. W.*	24·2	24·0	+ 0·2		22·9	+ 1·3
			4·4	5·0	+ 0·6	0·0	4·9	+ 0·5				23·8	24·0	− 0·2	− 0·8	20·5	+ 3·3
„ 26		*I. P. E.*	3·4	5·0	− 1·6		3·8	− 0·4	„ 26		*I. P. E.*	20·6	21·0	+ 0·4		31·9	+11·3
			4·8	5·0	− 0·2	− 1·8	6·1	− 1·3				21·8	21·0	− 0·8	− 1·0	31·0	+ 9·2
„ 28		*I. P. W.*	3·8	5·0	+ 1·2		2·7	− 1·1	„ 28		*I. P. W.*	18·9	19·0	− 0·1		19·3	− 0·4
			4·2	5·0	+ 0·8	+ 0·1	2·6	− 1·6				23·5	19·0	+ 4·5		18·6	+ 4·9
												20·1	19·0	+ 1·1	+ 1·0	19·5	+ 0·6
„ 29		*I. P. E.*	3·0	5·0	− 2·0		3·3	− 0·3	„ 29		*I. P. E.*	23·3	23·0	− 0·3		24·6	+ 1·3
			4·4	5·0	− 0·6	− 2·2	3·5	+ 0·9				20·5	23·0	+ 2·5		22·9	+ 2·4
												22·9	23·0	+ 0·1	0·0	24·9	+ 2·0
„ 30		*I. P. W.*	5·6	5·0	− 0·6		5·4	− 0·2	„ 30		*I. P. W.*	22·8	23·0	− 0·2		24·5	− 1·7
			6·2	5·0	− 1·2	− 1·8	6·0	− 0·2				23·8	23·0	+ 0·8			
												22·6	23·0	− 0·4		23·5	− 0·9
												21·6	23·0	− 1·4	− 1·1	23·5	− 1·9

* Using a mean value of C_0.

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1883			*d*	*d*	*d*	*d*	*d*	*d*	1883			*d*	*d*	*d*	*d*	*d*	*d*
Feb. 8	CALCUTTA (Telescope No. 1)	*I. P. E.*	5·3	5·0	+ 0·3		3·2	+ 2·3‖	Feb. 8	FYZABAD (Telescope No. 2)	*I. P. E.*	47·5	47·0	− 0·5		45·9	− 1·6
			7·4	5·0	+ 2·4	+ 0·5	2·9	+ 4·4‖				46·6	47·0	+ 0·4		44·9	− 1·7
												47·3	47·0	− 0·3	− 0·9	45·1	− 2·2
„ 9		*I. P. W.*					12·1	+ 5·2*	„ 9		*I. P. W.*	45·7	47·0	− 1·3		50·0	− 4·3
			6·2	5·0	− 1·2		5·1	− 1·1				47·2	47·0	+ 0·2		50·9	− 3·7
			7·5	5·0	− 2·5	− 2·8	5·2	− 2·3				45·6	47·0	− 1·4	− 1·6	49·9	− 4·3
„ 10		*I. P. E.*	6·6	5·0	+ 1·6	+ 0·7†	12·6	− 6·0	„ 10		*I. P. E.*	48·2	47·0	− 1·2		44·7	− 3·5
			6·6	15·0	− 8·4	− 9·3‡	12·9	− 6·3				47·4	47·0	− 0·4		45·0	− 2·4
												46·5	47·0	+ 0·5	− 1·2	44·4	− 2·1
„ 11		*I. P. W.*	8·1	5·0	− 3·1		2·8	− 5·4§	„ 11		*I. P. W.*	48·0	47·0	+ 1·0		51·5	− 3·5
			7·9	5·0	− 2·9							46·1	47·0	− 0·9		50·9	− 4·8
			8·6	5·0	− 3·6	− 4·1	3·8	− 4·4§				45·7	47·0	− 1·3		50·6	− 4·9
												46·1	47·0	− 0·9	− 1·3		
„ 13		*I. P. E.*	6·9	5·0	+ 1·9		13·1	− 5·7‖	„ 13		*I. P. E.*	48·0	47·0	− 1·0		46·6	− 1·4
			7·8	5·0	+ 2·8	+ 1·5	12·3	− 4·8‖				48·7	47·0	− 1·7		46·7	− 2·0
												46·7	47·0	+ 0·3	− 1·6	47·5	+ 0·8
„ 14		*I. P. W.*	9·1	5·0	− 4·1		6·5	− 2·6	„ 14		*I. P. W.*	46·5	47·0	− 0·5		41·1	+ 5·4
			8·1	5·0	− 3·1	− 4·5	4·3	− 3·8				45·6	47·0	− 1·4		40·5	+ 5·1
												45·4	47·0	− 1·6	− 2·0	40·3	+ 5·1
Feb. 22	CALCUTTA (Telescope No. 1)	*I. P. W.*	307·1	305·0	− 2·1		305·9	− 1·2	Feb. 22	JUBBULPORE (Telescope No. 2)	*I. P. W.*	20·8	22·0	− 1·2		20·2	+ 0·6
			306·5	305·0	− 1·5	− 2·7	305·9	− 0·6				21·9	22·0	− 0·1		20·7	+ 1·2
												21·7	22·0	− 0·3	− 1·3	21·0	+ 0·7
„ 23		*I. P. E.*	307·3	305·0	+ 2·3		310·1	− 2·8	„ 23		*I. P. E.*	23·8	23·0	− 0·8		22·1	− 1·7
			308·5	305·0	+ 3·5	+ 2·0	311·5	− 3·0				23·3	23·0	− 0·3		21·9	− 1·4
												22·2	23·0	+ 0·8	− 0·9	20·7	− 1·5
„ 24		*I. P. W.*	306·4	305·0	− 1·4		302·4	− 4·0	„ 24		*I. P. W.*	22·5	22·0	+ 0·5		21·9	+ 0·6
			309·3	305·0	− 4·3	− 3·8	303·2	− 6·1				20·9	22·0	− 1·1		22·4	− 1·5
												21·7	22·0	− 0·3	− 1·1	22·8	− 1·1
„ 28		*I. P. E.*	309·8	305·0	+ 4·8		300·3	+ 9·5	„ 28		*I. P. E.*	22·0	22·0	0·0		23·7	+ 1·7
			307·6	305·0	+ 2·6	+ 2·8	298·3	+ 9·3				23·4	22·0	− 1·4		24·2	+ 0·8
												22·7	22·0	− 0·7	− 1·5	22·9	+ 0·2
Mar. 2		*I. P. W.*	306·4	305·0	− 1·4		312·2	+ 5·8	Mar. 2		*I. P. W.*	24·5	23·0	+ 1·5		21·1	+ 3·4
			306·2	305·0	− 1·2	− 2·2	312·2	+ 6·0				22·1	23·0	− 0·9		21·6	+ 0·5
												23·4	23·0	+ 0·4	− 0·5	21·3	+ 2·1
„ 3		*I. P. E.*	308·5	305·0	+ 3·5		299·3	+ 9·2	„ 3		*I. P. E.*	20·9	21·0	+ 0·1		21·2	+ 0·3
			308·5	305·0	+ 3·5	+ 2·6	299·6	+ 8·9				21·3	21·0	− 0·3		21·3	0·0
												22·1	21·0	− 1·1	− 1·2	21·4	− 0·7

* For λ Ursæ Minoris only, obtained by using a mean value of C_0: the leveling screws were altered after this determination and b was re-determined. † For all stars up to No. 3068. ‡ For subsequent stars. § Using a mean value of C_0. ‖ Giving half weight to the first value of M and thus finding a mean M.

TABLE I. ABSTRACT OF DETERMINATIONS OF COLLIMATION AND LEVEL CORRECTION-CONSTANTS.

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1883			*d*	*d*	*d*	*d*	*d*	*d*	1883			*d*	*d*	*d*	*d*	*d*	*d*
Mar. 14	FYZABAD (Telescope No. 1)	*I. P. E.*	302·8	300·0	+ 2·8		298·1	+ 4·3*	Mar. 14	JUBBULPORE (Telescope No. 2)	*I. P. E.*	22·7	23·0	+ 0·3		23·0	+ 0·3
			301·5	300·0	+ 1·5							20·4	23·0	+ 2·6		23·1	+ 2·7
			302·9	300·0	+ 2·9	+ 1·6	298·3	+ 4·1*				23·0	23·0	0·0	+ 0·2	23·3	+ 0·3
„ 15		*I. P. W.*	299·1	300·0	+ 0·9		308·4	+ 9·3	„ 15		*I. P. W.*	20·1	21·0	− 0·9		19·2	+ 0·9
			299·9	300·0	+ 0·1	− 0·3	308·3	+ 8·4				19·3	21·0	− 1·7		19·6	− 0·3
												18·5	21·0	− 2·5	− 2·5	18·2	+ 0·3
„ 16		*I. P. E.*	301·7	300·0	+ 1·7		298·9	+ 2·8	„ 16		*I. P. E.*	23·7	24·0	+ 0·3		22·8	− 0·9
			301·3	300·0	+ 1·3	+ 0·7	299·5	+ 1·8				21·9	24·0	+ 2·1		20·8	− 1·1
												22·1	24·0	+ 1·9	+ 0·6	20·9	− 1·2
„ 17		*I. P. W.*	298·4	300·0	+ 1·6		297·8	− 0·6	„ 17		*I. P. W.*	22·5	22·0	+ 0·5		22·6	− 0·1
			299·5	300·0	+ 0·5	+ 0·2	298·5	− 1·0				20·8	22·0	− 1·2		23·1	− 2·3
												20·4	22·0	− 1·6	− 1·6	20·9	− 0·5
„ 18		*I. P. E.*	299·7	300·0	− 0·3		301·6	− 1·9	„ 18		*I. P. E.*	24·8	25·0	+ 0·2		24·9	+ 0·1
			299·3	300·0	− 0·7	− 1·3	299·5	− 0·2				23·7	25·0	+ 1·3		23·9	+ 0·2
												23·0	25·0	+ 2·0	+ 0·4	24·1	+ 1·1
„ 19		*I. P. W.*	297·2	300·0	+ 2·8		305·1	+ 7·5*	„ 19		*I. P. W.*	21·6	21·0	+ 0·6		20·8	+ 0·8
			298·0	300·0	+ 2·0	+ 1·6	307·9	+ 10·3*				21·3	21·0	+ 0·3		21·1	+ 0·2
							308·5	+ 10·9*				20·4	21·0	− 0·6	− 0·7	21·3	− 0·9
„ 20		*I. P. E.*	298·3	300·0	− 1·7		297·2	+ 1·7*	„ 20		*I. P. E.*	24·4	25·0	+ 0·6		24·0	− 0·4
							297·9	+ 1·0*				23·9	25·0	+ 1·1		23·7	− 0·2
			299·5	300·0	− 0·5	− 1·9	297·4	+ 1·5*				21·9	25·0	+ 3·1	+ 0·8	22·2	+ 0·3
Mar. 28	FYZABAD (Telescope No. 1)	*I. P. E.*	303·3	300·0	+ 3·3		296·4	+ 6·9	Mar. 28	AGRA (Telescope No. 2)	*I. P. E.*	40·7	41·0	+ 0·3		40·6	− 0·1
								+ 6·8				39·2	41·0	+ 1·8		39·7	+ 0·5
			301·6	300·0	+ 1·6		294·8	+ 7·6*				39·4	41·0	+ 1·6	+ 0·4	39·7	+ 0·3
			302·2	300·0	+ 2·2	+ 1·6	295·0	+ 7·4*									
„ 29		*I. P. W.*					300·2	− 0·6*	„ 29		*I. P. W.*	42·1	42·0	+ 0·1		42·6	− 0·5
			300·7	300·0	− 0·7		301·2	+ 0·4*				40·0	42·0	− 2·0	− 1·8	41·8	− 1·8
			300·8	300·0	− 0·8	− 1·6	302·8	+ 2·0*									
„ 30		*I. P. E.*					301·4	− 0·3*	„ 30		*I. P. E.*	39·4	40·0	+ 0·6		39·1	− 0·3
			301·4	300·0	+ 1·4		303·0	− 1·9*				40·5	40·0	− 0·5		38·0	− 2·5
			300·8	300·0	+ 0·8	+ 0·3	302·7	− 1·6*				40·5	40·0	− 0·5	− 0·9	38·1	− 2·4
„ 31		*I. P. W.*	298·0	300·0	+ 2·0		305·9	+ 7·9	„ 31		*I. P. W.*	42·5	42·0	+ 0·5		42·7	− 0·2
			299·2	300·0	+ 0·8	+ 0·6	306·5	+ 7·3				41·5	42·0	− 0·5		41·7	− 0·2
												41·8	42·0	− 0·2	− 0·9	41·9	− 0·1
Apr. 3		*I. P. E.*	301·0	300·0	+ 1·0		297·7	+ 3·3	Apr. 3		*I. P. E.*	37·6	39·0	+ 1·4		36·5	− 1·1
			302·0	300·0	+ 2·0	+ 0·7	297·3	+ 4·7				38·1	39·0	+ 0·9		36·3	− 1·8
												38·0	39·0	+ 1·0	+ 0·3	34·0	− 4·0
„ 4		*I. P. W.*	299·9	300·0	+ 0·1		301·3	+ 1·3*	„ 4		*I. P. W.*	40·0	39·0	+ 1·0		40·4	− 0·4
							302·4	+ 2·4*				41·0	39·0	+ 2·0		40·0	+ 1·0
			300·1	300·0	− 0·1	− 0·8	303·0	+ 3·0*				40·9	39·0	+ 1·9	+ 0·8	40·1	+ 0·8

* Using a mean value of C_0.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
JALPAIGURI AND FYZABAD	JALPAIGURI (Latitude 26° 31′)			E	1364 Gr. 72	L	4	+0·2154	3 4 26·55	−0·02	−0·05	+1·17		27·65	3 3 16·81	− 1 10·84		
																	+ 3·3	
		Dec. 2	*I.P.E.*	„	326 „	U	3	−0·2994	3 29 56·37	+0·03	+0·10	+1·17	+0·02	57·69	3 28 45·15	− 1 12·54		
																		+ 0·8
				W	δ Ursæ Minoris	L	3	+0·3502	5 42 39·40	−0·27	−0·43	+1·17		39·87	6 9 39·97	+27 0·10		
																	− 1·7	
				„	51 Cephei	U	4	−0·4048	6 18 43·70	+0·32	+0·66	−1·17	+0·08	43·59	6 45 44·99	+27 1·40		
				E	1364 Gr. 72	L	4	+0·2154	3 4 31·75	+0·09	−0·09	+1·16		32·91	3 3 16·96	− 1 15·95		
																	−26·5	
		„ 4	*I.P.W.*	„	326 „	U	3	−0·2994	3 29 46·10	−0·14	+0·19	+1·16	+0·02	47·33	3 28 45·03	− 1 2·30		−26·9
				W	δ Ursæ Minoris	L	4	+0·3502	5 42 41·30	−0 23	−0·09	+1·16		42·14	6 9 39·62	+26 57·48		
																	−27·2	
				„	51 Cephei	U	3	−0·4048	6 18 28·17	+0·28	+0·14	−1·16	+0·08	27·51	6 45 45·56	+27 18·05		
				E	1364 Gr. 72	L	5	+0·2154	3 4 29·16	+0·02	+0·02	+1·15		30·35	3 3 17·04	− 1 13·31		
		„ 5	*I.P.E*														−16·8	−16·8
				„	326 „	U	3	−0·2994	3 29 48·53	−0·03	−0·03	+1·15	+0·02	49·64	3 28 44·97	− 1 4·67		
				E	1364 Gr. 72	L	4	+0·2154	3 4 24·58	+0·23	−0·03	+1·18		25·96	3 3 17·12	− 1 8·84		
																	− 4·3	
		„ 6	*I.P.W.*	„	326 „	U	3	−0·2994	3 29 50·60	−0·35	+0·07	+1·18	+0·02	51·52	3 28 44·91	− 1 6·61		− 6·5
				W	δ Ursæ Minoris	L	3	+0·3502	5 42 27·50	+0·57	−0·16	+1·18		29·09	6 9 39·30	+27 10·21		
																	− 8·6	
				„	51 Cephei	U	4	−0·4048	6 18 30·92	−0·70	+0·25	−1·18	+0·08	29·37	6 45 46·11	+27 16·74		
				E	1364 Gr. 72	L	4	+0·2154	3 4 28·48	−0·35	−0·21	+1·17		29·09	3 3 17·19	− 1 11·90		
																	−24·4	
		„ 7	*I.P.E.*	„	326 „	U	3	−0·2994	3 29 42·03	+0·52	+0·45	+1·17	+0·02	44·19	3 28 44·85	− 0 59·34		−25·3
				W	δ Ursæ Minoris	L	4	+0·3502	5 42 32·15	−1·33	−0·45	+1·17		31·54	6 9 39·12	+27 7·58		
																	−26·2	
				„	51 Cephei	U	4	−0·4048	6 18 17·83	+1·62	+0·68	−1·17	+0·08	19·04	6 45 46·39	+27 27·35		
				E	1364 Gr. 72	L	4	+0·2154	3 4 30·60	+0·39	+0·05	+1·16		32·20	3 3 17·27	− 1 14·93		
																	−44·9	
		„ 8	*I.P.W.*	„	326 „	U	3	−0·2994	3 29 36·13	−0·59	−0·10	+1·16	+0·02	36·62	3 28 44·79	− 0 51·83		−45·8
				W	δ Ursæ Minoris	L	4	+0·3502	5 42 32·83	+0·80	+0·13	+1·16		34·92	6 9 38·93	+27 4·01		
																	−46·6	
				„	51 Cephei	U	4	−0·4048	6 18 9·73	−0·97	−0·20	−1·16	+0·08	7·48	6 45 46·68	+27 39·20		
				E	1364 Gr. 72	L	4	+0·2154	3 4 27·45	+0·09	−0·02	+1·18		28·70	3 3 17·35	− 1 11·35		
																	−32·0	
		„ 9	*I.P.E.*	„	326 „	U	3	−0·2994	3 29 38·53	−0·14	+0·03	+1·18	+0·02	39·62	3 28 44·74	− 0 54·88		−32·2
													+2·79	12·26			−34·6*	
				W	51 Cephei	U	3	−0·4048	6 18 10·67	+0·09	−0·11	−1·18			6 45 46·99			
													−5·54	3·93			−30·2*	
							4	+0·2154	3 4 21·98	+0·28	+0 02	+1·18						
				E	1364 Gr. 72	L	4	−0·2994	3 29 38·35	−0·42	−0·03	+1·18		23·46	3 3 17·50	− 1 5·96		
																	−22·3	
		„ 11	*I.P.W.*	„	326 „	U	4	+0·3502	5 42 14·85	+0·91	+0·15	+1·18	+0·02	39·10	3 28 44·62	− 0 54·48		−23·9
				W	δ Ursæ Minoris	L	4	−0·4048	6 18 9·65	−1·11	−0·23	−1·18		17·09	6 9 38·36	+27 21·27		
																	−25·4	
				„	51 Cephei	U							+0·08	7·21	6 45 47·65	+27 40·44		

* These values have been obtained by correcting the "Observed Time of Transit" for "Clock Rate" and change in Right Ascension (which corrections are in column 14) and then deducing the change of Azimuth as compared with the values (1) on the 8th December (2) on the 11th December 1882.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Level	Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
JALPAIGURI AND FYZABAD	FYZABAD (Latitude 26° 47′)			E	1364 Gr. 72	L	3	+0·2150	3 30 48·13	+0·23	+0·21	+1·31		49·88	3 3 16·76	−27 33·12		
																	+ 8·5	
		Dec. 2	*I.P.E.*	„	326 „	U	3	−0·2986	3 56 22·03	−0·35	−0·44	+1·31	+0·02	22·57	3 28 45·16	−27 37·41		
				W	δ Ursæ Minoris	L	3	+0·3496	6 9 0·13	+0·38	+0 38	+1·31		2·20	6 9 39·97	+ 0 37·77		+ 3·2
																	− 2·1	
				„	51 Cephei	U	3	−0·4038	6 45 7·87	−0·46	−0·57	−1·31	+0·08	5·61	6 45 44·99	+ 0 39·38		
				E	1364 Gr. 72	L	3	+0·2150	3 30 50·00	+0·16	−0·47	+1·73		51·42	3 3 16·92	−27 34·50		
																	− 2·0	
		„ 4	*I.P.W.*	„	326 „	U	5	−0·2986	3 56 15·94	−0·24	+0·99	+1·73	+0·02	18·44	3 28 45·03	−27 33·41		− 3·9
				W	δ Ursæ Minoris	L	4	+0·3496	6 8 56·68	+0·27	−0·85	+1·73		57·83	6 9 39·62	+ 0 41·79		
																	− 5·7	
				„	51 Cephei	U	3	−0·4038	6 44 60·17	−0·32	+1·28	−1·73	+0·08	59·48	6 45 45·56	+ 0 46·08		
				E	1364 Gr. 72	L	3	+0·2150	3 30 48·87	+0·23	−1·00	+1·74		49·84	3 3 16·99	−27 32·85		
																	− 0·1	
		„ 5	*I.P.E.*	„	326 „	U	3	−0·2986	3 56 14·20	−0·35	+2·11	+1·74	+0·02	17·72	3 28 44·97	−27 32·75		− 4·1
				W	δ Ursæ Minoris	L	3	+0·3496	6 8 55·07	+0·38	−1·81	+1·74		55·38	6 9 39·46	+ 0 44·08		
																	− 8·0	
				„	51 Cephei	U	3	−0·4038	6 44 55·10	−0·46	+2·75	−1·74	+0·08	55·73	6 45 45·83	+ 0 50·10		
				E	1364 Gr. 72	L	5	+0·2150	3 30 47·02	+0·12	+0·02	+1·74		48·90	3 3 17·07	−27 31·83		
																	− 6·2	
		„ 6	*I.P.W.*	„	326 „	U	4	−0·2986	3 56 11·98	−0·17	−0·04	+1·74	+0·02	13·53	3 28 44·91	−27 28·62		− 9·5
				W	δ Ursæ Minoris	L	4	+0·3496	6 8 51·68	+0·19	+0·03	+1·74		53·64	6 9 39·30	+ 0 45·66		
																	−12·8	
				„	51 Cephei	U	3	−0·4038	6 44 52·73	−0·23	−0·05	−1·74	+0·08	50·79	6 45 46·11	+ 0 55·32		
				E	1364 Gr. 72	L	3	+0·2150	3 30 45·40	+0·32	−0·07	+1·71		47·36	3 3 17·15	−27 30·21		
																	+ 1·1	
		„ 7	*I.P.E.*	„	326 „	U	3	−0·2986	3 56 14·20	−0·49	+0·16	+1·71	+0·02	15·60	3 28 44·85	−27 30·75		− 3·8
				W	δ Ursæ Minoris	L	3	+0 3496	6 8 47·00	+0·53	−0·14	+1·71		49·10	6 9 39·12	+ 0 50·02		
																	− 8·7	
				„	51 Cephei	U	4	−0·4038	6 44 51·90	−0·65	+0·21	−1·71	+0·08	49·83	6 45 46·39	+ 0 56·56		
				E	1364 Gr. 72	L	4	+0·2150	3 30 45·33	+0·16	+0·05	+1·72		47·26	3 3 17·22	−27 30·04		
																	− 5·5	
		„ 8	*I.P.W.*	„	326 „	U	5	−0·2986	3 56 10·56	−0·24	−0·11	+1·72	+0·02	11·95	3 28 44·79	−27 27·16		− 9·4
				W	δ Ursæ Minoris	L	3	+0·3496	6 8 44·83	+0·27	+0·09	+1·72		46·91	6 9 38·93	+ 0 52.02		
																	−13·3	
				„	51 Cephei	U	3	−0·4038	6 44 46·73	−0·32	−0·14	−1·72	+0·08	44·63	6 45 46·68	+ 1 2·05		
				E	1364 Gr. 72	L	3	+0·2150	3 30 42·33	+0·30	+0·10	+1·71		44·44	3 3 17·30	−27 27·14		
																	− 3·7	
		„ 9	*I.P.E.*	„	326 „	U	4	−0·2986	3 56 8·88	−0·45	−0·21	+1·71	+0·02	9·95	3 28 44·74	−27 25·21		− 9·5
				W	δ Ursæ Minoris	L	3	+0·3496	6 8 41·50	+0·50	+0·18	+1·71		43·89	6 9 38·74	+ 0 54·85		
																	−15·2	
				„	51 Cephei	U	3	−0·4038	6 44 43·17	−0·60	−0·27	−1·71	+0·08	40·67	6 45 46·99	+ 1 6·32		
				E	1364 Gr. 72	L	3	+0·2150	3 30 42·90	+0·35	+0·12	+1·72		45·09	3 3 17·46	−27 27·63		
																	−14·0	
		„ 11	*I.P.W.*	„	326 „	U	4	−0·2986	3 56 4·08	−0·52	−0·26	+1·72	+0·02	5·04	3 28 44·62	−27 20·42		−17·7
				W	δ Ursæ Minoris	L	3	+0·3496	6 8 36·37	+0·57	+0·23	+1·72		38·89	6 9 38·36	+ 0 59·47		
																	−21·3	
				„	51 Cephei	U	3	−0·4038	6 44 34·80	−0·70	−0·34	−1·72	+0·08	32·12	6 45 47·65	+ 1 15·53		

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant, A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
JALPAIGURI AND CALCUTTA	JALPAIGURI (Latitude 26° 31′)	1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
				E	1409 Gr. 72	L	5	+0·1661	3 39 24·72	−0·12	−0·06	+1·46		26·00	3 39 26·86	+ 0 0·86		
				,,	372 ,,	U	6	−0·2321	4 0 32·28	+0·19	+0·14	+1·46	+0·04	34·11	4 0 35·15	+ 0 1·04	− 0·5	
		Dec. 21	*I.P.W.*	W	δ Ursæ Minoris	L	2	+0·3500	6 8 30·60	−0·46	−0·25	+1·46		31·35	6 9 37·26	+ 1 5·91		+ 1·5
				,,	51 Cephei	U	2	−0·4051	6 44 47·05	+0·56	+0·39	−1·46	+0·06	46·60	6 45 49·87	+ 1 3·27	+ 3·5	
				E	372 Gr. 72	U	2	−0·2321	4 0 19·30	+0·19	+0·25	+1·44		21·18	4 0 34·70	+ 0 13·52		
				,,	1556 ,,	L	8	+0·1575	4 57 36·43	−0·12	−0·10	−1·44	+0·12	34·89	4 57 47·91	+ 0 13·02	− 1·3	
		,, 26	*I.P.E.*	W	δ Ursæ Minoris	L	3	+0·3500	6 8 20·97	−0·53	−0·27	+1·44		21·61	6 9 36·78	+ 1 15·17		− 0·3
				,,	51 Cephei	U	3	−0·4051	6 44 36·60	+0·65	+0·41	−1·44	+0·06	36·28	6 45 50·93	+ 1 14·65	+ 0·7	
				E	372 Gr. 72	U	7	−0·2321	4 0 16·23	−0·41	−0·14	+1·44		17·12	4 0 34·62	+ 0 17·50		
				,,	1556 ,,	L	5	+0·1575	4 57 33·10	+0·25	+0·05	−1·44	+0·12	32·08	4 57 47·95	+ 0 15·87	− 4·2	
		,, 27	*I.P.W.*	W	δ Ursæ Minoris	L	3	+0·3500	6 8 18·33	+0·57	+0·15	+1·44		20·49	6 9 36·72	+ 1 16·23		− 3·4
				,,	51 Cephei	U	3	−0·4051	6 44 35·23	−0·70	−0·23	−1·44	+0·06	32·92	6 45 51·11	+ 1 18·19	− 2·6	
				E	372 Gr. 72	U	5	−0·2321	4 0 17·74	+0·27	+0·04	+1·45		19·50	4 0 34·53	+ 0 15·03		
				,,	1556 ,,	L	8	+0·1575	4 57 27·53	−0·17	−0·02	−1·45	+0·12	26·01	4 57 47·99	+ 0 21·98	+ 17·8	
		,, 28	*I.P.E.*	W	δ Ursæ Minoris	L	3	+0·3500	6 8 10·27	−0·38	−0·04	+1·45		11·30	6 9 36·69	+ 1 25·39		+ 17·1
				,,	51 Cephei	U	3	−0·4051	6 44 39·00	+0·46	+0·07	−1·45	+0·06	38·14	6 45 51·25	+ 1 13·11	+ 16·3	
		,, 29	*I.P.W.*	E	1556 Gr. 72	L	5	+0·1575	4 57 27·98	+0·30	+0·02	−1·45	+2·86	29·71	4 57 48·03		− 6·5*	− 8·9
													−11·44	15·41			−11·2*	
				E	372 Gr. 72	U	5	−0·2321	3 59 58·88	−0·30	−0·13	+1·44		59·89	4 0 34·09	+ 0 34·20		
		1883 Jan. 2	*I.P.E.*	,,	1556 ,,	L	7	+0·1575	4 57 14·70	+0·18	+0·05	−1·44	+0·12	13·61	4 57 48·19	+ 0 34·58	+ 1·0	
				W	δ Ursæ Minoris	L	4	+0·3500	6 8 3·35	+0·42	+0·13	+1·44		5·34	6 9 36·76	+ 1 31·42		+ 0·9
				,,	51 Cephei	U	3	−0·4051	6 44 22·80	−0·51	−0·20	−1·44	+0·06	20·71	6 45 51·59	+ 1 30·88	+ 0·7	
JALPAIGURI AND CALCUTTA	CALCUTTA (Latitude 22° 33′)	1882																
				W	372 Gr. 72	U	3	−0·2413	4 0 54·50	+0·52	+0·15	+1·67		56·84	4 0 35·16	− 0 21·68		
				,,	δ Ursæ Minoris	L	3	+0·3596	6 10 7·97	−0·72	−0·15	+1·67	+0·21	8·98	6 9 37·26	− 0 31·72	− 16·7	
		Dec. 21	*I.P.W.*	,,	δ Ursæ Minoris	L	3	+0·3596	6 10 7·97	−0·72	−0·15	+1·67		8·77	6 9 37·26	− 0 31·51		− 15·0
				,,	51 Cephei	U	3	−0·4198	6 46 11·57	+0·88	+0·24	−1·67	+0·06	11·08	6 45 49·87	− 0 21·21	− 13·2	
				W	372 Gr. 72	U	4	−0·2413	4 0 52·88	+0·05	+0·07	+1·66		54·66	4 0 34·71	− 0 19·95		
				,,	1556 ,,	L	5	+0·1609	4 57 58·88	−0·03	−0·03	+1·66	+0·09	60·57	4 57 47·93	− 0 12·64	+ 18·2	
		,, 26	*I.P.E.*	,,	δ Ursæ Minoris	L	3	+0·3596	6 9 43·53	−0·08	−0·07	+1·66		45·04	6 9 36·78	− 0 8·26		+ 20·8
				,,	51 Cephei	U	3	−0·4198	6 46 18·77	+0·09	+0·12	−1·66	+0·06	17·38	6 45 50·93	− 0 26·45	+ 23·3	

* These values have been obtained by correcting the "Observed Time of Transit" for "Clock Rate" and change in Right Ascension (which corrections are in column 14) and then deducing the change of Azimuth as compared with the values (1) on the 28th December 1882 (2) on the 2nd January 1883.

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
JALPAIGURI AND CALCUTTA	CALCUTTA (Latitude 22° 33′)	1882							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
				W	372 Gr. 72	U	3	−0·2413	4 0 49·63	+1·06	+0·64	+1·67		53·00	4 0 34·63	− 0 18·37	+21·2	
		Dec. 27	*I.P.W.*	„	δ Ursæ Minoris	L	4	+0·3596	6 9 42·60	−1·48	−0·64	+1·67	+0·21	42·36	6 9 36·72	− 0 5·64		+19·9
				„	δ Ursæ Minoris	L	4	+0·3596	6 9 42·60	−1·48	−0·64	+1·67		42·15	6 9 36·72	− 0 5·43	+18·6	
				„	51 Cephei	U	3	−0·4198	6 46 9·80	+1·81	+1·01	−1·67	+0·06	11·01	6 45 51·11	− 0 19·90		
				W	372 Gr. 72	U	4	−0·2413	4 0 45·33	+0·43	+0·81	+1·67		48·24	4 0 34·54	− 0 13·70	+10·2	
		„ 28	*I.P.E.*	„	1556 „	L	5	+0·1609	4 57 56·40	−0·27	−0·28	+1·67	+0·09	57·61	4 57 48·01	− 0 9·60		+11·1
				„	δ Ursæ Minoris	L	4	+0·3596	6 9 43·40	−0·61	−0·81	+1·67		43·65	6 9 36·69	− 0 6·96	+11·9	
				„	51 Cephei	U	4	−0·4198	6 46 7·08	+0·74	+1·29	−1·67	+0·06	7·50	6 45 51·25	− 0 16·25		
				W	372 Gr. 72	U	4	−0·2413	4 0 45·45	−1·11	+0·65	+1·67		46·66	4 0 34·45	− 0 12·21	+ 9·7	
		„ 29	*I.P.W.*	„	1556 „	L	4	+0·1609	4 57 54·13	+0·68	−0·22	+1·67	+0·09	56·35	4 57 48·05	− 0 8·30		+12·7
				„	δ Ursæ Minoris	L	3	+0·3596	6 9 37·10	+1·56	−0·70	+1·67		39·63	6 9 36·68	− 0 2·95	+15·7	
				„	51 Cephei	U	3	−0·4198	6 46 8·93	−1·90	+1·11	−1·67	+0·06	6·53	6 45 51·37	− 0 15·16		
		1883		W	372 Gr. 72	U	4	−0·2413	4 0 32·53	−0·62	−0·51	+1·67		33·07	4 0 34·10	+ 0 1·03	+ 0·1	
		Jan. 2	*I.P.E.*	„	1556 „	L	5	+0·1609	4 57 44·80	+0·38	+0·17	+1·67	+0·09	47·11	4 57 48·21	+ 0 1·10		+ 3·6
				„	δ Ursæ Minoris	L	4	+0·3596	6 9 31·30	+0·88	+0·51	+1·67		34·36	6 9 36·76	+ 0 2·40	+ 7·0	
				„	51 Cephei	U	4	−0·4198	6 45 58·13	−1·07	−0·81	−1·67	+0·06	54·64	6 45 51·59	− 0 3·05		
CHITTAGONG AND JALPAIGURI	CHITTAGONG (Latitude 22° 20′)	1883																
				E	δ Ursæ Minoris	L	3	+0 3598	6 9 5·27	+0·65	−0·17	+1·73		7·48	6 9 37·05	+ 0 29·57	−15·1	
		Jan. 12	*I.P.E.*	„	51 Cephei	U	2	−0·4208	6 45 13·05	−0·79	+0·28	−1·73	+0·04	10·85	6 45 52·18	+ 0 41·33		−11·5
				„	1958 Gr. 72	L	4	+0·1585	8 50 16·80	+0·28	−0·06	+1·73		18·75	8 50 51·05	+ 0 32·30	− 7·8	
				„	908 „	U	4	−0·1365	9 19 50·00	−0·27	+0·11	+1·73	+0·03	51·60	9 20 26·19	+ 0 34·59		
				E	δ Ursæ Minoris	L	3	+0·3598	6 9 0·83	+0·19	+0·36	+1·72		3·10	6 9 37·16	+ 0 34·06	− 5·2	
		„ 13	*I.P.W.*	„	51 Cephei	U	4	−0·4208	6 45 16·48	−0·23	−0·57	−1·72	+0·04	14·00	6 45 52·11	+ 0 38·11		− 5·8
				W	1958 Gr. 72	L	5	+0·1585	8 37 12·24	+0·08	+0·12	0·00		12·44	8 50 50·99	+13 38·55	− 6·4	
				„	908 „	U	5	−0·1365	9 6 46·06	−0·08	−0·23	0·00	+0·09	45·84	9 20 26·28	+13 40·44		
				E	δ Ursæ Minoris	L	4	+0·3598	6 8 58·25	+0·19	−0·21	0·00		58·23	6 9 37·29	+ 0 39·06	+ 2·1	
		„ 14	*I.P.E.*	„	51 Cephei	U	4	−0·4208	6 45 14·48	−0·23	+0·34	0·00	+0·04	14·63	6 45 52·03	+ 0 37·40		+ 5·6
				W	1958 Gr. 72	L	6	+0·1585	8 37 6·30	+0·08	−0·07	0·00		6·31	8 50 50·93	+13 44·62	+ 9·1	
				„	908 „	U	4	−0·1365	9 6 44·28	−0·08	+0·14	0·00	+0·09	44·43	9 20 26·38	+13 41·95		
				E	δ Ursæ Minoris	L	4	+0·3598	6 8 47·43	−0·53	+0·30	+1·67		48·87	6 9 37·42	+ 0 48·55	+22·2	
		„ 15	*I.P.W.*	„	51 Cephei	U	4	−0·4208	6 45 22·15	+0·65	−0·47	−1·67	+0·04	20·70	6 45 51·95	+ 0 31·25		+24·6
				W	1958 Gr. 72	L	5	+0·1585	8 36 60·88	−0·23	+0·10	−1·67		59·08	8 50 50·88	+13 51·80	+27·0	
				„	908 „	U	5	−0·1365	9 6 44·18	+0·22	−0·19	−1·67	+0·09	42·63	9 20 26·47	+13 43·84		

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant Δ	Observed Time of Transit	Corrections for Collimation	Corrections for Level	Corrections for Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
									h m s	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
CHITTAGONG AND JALPAIGURI	CHITTAGONG (Latitude 22° 20′)	1883		E	δ Ursæ Minoris	L	3	+0·3598	6 8 51·30	+0·68	+0·04	+1·70		53·72	6 9 37·67	+ 0 43·95		
																	+ 5·2	
		Jan. 17	*I.P.E.*	„	51 Cephei	U	3	−0·4208	6 45 14·50	−0·84	−0·06	−1·70	+0·04	11·94	6 45 51·81	+ 0 39·87		+6·2
				W	1958 Gr. 72	L	4	+0·1585	8 36 54·88	+0·29	+0·01	−1·70		53·48	8 50 50·76	+13 57·28		
																	+ 7·2	
				„	908 „	U	5	−0·1365	9 6 33·42	−0·29	−0·02	−1·70	+0·09	31·50	9 20 26·65	+13 55·15		
				E	δ Ursæ Minoris	L	3	+0·3598	6 8 50·60	+0·27	−0·06	+1·68		52·49	6 9 37·77	+ 0 45·28		
																	+ 0·8	
		„ 18	*I.P.W.*	„	51 Cephei	U	4	−0·4208	6 45 8·98	−0·33	+0·10	−1·68	+0·04	7·11	6 45 51·75	+ 0 44·64		+0·8
				W	1958 Gr. 72	L	5	+0·1585	8 36 52·06	+0·11	−0·02	−1·68		50·47	8 50 50·70	+13 60·23		
																	+ 0·8	
				„	908 „	U	5	−0·1365	9 6 28·42	−0·11	+0·04	−1·68	+0·09	26·76	9 20 26·74	+13 59·98		
	JALPAIGURI (Latitude 26° 31′)	1883		E	δ Ursæ Minoris	L	3	+0·3499	6 21 23·67	+0·23	+0·06	+1·45		25·41	6 9 37·05	−11 48·36		
																	+ 3·1	
		Jan. 12	*I.P.E.*	„	51 Cephei	U	3	−0·4053	6 57 44·63	−0·28	−0·09	−1·45	+0·04	42·85	6 45 52·18	−11 50·67		+6·6
				W	1958 Gr. 72	L	6	+0·1551	8 49 40·12	+0·05	+0·04	−1·45		38·76	8 50 51·05	+ 1 12·29		
																	+10·0	
				„	908 „	U	8	−0·1303	9 19 18·24	−0·05	−0·07	−1·45	+0·09	16·76	9 20 26·19	+ 1 9·43		
				E	δ Ursæ Minoris	L	6	+0·3499	6 21 24·05	+0·84	+0·46	+1·50		26·85	6 9 37·16	−11 49·69		
																	− 2·8	
		„ 13	*I.P.W.*	„	51 Cephei	U	3	−0·4053	6 57 42·87	−1·02	−0·70	−1·50	+0·04	39·69	6 45 52·11	−11 47·58		−1·2
				W	1958 Gr. 72	L	7	+0·1551	8 49 36·49	+0·64	+0·27	−1·50		35·90	8 50 50·99	+ 1 15·09		
																	+ 0·4	
				„	908 „	U	7	−0·1303	9 19 13·80	−0·62	−0·47	−1·50	+0·09	11·30	9 20 26·28	+ 1 14·98		
				E	δ Ursæ Minoris	L	5	+0·3499	6 21 26·24	+0·27	+0·03	+1·52		28·06	6 9 37·29	−11 50·77		
																	− 9·2	
		„ 14	*I.P.E.*	„	51 Cephei	U	3	−0·4053	6 57 37·67	−0·32	−0·05	−1·52	+0·04	35·82	6 45 52·03	−11 43·79		−3·0
				W	1958 Gr. 72	L	5	+0·1551	8 49 33·40	+0·13	+0·03	−1·52		32·04	8 50 50·93	+ 1 18·89		
																	+ 3·3	
				„	908 „	U	8	−0·1303	9 19 10·03	−0·13	−0·05	−1·52	+0·09	8·42	9 20 26·38	+ 1 17·96		
				E	δ Ursæ Minoris	L	5	+0·3499	6 21 22·08	+0·19	+0·10	+1·54		23·91	6 9 37·42	−11 46·49		
																	− 3·3	
		„ 15	*I.P.W.*	„	51 Cephei	U	3	−0·4053	6 57 37·87	−0·23	−0·16	−1·54	+0·04	35·98	6 45 51·95	−11 44·03		+2·1
				W	1958 Gr. 72	L	6	+0·1551	8 49 28·12	+0·08	+0·04	−1·54		26·70	8 50 50·88	+ 1 24·18		
																	+ 7·4	
				„	908 „	U	5	−0·1303	9 19 5·98	−0·08	−0·05	−1·54	+0·09	4·40	9 20 26·47	+ 1 22·07		
				E	δ Ursæ Minoris	L	5	+0·3499	6 21 17·42	−0·04	−0·27	+1·52		18·63	6 9 37·67	−11 40·96		
																	+ 3·5	
		„ 17	*I.P.E.*	„	51 Cephei	U	3	−0·4053	6 57 36·43	+0·05	+0·41	−1·52	+0·04	35·41	6 45 51·81	−11 43·60		+3·5
				E	δ Ursæ Minoris	L	4	+0·3499	6 21 16·63	+0·30	+0·10	+1·52		18·55	6 9 37·77	−11 40·78		
																	− 2·1	
		„ 18	*I.P.W.*	„	51 Cephei	U	3	−0·4053	6 57 32·93	−0·37	−0·16	−1·52	+0·04	30·92	6 45 51·75	−11 39·17		+3·7
				W	1958 Gr. 72	L	5	+0·1551	8 49 14·68	+0·20	+0·01	−1·52		13·37	8 50 50·70	+ 1 37·33		
																	+ 9·5	
				„	908 „	U	6	−0·1303	9 18 53·77	−0·19	−0·02	−1·52	+0·09	52·13	9 20 26·74	+ 1 34·61		

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1883							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
CHITTAGONG AND CALCUTTA	CHITTAGONG (Latitude 22° 20′)			E	51 Cephei	U	4	−0·4209	6 45 57·88	−0·37	−0·43	+1·68		58·76	6 45 51·58	− 0 7·18		
		Jan. 23	*I.P.W.*	„	λ Ursæ Minoris	L	2	+1·1468	7 39 40·35	+0·98	+0·98	−1·68	+0·09	40·72	7 39 39·86	− 0 0·86	+ 4·0	+ 4·4
				W	908 Gr. 72	U	4	−0·1365	9 6 38·43	−0·13	−0·18	−1·68		36·44	9 20 27·08	+13 51·28*	+ 4·7	
				E	51 Cephei	U	4	−0·4209	6 45 59·15	−0·05	+0·28	+1·70		61·08	6 45 51·48	− 0 9·60		
				„	λ Ursæ Minoris	L	3	+1·1468	7 39 39·67	+0·12	−0·63	−1·70	+0·09	37·55	7 39 39·83	+ 0 2·28	+ 7·6	
		„ 24	*I.P.E.*	W	1958 Gr. 72	L	5	+0·1585	8 36 56·98	+0·02	−0·06	+1·70		58·64	8 50 50·50	+13 51·86		+ 8·2
				„	908 „	U	5	−0·1365	9 6 39·48	−0·02	+0·11	−1·70	−0·02	37·85	9 20 27·14	+13 49·29	+ 8·7	
				E	51 Cephei	U	4	−0·4209	6 45 52·65	0·00	+0·16	+1·71		54·52	6 45 51·35	− 0 3·17		
				„	λ Ursæ Minoris	L	2	+1·1468	7 39 31·85	0·00	−0·36	−1·71	+0·09	29·87	7 39 39·90	+ 0 10·03	+ 8·4	
		„ 25	*I.P.W.*	W	1958 Gr. 72	L	6	+0·1585	8 36 57·55	0·00	−0·03	+1·71		59·23	8 50 50·47	+13 51·24		+ 10·7
				„	908 „	U	5	−0·1365	9 6 41·48	0·00	+0·06	−1·71	−0·02	39·81	9 20 27·21	+13 47·40	+13·0	
				E	51 Cephei	U	3	−0·4209	6 45 48·20	−0·84	−0·18	+1·71		48·89	6 45 51·19	+ 0 2·30		
				„	λ Ursæ Minoris	L	2	+1·1468	7 39 53·85	+2·22	+0·40	−1·71	+0·09	54·85	7 39 40·03	− 0 14·82	−10·9	
		„ 26	*I.P.E.*	W	1958 Gr. 72	L	6	+0·1585	8 37 1·73	+0·29	+0·04	+1·71		3·77	8 50 50·43	+13 46·66		− 10·3
				„	908 „	U	5	−0·1365	9 6 39·84	−0·29	−0·07	−1·71	−0·02	37·75	9 20 27·28	+13 49·53	− 9·7	
				E	51 Cephei	U	3	−0·4209	6 45 46·97	+0·05	−0·26	+1·72		48·48	6 45 50·82	+ 0 2·34		
				„	λ Ursæ Minoris	L	3	+1·1468	7 39 21·17	−0·12	+0·58	−1·72	+0·09	20·00	7 39 40·48	+ 0 20·48	+11·6	
		„ 28	*I.P.W.*	W	1958 Gr. 72	L	5	+0·1585	8 37 0·96	−0·02	+0·05	+1·72		2·71	8 50 50·37	+13 47·66		+ 11·9
				„	908 „	U	5	−0·1365	9 6 45·14	+0·02	−0·10	−1·72	−0·02	43·32	9 20 27·41	+13 44·09	+12·1	
				E	51 Cephei	U	4	−0·4209	6 45 41·03	−1·02	+0·06	+1·70		41·77	6 45 50·62	+ 0 8·85		
				„	λ Ursæ Minoris	L	2	+1·1468	7 39 37·50	+2·71	−0·13	−1·70	+0·09	38·47	7 39 40·75	+ 0 2·28	− 4·2	
		„ 29	*I.P.E.*	W	1958 Gr. 72	L	5	+0·1585	8 37 1·12	+0·36	−0·01	+1·70		3·17	8 50 50·34	+13 47·17		− 1·4
				„	908 „	U	5	−0·1365	9 6 42·80	−0·35	+0·02	−1·70	−0·02	40·75	9 20 27·48	+13 46·73	+ 1·5	
				E	51 Cephei	U	3	−0·4209	6 45 37·80	−0·84	−0·04	+1·69		38·61	6 45 50·42	+ 0 11·81		
				„	λ Ursæ Minoris	L	2	+1·1468	7 39 23·65	+2·22	+0·09	−1·69	+0·09	24·36	7 39 41·04	+ 0 16·68	+ 3·1	
		„ 30	*I.P.W.*	W	1958 Gr. 72	L	5	+0·1585	8 37 1·74	+0·29	+0·01	+1·69		3·73	8 50 50·30	+13 46·57		+ 2·3
				„	908 „	U	5	−0·1365	9 6 43·44	−0·29	−0·02	−1·69	−0·02	41·42	9 20 27·54	+13 46·12	+ 1·5	
		1883																
	CALCUTTA (Latitude 22° 33′)			E	51 Cephei	U	3	−0·4202	6 59 51·00	−0·56	−0·72	+1·56		51·28	6 45 51·58	−13 59·70		
		Jan. 23	*I.P.W.*	„	λ Ursæ Minoris	L	1	+1·1451	7 53 43·60	+1·48	+1·62	−1·56	+0·09	45·23	7 39 39·86	−13 65·37	− 3·6	
				W	1958 Gr. 72	L	5	+0·1584	8 50 51·82	+0·30	+0·18	+1·56		53·86	8 50 50·53	− 0 3·33		− 2·1
				„	908 „	U	4	−0·1362	9 20 32·48	−0·29	−0·36	−1·56	−0·02	30·25	9 20 27·08	− 0 3·17	− 0·5	

* True Clock correction deduced from the following day.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Level	Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1883							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
CHITTAGONG AND CALCUTTA	CALCUTTA (Latitude 22° 33′)			E	51 Cephei	U	4	−0·4202	6 59 58·88	+0·74	+1·01	+1·57		62·20	6 45 51·48	−14 10·72		
				„	λ Ursæ Minoris	L	1	+1·1451	7 53 10·30	−1·97	−2·30	−1·57	+0·09	4·55	7 39 39·83	−13 24·72	+29·4	
		Jan. 24	*I.P.E.*	W	1958 Gr. 72	L	5	+0·1584	8 50 49·46	−0·46	−0·21	+1·57		50·36	8 50 50·50	+ 0 0·14		+29·7
				„	908 „	U	5	−0·1362	9 20 36·58	+0·44	+0·41	−1·57	−0·02	35·84	9 20 27·14	− 0 8·70	+30·0	
				E	51 Cephei	U	4	−0·4202	6 59 56·88	−0·46	+0·48	+1·56		58·46	6 45 51·35	−14 7·11		
				„	λ Ursæ Minoris	L	2	+1·1451	7 53 8·80	+1·23	−1·08	−1·56	+0·09	7·48	7 39 39·90	−13 27·58	+25·3	
		„ 25	*I.P.W.*	W	1958 Gr. 72	L	5	+0·1584	8 50 50·50	+0·18	−0·14	+1·56		52·10	8 50 50·47	− 0 1·63		+27·3
				„	908 „	U	5	−0·1362	9 20 38·96	−0·17	+0·27	−1·56	−0·02	37·48	9 20 27·21	− 0 10·27	+29·3	
				E	51 Cephei	U	4	−0·4202	6 59 57·68	−0·42	+2·03	+1·55		60·84	6 45 51·19	−14 9·65		
				„	λ Ursæ Minoris	L	3	+1·1451	7 52 57·50	+1·11	−4·60	−1·55	+0·09	52·55	7 39 40·03	−13 12·52	+36·5	
		„ 26	*I.P.E.*	W	1958 Gr. 72	L	6	+0·1584	8 50 50·43	+0·26	−0·39	+1·55		51·85	8 50 50·43	− 0 1·42		+36·6
				„	908 „	U	8	−0·1362	9 20 40·58	−0·25	+0·75	−1·55	−0·02	39·51	9 20 27·28	− 0 12·23	+36·7	
				E	51 Cephei	U	5	−0·4202	6 59 53·62	+0·79	+0·34	+1·57		56·32	6 45 50·82	−14 5·50		
				„	λ Ursæ Minoris	L	2	+1·1451	7 52 51·45	−2·09	−0·77	−1·57	+0·09	47·11	7 39 40·48	−13 6·63	+37·6	
		„ 28	*I.P.W.*	W	1958 Gr. 72	L	6	+0·1584	8 50 51·60	−0·41	−0·09	+1·57		52·67	8 50 50·37	− 0 2·30		+39·1
				„	908 „	U	5	−0·1362	9 20 42·68	+0·40	+0·17	−1·57	−0·02	41·66	9 20 27·41	− 0 14·25	+40·6	
				E	51 Cephei	U	4	−0·4202	6 59 41·68	+0·28	+0·40	+1·57		43·93	6 45 50·62	−13 53·31		
				„	λ Ursæ Minoris	L	3	+1·1451	7 53 12·33	−0·74	−0·90	−1·57	+0·09	9·21	7 39 40·75	−13 28·46	+15·9	
		„ 29	*I.P.E.*	W	1958 Gr. 72	L	5	+0 1584	8 50 54·88	−0·15	−0·10	+1·57		56·20	8 50 50·34	− 0 5·86		+17·6
				„	908 „	U	6	−0·1362	9 20 40·28	+0·14	+0·19	−1·57	−0·02	39·02	9 20 27·48	− 0 11·54	+19·3	
				E	51 Cephei	U	4	−0·4202	6 59 37·10	−0·32	−0·24	+1·55		38·09	6 45 50·42	−13 47·67		
				„	λ Ursæ Minoris	L	3	+1·1451	7 53 15·07	+0·86	+0·54	−1·55	+0·09	15·01	7 39 41·04	−13 33·97	+ 8·8	
		„ 30	*I.P.W.*	W	1958 Gr. 72	L	7	+0·1584	8 50 55·53	+0·31	+0·05	+1·55		57·44	8 50 50·30	− 0 7·14		+ 9·3
				„	908 „	U	6	−0·1362	9 20 39·53	−0·30	−0·10	−1·55	−0·02	37·56	9 20 27·54	− 0 10·02	+ 9·8	
		1883																
CALCUTTA AND FYZABAD	CALCUTTA (Latitude 22° 33′)			E	λ Ursæ Minoris	L	2	+1·1433	7 38 43·30	−0·61	−1·53	+1·63		42·79	7 39 43·26	+ 0 60·47		
				„	815 Gr. 72	U	3	−0·6410	8 20 10·70	+0·36	+1·11	+1·63	+0·02	13·82	8 20 59·53	+ 0 45·71	+ 8·3	
		Feb. 8	*I.P.E.*	„	2209 „	L	3	+0·3654	11 26 50·03	−0·19	−0·43	−1·63		47·78	11 27 38·96	+ 0 51·18		+10·4
				„	1138 „	U	3	−0·7096	12 13 58·30	+0·39	+1·08	−1·63	+0·02	58·16	12 14 35·93	+ 0 37·77	+12·4	
				E	λ Ursæ Minoris	L	2	+1·1433	7 38 42·25	+3·44	−2·34	+1·64		44·99	7 39 43·73	+ 0 58·74		
		„ 9	*I.P.W.*	„	815 Gr. 72	U	3	−0·6410	8 20 12·37	−2·02	−0·56	+1·64	+0·02	11·45	8 20 59·47	+ 0 48·02	+ 6·0	+ 6·0

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Level	Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
									h m s	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
CALCUTTA AND FYZABAD	CALCUTTA (Latitude 22° 33′)	1883		E	λ Ursæ Minoris	L	2	+1·1433	7 38 45·75	−0·86	+2·79	+1·63		49·31	7 39 44·28	+ 0 54·97		
																	+ 2·8	
		Feb. 10	*I.P.E.*	„	815 Gr. 72	U	5	−0·6410	8 20 9·32	+0·50	−2·03	+1·63	+0·02	9·44	8 20 59·41	+ 0 49·97		
																		+2·8
				„	2209 „	L	3	+0·3654	11 26 44·83	+3·60	+0·79	−1·63		47·59	11 27 38·58	+ 0 50·99		
																	+ 2·8	
				„	1138 „	U	2	−0·7096	12 13 60·00	−7·24	−1·98	−1·63	+0·02	49·17	12 14 37·03	+ 0 47·86		
				E	α Hydræ	U	10	+0·0116	9 21 0·83	−0·09	−0·10	+1·62		2·26	9 21 52·71	+ 0 50·45		
																	+ 8·4	
		„ 11	*I.P.W.*	„	0 Ursæ Majoris	U	13	−0·0182	9 24 13·18	−0·15	−0·16	+1·62	0·00	14·49	9 25 4·69	+ 0 50·20		
																		+6·4
				„	2209 Gr. 72	L	4	+0·3654	11 26 46·83	+1·59	+0·62	−1·62		47·42	11 27 38·39	+ 0 50·97		
																	+ 4·3	
				„	1138 „	U	3	−0·7096	12 13 57·63	−3·19	−1·56	−1·62	+0·02	51·28	12 14 37·58	+ 0 46·30		
				E	λ Ursæ Minoris	L	2	+1·1433	7 38 42·55	−1·84	+2·34	+1·64		44·69	7 39 46·08	+ 0 61·39		
																	+ 6·3	
		„ 13	*I.P.E.*	„	815 Gr. 72	U	5	−0·6410	8 20 8·04	+1·08	−1·70	+1·64	+0·02	9·08	8 20 59·23	+ 0 50·15		
																		+8·2
				„	2209 „	L	4	+0·3654	11 26 44·83	−0·58	+0·66	−1·64		43·27	11 27 38·01	+ 0 54·74		
																	+10·1	
				„	1138 „	U	3	−0·7096	12 13 56·97	+1·17	−1·66	−1·64	+0·02	54·86	12 14 38·68	+ 0 43·82		
				E	λ Ursæ Minoris	L	2	+1·1433	7 38 52·90	+5·53	+1·44	+1·63		61·50	7 39 46·63	+ 0 45·13		
																	− 6·1	
		„ 14	*I.P.W.*	„	815 Gr. 72	U	5	−0·6410	8 20 5·72	−3·24	−1·05	+1·63	+0·02	3·08	8 20 59·17	+ 0 56·09		
																		−9·3
				„	2200 „	L	4	+0·3654	11 26 50·70	+1·74	+0·41	−1·63		51·22	11 27 37·82	+ 0 46·60		
																	−12·4	
				„	1138 „	U	3	−0·7096	12 13 45·47	−3·50	−1·02	−1·63	+0·02	39·34	12 14 39·23	+ 0 59·89		
	FYZABAD (Latitude 26° 47′)	1883		W	λ Ursæ Minoris	L	2	+1·1070	7 39 42·05	+0·61	+1·22	+1·67		45·55	7 39 43·26	− 0 2·29		
																	+ 0·3	
		Feb. 8	*I.P.E.*	„	815 Gr. 72	U	5	−0·6151	8 21 1·72	−0·36	−0·86	+1·67	+0·11	2·28	8 20 59·53	− 0 2·75		
																		−0·9
				„	2200 „	L	4	+0·3551	11 27 44·95	+0·19	+0·35	−1·67		43·82	11 27 38·96	− 0 4·86		
																	− 2·0	
				„	1138 „	U	2	−0·6841	12 14 41·60	−0·39	−0·85	−1·67	+0·12	38·81	12 14 35·93	− 0 2·88		
				W	λ Ursæ Minoris	L	3	+1·1070	7 39 35·83	+1·60	+2·40	+1·66		41·49	7 39 43·73	+ 0 2·24		
																	+ 5·4	
		„ 9	*I.P.W.*	„	815 Gr. 72	U	8	−0·6151	8 21 7·31	−0·94	−1·68	+1·66	+0·11	6·46	8 20 59·47	− 0 6·99		
																		+2·8
				„	815 „	U	8	−0·6151	8 21 7·31	−0·94	−1·68	+1·66		6·35	8 20 59·47	− 0 6·88		
																	+ 0·1	
				„	2209 „	L	4	+0·3551	11 27 45·50	+0·50	+0·69	−1·66	+0·49	45·52	11 27 38·77	− 0 6·75		
				W	λ Ursæ Minoris	L	3	+1·1070	7 39 43·17	+0·74	+1·87	+1·67		47·45	7 39 44·28	− 0 3·17		
																	+ 5·0	
		„ 10	*I.P.E.*	„	815 Gr. 72	U	5	−0·6151	8 21 11·18	−0·43	−1·31	+1·67	+0·11	11·22	8 20 59·41	− 0 11·81		
																		+3·7
				„	2209 „	L	4	+0·3551	11 27 50·32	+0·23	+0·54	−1·67		49·42	11 27 38·58	− 0 10·84		
																	+ 2·3	
				„	1138 „	U	2	−0·6841	12 14 53·70	−0·47	−1·30	−1·67	+0·12	50·38	12 14 37·03	− 0 13·35		
				W	λ Ursæ Minoris	L	2	+1·1070	7 39 52·80	+1·35	+2·56	+1·66		58·37	7 39 44·89	− 0 13·48		
				„	815 Gr. 72	U	2	−0·6151	8 21 13·25	−0·79	−1·80	+1·66	+0·11	12·43	8 20 59·35	− 0 13·08	− 0·2	
		„ 11	*I.P.W.*	„	2209 „	L	4	+0·3551	11 27 53·80	+0·43	+0·74	−1·66		53·31	11 27 38·39	− 0 14·92		+1·2
				„	1138 „	U	3	−0·6841	12 14 59·50	−0·86	−1·78	−1·66	+0·12	55·32	12 14 37·58	− 0 17·74	+ 2·6	

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
									h m s	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
CALCUTTA AND FYZABAD	FYZABAD (Latitude 26° 47′)	1883		W	λ Ursæ Minoris	L	2	+1·1070	7 40 3·60	+1·35	+0·74	+1·66		7·35	7 39 46·08	− 0 21·27		
																	+ 0·4	
		Feb. 13	*I.P.E.*	„	815 Gr. 72	U	5	−0·6151	8 21 20·66	−0·79	−0·52	+1·66	+0·11	21·12	8 20 59·23	− 0 21·89		
																		− 1·4
				„	2209 „	L	4	+0·3551	11 28 2·35	+0·43	+0·22	−1·66		1·34	11 27 38·01	− 0 23·33		
																	− 3·2	
				„	1138 „	U	2	−0·6841	12 14 61·70	−0·86	−0·52	−1·66	+0·12	58·78	12 14 38·68	− 0 20·10		
				W	λ Ursæ Minoris	L	2	+1·1070	7 40 0·95	+2·46	−2·77	+1·67		2·31	7 39 46·63	− 0 15·68		
																	+ 6·4	
		„ 14	*I.P.W.*	„	815 Gr. 72	U	5	−0·6151	8 21 23·58	−1·44	+1·94	+1·67	+0·11	25·86	8 20 59·17	− 0 26·69		
																		+ 5·6
				„	2209 „	L	4	+0·3551	11 28 3·78	+0·77	−0·80	−1·67		2·08	11 27 37·82	− 0 24·26		
																	+ 4·7	
				„	1138 „	U	3	−0·6841	12 15 9·67	−1·56	+1·92	−1·67	+0·12	8·48	12 14 39·23	− 0 29·25		
CALCUTTA AND JUBBULPORE	CALCUTTA (Latitude 22° 33′)	1883		E	1958 Gr. 72	L	5	+0·1584	8 50 49·02	+0·44	+0·04	+1·63		51·13	8 50 50·78	− 0 0·35		
																	+23·2	
		Feb. 22	*I.P.W.*	„	1138 „	U	4	−0·7096	12 15 4·33	−2·37	−0·29	+1·63	+0·16	3·46	12 14 42·97	− 0 20·49		
																		+22·8
				„	2209 „	L	4	+0·3654	11 27 30·13	+1·04	+0·11	+1·63		32·91	11 27 36·63	+ 0 3·72		
																	+22·4	
				„	1138 „	U	4	−0·7096	12 15 4·33	−2·37	−0·29	+1·63	+0·04	3·34	12 14 42·97	− 0 20·37		
				E	1958 Gr. 72	L	5	+0·1584	8 50 49·06	−0·33	+0·12	+1·63		50·48	8 50 50·82	+ 0 0·34		
																	+13·6	
		„ 23	*I.P.E.*	„	908 „	U	4	−0·1362	9 20 32·95	+0·32	−0·23	−1·63	+0·02	31·43	9 20 27·75	− 0 3·68		
																		+10·1
				„	2209 „	L	4	+0·3654	11 27 37·80	−0·77	+0·37	−1·63		35·77	11 27 36·51	+ 0 0·74		
																	+ 6·5	
				„	1138 „	U	4	−0·7096	12 14 50·55	+1·56	−0·93	−1·63	+0·04	49·59	12 14 43·32	− 0 6·27		
				E	1958 Gr. 72	L	4	+0·1584	8 50 47·08	+0·62	+0·21	+1·64		49·55	8 50 50·89	+ 0 1·34		
																	+19·4	
		„ 24	*I.P.W.*	„	908 „	U	5	−0·1362	9 20 34·72	−0·60	−0·41	−1·64	+0·02	32·09	9 20 27·71	− 0 4·38		
																		+19·1
				„	2209 „	L	4	+0·3654	11 27 31·40	+1·47	+0·65	−1·64		31·88	11 27 36·42	+ 0 4·54		
																	+18·7	
				„	1138 „	U	3	−0·7096	12 14 65·43	−2·96	−1·63	−1·64	+0·04	59·24	12 14 43·67	− 0 15·57		
				E	1958 Gr. 72	L	3	+0·1584	8 50 46·10	−0·46	−0·39	+1·63		46·88	8 50 51·16	+ 0 4·28		
																	− 0·2	
		„ 28	*I.P.E.*	„	908 „	U	5	−0·1362	9 20 23·64	+0·44	+0·76	−1·63	+0·02	23·23	9 20 27·56	+ 0 4·33		
																		+ 0·7
				„	2209 „	L	3	+0·3654	11 27 35·70	−1·08	−1·20	−1·63		31·79	11 27 36·07	+ 0 4·28		
																	+ 1·5	
				„	1138 „	U	3	−0·7096	12 14 38·87	+2·18	+3·00	−1·63	+0·04	42·46	12 14 45·08	+ 0 2·62		
				E	1958 Gr. 72	L	4	+0·1584	8 50 41·55	+0·36	−0·24	+1·63		43·30	8 50 51·29	+ 0 7·99		
																	+ 8·1	
		Mar. 2	*I.P.W.*	„	908 „	U	4	−0·1362	9 20 23·35	−0·35	+0·48	−1·63	+0·02	21·87	9 20 27·48	+ 0 5·61		
																		+ 5·8
				„	2209 „	L	4	+0·3654	11 27 28·98	+0·85	−0·75	−1·63		27·45	11 27 35·89	+ 0 8·44		
																	+ 3·5	
				„	1138 „	U	3	−0·7096	12 14 42·53	−1·71	+1·88	−1·63	+0·04	41·11	12 14 45·78	+ 0 4·67		
				E	908 Gr. 72	U	2	−0·1362	9 20 21·25	+0·41	+0·74	−1·63		20·77	9 20 27·44	+ 0 6·67		
																	+ 5·8	
		„ 3	*I.P.E.*	„	2209 „	L	3	+0·3654	11 27 29·93	−1·01	−1·16	−1·63	+0·10	26·23	11 27 35·79	+ 0 9·56		
																		+ 5·6
				„	2209 „	L	3	+0·3654	11 27 29·93	−1·01	−1·16	−1·63		26·13	11 27 35·79	+ 0 9·66		
																	+ 5·3	
				„	1138 „	U	3	−0·7096	12 14 38·87	+2·02	+2·90	−1·63	+0·04	42·20	12 14 46·14	+ 0 3·94		

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
									h m s	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
CALCUTTA AND JUBBULPORE	JUBBULPORE (Latitude 23° 10′)	1883 Feb. 22	*I.P.W.*	E	1958 Gr. 72	L	3	+0·1579	9 24 23·13	+0·25	−0·04	+1·69		25·03	8 50 50·78	−33 34·25	+41·3	+42·2
				„	908 „	U	4	−0·1354	9 54 16·02	−0·24	+0·07	−1·69	+0·02	14·18	9 20 27·79	−33 46·39		
				W	2209 „	L	4	+0·3639	11 27 17·12	+0·58	−0·12	−1·69		15·89	11 27 36·63	+ 0 20·74	+43·1	
				„	1138 „	U	2	−0·7066	12 15 11·10	−1·17	+0·29	−1·69	−0·14	8·39	12 14 42·97	− 0 25·42		
		„ 23	*I.P.E.*	E	1958 Gr. 72	L	5	+0·1579	9 24 28·34	+0·11	+0·07	+1·70		30·22	8 50 50·85	−33 39·37	+ 2·9	+ 2·2
				„	908 „	U	7	−0·1354	9 54 9·94	−0·11	−0·14	−1·70	+0·02	8·01	9 20 27·75	−33 40·26		
				W	2209 „	L	4	+0·3639	11 27 28·52	+0·27	+0·22	−1·70		27·31	11 27 36·55	+ 0 9·24	+ 1·4	
				„	1138 „	U	2	−0·7066	12 14 38·55	−0·54	−0·56	−1·70	−0·14	35·61	12 14 43·32	+ 0 7·71		
		„ 24	*I.P.W.*	W	ε Corvi	U	10	+0·0172	12 3 56·65	−0·03	−0·01	−1·75		54·86	12 4 9·19	+ 0 14·33	+29·9	+29·6
				„	1138 Gr. 72	U	3	−0·7066	12 14 53·93	−1·01	−0·13	−1·75	−0·03	51·01	12 14 43·67	− 0 7·34		
				„	1138 „	U	3	−0·7066	12 14 53·93	−1·01	−0·13	−1·75		51·04	12 14 43·67	− 0 7·37	+29·3	
				„	α Crucis	U	18	+0·0485	12 19 57·41	−0·06	0·00	−1·75	−0·02	55·58	12 20 10·33	+ 0 14·75		
		„ 28	*I.P.E.*	E	1958 Gr. 72	L	5	+0·1579	9 24 19·06	+0·21	−0·03	+1·69		20·93	8 50 51·19	−33 29·74	+24·7	+25·1
				„	908 „	U	5	−0·1354	9 54 6·40	−0·21	+0·06	−1·69	+0·02	4·58	9 20 27·56	−33 37·02		
				W	2209 „	L	4	+0·3639	11 26 54·05	+0·50	−0·09	−1·69		52·77	11 27 36·11	+ 0 43·34	+25·5	
				„	1138 „	U	3	−0·7066	12 14 31·70	−1·01	+0·23	−1·69	−0·14	29·09	12 14 45·08	+ 0 15·99		
		Mar. 2	*I.P.W.*	W	λ Ursæ Minoris	L	2	+1·1372	7 38 18·95	+0·74	−0·97	+1·69		20·41	7 39 57·63	+ 1 37·22	+48·1	+48·7
				„	908 Gr. 72	U	5	−0·1354	9 19 50·00	−0·10	+0·17	+1·69	−0·31	51·45	9 20 27·48	+ 0 36·03		
				„	2209 „	L	3	+0·3639	11 26 36·77	+0·23	−0·28	−1·69		35·03	11 27 35·93	+ 1 0·90	+49·2	
				„	1138 „	U	2	−0·7066	12 14 39·15	−0·47	+0·69	−1·69	−0·14	37·54	12 14 45·79	+ 0 8·25		
		„ 3	*I.P.E.*	W	1961 Gr. 72	L	9	+0·1275	8 51 54·46	+0·16	+0·01	+1·68		56·31	8 52 45·60	+ 0 49·29	+20·9	+19·4
				„	908 „	U	5	−0·1354	9 19 42·30	−0·19	−0·02	+1·68	−0·08	43·69	9 20 27·44	+ 0 43·75		
				„	2209 „	L	3	+0·3639	11 26 42·70	+0·46	+0·03	−1·68		41·51	11 27 35·84	+ 0 54·33	+17·9	
				„	1138 „	U	2	−0·7066	12 14 13·80	−0·93	−0·07	−1·68	−0·14	10·98	12 14 46·14	+ 0 35·16		
FYZABAD AND JUBBULPORE	FYZABAD (Latitude 26° 47′)	1883 Mar. 14	*I.P.E.*	E	981 Gr. 72	U	5	−0·1571	10 17 9·92	+0·30	+0·44	−1·39		9·27	10 16 52·32	− 0 16·95	−17·9	−17·9
				„	2109 „	L	3	+0·2665	10 22 41·73	−0·46	−0·46	−1·39	−0·02	39·40	10 22 14·89	− 0 24·51		
		„ 15	*I.P.W.*	E	981 Gr. 72	U	4	−0·1571	10 17 17·63	−0·06	+0·93	−1·38		17·12	10 16 52·25	− 0 24·87	− 4·4	− 6·3
				„	2109 „	L	5	+0·2665	10 22 44·02	+0·09	−0·97	−1·38	−0·02	41·74	10 22 15·00	− 0 26·74		
				W	2209 „	L	3	+0·3551	11 18 49·63	+0·12	−1·37	−1·38		47·00	11 27 35·57	+ 8 48·57	− 8·1	
				„	1138 „	U	3	−0·6841	12 5 49·87	−0·23	+3·30	−1·38	+0·06	51·62	12 14 48·58	+ 8 56·96		

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Level	Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
									h m s	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
FYZABAD AND JUBBULPORE	FYZABAD (Latitude 26° 47′)	1883		E	981 Gr. 72	U	5	−0·1571	10 17 25·46	+0·13	+0·24	−1·38		24·45	10 16 52·18	− 0 32·27		
				„	2109 „	L	4	+0·2665	10 22 47·40	−0·20	−0·25	−1·38	−0·02	45·55	10 22 15·10	− 0 30·45	+ 4·3	
		Mar. 16	*I.P.E.*	W	2209 „	L	3	+0·3551	11 18 47·27	−0·27	−0·35	−1·38		45·27	11 27 35·62	+ 8 50·35		− 0·9
				„	1138 „	U	3	−0·6841	12 5 51·90	+0·54	+0·85	−1·38	+0·06	51·97	12 14 48·66	+ 8 56·69	− 6·1	
				E	981 Gr. 72	U	4	−0·1571	10 17 30·70	+0·04	−0·08	−1·39		29·27	10 16 52·12	− 0 37·15		
		„	17	*I.P.W.*	„	2109 „	L	4	+0·2665	10 22 53·15	−0·06	+0·09	−1·39	−0·02	51·77	10 22 15·20	− 0 36·57	+ 1·4	
				W	2209 „	L	4	+0·3551	11 18 43·30	−0·08	+0·12	−1·39		41·95	11 27 35·66	+ 8 53·71		− 1·1
				„	1138 „	U	3	−0·6841	12 5 52·73	+0·16	−0·30	−1·39	+0·06	51·26	12 14 48·74	+ 8 57·48	− 3·6	
				E	981 Gr. 72	U	5	−0·1571	10 17 34·54	−0·25	−0·11	−1·38		32·80	10 16 52·05	− 0 40·75		
		„	18	*I.P.E.*	„	2109 „	L	4	+0·2665	10 22 58·48	+0·37	+0·12	−1·38	−0·02	57·57	10 22 15·31	− 0 42·26	− 3·6	
				W	2209 „	L	4	+0·3551	11 18 40·83	+0·50	+0·17	−1·38		40·12	11 27 35·70	+ 8 55·58		− 2·9
				„	1138 „	U	3	−0·6841	12 5 53·73	−1·01	−0·41	−1·38	+0·06	50·99	12 14 48·82	+ 8 57·83	− 2·2	
				E	981 Gr. 72	U	5	−0·1571	10 17 42·22	+0·30	+0·93	−1·39		42·06	10 16 51·98	− 0 50·08		
		„	19	*I.P.W.*	„	2109 „	L	4	+0·2665	10 23 5·35	−0·46	−0·97	−1·39	−0·02	2·51	10 22 15·41	− 0 47·10	+ 7·0	
				W	2209 „	L	3	+0·3551	11 18 38·83	−0·62	−1·37	−1·39		35·45	11 27 35·74	+ 8 59·29		+ 5·7
				„	1138 „	U	3	−0·6841	12 5 50·33	+1·24	+3·93	−1·39	+0·06	54·17	12 14 48·90	+ 8 54·73	+ 4·4	
				E	981 Gr. 72	U	5	−0 1571	10 17 48·76	−0·36	+0·15	−1·39		47·16	10 16 51·91	− 0 55·25		
		„	20	*I.P.E.*	„	2109 „	L	4	+0·2665	10 23 9·78	+0·55	−0·15	−1·39	−0·02	8·77	10 22 15·52	− 0 53·25	+ 4·7	
				W	2209 „	L	3	+0·3551	11 18 34·30	+0·74	−0·22	+1·39		36·21	11 27 35·78	+ 8 59·57		+ 1·3
				„	1138 „	U	3	−0·6841	12 5 49·57	−1·48	+0·52	−1·39	+0·06	47·28	12 14 48·99	+ 9 1·71	− 2·1	
	JUBBULPORE (Latitude 23° 10′)	1883		E	981 Gr. 72	U	2	−0·1634	10 25 59·70	+0·13	+0·14	−1·69		58·28	10 16 52·32	− 9 5·96		
				„	2109 „	L	1	+0·2728	10 31 19·00	−0·20	−0·14	−1·69	−0·02	16·95	10 22 14·89	− 9 2·06	+ 8·7	
		Mar. 14	*I.P.E.*	W	1138 „	U	2	−0·7066	12 14 51·85	+0·39	+0·49	−1·69		51·04	12 14 48·50	− 0 2·54		+ 7·6
				„	α Ursæ Minoris	L	2	+0·9126	13 15 22·50	−0·49	−0·55	−1·69	+0·08	19·85	13 15 27·72	+ 0 7·87	+ 6·4	
				E	981 Gr. 72	U	4	−0·1634	10 26 6·10	−0·40	+0·03	−1·70		4·03	10 16 52·25	− 9 11·78		
		„	15	*I.P.W.*	„	2109 „	L	4	+0·2728	10 31 25·35	+0·60	−0·03	−1·70	−0·02	24·20	10 22 15·00	− 9 9·20	+ 5·9	
				W	2209 „	L	3	+0·3639	11 27 27·87	+1·12	0·00	−1·70		27·29	11 27 35·57	+ 0 8·28		+ 5·6
				„	1138 „	U	3	−0·7066	12 14 49·90	−2·26	0·00	−1·70	+0·06	46·00	12 14 48·58	+ 0 2·58	+ 5·3	
				E	981 Gr. 72	U	4	−0·1634	10 26 12·70	+0·08	−0·09	−1·69		11·00	10 16 52·18	− 9 18·82		
		„	16	*I.P.E.*	„	2109 „	L	4	+0·2728	10 31 29·23	−0·12	+0·09	−1·69	−0·02	27·49	10 22 15·10	− 9 12·39	+14·7	
				W	2209 „	L	3	+0·3639	11 27 24·93	−0·46	+0·16	−1·69		22·94	11 27 35·62	+ 0 12·68		+14·9
				„	1138 „	U	3	−0·7066	12 14 53·13	+0·93	−0·39	−1·69	+0·06	52·04	12 14 48·66	− 0 3·38	+15·0	

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1883							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
FYZABAD AND JUBBULPORE	JUBBULPORE (Latitude 23° 10′)			E	981 Gr. 72	U	5	−0·1634	10 26 20·42	−0·23	−0·11	−1·71		18·37	10 16 52·12	− 9 26·25		
																	+25·8	
				,,	2109 ,,	L	4	+0·2728	10 31 31·48	+0·35	+0·11	−1·71	−0·02	30·21	10 22 15·20	− 9 15·01		
		Mar. 17	*I.P.W.*															+23·8
				W	2209 ,,	L	3	+0·3639	11 27 17·90	+0·85	+0·18	−1·71		17·22	11 27 35·66	+ 0 18·44		
																	+21·8	
				,,	1138 ,,	U	3	−0·7066	12 14 57·43	−1·71	−0·46	−1·71	+0·06	53·61	12 14 48·74	− 0 4·87		
				E	981 Gr. 72	U	4	−0·1634	10 26 24·18	0·00	−0·06	−1·71		22·41	10 16 52·05	− 9 30·36		
																	+18·1	
				,,	2109 ,,	L	4	+0·2728	10 31 39·45	0·00	+0·06	−1·71	−0·02	37·78	10 22 15·31	− 9 22·47		
		,, 18	*I.P.E.*															+16·4
				W	2209 ,,	L	3	+0·3639	11 27 19·67	−0·35	+0·13	−1·71		17·74	11 27 35·70	+ 0 17·96		
																	+14·7	
				,,	1138 ,,	U	3	−0·7066	12 14 47·93	+0·70	−0·33	−1·71	+0·06	46·65	12 14 48·82	+ 0 2·17		
				E	981 Gr. 72	U	4	−0·1634	10 26 31·40	−0·06	+0·09	−1·70		29·73	10 16 51·98	− 9 37·75		
																	+26·2	
				,,	2109 ,,	L	4	+0·2728	10 31 43·48	+0·09	−0·09	−1·70	−0·02	41·76	10 22 15·41	− 9 26·35		
		,, 19	*I.P.W.*															+23·7
				W	2209 ,,	L	3	+0·3639	11 27 15·20	+0·31	+0·05	−1·70		13·86	11 27 35·74	+ 0 21·88		
																	+21·2	
				,,	1138 ,,	U	3	−0·7066	12 14 52·13	−0·62	−0·14	−1·70	+0·06	49·73	12 14 48·90	− 0 0·83		
				E	981 Gr. 72	U	4	−0·1634	10 26 37·93	+0·02	−0·02	−1·69		36·24	10 16 51·91	− 9 44·33		
																	+31·8	
				,,	2109 ,,	L	4	+0·2728	10 31 47·70	−0·03	+0·02	−1·69	−0·02	45·98	10 22 15·52	− 9 30·46		
		,, 20	*I.P.E.*															+31·7
				W	2209 ,,	L	3	+0·3639	11 27 10·97	−0·50	0·00	−1·69		8·78	11 27 35·78	+ 0 27·00		
																	+31·5	
				,,	1138 ,,	U	3	−0·7066	12 14 56·33	+1·01	0·00	−1·69	+0·06	55·71	12 14 48·99	− 0 6·72		
		1883																
FYZABAD AND AGRA	FYZABAD (Latitude 26° 47′)			E	1002 Gr. 72	U	4	−0·1172	10 31 36·30	+0·23	+0·57	+1·40		38·50	10 32 0·82	+ 0 22·32		
																	− 1·7	
				,,	2154 ,,	L	4	+0·1634	10 47 26·23	−0·28	−0·39	+1·40	−0·06	26·90	10 47 48·73	+ 0 21·83		
				W	1191 ,,	U	4	−0·1826	12 31 46·45	+0·35	+0·88	+1·40		49·08	12 48 17·23	+16 28·15		− 1·1
		Mar. 28	*I.P.E.*															
				,,	1192 ,,	U	4	−0·1826	12 31 53·85	+0·35	+0·88	+1·40		56·48	12 48 24·99	+16 28·51	− 0·9	
				,,	α Ursæ Minoris	L	3	+0·8868	12 59 2·80	−1·57	−3·17	−1·40	−0·12	56·54	13 15 23·91	+16 27·37		
																	− 0·2	
				,,	1270 Gr. 72	U	3	−0·1618	13 29 22·67	+0·31	+0·80	−1·40	−0·25	22·13	13 45 49·70	+16 27·57		
				E	2154 Gr. 73	L	5	+0·1634	10 47 31·18	+0·28	+0·01	+1·38		32·85	10 47 48·82	+ 0 16·67*	− 4·3	
		,, 29	*I.P.W.*	W	α Ursæ Minoris	L	2	+0·8868	12 59 3·05	+1·57	−0·51	−1·38		2·73	13 15 23·87	+16 21·14		− 2·4
																	− 0·5	
				,,	1270 Gr. 72	U	5	−0·1618	13 29 29·78	−0·31	+0·13	−1·38	−0·13	28·09	13 45 49·74	+16 21·65		
				E	1002 Gr. 72	U	5	−0·1172	10 31 47·56	+0·04	−0·09	+1·39		48·90	10 32 0·67	+ 0 11·77		
																	− 4·4	
				,,	2154 ,,	L	4	+0·1634	10 47 37·05	−0·05	+0·06	+1·39	−0·06	38·39	10 47 48·91	+ 0 10·52		
				W	1191 ,,	U	4	−0·1826	12 31 58·73	+0·07	−0 21	+1·39		59·98	12 48 17·22	+16 17·24		− 5·7
		,, 30	*I.P.E.*															
				,,	1192 ,,	U	4	−0·1826	12 32 6·70	+0·07	−0·21	+1·39		7·95	12 48 24·98	+16 17·03	− 7·3	
				,,	α Ursæ Minoris	L	3	+0·8868	12 59 15·47	−0·29	+0·76	−1·39	−0·12	14·43	13 15 23·82	+16 9·39		
																	− 6·6	
				,,	1270 Gr. 72	U	4	−0·1618	13 29 35·20	+0·06	−0·19	−1·39	−0·25	33·43	13 45 49·79	+16 16·36		

* True clock correction obtained from mean of the preceding and following days.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
									h m s	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
FYZABAD AND AGRA	FYZABAD (Latitude 26° 47′)	1883		E	α Ursæ Majoris	U	15	−0·0283	10 56 26·32	+0·03	+0·30	+1·39		28·04	10 56 33·38	+ 0 5·34		
				„	δ Crateris	U	4	+0·0152	11 13 28·53	+0·01	+0·13	−1·39	−0·06	27·22	11 13 32·20	+ 0 4·98	− 8·3	
				W	1191 Gr. 72	U	3	−0·1826	12 32 3·17	+0·13	+0·89	+1·39		5·58	12 48 17·22	+16 11·64		
		Mar. 31	*I.P.W.*	„	1192 „	U	3	−0·1826	12 32 11·23	+0·13	+0·89	+1·39		13·64	12 48 24·98	+16 11·34	−10·6	− 9·4
				„	α Ursæ Minoris	L	2	+0·8868	12 59 28·90	−0·59	−3·21	−1·39	−0·12	23·59	13 15 23·76	+16 0·17		
				„	1270 Gr. 72	U	5	−0·1618	13 29 39·68	+0·12	+0·81	−1·39	−0·25	38·97	13 45 49·84	+16 10·87	−10·2	
				E	1002 Gr. 72	U	5	−0·1172	10 32 9·12	+0·10	+0·34	+1·39		10·95	10 32 0·37	− 0 10·58		
				„	2154 „	L	5	+0·1634	10 47 58·24	−0·12	−0·23	+1·39	−0·06	59·22	10 47 49·27	− 0 9·95	+ 2·2	
				W	1191 „	U	5	−0·1826	12 32 24·44	+0·15	+0·47	+1·39		26·45	12 48 17·21	+15 50·76		
		Apr. 3	*I.P.E.*	„	1192 „	U	5	−0·1826	12 32 32·00	+0·15	+0·47	+1·39		34·01	12 48 24·98	+15 50·97	− 0·7	+ 0·8
				„	α Ursæ Minoris	L	3	+0·8868	12 59 37·10	−0·69	−1·69	−1·39	−0·12	33·21	13 15 23·38	+15 50·17		
				„	1270 Gr. 72	U	5	−0·1618	13 29 60·26	+0·14	+0·43	−1·39	−0·25	59·19	13 45 49·97	+15 50·78	− 0·6	
				E	1002 Gr. 72	U	5	−0·1172	10 32 14·44	−0·12	+0·11	+1·38		15·81	10 32 0·29	− 0 15·52		
				„	2154 „	L	6	+0·1634	10 48 4·02	+0·14	−0·07	+1·38	−0·06	5·41	10 47 49·37	− 0 16·04	+ 1·8	
				W	1191 „	U	4	−0·1826	12 32 31·40	−0·17	+0·35	+1·38		32·96	12 48 17·21	+15 44·25		
		„ 4	*I.P.W.*	„	1192 „	U	4	−0·1826	12 32 39·10	−0·17	+0·35	+1·38		40·66	12 48 24·98	+15 44·32	− 1·7	+ 0·1
				„	α Ursæ Minoris	L	3	+0·8868	12 59 42·70	+0·79	−1·27	−1·38	−0·12	40·72	13 15 23·24	+15 42·52		
				„	1270 Gr. 72	U	5	−0·1618	13 30 7·32	−0·16	+0·32	−1·38	−0·25	5·85	13 45 50·02	+15 44·17	− 1·6	
	AGRA (Latitude 27° 10′)	1883		W	1002 Gr. 72	U	9	−0·1166	10 31 57·89	+0·06	+0·02	0·00		57·97	10 32 0·82	+ 0 2·85		
				„	2154 „	L	8	+0·1630	10 47 49·81	−0·07	−0·01	+1·58	−0·07	51·24	10 47 48·73	− 0 2·51	−19·2	
		Mar. 28	*I.P.E.*	„	1191 „	U	4	−0·1818	12 48 14·98	+0·09	+0·02	0·00		15·09	12 48 17·23	+ 0 2·14		−17·0
				„	1192 „	U	4	−0·1818	12 48 22·20	+0·09	+0·02	0·00		22·31	12 48 24·99	+ 0 2·68		
				„	α Ursæ Minoris	L	2	+0·8840	13 15 37·80	−0·39	−0·09	0·00	−0·12	37·20	13 15 23·91	− 0 13·29	−14·7	
				„	1270 Gr. 72	U	4	−0·1611	13 45 47·50	+0·08	+0·02	0·00	−0·25	47·35	13 45 49·70	+ 0 2·35	−15·0	
				W	1002 Gr. 72	U	8	−0·1166	10 32 2·13	−0·26	−0·10	+1·56		3·33	10 32 0·75	− 0 2·58		
		„ 29	*I.P.W.*	„	α Ursæ Minoris	L	2	+0·8840	13 15 47·20	+1·77	+0·52	−1·56	−0·71	47·22	13 15 23·88	− 0 23·34	−20·7	−20·4
				„	1270 Gr. 72	U	4	−0·1611	13 45 54·90	−0·35	−0·13	−1·56	−0·85	52·01	13 45 49·74	− 0 2·27	−20·2	
				W	1002 Gr. 72	U	9	−0·1166	10 32 5·76	−0·13	−0·14	+1·57		7·06	10 32 0·67	− 0 6·39		
				„	2154 „	L	9	+0 1630	10 48 4·66	+0·16	+0·10	+1·57	−0·07	6·42	10 47 48·91	− 0 17·51	−39·8	
		„ 30	*I.P.E.*	„	1191 „	U	6	−0·1818	12 48 21·28	−0·20	−0·20	+1·57		22·45	12 48 17·22	− 0 5·23		−39·5
				„	1192 „	U	6	−0·1818	12 48 28·85	−0·20	−0·20	+1·57		30·02	12 48 24·98	− 0 5·04	−39·2	
				„	α Ursæ Minoris	L	2	+0·8840	13 16 10·90	+0·88	+0·73	−1·57	−0·12	10·82	13 15 23·82	− 0 47·00		

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for			Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
										Collimation	Level	Pen Equation Q						
		1883							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
				W	1002 Gr. 72	U	8	−0·1166	10 32 10·23	−0·13	−0·02	+1·60		11·68	10 32 0·59	− 0 11·09		
				„	2154 „	L	10	+0·1630	10 48 12·36	+0·16	+0·01	+1·60	−0·07	14·06	10 47 49·00	− 0 25·06	−49·9	
		Mar. 31	*I.P.W.*	„	1191 „	U	5	−0·1818	12 48 24·16	−0·20	−0·02	+1·60		25·54	12 48 17·22	− 0 8·32		−52·4
				„	1192 „	U	5	−0·1818	12 48 32·28	−0·20	−0·02	+1·60		33·66	12 48 24·98	− 0 8·68	−54·8	
				„	α Ursæ Minoris	L	3	+0·8840	13 16 31·37	+0·88	+0·09	−1·60	−0·12	30·62	13 15 23·76	− 1 6·86		
				W	1002 Gr. 72	U	8	−0·1166	10 32 34·34	+0·04	−0·20	+1·52		35·70	10 32 0·37	− 0 35·33		
				„	2154 „	L	8	+0·1630	10 48 24·69	−0·05	+0·13	+1·52	−0·07	26·22	10 47 49·27	− 0 36·95	− 5·8	
				„	1191 „	U	5	−0·1818	12 48 52·02	+0·07	−0·27	+1·52		53·34	12 48 17·21	− 0 36·13		− 8·4
		Apr. 3	*I.P.E.*	„	1192 „	U	5	−0·1818	12 48 59·36	+0·07	−0·27	+1·52		60·68	12 48 24·98	− 0 35·70	−11·0	
				„	α Ursæ Minoris	L	2	+0·8840	13 16 11·95	−0·29	+0·99	−1·52	−0·12	11·01	13 15 23·38	− 0 47·63		
				„	1270 Gr. 72	U	5	−0·1611	13 46 28·26	+0·06	−0·25	−1·52	−0·25	26·30	13 45 49·97	− 0 36·33	−10·8	
				W	1002 Gr. 72	U	10	−0·1166	10 32 37·67	+0·12	+0·04	+1·59		39·42	10 32 0·29	− 0 39·13		
				„	2154 „	L	10	+0·1630	10 48 34·85	−0·14	−0·03	+1·59	−0·07	36·20	10 47 49·37	− 0 46·83	−27·5	
		„	*I.P.W.*	„	1191 „	U	5	−0·1818	12 48 53·78	+0·17	+0·06	+1·59		55·60	12 48 17·21	− 0 38·39		−29·0
				„	1192 „	U	5	−0·1818	12 49 1·04	+0·17	+0·06	+1·59		2·86	12 48 24·98	− 0 37·88	−30·4	
				„	α Ursæ Minoris	L	2	+0·8840	13 16 36·55	−0·79	−0·21	−1·59	−0·12	33·84	13 15 23·24	− 1 10·60		
				„	1270 Gr. 72	U	3	−0·1611	13 46 30·40	+0·16	+0·05	−1·59	−0·25	28·77	13 45 50·02	− 0 38·75	−30·5	

FYZABAD AND AGRA

AGRA (Latitude 27° 10′)

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$
1882 December 4	s	s	s	s	s	s	s	s
	0·95	0·50	0·94	0·20	0·80	0·30	1·00	0·30
	·95	·50	·89	·18	·80	·31	0·95	·29
	·94	·50	·89	·20	·80	·30	·97	·31
	·95	·46	·85	·20	·80	·30	·98	·30
	·98	·50	·85	·20	·80	·30	·98	·31
	·95	·50	·88	·22	·80	·30	·98	·33
	·96	·47	·88	·21	·80	·30	1·00	·31
	·95	·50	·88	·22	·80	·30	1·00	·33
	·94	·48	·88	·20	·80	·30	1·00	·32
	·95	·50	·89	·20	·80	·31	0·97	·33
	·95	·50	·90	·17	·80	·30	1·00	·32
	·95	·49	·84	·18	·80	·30	1·00	·33
	·93	·50	·85	·16	·79	·31	0·96	·30
	·92	·47	·85	·15	·79	·31	1·00	·31
	·95	·50	·90	·15	·80	·30	0·96	·29
	·95	·50	·85	·13	·78	·32	1·00	·31
	·95	·48	·84	·22	·79	·30	1·00	·28
	·94	·46	·84	·17	·77	·31	1·00	·25
	·93	·49	·85	·23	·77	·30	1·00	·32
	·90	·50	·85	·27	·77	·34	1·00	·33
Corresponding Mean Observed Times by E Clock	h m s 4 28 11	h m s 4 31 11	h m s 4 29 25 s +0·870	h m s 4 32 28 s +0·193	h m s 5 49 11	h m s 5 52 30	h m s 5 50 25 s +0·988	h m s 5 54 2 s +0·309
Corresponding Mean Observed Times by W Clock	h m s 3 59 56 s +0·945	h m s 4 2 53 s +0·490	h m s 4 1 11	h m s 4 4 11	h m s 5 20 56 s +0·793	h m s 5 24 12 s +0·306	h m s 5 22 11	h m s 5 25 45
Difference	m s 28 14·055	m s 28 17·510	m s 28 14·870	m s 28 17·193	m s 28 14·207	m s 28 17·694	m s 28 14·988	m s 28 17·309

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q-$	$Q+$
1882 December 5	s	s	s	s	s	s	s	s
	0·60	0·05	0·10	0·70	0·60	0·98	0·85	0·10
	·60	·07	·07	·70	9·60	·97	·85	·12
	·60	·09	·10	·65	10·50	1·00	·84	·12
	·65	·07	·15	·70	11·50	1·00	·83	·13
	·60	·09	·10	·71	12·60	0·96	·85	·13
	·60	·07	·10	·75	13·50	·97	·85	·13
	·60	·10	·12	·79	19·50	1·00	·85	·13
	·60	·10	·06	·77	20·55	1·00	·85	·15
	·60	·10	·07	·80	21·50	0·98	·88	·13
	·60	·08	·06	·77	22·49	·99	·85	·10
	·60	·10	·04	·74	23·50	·98	·85	·12
	·60	·10	·07	·74	24·50	·96	·85	·12
	·60	·10	·06	·73	25·50	1·00	·85	·13
	·60	·10	·06	·76	26·49	0·97	·87	·14
	·60	·13	·04	·74	27·50	·97	·86	·15
	·60	·10	·05	·72	28·49	·99	·86	·10
	·60	·11	·05	·72	29·50	·97	·87	·14
	·60	·07	·04	·70	30·50	·99	·88	·11
	·60	·11	·05	·70	31·50	1·00	·87	·13
	·60	·08	·04	·74	32·49	0·97	·88	·14
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	4 28 15	4 31 45	4 33 34	4 36 27	5 51 41	5 52 6	5 50 27	5 53 30
			s	s			s	s
			+0·072	+0·732			+0·857	+0·126
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	3 59 55	4 3 29	4 5 15	4 8 11	5 23 21	5 23 49	5 22 11	5 25 11
	s	s			s	s		
	+0·603	+0·091			+0·516	+0·983		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	28 19·397	28 15·909	28 19·072	28 16·732	28 19·484	28 16·017	28 16·857	28 19·126

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
December 6	0·60	0·23	0·60	0·94	0·57	0·05	0·69	0·02
	·62	·15	·60	·94	·60	·02	·69	·01
	·60	·23	·60	·94	·55	·04	·60	·02
	·65	·15	·60	·95	·60	·00	·70	·02
	·64	·21	·60	·90	·56	·04	·70	·02
	·69	·20	·59	·97	·59	·04	·70	·01
	·70	·20	·60	·98	·57	·05	·70	·01
	·71	·21	·58	·95	·57	·05	·70	·02
	·75	·21	·57	·95	·59	·07	·69	·01
	·71	·20	·60	·90	·60	·04	·68	·01
	·72	·20	·59	·97	·55	·05	·67	·01
	·70	·22	·59	·98	·56	·04	·66	·03
	·73	·20	·60	·96	·57	·05	·65	·03
	·75	·17	·55	·97	·57	·04	·64	·05
	·79	·20	·60	·99	·60	·07	·63	·05
	·75	·20	·56	·96	·58	·03	·65	·05
	·71	·22	·60	1·03	·58	·03	·65	·03
	·71	·22	·58	0·94	·59	·04	·67	·10
	·75	·20	·60	·97	·60	·04	·64	·10
	·74	·20	·60	·93	·56	·03	·64	·10
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	4 28 55	4 31 29	4 30 29	4 33 31	5 49 32	5 52 29	5 50 29	5 54 21
			s	s			s	s
			+0·591	+0·956			+0·668	+0·035
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	4 0 33	4 3 11	4 2 11	4 5 11	5 21 10	5 24 11	5 22 11	5 26 0
	s	s			s	s		
	+0·701	+0·201			+0·578	+0·041		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	28 21·299	28 17·799	28 18·591	28 20·956	28 21·422	28 17·959	28 18·668	28 21·035

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
December 7	0·84	0·30	0·51	0·82	0·70	0·08	0·57	1·04
	·89	·30	·52	·86	·70	·10	·60	0·97
	·89	·25	·59	·85	·71	·12	·62	1·00
	·86	·25	·59	·84	·70	·07	·60	0·99
	·87	·33	·53	·85	·70	·12	·62	·98
	·88	·25	·55	·84	·70	·10	·64	·94
	·85	·24	·54	·89	·70	·10	·62	·92
	·84	·26	·53	·87	·70	·09	·60	1·00
	·85	·27	·50	·95	·71	·10	·61	0·93
	·86	·30	·50	·90	·70	·10	·60	·99
	·84	·30	·51	·88	·70	·12	·68	·95
	·88	·28	·50	·90	·70	·10	·65	·95
	·84	·30	·50	·87	·70	·10	·67	·96
	·85	·27	·50	·93	·70	·09	·70	·97
	·85	·28	·53	·95	·70	·10	·70	·97
	·84	·26	·55	·87	·70	·10	·61	·98
	·84	·24	·55	·90	·70	·10	·65	·99
	·84	·23	·55	·94	·70	·10	·62	1·00
	·85	·25	·55	·88	·70	·10	·61	1·05
	·85	·27	·55	·90	·68	·10	·61	1·00
Corresponding Mean Observed Times by E Clock	h m s 4 28 11	h m s 4 31 5	h m s 4 29 31 s +0·533	h m s 4 32 54 s +0·885	h m s 5 49 11	h m s 5 51 31	h m s 5 50 33 s +0·629	h m s 5 53 47 s +0·979
Corresponding Mean Observed Times by W Clock	h m s 3 59 47 s +0·856	h m s 4 2 45 s +0·272	h m s 4 1 11	h m s 4 4 32	h m s 5 20 47 s +0·700	h m s 5 23 11 s +0·100	h m s 5 22 13	h m s 5 25 25
Difference	m s 28 23·144	m s 28 19·728	m s 28 20·533	m s 28 22·885	m s 28 23·300	m s 28 19·900	m s 28 20·629	m s 28 22·979

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +
1882 December 8	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·40	1·01	0·48	0·80	0·20	0·80	0·54	0·87
	·35	0·95	·45	·81	·23	·80	·54	·86
	·35	·95	·50	·77	·23	·80	·52	·86
	·35	·95	·45	·79	·27	·80	·52	·87
	·40	·93	·49	·74	·25	·80	·53	·84
	·39	·92	·44	·76	·25	·80	·53	·85
	·40	·93	·45	·74	·25	·80	·52	·85
	·41	·98	·42	·80	·25	·83	·52	·83
	·42	·95	·47	·80	·25	·80	·50	·85
	·43	·94	·41	·79	·25	·80	·55	·83
	·37	·97	·40	·77	·27	·80	·54	·84
	·37	·93	·43	·77	·24	·82	·54	·87
	·37	·96	·40	·80	·25	·81	·55	·87
	·36	·94	·40	·76	·24	·81	·54	·85
	·37	·95	·50	·77	·23	·80	·50	·85
	·37	·96	·44	·84	·24	·80	·54	·86
	·40	·95	·49	·75	·25	·80	·54	·84
	·40	·97	·50	·75	·25	·80	·54	·86
	·38	·97	·49	·78	·25	·81	·52	·89
	·39	·96	·45	·78	·25	·80	·50	·85
Corresponding Mean Observed Times by E Clock	*h m s* 4 28 33	*h m s* 4 31 37	*h m s* 4 29 33	*h m s* 4 33 10	*h m s* 5 48 50	*h m s* 5 51 37	*h m s* 5 50 11	*h m s* 5 53 11
			s +0·453	*s* +0·779			*s* +0·529	*s* +0·855
Corresponding Mean Observed Times by W Clock	*h m s* 4 0 11	*h m s* 4 3 11	*h m s* 4 1 11	*h m s* 4 4 46	*h m s* 5 20 28	*h m s* 5 23 11	*h m s* 5 21 49	*h m s* 5 24 47
	s +0·384	*s* +0·954			*s* +0·245	*s* +0·804		
Difference	*m s* 28 21·616	*m s* 28 25·046	*m s* 28 22·453	*m s* 28 24·779	*m s* 28 21·755	*m s* 28 25·196	*m s* 28 22·529	*m s* 28 24·855

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$
1882 December 9	s	s	s	s	s	s	s	s
	0·35	0·91	0·42	0·80	0·22	0·80	0·56	0·90
	·38	·93	·41	·77	·21	·80	·53	·94
	·36	·92	·43	·79	·23	·80	·55	·89
	·33	·92	·45	·80	·24	·80	·55	·93
	·36	·95	·48	·77	·23	·82	·54	·95
	·36	·95	·42	·86	·23	·82	·55	·97
	·38	·95	·40	·85	·21	·82	·55	·92
	·34	·91	·46	·80	·23	·80	·53	·90
	·37	·94	·50	·80	·22	·80	·52	·91
	·34	·95	·44	·82	·23	·81	·53	·90
	·35	·90	·49	·75	·21	·80	·55	·90
	·33	·97	·50	·84	·24	·79	·51	·92
	·34	·95	·50	·77	·24	·79	·54	·93
	·32	·92	·50	·80	·20	·80	·54	·92
	·36	·95	·45	·74	·20	·79	·60	·92
	·35	·90	·45	·77	·24	·78	·50	·91
	·33	·90	·40	·80	·24	·80	·59	·95
	·32	·90	·43	·75	·21	·79	·50	·93
	·37	·91	·40	·76	·20	·80	·48	·92
	·41	·92	·42	·80	·20	·80	·57	·95
Corresponding Mean Observed Times by E Clock	h m s 4 28 35	h m s 4 31 11	h m s 4 29 35 s +0·448	h m s 4 33 10 s +0·792	h m s 5 48 59	h m s 5 52 11	h m s 5 50 10 s +0·540	h m s 5 53 10 s +0·923
Corresponding Mean Observed Times by W Clock	h m s 4 0 11 s +0·353	h m s 4 2 43 s +0·928	h m s 4 1 11	h m s 4 4 44	h m s 5 20 35 s +0·222	h m s 5 23 43 s +0·801	h m s 5 21 46	h m s 5 24 44
Difference	m s 28 23·647	m s 28 27·072	m s 28 24·448	m s 28 26·792	m s 28 23·778	m s 28 27·199	m s 28 24·540	m s 28 26·923

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$
1882 December 11	s	s	s	s	s	s	s	s
	0·50	0·05	0·25	0·61	0·32	0·90	0·37	0·75
	·50	·05	·25	·63	·34	·90	·38	·75
	·50	·07	·28	·64	·33	·90	·39	·73
	·50	·07	·27	·60	·32	·90	·38	·75
	·50	·02	·30	·63	·30	·90	·38	·75
	·50	·03	·29	·61	·35	·90	·40	·75
	·50	·04	·30	·62	·30	·90	·39	·73
	·50	·09	·23	·64	·35	·90	·40	·72
	·50	·05	·30	·64	·37	·90	·40	·75
	·52	·00	·30	·66	·35	·90	·39	·75
	·50	·00	·28	·65	·33	·90	·39	·75
	·50	·05	·29	·66	·30	·91	·40	·74
	·48	·01	·28	·70	·33	·90	·39	·76
	·48	·01	·28	·64	·30	·88	·40	·75
	·50	·02	·29	·65	·30	·90	·40	·74
	·50	·04	·33	·70	·30	·90	·39	·72
	·50	·01	·29	·63	·30	·90	·40	·71
	·49	·02	·30	·65	·33	·90	·41	·75
	·49	·04	·25	·62	·33	·90	·40	·74
	·50	·00	·25	·63	·32	·90	·40	·71
Corresponding Mean Observed Times by E Clock	h m s 4 27 11	h m s 4 31 11	h m s 4 29 58 s +0·281	h m s 4 32 41 s +0·641	h m s 5 48 11	h m s 5 51 11	h m s 5 49 11 s +0·393	h m s 5 50 41 s +0·740
Corresponding Mean Observed Times by W Clock	h m s 3 58 43 s +0·498	h m s 4 2 40 s +0·034	h m s 4 1 30	h m s 4 4 11	h m s 5 19 43 s +0·324	h m s 5 22 39 s +0·900	h m s 5 20 43	h m s 5 22 11
Difference	m s 28 27·502	m s 28 30·966	m s 28 28·281	m s 28 30·641	m s 28 27·676	m s 28 31·100	m s 28 28·393	m s 28 30·740

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
December 21	0·77	0·45	0·56	0·40	0·75	0·43	0·53	0·43
	·77	·45	·58	·40	·76	·40	·50	·45
	·76	·45	·56	·44	·76	·41	·51	·44
	·76	·45	·57	·45	·77	·40	·53	·45
	·77	·46	·56	·45	·77	·42	·50	·46
	·77	·45	·55	·45	·78	·41	·50	·46
	·76	·43	·52	·45	·77	·43	·50	·46
	·77	·45	·51	·47	·78	·40	·50	·47
	·76	·43	·51	·46	·77	·40	·50	·45
	·75	·44	·51	·44	·75	·41	·50	·45
	·79	·42	·51	·44	·77	·41	·50	·45
	·80	·40	·50	·43	·77	·45	·50	·40
	·76	·44	·50	·43	·77	·44	·52	·38
	·78	·45	·53	·41	·78	·45	·50	·40
	·79	·44	·50	·41	·77	·45	·50	·40
	·79	·40	·50	·43	·78	·44	·50	·40
	·77	·45	·50	·42	·79	·43	·51	·39
	·77	·44	·50	·44	·77	·44	·53	·39
	·79	·44	·50	·45	·77	·44	·53	·42
	·79	·42	·50	·47	·79	·41	·55	·42
Corresponding Mean Observed Times by E Clock	h m s 4 58 4	h m s 4 58 11	h m s 4 59 46 s +0·524	h m s 5 1 11 s +0·437	h m s 5 49 32	h m s 5 50 35	h m s 5 46 54 s +0·511	h m s 5 47 49 s +0·429
Corresponding Mean Observed Times by W Clock	h m s 4 57 2 s +0·774	h m s 4 57 6 s +0·438	h m s 4 58 45	h m s 5 0 7	h m s 5 48 30 s +0·771	h m s 5 49 30 s +0·424	h m s 5 45 53	h m s 5 46 45
Difference	m s 1 1·226	m s 1 4·562	m s 1 1·524	m s 1 4·437	m s 1 1·229	m s 1 4·576	m s 1 1·511	m s 1 4·429

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$
1882 December 26	s	s	s	s	s	s	s	s
	0·91	0·55	0·45	0·30	0·90	0·55	0·43	0·35
	·90	·56	·45	·30	·90	·55	·44	·35
	·90	·58	·43	·30	·90	·60	·45	·35
	·90	·56	·43	·30	·90	·56	·44	·35
	·88	·59	·44	·30	·91	·57	·45	·30
	·89	·56	·44	·30	·90	·55	·45	·30
	·90	·55	·44	·30	·90	·59	·44	·27
	·90	·55	·44	·33	·90	·57	·45	·27
	·90	·57	·45	·33	·90	·59	·45	·26
	·90	·56	·45	·34	·91	·58	·45	·29
	·90	·58	·45	·34	·90	·59	·43	·30
	·90	·57	·47	·34	·90	·57	·44	·30
	·90	·59	·45	·35	·90	·59	·40	·34
	·90	·56	·49	·35	·89	·57	·40	·30
	·90	·56	·47	·35	·90	·57	·40	·32
	·90	·59	·49	·30	·90	·58	·41	·32
	·89	·57	·47	·30	·90	·57	·40	·31
	·90	·57	·45	·28	·90	·56	·42	·32
	·90	·57	·44	·29	·90	·59	·40	·31
	·90	·58	·45	·30	·90	·55	·41	·30
Corresponding Mean Observed Times by E Clock	h m s 4 59 0	h m s 4 59 55	h m s 5 1 39 s +0·453	h m s 5 2 52 s +0·315	h m s 5 43 55	h m s 5 44 45	h m s 5 46 40 s +0·428	h m s 5 47 52 s +0·311
Corresponding Mean Observed Times by W Clock	h m s 4 58 0 s +0·899	h m s 4 58 52 s +0·569	h m s 5 0 40	h m s 5 1 50	h m s 5 42 55 s +0·901	h m s 5 43 42 s +0·573	h m s 5 45 41	h m s 5 46 50
Difference	m s 0 59·101	m s 1 2·431	m s 0 59·453	m s 1 2·315	m s 0 59·099	m s 1 2·427	m s 0 59·428	m s 1 2·311

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +
1882 December 27	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·58	0·24	0·80	0·65	0·60	0·25	0·76	0·60
	·58	·25	·80	·65	·60	·25	·78	·67
	·57	·22	·77	·65	·58	·26	·75	·65
	·59	·25	·78	·65	·60	·25	·75	·62
	·57	·25	·76	·65	·60	·25	·75	·60
	·59	·25	·77	·65	·60	·24	·75	·60
	·57	·25	·77	·65	·59	·22	·75	·60
	·58	·26	·80	·65	·59	·25	·75	·60
	·57	·24	·76	·64	·58	·24	·74	·59
	·59	·24	·76	·64	·60	·25	·73	·59
	·58	·25	·75	·65	·58	·24	·70	·60
	·59	·26	·75	·65	·60	·27	·71	·60
	·60	·25	·74	·65	·59	·26	·72	·60
	·60	·25	·75	·66	·60	·26	·71	·60
	·60	·23	·76	·66	·59	·26	·71	·63
	·59	·25	·77	·68	·60	·29	·72	·64
	·60	·24	·77	·69	·60	·27	·75	·65
	·60	·25	·78	·70	·60	·28	·75	·65
	·59	·25	·78	·69	·60	·26	·74	·60
	·60	·26	·79	·67	·60	·27	·75	·60
Corresponding Mean Observed Times by E Clock	*h m s* 4 59 40	*h m s* 5 0 50	*h m s* 5 2 11 *s* +0·771	*h m s* 5 3 26 *s* +0·659	*h m s* 5 44 40	*h m s* 5 45 40	*h m s* 5 46 58 *s* +0·739	*h m s* 5 47 51 *s* +0·615
Corresponding Mean Observed Times by W Clock	*h m s* 4 58 41 *s* +0·587	*h m s* 4 59 48 *s* +0·247	*h m s* 5 1 13	*h m s* 5 2 25	*h m s* 5 43 41 *s* +0·595	*h m s* 5 44 38 *s* +0·256	*h m s* 5 46 0	*h m s* 5 46 50
Difference	*m s* 0 58·413	*m s* 1 1·753	*m s* 0 58·771	*m s* 1 1·659	*m s* 0 58·405	*m s* 1 1·744	*m s* 0 58·739	*m s* 1 1·615

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Jalpaiguri (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$
1882	s	s	s	s	s	s	s	s
December 28	0·20	0·87	0·10	1·00	0·21	0·83	0·12	0·00
	·20	·89	·10	1·01	·20	·80	·11	·00
	·19	·88	·10	1·01	·18	·83	·10	·01
	·19	·89	·10	1·00	·20	·87	·10	·00
	·20	·89	·11	1·01	·20	·86	·10	·00
	·20	·89	·12	1·00	·20	·86	·10	·00
	·20	·87	·16	1·01	·18	·85	·10	·00
	·20	·86	·15	1·00	·19	·84	·10	·00
	·19	·87	·14	1·01	·19	·84	·10	·00
	·19	·86	·12	1·01	·19	·85	·10	·00
	·19	·86	·15	1·02	·18	·87	·10	·03
	·19	·86	·11	1·03	·16	·87	·10	·02
	·19	·86	·10	1·03	·20	·85	·10	·01
	·20	·85	·10	1·00	·20	·88	·10	·00
	·20	·86	·11	1·00	·19	·89	·10	·00
	·20	·85	·10	0·99	·20	·89	·10	·00
	·19	·87	·10	1·00	·20	·86	·11	·00
	·19	·86	·10	1·00	·21	·87	·13	·00
	·18	·85	·10	1·00	·21	·87	·11	·00
	·18	·84	·13	1·00	·20	·89	·12	·00
Corresponding Mean Observed Times by E Clock	h m s 5 0 11	h m s 5 1 13	h m s 5 3 48 s +0·115	h m s 5 4 35 s +1·007	h m s 5 43 56	h m s 5 44 50	h m s 5 46 59 s +0·105	h m s 5 47 56 s +0·004
Corresponding Mean Observed Times by W Clock	h m s 4 59 13 s +0·194	h m s 5 0 11 s +0·867	h m s 5 2 50	h m s 5 3 35	h m s 5 42 58 s +0·195	h m s 5 43 48 s +0·859	h m s 5 46 1	h m s 5 46 55
Difference	m s 0 57·806	m s 1 1·133	m s 0 58·115	m s 1 1·007	m s 0 57·805	m s 1 1·141	m s 0 58·105	m s 1 1·004

Arc Jalpaiguri (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$
1882 December 29	s	s	s	s	s	s	s	s
	0·67	0·35	0·65	0·50	0·70	0·35	0·60	0·48
	·68	·37	·65	·49	·70	·35	·60	·48
	·66	·39	·65	·48	·70	·35	·61	·48
	·67	·40	·64	·50	·70	·36	·60	·50
	·67	·35	·65	·50	·70	·36	·60	·50
	·69	·35	·63	·50	·70	·37	·60	·50
	·68	·35	·62	·53	·70	·38	·60	·50
	·69	·34	·60	·52	·70	·36	·60	·50
	·67	·33	·60	·51	·70	·35	·60	·51
	·69	·34	·60	·52	·70	·36	·60	·51
	·70	·31	·62	·52	·70	·35	·60	·51
	·69	·35	·60	·51	·70	·35	·60	·50
	·68	·38	·63	·54	·70	·34	·60	·55
	·70	·35	·61	·54	·70	·35	·60	·56
	·68	·32	·63	·55	·70	·34	·60	·52
	·68	·31	·63	·55	·70	·34	·60	·50
	·67	·34	·64	·56	·70	·33	·59	·50
	·67	·34	·61	·54	·70	·34	·59	·50
	·67	·34	·60	·55	·70	·34	·57	·52
	·67	·35	·62	·52	·70	·34	·60	·55
Corresponding Mean Observed Times by E Clock	h m s 4 59 50	h m s 5 1 0	h m s 5 4 17 s +0·624	h m s 5 5 15 s +0·522	h m s 5 44 11	h m s 5 45 12	h m s 5 46 55 s +0·598	h m s 5 47 58 s +0·509
Corresponding Mean Observed Times by W Clock	h m s 4 58 52 s +0·679	h m s 4 59 59 s +0·348	h m s 5 3 20	h m s 5 4 15	h m s 5 43 13 s +0·700	h m s 5 44 11 s +0·351	h m s 5 45 58	h m s 5 46 58
Difference	m s 0 57·321	m s 1 0·652	m s 0 57·624	m s 1 0·522	m s 0 57·300	m s 1 0·649	m s 0 57·598	m s 1 0·509

Arc Jalpaiguri (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$
1883 January 2	s	s	s	s	s	s	s	s
	0·67	0·35	0·66	0·55	0·70	0·36	0·62	0·54
	·67	·33	·65	·57	·70	·35	·64	·55
	·69	·36	·65	·60	·69	·34	·66	·55
	·68	·34	·68	·56	·70	·34	·67	·57
	·70	·35	·68	·54	·70	·34	·69	·55
	·69	·35	·69	·51	·70	·37	·66	·60
	·70	·35	·65	·54	·70	·34	·68	·55
	·68	·34	·64	·55	·70	·35	·63	·57
	·68	·35	·65	·55	·67	·34	·65	·58
	·65	·33	·67	·53	·69	·37	·64	·55
	·67	·35	·65	·54	·70	·35	·63	·55
	·66	·35	·65	·54	·70	·37	·62	·51
	·70	·39	·67	·54	·70	·34	·66	·50
	·67	·35	·67	·55	·70	·35	·66	·50
	·70	·38	·68	·51	·68	·35	·66	·50
	·69	·36	·69	·51	·70	·35	·64	·50
	·70	·38	·67	·55	·69	·33	·65	·52
	·68	·34	·69	·55	·70	·36	·63	·57
	·70	·38	·70	·51	·67	·37	·64	·55
	·69	·36	·70	·54	·70	·39	·62	·54
Corresponding Mean Observed Times by E Clock	h m s 5 0 35	h m s 5 1 35	h m s 5 3 49 s +0·670	h m s 5 4 49 s +0·542	h m s 5 43 20	h m s 5 44 30	h m s 5 46 39 s +0·648	h m s 5 47 44 s +0·543
Corresponding Mean Observed Times by W Clock	h m s 4 59 40 s +0·684	h m s 5 0 37 s +0·355	h m s 5 2 55	h m s 5 3 52	h m s 5 42 25 s +0·695	h m s 5 43 32 s +0·353	h m s 5 45 45	h m s 5 46 47
Difference	m s 0 54·316	m s 0 57·645	m s 0 54·670	m s 0 57·542	m s 0 54·305	m s 0 57·647	m s 0 54·648	m s 0 57·543

Arc Chittagong (E) *and Jalpaiguri* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 January 12	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·95	0·85	0·55	0·10	0·90	0·77	0·66	0·20
	·95	·86	·55	·10	·90	·74	·65	·19
	·98	·85	·55	·07	·85	·74	·64	·20
	·95	·90	·57	·12	·90	·75	·66	·19
	·97	·87	·57	·10	·85	·76	·64	·18
	·91	·86	·56	·07	·90	·75	·62	·20
	·93	·86	·58	·06	·84	·74	·61	·20
	·91	·86	·59	·06	·87	·70	·64	·20
	1·00	·86	·55	·12	·89	·70	·64	·17
	1·00	·86	·59	·14	·90	·70	·62	·16
	0·90	·87	·53	·10	·85	·72	·65	·17
	·91	·87	·55	·09	·90	·80	·61	·15
	·97	·88	·54	·10	·85	·85	·67	·16
	·90	·87	·57	·10	·88	·78	·63	·15
	·95	·87	·57	·09	·90	·74	·62	·20
	·90	·87	·58	·10	·90	·75	·61	·16
	1·00	·86	·57	·20	·85	·85	·66	·20
	0·90	·85	·59	·10	·91	·70	·65	·15
	·90	·86	·59	·15	·85	·77	·65	·19
	·90	·87	·55	·10	·90	·73	·65	·15
Corresponding Mean Observed Times by E Clock	*h m s* 7 7 35	*h m s* 7 8 40	*h m s* 7 10 43 *s* +0·565	*h m s* 7 11 40 *s* +0·104	*h m s* 8 12 48	*h m s* 8 13 49	*h m s* 8 15 11 *s* +0·639	*h m s* 8 16 11 *s* +0·179
Corresponding Mean Observed Times by W Clock	*h m s* 6 54 31 *s* +0·939	*h m s* 6 55 39 *s* +0·865	*h m s* 6 57 40	*h m s* 6 58 40	*h m s* 7 59 44 *s* +0·880	*h m s* 8 0 48 *s* +0·752	*h m s* 8 2 8	*h m s* 8 3 11
Difference	*m s* 13 3·061	*m s* 13 0·135	*m s* 13 3·565	*m s* 13 0·104	*m s* 13 3·120	*m s* 13 0·248	*m s* 13 3·639	*m s* 13 0·179

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Chittagong (E) *and Jalpaiguri* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	Q +	Q +	Q −	Q −	Q +	Q +	Q −
1883 January 13	s	s	s	s	s	s	s	s
	0·40	0·35	0·03	0·59	0·30	0·20	0·45	0·48
	·39	·35	·03	·56	·25	·20	·46	·45
	·40	·38	·03	·60	·30	·20	·49	·50
	·30	·36	·05	·59	·28	·20	·46	·44
	·36	·38	·02	·59	·30	·25	·45	·50
	·30	·37	·00	·59	·25	·23	·46	·45
	·40	·39	·02	·59	·30	·24	·40	·44
	·32	·38	·00	·55	·22	·22	·41	·44
	·30	·44	·00	·59	·25	·25	·42	·44
	·39	·40	·00	·56	·26	·22	·41	·45
	·32	·39	·00	·60	·23	·27	·43	·45
	·32	·37	·00	·59	·21	·22	·49	·40
	·32	·38	·00	·58	·23	·22	·45	·45
	·30	·37	·02	·55	·24	·20	·46	·47
	·40	·36	·01	·60	·25	·22	·45	·50
	·30	·33	·02	·58	·24	·20	·40	·43
	·40	·34	·04	·60	·25	·20	·44	·50
	·35	·33	·01	·59	·25	·20	·45	·43
	·30	·34	·02	·60	·27	·20	·46	·43
	·30	·34	·02	·56	·25	·20	·41	·43
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	7 7 25	7 8 35	7 9 31	7 10 27	8 12 35	8 13 35	8 14 38	8 15 29
			s	s			s	s
			+0·016	+0·583			+0·443	+0·454
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	6 54 19	6 55 32	6 56 25	6 57 25	7 59 29	8 0 32	8 1 34	8 2 25
	s	s			s	s		
	+0·344	+0·368			+0·257	+0·217		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	13 5·656	13 2·632	13 6·016	13 2·583	13 5·743	13 2·783	13 4·443*	13 4·454*

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Chittagong (E) *and Jalpaiguri* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* −	*Q* +
1883 January 14	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·72	0·70	0·02	1·00	0·65	0·57	0·14	0·10
	·72	·71	·00	1·00	·65	·57	·10	·09
	·70	·71	·05	1·00	·62	·56	·15	·10
	·70	·75	·00	1·00	·66	·60	·12	·11
	·70	·72	·05	1·00	·62	·59	·16	·10
	·70	·73	·00	1·00	·64	·57	·10	·10
	·70	·71	·06	1·00	·61	·60	·14	·10
	·70	·77	·04	1·00	·62	·60	·13	·10
	·68	·74	·05	1·00	·61	·64	·12	·10
	·68	·76	·01	1·00	·60	·63	·10	·10
	·65	·70	·03	1·00	·61	·69	·15	·10
	·68	·75	·00	1·00	·65	·65	·10	·10
	·67	·74	·07	0·98	·60	·68	·10	·10
	·68	·75	·00	1·00	·60	·69	·10	·10
	·66	·71	·05	1·00	·57	·68	·17	·15
	·65	·71	·00	1·01	·60	·70	·10	·10
	·70	·70	·07	1·00	·62	·69	·15	·10
	·70	·75	·00	1·00	·60	·70	·14	·10
	·67	·70	·03	1·00	·60	·65	·12	·15
	·70	·71	·00	1·00	·60	·65	·13	·11
Corresponding Mean Observed Times by E Clock	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*
	7 7 49	7 8 48	7 10 52	7 11 44	8 12 40	8 13 35	8 15 42	8 16 42
			s	*s*			*s*	*s*
			+0·027	+1·000			+0·126	+0·106
Corresponding Mean Observed Times by W Clock	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*
	6 54 40	6 55 42	6 57 45	6 58 38	7 59 31	8 0 29	8 2 35	8 3 35
	s	*s*			*s*	*s*		
	+0·688	+0·726			+0·617	+0·636		
Difference	*m s*	*m s*	*m s*	*m s*	*m s*	*m s*	*m s*	*m s*
	13 8·312	13 5·274	13 7·027*	13 7·000*	13 8·383	13 5·364	13 7·126*	13 7·106*

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

Arc Chittagong (E) *and Jalpaiguri* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q+$	$Q-$
1883	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
January 15	0·14	0·26	0·88	0·20	1·02	0·02	0·35	1·02
	·10	·20	·90	·20	1·00	·05	·35	1·02
	·05	·21	·86	·20	1·01	·03	·35	0·99
	·11	·18	·90	·23	1·00	·06	·36	1·02
	·06	·14	·89	·20	1·03	·04	·36	1·00
	·10	·19	·89	·20	1·00	·04	·35	1·00
	·10	·14	·90	·19	1·02	·03	·35	0·99
	·10	·14	·90	·20	1·00	·04	·37	·98
	·10	·15	·89	·19	1·00	·03	·36	1·00
	·09	·17	·90	·20	0·98	·05	·35	0·99
	·01	·18	·85	·19	1·00	·05	·35	1·00
	·14	·17	·90	·20	0·99	·09	·35	0·99
	·03	·17	·88	·19	1·00	·06	·40	·97
	·10	·17	·90	·20	0·97	·05	·35	·96
	·05	·19	·90	·19	1·00	·05	·41	·96
	·08	·17	·90	·20	0·99	·08	·32	·95
	·02	·16	·90	·20	1·01	·07	·31	·95
	·10	·14	·90	·20	0·99	·06	·34	·95
	·10	·12	·90	·18	1·00	·05	·30	·95
	·10	·16	·90	·19	0·99	·10	·30	·95
Corresponding Mean Observed Times by E Clock	*h m s* 7 7 48	*h m s* 7 8 47	*h m s* 7 10 49	*h m s* 7 11 51	*h m s* 8 12 35	*h m s* 8 13 50	*h m s* 8 15 22	*h m s* 8 16 18
			s +0·892	*s* +0·198			*s* +0·349	*s* +0·982
Corresponding Mean Observed Times by W Clock	*h m s* 6 54 37	*h m s* 6 55 39	*h m s* 6 57 42	*h m s* 6 58 40	*h m s* 7 59 23	*h m s* 8 0 42	*h m s* 8 2 11	*h m s* 8 3 11
	s +0·084	*s* +0·171			*s* +1·000	*s* +0·053		
Difference	*m s* 13 10·916	*m s* 13 7·829	*m s* 13 7·892	*m s* 13 11·198	*m s* 13 11 000	*m s* 13 7·947	*m s* 13 11·349	*m s* 13 7·982

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Chittagong (E) *and Jalpaiguri* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* −	*Q* +
1883 January 17	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·19	0·14	0·22	0·81	0·05	0·10	0·90	0·25
	·16	·16	·25	·80	·10	·10	·90	·29
	·17	·15	·25	·80	·10	·06	·91	·25
	·17	·21	·25	·80	·10	·14	·90	·29
	·17	·27	·25	·80	·09	·10	·91	·27
	·20	·20	·28	·80	·10	·11	·90	·27
	·16	·20	·25	·80	·09	·10	·90	·25
	·20	·22	·30	·80	·10	·10	·90	·29
	·16	·23	·24	·80	·08	·10	·90	·25
	·23	·25	·22	·80	·10	·10	·90	·29
	·23	·25	·33	·82	·10	·10	·92	·27
	·20	·30	·29	·80	·06	·13	·90	·29
	·17	·30	·23	·80	·08	·12	·90	·26
	·17	·30	·23	·79	·07	·15	·90	·26
	·19	·30	·20	·81	·05	·12	·91	·27
	·20	·22	·23	·81	·04	·12	·90	·29
	·20	·20	·20	·81	·05	·08	·95	·30
	·20	·25	·23	·81	·05	·05	·90	·26
	·25	·35	·20	·81	·07	·05	·92	·27
	·29	·20	·17	·80	·09	·05	·90	·29
Corresponding Mean Observed Times by E Clock	*h m s* 7 7 48	*h m s* 7 8 46	*h m s* 7 10 27 *s* +0·241	*h m s* 7 11 41 *s* +0·804	*h m s* 8 13 0	*h m s* 8 13 48	*h m s* 8 15 57 *s* +0·906	*h m s* 8 16 56 *s* +0·273
Corresponding Mean Observed Times by W Clock	*h m s* 6 54 32 *s* +0·196	*h m s* 6 55 33 *s* +0·235	*h m s* 6 57 11	*h m s* 6 58 29	*h m s* 7 59 44 *s* +0·079	*h m s* 8 0 35 *s* +0·099	*h m s* 8 2 45	*h m s* 8 3 40
Difference	*m s* 13 15·804	*m s* 13 12·765	*m s* 13 16·241	*m s* 13 12·804	*m s* 13 15·921	*m s* 13 12·901	*m s* 13 12·906	*m s* 13 16·273

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Chittagong (E) *and Jalpaiguri* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883	s	s	s	s	s	s	s	s
January 18	0·89	0·90	0·59	0·20	0·74	0·80	0·64	0·30
	·89	·89	·58	·20	·72	·80	·67	·30
	·85	·90	·55	·20	·70	·80	·67	·30
	·84	·90	·55	·20	·70	·80	·65	·31
	·90	·90	·60	·20	·70	·80	·70	·27
	·97	·89	·55	·20	·70	·80	·70	·30
	·85	·85	56	·20	·70	·79	·69	·30
	·85	·89	·57	·20	·71	·80	·68	·33
	·99	·85	·57	·20	·72	·80	·65	·30
	·90	·90	·55	·20	·72	·80	·67	·29
	·80	·85	·58	·20	·71	·76	·66	·30
	1·00	·85	·55	·20	·71	·76	·70	·30
	0·89	·85	·60	·22	·70	·75	·69	·36
	·87	·85	·58	·20	·71	·75	·64	·38
	·86	·80	·60	·21	·70	·75	·67	·36
	·93	·85	·57	·20	·70	·77	·65	·30
	·89	·90	·58	·20	·70	·77	·67	·32
	·82	·86	·59	·19	·70	·78	·70	·30
	·86	·87	·58	·20	·72	·77	·65	·31
	·80	1·00	·59	·20	·70	·80	·70	·33
Corresponding Mean Observed Times by E Clock	h m s 7 7 46	h m s 7 8 50	h m s 7 10 11 s +0·575	h m s 7 11 11 s +0·201	h m s 8 13 0	h m s 8 13 50	h m s 8 15 11 s +0·673	h m s 8 16 11 s +0·313
Corresponding Mean Observed Times by W Clock	h m s 6 54 27 s +0·883	h m s 6 55 34 s +0·878	h m s 6 56 53	h m s 6 57 56	h m s 7 59 41 s +0·708	h m s 8 0 34 s +0·783	h m s 8 1 53	h m s 8 2 56
Difference	m s 13 18·117	m s 13 15·122	m s 13 18·575	m s 13 15·201	m s 13 18·292	m s 13 15·217	m s 13 18·673	m s 13 15·313

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q-$	$Q+$
1883	s	s	s	s	s	s	s	s
January 23	0·83	0·98	0·47	0·10	0·90	0·99	0·00	0·35
	·78	·97	·51	·09	·90	1·02	·06	·38
	·74	·96	·46	·10	·90	1·00	·00	·35
	·79	·87	·49	·08	·90	1·08	·06	·38
	·76	·92	·46	·10	·85	1·00	·01	·35
	·79	·88	·50	·08	·84	1·06	·07	·37
	·77	·93	·47	·10	·90	1·01	·00	·35
	·80	·87	·51	·07	·90	1·05	·07	·38
	·79	·90	·46	·10	·89	0·99	·01	·35
	·80	·89	·49	·09	·90	1·02	·08	·38
	·78	·87	·46	·10	·90	0·99	·02	·34
	·80	·89	·49	·08	·88	1·02	·09	·40
	·80	·92	·45	·13	·89	0·99	·03	·35
	·82	·95	·49	·09	·85	1·00	·08	·40
	·81	·94	·46	·10	·92	0·98	·01	·35
	·80	·89	·50	·07	·90	1·00	·09	·38
	·80	·94	·47	·10	·99	0·98	·06	·34
	·78	·90	·51	·09	·90	1·00	·08	·38
	·80	·97	·47	·12	·94	0·98	·05	·35
	·83	·96	·51	·07	·93	1·02	·07	·39
Corresponding Mean Observed Times by E Clock	h m s 7 48 13	h m s 7 49 13	h m s 7 50 21 s +0·482	h m s 7 51 48 s +0·093	h m s 8 42 50	h m s 8 43 50	h m s 8 46 12 s +0·047	h m s 8 46 50 s +0·366
Corresponding Mean Observed Times by W Clock	h m s 7 34 11 s +0·794	h m s 7 35 14 s +0·920	h m s 7 36 20	h m s 7 37 50	h m s 8 28 48 s +0·899	h m s 8 29 51 s +1·009	h m s 8 32 14	h m s 8 32 49
Difference	m s 14 1·206	m s 13 58·080	m s 14 1·482	m s 13 58·093	m s 14 1·101	m s 13 57·991	m s 13 58·047	m s 14 1·366

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 January 24	s	s	s	s	s	s	s	s
	0·20	0·35	0·05	0·64	0·34	0·48	0·90	0·50
	·20	·35	·06	·68	·36	·50	·97	·53
	·20	·36	·04	·65	·34	·49	·90	·50
	·25	·34	·10	·70	·40	·50	·95	·54
	·22	·33	·04	·63	·31	·51	·90	·50
	·24	·33	·09	·70	·32	·50	·95	·57
	·20	·35	·05	·68	·30	·50	·90	·50
	·23	·36	·10	·70	·37	·49	·95	·58
	·20	·37	·02	·67	·30	·49	·90	·54
	·20	·36	·09	·69	·30	·49	·95	·55
	·17	·35	·09	·65	·30	·45	·90	·55
	·20	·32	·10	·70	·32	·46	·95	·59
	·16	·31	·08	·65	·39	·47	·91	·51
	·20	·34	·10	·70	·36	·50	·95	·58
	·20	·36	·04	·63	·31	·48	·90	·52
	·21	·31	·10	·70	·32	·50	·97	·58
	·20	·29	·03	·63	·31	·49	·90	·52
	·20	·30	·10	·70	·35	·49	·98	·56
	·20	·31	·03	·63	·35	·49	·90	·51
	·21	·30	·08	·70	·33	·48	·98	·56
Corresponding Mean Observed Times by E Clock	h m s 7 48 50	h m s 7 49 50	h m s 7 50 43 s +0·070	h m s 7 51 43 s +0·672	h m s 8 42 50	h m s 8 43 50	h m s 8 45 42 s +0·931	h m s 8 46 39 s +0·540
Corresponding Mean Observed Times by W Clock	h m s 7 34 52 s +0·205	h m s 7 35 55 s +0·335	h m s 7 36 45	h m s 7 37 49	h m s 8 28 52 s +0·334	h m s 8 29 55 s +0·488	h m s 8 31 45	h m s 8 32 45
Difference	m s 13 57·795	m s 13 54·665	m s 13 58·070	m s 13 54·672	m s 13 57·666	m s 13 54·512	m s 13 57·931	m s 13 54·540

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q-$	$Q+$
1883	s	s	s	s	s	s	s	s
January 25	0·84	0·98	0·43	0·05	0·94	0·06	0·90	0·35
	·80	1·00	·49	·00	·90	·06	·94	·37
	·81	0·94	·44	·05	·98	·07	·90	·32
	·80	·96	·48	·00	·94	·03	·94	·38
	·84	·93	·42	·04	·99	·06	·90	·31
	·81	·96	·49	·00	·94	·00	·92	·38
	·88	·94	·44	·04	1·00	·06	·90	·30
	·82	·95	·46	·00	0·93	·07	·93	·36
	·87	·93	·42	·05	·97	·06	·90	·31
	·83	·94	·46	·00	·90	·06	·92	·37
	·84	·94	·42	·06	·95	·07	·89	·31
	·80	·97	·47	·01	·90	·03	·93	·35
	·84	·94	·44	·05	·95	·07	·90	·30
	·80	·98	·46	·00	·94	·06	·91	·37
	·83	·95	·40	·05	·98	·06	·88	·32
	·80	·97	·46	·00	·90	·03	·90	·37
	·81	·96	·40	·05	1·00	·05	·89	·31
	·80	·94	·47	·00	0·90	·02	·90	·36
	·81	·95	·44	·04	·93	·06	·89	·30
	·79	·94	·46	·02	·88	·03	·90	·37
Corresponding Mean Observed Times by E Clock	h m s 7 47 11	h m s 7 48 45	h m s 7 50 11 s +0·448	h m s 7 51 21 s +0·026	h m s 8 42 47	h m s 8 43 40	h m s 8 46 1 s +0·907	h m s 8 47 5 s +0·341
Corresponding Mean Observed Times by W Clock	h m s 7 33 16 s +0·821	h m s 7 34 53 s +0·954	h m s 7 36 17	h m s 7 37 30	h m s 8 28 52 s +0·941	h m s 8 29 49 s +0·051	h m s 8 32 11	h m s 8 33 11
Difference	m s 13 54·179	m s 13 51·046	m s 13 54·448	m s 13 51·026	m s 13 54·059	m s 13 50·949	m s 13 50·907	m s 13 54·341

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q+$	$Q-$
1883	s	s	s	s	s	s	s	s
January 26	0·43	0·44	0·50	0·92	0·44	0·58	0·80	0·40
	·40	·50	·56	·95	·45	·58	·79	·38
	·40	·46	·50	·91	·44	·60	·83	·40
	·40	·51	·55	·95	·49	·60	·80	·36
	·40	·45	·50	·90	·47	·60	·82	·40
	·40	·46	·55	·96	·50	·60	·79	·38
	·39	·44	·50	·93	·48	·60	·83	·40
	·40	·46	·55	·95	·47	·58	·80	·40
	·40	·44	·50	·90	·45	·59	·83	·43
	·40	·46	·55	·96	·49	·58	·80	·39
	·37	·46	·50	·92	·47	·57	·84	·41
	·38	·48	·52	·95	·50	·59	·81	·38
	·39	·47	·50	·92	·47	·60	·84	·42
	·37	·46	·53	·96	·50	·59	·80	·40
	·35	·49	·48	·90	·50	·59	·83	·43
	·39	·48	·52	·96	·50	·59	·80	·38
	·38	·47	·48	·90	·48	·63	·84	·41
	·35	·46	·52	·95	·46	·61	·80	·38
	·35	·45	·49	·90	·44	·63	·84	·42
	·35	·49	·51	·95	·45	·60	·80	·40
Corresponding Mean Observed Times by E Clock	h m s 7 48 20	h m s 7 50 20	h m s 7 51 58 s +0·516	h m s 7 52 49 s +0·932	h m s 8 42 30	h m s 8 44 11	h m s 8 45 40 s +0·815	h m s 8 46 37 s +0·399
Corresponding Mean Observed Times by W Clock	h m s 7 34 29 s +0·385	h m s 7 36 32 s +0·467	h m s 7 38 11	h m s 7 38 59	h m s 8 28 39 s +0·473	h m s 8 30 23 s +0·596	h m s 8 31 50	h m s 8 32 50
Difference	m s 13 50·615	m s 13 47·533	m s 13 47·516	m s 13 50·932	m s 13 50·527	m s 13 47·404	m s 13 50·815	m s 13 47·399

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 January 28	s	s	s	s	s	s	s	s
	0·79	0·95	0·43	1·00	0·94	0·05	0·31	0·93
	·84	·94	·50	0·95	·95	·07	·30	·91
	·80	·99	·44	·96	·90	·05	·33	·93
	·85	·95	·49	·94	·91	·09	·30	·90
	·80	·97	·46	·99	·89	·07	·35	·94
	·89	·92	·50	·96	·94	·09	·30	·92
	·78	·94	·44	1·00	·89	·04	·36	·95
	·80	·90	·50	0·94	·91	·08	·30	·90
	·79	·94	·44	1·00	·94	·09	·35	·95
	·84	·90	·50	0·96	·90	·07	·30	·90
	·82	·92	·44	1·00	1·00	·07	·35	·94
	·83	·90	·50	0·96	0·92	·07	·30	·90
	·84	·94	·42	1·00	·97	·05	·35	·94
	·87	·92	·47	0·96	·95	·10	·30	·90
	·84	·97	·44	1·00	1·00	·10	·35	·94
	·79	·95	·50	0·96	0·94	·10	·30	·90
	·81	1·00	·44	·96	·97	·20	·36	·94
	·80	0·99	·49	·98	·92	·12	·30	·90
	·85	1·00	·40	1·00	·99	·10	·34	·94
	·84	0·95	·45	0·97	·91	·10	·30	·90
Corresponding Mean Observed Times by E Clock	h m s 7 47 56	h m s 7 48 56	h m s 7 49 55 s +0·463	h m s 7 50 51 s +0·975	h m s 8 42 56	h m s 8 43 57	h m s 8 45 34 s +0·323	h m s 8 46 30 s +0·922
Corresponding Mean Observed Times by W Clock	h m s 7 34 11 s +0·824	h m s 7 35 14 s +0·947	h m s 7 36 11	h m s 7 37 11	h m s 8 29 11 s +0·937	h m s 8 30 16 s +0·086	h m s 8 31 50	h m s 8 32 50
Difference	m s 13 44·176	m s 13 41·053	m s 13 44·463	m s 13 40·975	m s 13 44·063	m s 13 40·914	m s 13 44·323	m s 13 40·922

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
January 29	0·44	0·57	0·85	0·40	0·60	0·64	0·72	0·31
	·49	·57	·80	·40	·55	·66	·73	·29
	·40	·57	·85	·44	·59	·64	·70	·35
	·44	·61	·80	·40	·54	·70	·71	·30
	·46	·62	·84	·44	·51	·67	·70	·33
	·45	·60	·80	·40	·51	·70	·73	·30
	·41	·58	·86	·44	·55	·70	·69	·32
	·45	·61	·81	·40	·60	·70	·74	·29
	·44	·65	·86	·45	·56	·73	·70	·33
	·45	·70	·80	·40	·56	·72	·74	·30
	·45	·59	·86	·45	·54	·69	·70	·33
	·46	·60	·80	·40	·59	·70	·72	·30
	·45	·57	·90	·45	·55	·66	·70	·31
	·50	·59	·80	·40	·62	·70	·77	·30
	·45	·59	·87	·44	·55	·70	·67	·30
	·46	·60	·80	·39	·60	·70	·77	·30
	·45	·57	·86	·49	·57	·66	·70	·30
	·47	·60	·80	·41	·56	·72	·76	·30
	·46	·60	·86	·45	·59	·70	·70	·31
	·48	·60	·80	·40	·55	·70	·76	·29
Corresponding Mean Observed Times by E Clock	*h m s* 7 47 56	*h m s* 7 48 56	*h m s* 7 50 31 *s* +0·831	*h m s* 7 51 28 *s* +0·423	*h m s* 8 42 56	*h m s* 8 43 56	*h m s* 8 45 30 *s* +0·721	*h m s* 8 46 30 *s* +0·308
Corresponding Mean Observed Times by W Clock	*h m s* 7 34 14 *s* +0·453	*h m s* 7 35 17 *s* +0·600	*h m s* 7 36 50	*h m s* 7 37 50	*h m s* 8 29 14 *s* +0·565	*h m s* 8 30 17 *s* +0·690	*h m s* 8 31 49	*h m s* 8 32 52
Difference	*m s* 13 41·547	*m s* 13 38·400	*m s* 13 41·831	*m s* 13 38·423	*m s* 13 41·435	*m s* 13 38·310	*m s* 13 41·721	*m s* 13 38·308

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 January 30	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·06	0·13	0·20	0·80	0·15	0·28	0·09	0·65
	·06	·16	·20	·84	·16	·29	·13	·71
	·09	·12	·17	·80	·15	·20	·08	·68
	·06	·17	·22	·84	·15	·30	·10	·70
	·10	·12	·19	·80	·20	·20	·09	·69
	·09	·19	·21	·84	·20	·30	·13	·75
	·09	·16	·18	·80	·19	·24	·08	·69
	·06	·18	·22	·84	·15	·28	·10	·74
	·06	·17	·19	·78	·17	·26	·08	·70
	·04	·18	·21	·81	·14	·29	·10	·71
	·08	·16	·20	·79	·16	·27	·08	·68
	·05	·22	·22	·84	·19	·30	·12	·74
	·10	·17	·19	·79	·13	·30	·07	·70
	·02	·19	·22	·84	·17	·30	·13	·71
	·09	·18	·19	·79	·19	·31	·07	·68
	·06	·19	·23	·83	·15	·37	·10	·72
	·08	·14	·16	·80	·15	·30	·09	·70
	·07	·17	·22	·83	·15	·30	·11	·73
	·10	·15	·19	·80	·19	·40	·10	·66
	·10	·17	·20	·85	·19	·37	·13	·75
Corresponding Mean Observed Times by E Clock	*h m s* 7 46 56	*h m s* 7 48 56	*h m s* 7 50 30 *s* +0·201	*h m s* 7 51 30 *s* +0·816	*h m s* 8 42 56	*h m s* 8 43 56	*h m s* 8 45 30 *s* +0·099	*h m s* 8 46 30 *s* +0·705
Corresponding Mean Observed Times by W Clock	*h m s* 7 33 17 *s* +0·073	*h m s* 7 35 20 *s* +0·166	*h m s* 7 36 51	*h m s* 7 37 55	*h m s* 8 29 17 *s* +0·167	*h m s* 8 30 20 *s* +0·293	*h m s* 8 31 51	*h m s* 8 32 55
Difference	*m s* 13 38·927	*m s* 13 35·834	*m s* 13 39·201	*m s* 13 35·816	*m s* 13 38·833	*m s* 13 35·707	*m s* 13 39·099	*m s* 13 35·705

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 February 8	s	s	s	s	s	s	s	s
	0·20	0·60	0·80	0·58	0·50	0·89	0·50	0·30
	·24	·55	·90	·60	·48	·89	·61	·37
	·20	·60	·80	·59	·50	·83	·59	·25
	·26	·57	·88	·60	·45	·89	·63	·35
	·26	·59	·79	·55	·55	·80	·57	·27
	·27	·52	·88	·60	·50	·87	·60	·35
	·20	·58	·81	·55	·50	·81	·53	·29
	·28	·55	·90	·60	·50	·88	·60	·32
	·25	·58	·81	·55	·50	·84	·50	·30
	·27	·54	·90	·60	·50	·90	·60	·34
	·20	·60	·80	·59	·55	·81	·55	·30
	·25	·55	·91	·60	·53	·89	·60	·35
	·21	·61	·80	·59	·60	·80	·66	·30
	·30	·60	·90	·60	·55	·93	·60	·35
	·20	·60	·83	·55	·59	·90	·55	·30
	·26	·58	·90	·60	·50	·97	·60	·34
	·29	·59	·80	·54	·50	·89	·56	·30
	·24	·57	·89	·62	·50	·92	·60	·35
	·20	·61	·80	·59	·50	·89	·55	·30
	·25	·55	·88	·61	·50	·95	·60	·38
Corresponding Mean Observed Times by E Clock	h m s 9 24 15	h m s 9 25 12	h m s 9 26 29 s +0·849	h m s 9 27 30 s +0·586	h m s 10 38 30	h m s 10 39 31	h m s 10 40 43 s +0·580	h m s 10 41 40 s +0·321
Corresponding Mean Observed Times by W Clock	h m s 9 0 11 s +0·242	h m s 9 1 11 s +0·577	h m s 9 2 26	h m s 9 3 30	h m s 10 14 26 s +0·515	h m s 10 15 30 s +0·878	h m s 10 16 40	h m s 10 17 40
Difference	m s 24 3·758	m s 24 0·423	m s 24 3·849	m s 24 0·586	m s 24 3·485	m s 24 0·122	m s 24 3·580	m s 24 0·321

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 February 9	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·40	0·70	0·70	0·36	0·70	1·06	0·35	0·03
	·40	·73	·65	·39	·65	1·05	·40	·10
	·44	·71	·70	·35	·72	1·02	·35	·10
	·45	·75	·65	·40	·66	1 05	·40	·11
	·40	·72	·70	·35	·70	1·02	·35	·08
	·43	·71	·64	·40	·65	1·04	·40	·10
	·40	·73	·69	·35	·70	1·07	·36	·10
	·42	·75	·62	·43	·63	1·04	·40	·12
	·49	·75	·69	·34	·75	1·00	·35	·10
	·45	·73	·65	·40	·70	1·02	·40	·10
	·45	·70	·70	·35	·75	1·00	·34	·10
	·44	·79	·65	·40	·71	1·00	·44	·10
	·45	·75	·70	·34	·71	0·99	·35	·10
	·39	·78	·64	·40	·72	1·00	·40	·13
	·49	·80	·70	·34	·70	1·01	·37	·10
	·40	·75	·65	·41	·74	1·01	·41	·10
	·44	·71	·70	·40	·70	1·00	·36	·05
	·40	·74	·65	·42	·70	1·00	·45	·10
	·44	·83	·70	·35	·70	1·01	·44	·10
	·45	·78	·65	·40	·73	1·07	·40	·10
Corresponding Mean Observed Times by E Clock	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*
	9 24 15	9 25 15	9 26 29	9 27 25	10 37 40	10 38 40	10 40 50	10 41 45
			s	*s*			*s*	*s*
			+0·672	+0·379			+0·386	+0·096
Corresponding Mean Observed Times by W Clock	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*	*h m s*
	9 0 16	9 1 19	9 2 31	9 3 30	10 13 41	10 14 44	10 16 52	10 17 50
	s	*s*			*s*	*s*		
	+0·432	+0·746			+0·701	+1·023		
Difference	*m s*	*m s*	*m s*	*m s*	*m s*	*m s*	*m s*	*m s*
	23 58·568	23 55·254	23 58·672	23 55·379	23 58·299	23 54·977	23 58·386	23 55·096

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883	s	s	s	s	s	s	s	s
February 10	0·30	0·72	0·77	0·50	0·60	0·95	0·48	0·24
	·37	·70	·70	·44	·63	·86	·55	·20
	·40	·71	·79	·50	·69	·95	·47	·26
	·40	·67	·70	·43	·60	·90	·50	·20
	·34	·70	·77	·49	·55	·96	·46	·25
	·40	·68	·70	·45	·60	·88	·52	·20
	·35	·70	·80	·49	·60	·99	·47	·25
	·40	·69	·70	·44	·60	·90	·50	·20
	·35	·71	·80	·49	·60	1·00	·46	·25
	·40	·69	·70	·40	·61	0·90	·50	·20
	·35	·70	·80	·50	·60	1·00	·47	·25
	·40	·71	·70	·42	·65	1·00	·51	·20
	·35	·75	·80	·50	·61	1·04	·47	·22
	·40	·69	·70	·45	·62	0·95	·50	·18
	·34	·72	·80	·50	·59	1·00	·46	·24
	·40	·70	·70	·44	·60	0·92	·50	·20
	·33	·70	·79	·50	·56	1·00	·45	·24
	·39	·67	·70	·45	·60	0·95	·50	·20
	·33	·70	·80	·50	·53	1·00	·44	·25
	·35	·66	·70	·45	·61	0·91	·51	·20
Corresponding Mean Observed Times by E Clock	h m s 9 22 15	h m s 9 23 20	h m s 9 24 34 s +0·746	h m s 9 25 31 s +0·467	h m s 10 37 15	h m s 10 38 21	h m s 10 39 11 s +0·486	h m s 10 40 11 s +0·222
Corresponding Mean Observed Times by W Clock	h m s 8 58 21 s +0·368	h m s 8 59 29 s +0·699	h m s 9 0 41	h m s 9 1 41	h m s 10 13 21 s +0·603	h m s 10 14 30 s +0·953	h m s 10 15 18	h m s 10 16 21
Difference	m s 23 53·632	m s 23 50·301	m s 23 53·746	m s 23 50·467	m s 23 53·397	m s 23 50·047	m s 23 53·486	m s 23 50·222

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 February 11	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·90	0·30	0·20	0·90	0·85	0·85	0·95	0·72
	·90	·22	·15	·98	·85	·83	·99	·78
	·90	·27	·20	·90	·90	·87	·95	·67
	·90	·20	·16	·98	·83	·83	1·00	·75
	·92	·29	·19	·90	·85	·75	0·95	·65
	·91	·25	·17	·98	·84	·84	1·00	·76
	·95	·29	·20	·89	·84	·88	0·97	·65
	·94	·25	·16	·98	·81	·90	1·00	·72
	·91	·29	·20	·90	·82	·80	0·98	·77
	·90	·24	·18	1·00	·90	·85	·99	·77
	·90	·30	·20	0·90	·84	·80	1·00	·70
	·90	·20	·17	1·00	·81	·83	1·00	·75
	·90	·27	·20	0·90	·86	·81	0·99	·68
	·90	·24	·16	·95	·82	·80	1·00	·74
	·93	·30	·20	·90	·89	·79	0·96	·70
	·95	·25	·19	1·00	·86	·80	1·00	·75
	·95	·30	·20	0·93	·84	·79	0·96	·69
	·95	·20	·20	1·00	·80	·80	1·00	·75
	·90	·27	·20	0·90	·80	·80	0·99	·70
	·91	·20	·15	1·00	·80	·80	1·00	·74
Corresponding Mean Observed Times by E Clock	*h m s* 9 27 11	*h m s* 9 28 12	*h m s* 9 29 24 *s* +0·184	*h m s* 9 30 24 *s* +0·945	*h m s* 10 36 30	*h m s* 10 37 25	*h m s* 10 39 24 *s* +0·984	*h m s* 10 40 25 *s* +0·722
Corresponding Mean Observed Times by W Clock	*h m s* 9 3 21 *s* +0·916	*h m s* 9 4 26 *s* +0·257	*h m s* 9 5 35	*h m s* 9 6 39	*h m s* 10 12 42 *s* +0·841	*h m s* 10 13 37 *s* +0·821	*h m s* 10 15 36	*h m s* 10 16 40
Difference	*m s* 23 49·084	*m s* 23 45·743	*m s* 23 49·184	*m s* 23 45·945	*m s* 23 47·159*	*m s* 23 47·179*	*m s* 23 48·984	*m s* 23 45·722

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

Arc Calcutta (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 February 13	s	s	s	s	s	s	s	s
	0·40	0·78	0·81	0·52	0·56	0·85	0·65	0·32
	·35	·70	·73	·49	·50	·80	·55	·28
	·40	·70	·80	·51	·55	·87	·65	·34
	·34	·69	·75	·49	·53	·83	·55	·30
	·40	·70	·81	·51	·60	·90	·60	·35
	·33	·65	·74	·49	·59	·87	·56	·30
	·40	·70	·84	·50	·57	·93	·65	·34
	·32	·66	·84	·49	·51	·87	·58	·30
	·36	·77	·85	·52	·55	·88	·60	·35
	·25	·69	·80	·46	·54	·84	·57	·30
	·40	·71	·80	·55	·57	·90	·65	·35
	·38	·66	·75	·50	·50	·84	·56	·30
	·43	·73	·80	·59	·53	·87	·60	·31
	·40	·70	·76	·50	·52	·82	·57	·25
	·40	·73	·80	·52	·55	·90	·60	·34
	·40	·67	·75	·47	·55	·80	·56	·29
	·40	·74	·85	·56	·55	·90	·60	·34
	·35	·65	·76	·50	·51	·83	·56	·30
	·39	·70	·82	·51	·55	·90	·61	·34
	·30	·70	·75	·50	·53	·84	·55	·30
Corresponding Mean Observed Times by E Clock	h m s 9 24 22	h m s 9 25 20	h m s 9 26 34 s +0·791	h m s 9 27 31 s +0·509	h m s 10 36 20	h m s 10 37 20	h m s 10 38 34 s +0·591	h m s 10 39 30 s +0·315
Corresponding Mean Observed Times by W Clock	h m s 9 0 40 s +0·370	h m s 9 1 41 s +0·702	h m s 9 2 53	h m s 9 3 53	h m s 10 12 38 s +0·543	h m s 10 13 41 s +0·862	h m s 10 14 53	h m s 10 15 52
Difference	m s 23 41·630	m s 23 38·298	m s 23 41·791	m s 23 38·509	m s 23 41·457	m s 23 38·138	m s 23 41·591	m s 23 38·315

Arc Calcutta (E) *and Fyzabad* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At E		At W	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* −	*Q* +
1883 February 14	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·95	0·30	0·10	0·85	0·75	0·90	0·12	0·50
	1·00	·28	·15	·82	·70	1·00	·20	·50
	0·90	·30	·05	·86	·78	0·95	·08	·55
	1·00	·26	·15	·82	·74	·97	·11	·55
	0·90	·30	·10	·94	·70	·89	·15	·55
	1·00	·25	·15	·83	·68	·97	·16	·55
	1·00	·30	·10	·85	·70	·90	·09	·50
	1·00	·29	·18	·88	·68	1·00	·13	·57
	1·00	·30	·10	·85	·74	0·90	·05	·55
	0·95	·28	·20	·84	·70	·99	·20	·53
	·94	·30	·10	·89	·70	·90	·18	·49
	1·01	·28	·18	·82	·68	·97	·20	·53
	0·98	·30	·12	·86	·70	·88	·14	·50
	1·00	·26	·15	·84	·67	·98	·20	·50
	0·95	·35	·10	·85	·71	·90	·20	·50
	1·00	·30	·19	·80	·65	·99	·20	·50
	0·91	·37	·12	·85	·70	·91	·10	·45
	1·00	·30	·19	·83	·69	1·00	·12	·50
	0·90	·30	·10	·90	·68	0·90	·09	·50
	1·05	·30	·15	·90	·67	1·00	·15	·51
Corresponding Mean Observed Times by E Clock	*h m s* 9 23 31	*h m s* 9 24 30	*h m s* 9 26 26	*h m s* 9 27 11	*h m s* 10 38 59	*h m s* 10 40 11	*h m s* 10 42 13	*h m s* 10 43 11
			s +0·134	*s* +0·854	*s* +0·701	*s* +0·945		
Corresponding Mean Observed Times by W Clock	*h m s* 8 59 52	*h m s* 9 0 55	*h m s* 9 2 48	*h m s* 9 3 37	*h m s* 10 15 25	*h m s* 10 16 34	*h m s* 10 18 35	*h m s* 10 19 36
	s +0·972	*s* +0·296					*s* +0·144	*s* +0·517
Difference	*m s* 23 38·028	*m s* 23 34·704	*m s* 23 38·134	*m s* 23 34·854	*m s* 23 34·701	*m s* 23 37·945	*m s* 23 37·856	*m s* 23 34·483

Arc Calcutta (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 February 22	s	s	s	s	s	s	s	s
	0·40	0·77	0·73	0·50	0·15	0·60	1·00	0·70
	·40	·80	·80	·52	·19	·60	1·00	·77
	·34	·80	·78	·50	·17	·50	0·95	·70
	·30	·80	·80	·55	·20	·50	1·00	·71
	·30	·80	·77	·50	·20	·50	0·95	·70
	·30	·77	·80	·55	·17	·48	1·00	·71
	·30	·80	·77	·50	·20	·50	0·95	·70
	·30	·75	·76	·55	·19	·55	1·00	·75
	·29	·67	·80	·50	·20	·55	0·95	·71
	·26	·67	·75	·55	·15	·55	1·00	·72
	·29	·67	·83	·50	·18	·54	0·95	·76
	·30	·69	·76	·54	·17	·53	1·00	·71
	·30	·75	·81	·50	·19	·50	0·95	·70
	·37	·71	·74	·54	·16	·52	1·00	·73
	·40	·70	·80	·50	·14	·49	0·95	·70
	·35	·71	·75	·54	·19	·50	1·00	·72
	·35	·67	·80	·50	·20	·50	0·92	·70
	·34	·71	·75	·54	·19	·50	·97	·71
	·40	·68	·80	·50	·17	·54	·93	·70
	·36	·68	·80	·54	·15	·55	·99	·72
Corresponding Mean Observed Times by E Clock	h m s 9 43 32	h m s 9 44 40	h m s 9 46 49 s +0·780	h m s 9 47 54 s +0·521	h m s 11 0 30	h m s 11 1 40	h m s 11 3 1 s +0·973	h m s 11 4 8 s +0·716
Corresponding Mean Observed Times by W Clock	h m s 9 9 45 s +0·333	h m s 9 10 56 s +0·730	h m s 9 13 3	h m s 9 14 11	h m s 10 26 43 s +0·178	h m s 10 27 56 s +0·525	h m s 10 29 15	h m s 10 30 25
Difference	m s 33 46·667	m s 33 43·270	m s 33 46·780	m s 33 43·521	m s 33 46·822	m s 33 43·475	m s 33 46·973	m s 33 43·716

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 February 23	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·80	0·85	0·99	0·70	0·66	0·70	0·13	0·90
	·85	·75	1·05	·71	·66	·67	·20	·94
	·78	·83	1·00	·68	·68	·75	·10	·90
	·83	·83	1·00	·71	·68	·74	·17	·94
	·90	·85	1·00	·70	·68	·70	·11	·90
	·90	·80	1·00	·70	·67	·67	·20	·94
	·80	·87	1·02	·70	·73	·70	·11	·89
	·80	·85	0·99	·71	·67	·65	·16	·95
	·81	·85	1·00	·68	·69	·65	·15	·89
	·89	·87	1·00	·71	·70	·65	·20	·92
	·80	·85	1·00	·68	·62	·70	·13	·88
	·81	·85	0·97	·71	·69	·65	·19	·90
	·83	·85	·98	·69	·62	·66	·10	·88
	·90	·95	·94	·70	·70	·67	·16	·93
	·80	·90	1·00	·70	·68	·67	·13	·90
	·89	·87	0·95	·72	·70	·70	·16	·91
	·80	·90	1·00	·69	·67	·71	·10	·85
	·90	·84	0·95	·71	·69	·66	·14	·91
	·84	·85	1·00	·71	·65	·70	·13	·87
	·80	·85	0·95	·73	·70	·68	·19	·94
Corresponding Mean Observed Times by E Clock	*h m s* 9 44 20	*h m s* 9 45 45	*h m s* 9 47 26 *s* +0·990	*h m s* 9 48 23 *s* +0·702	*h m s* 11 0 36	*h m s* 11 1 17	*h m s* 11 3 1 *s* +0·148	*h m s* 11 3 57 *s* +0·907
Corresponding Mean Observed Times by W Clock	*h m s* 9 10 31 *s* +0·837	*h m s* 9 11 56 *s* +0·853	*h m s* 9 13 37	*h m s* 9 14 37	*h m s* 10 26 47 *s* +0·677	*h m s* 10 27 28 *s* +0·684	*h m s* 10 29 11	*h m s* 10 30 11
Difference	*m s* 33 48·163*	*m s* 33 48·147*	*m s* 33 49·990	*m s* 33 46·702	*m s* 33 48·323*	*m s* 33 48·316*	*m s* 33 50·148	*m s* 33 46·907

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883	s	s	s	s	s	s	s	s
February 24	0·81	0·89	1·00	0·75	0·95	0·30	0·16	0·90
	·90	·83	0·97	·69	·95	·30	·16	·89
	·80	·87	1·00	·70	·92	·30	·20	·90
	·85	·87	0·98	·70	·97	·30	·15	·87
	·84	·83	1·00	·70	·91	·36	·17	·90
	·90	·80	0·99	·68	·95	·30	·14	·85
	·96	·90	1·01	·70	·99	·34	·19	·91
	·90	·86	0·99	·67	·93	·31	·15	·90
	·80	·85	1·00	·71	·93	·39	·20	·90
	·83	·83	0·99	·70	1·00	·39	·14	·88
	·84	·89	1·00	·71	0·90	·39	·20	·90
	·81	·91	0·98	·70	·95	·40	·15	·88
	·88	·85	1·00	·70	·83	·40	·19	·91
	·80	·84	0·97	·69	·90	·41	·13	·89
	·77	·85	1·00	·71	·89	·40	·17	·91
	·80	·87	0·97	·70	·90	·43	·14	·89
	·74	·85	1·03	·72	·90	·44	·17	·91
	·88	·90	0·99	·70	·91	·47	·14	·90
	·84	·85	1·00	·73	·86	·50	·19	·91
	·80	·90	0·99	·70	·91	·48	·15	·90
Corresponding Mean Observed Times by E Clock	h m s 9 43 39	h m s 9 44 54	h m s 9 46 32 s +0·993	h m s 9 47 29 s +0·703	h m s 11 0 33	h m s 11 2 1	h m s 11 3 43 s +0·165	h m s 11 4 39 s +0·895
Corresponding Mean Observed Times by W Clock	h m s 9 9 47 s +0·838	h m s 9 11 2 s +0·862	h m s 9 12 40	h m s 9 13 40	h m s 10 26 39 s +0·923	h m s 10 28 11 s +0·381	h m s 10 29 50	h m s 10 30 50
Difference	m s 33 51·162*	m s 33 51·138*	m s 33 52·993	m s 33 49·703	m s 33 53·077	m s 33 49·619	m s 33 53·165	m s 33 49·895

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 February 28	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·11	0·10	0·70	0·48	0·90	0·90	0·90	0·62
	·19	·10	·75	·49	·90	·95	·91	·61
	·11	·10	·70	·45	·90	·94	·90	·64
	·16	·10	·73	·45	·90	·92	·90	·65
	·15	·15	·72	·46	·95	·92	·92	·65
	·14	·10	·71	·48	·95	·90	·90	·66
	·15	·08	·71	·47	·90	·89	·91	·62
	·15	·08	·70	·49	·99	·90	·92	·61
	·10	·10	·73	·48	·96	·95	·91	·62
	·14	·10	·70	·45	·92	·92	·94	·65
	·13	·11	·72	·48	·94	·94	·90	·64
	·11	·10	·73	·48	·98	·88	·90	·67
	·09	·10	·73	·45	·90	·93	·90	·66
	·10	·11	·75	·47	·98	·95	·90	·63
	·14	·15	·74	·47	·87	·91	·90	·65
	·15	·10	·74	·48	·90	·90	·90	·65
	·14	·15	·73	·49	·95	·86	·90	·65
	·10	·16	·74	·46	·95	·96	·90	·64
	·10	·13	·74	·48	·85	·95	·90	·65
	·10	·10	·74	·47	·95	·86	·90	·65
Corresponding Mean Observed Times by E Clock	*h m s* 9 43 50	*h m s* 9 45 0	*h m s* 9 46 54 *s* +0·726	*h m s* 9 48 5 *s* +0·472	*h m s* 10 59 55	*h m s* 11 1 11	*h m s* 11 2 34 *s* +0·906	*h m s* 11 3 34 *s* +0·641
Corresponding Mean Observed Times by W Clock	*h m s* 9 9 43 *s* +0·128	*h m s* 9 10 53 *s* +0·111	*h m s* 9 12 46	*h m s* 9 14 0	*h m s* 10 25 47 *s* +0·927	*h m s* 10 27 3 *s* +0·917	*h m s* 10 28 26	*h m s* 10 29 29
Difference	*m s* 34 6·872*	*m s* 34 6·889*	*m s* 34 8·726	*m s* 34 5·472	*m s* 34 7·073*	*m s* 34 7·083*	*m s* 34 8·906	*m s* 34 5·641

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Calcutta (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 March 2	s	s	s	s	s	s	s	s
	0·82	0·82	1·00	0·70	0·66	0·70	0·11	0·89
	·86	·84	0·98	·72	·60	·70	·12	·88
	·87	·85	·99	·70	·65	·66	·10	·90
	·80	·80	·97	·71	·62	·70	·11	·88
	·79	·85	1·00	·71	·68	·66	·10	·88
	·83	·82	1·00	·70	·61	·67	·10	·85
	·79	·81	0·97	·70	·60	·70	·10	·88
	·79	·80	1·00	·70	·59	·69	·10	·86
	·78	·80	0·98	·70	·70	·70	·10	·86
	·76	·80	·98	·70	·65	·67	·10	·88
	·80	·80	·98	·70	·69	·70	·10	·88
	·80	·81	·99	·71	·62	·67	·12	·90
	·80	·80	·99	·70	·65	·70	·12	·88
	·82	·82	1·00	·70	·66	·69	·12	·90
	·80	·80	0·97	·71	·65	·69	·11	·90
	·80	·80	1·00	·70	·69	·65	·12	·89
	·80	·84	1·00	·70	·65	·66	·13	·89
	·76	·85	0·97	·70	·69	·70	·12	·89
	·80	·84	·96	·71	·64	·63	·14	·85
	·79	·83	·97	·71	·70	·70	·13	·86
Corresponding Mean Observed Times by E Clock	h m s 9 43 50	h m s 9 44 56	h m s 9 46 34 s +0·985	h m s 9 47 34 s +0·704	h m s 11 0 30	h m s 11 1 37	h m s 11 2 59 s +0·113	h m s 11 3 56 s +0·880
Corresponding Mean Observed Times by W Clock	h m s 9 9 36 s +0·803	h m s 9 10 42 s +0·819	h m s 9 12 20	h m s 9 13 23	h m s 10 26 16 s +0·650	h m s 10 27 23 s +0·682	h m s 10 28 44	h m s 10 29 45
Difference	m s 34 13·197*	m s 34 13·181*	m s 34 14·985	m s 34 11·704	m s 34 13·350*	m s 34 13·318*	m s 34 15·113	m s 34 11·880

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

Arc Calcutta (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 March 3	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	1·01	0·39	0·15	0·84	0·80	0·21	0·31	0·08
	1·00	·44	·12	·85	·80	·17	·31	·09
	1·06	·37	·15	·89	·80	·20	·30	·09
	1·00	·37	·15	·86	·80	·12	·30	·08
	1·00	·39	·14	·88	·80	·18	·31	·09
	1·02	·40	·14	·88	·83	·10	·31	·07
	1·00	·39	·15	·88	·81	·15	·31	·10
	0·95	·40	·15	·87	·80	·20	·32	·09
	·99	·37	·15	·87	·80	·12	·32	·09
	·95	·39	·17	·86	·79	·20	·30	·06
	·93	·36	·16	·85	·80	·15	·33	·07
	·95	·45	·14	·85	·79	·15	·31	·07
	1·05	·38	·15	·85	·80	·20	·31	·07
	0·97	·33	·14	·85	·80	·18	·31	·05
	·97	·30	·13	·85	·84	·20	·30	·08
	1·00	·32	·15	·85	·80	·20	·30	·06
	1·00	·30	·15	·86	·81	·19	·30	·06
	1·03	·36	·15	·86	·90	·16	·30	·09
	1·00	·27	·13	·85	·81	·17	·31	·08
	1·00	·27	·11	·85	·90	·17	·30	·09
Corresponding Mean Observed Times by E Clock	*h m s* 9 43 45	*h m s* 9 45 11	*h m s* 9 46 23 *s* +0·144	*h m s* 9 47 25 *s* +0·860	*h m s* 10 59 54	*h m s* 11 1 9	*h m s* 11 2 34 *s* +0·308	*h m s* 11 3 35 *s* +0·078
Corresponding Mean Observed Times by W Clock	*h m s* 9 9 26 *s* +0·994	*h m s* 9 10 56 *s* +0·363	*h m s* 9 12 5	*h m s* 9 13 11	*h m s* 10 25 35 *s* +0·814	*h m s* 10 26 54 *s* +0·171	*h m s* 10 28 16	*h m s* 10 29 20
Difference	*m s* 34 18·006	*m s* 34 14·637	*m s* 34 18·144	*m s* 34 14·860	*m s* 34 18·186	*m s* 34 14·829	*m s* 34 18·308	*m s* 34 15·078

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At E		At W	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q-$	$Q+$
1883 March 14	s	s	s	s	s	s	s	s
	0·95	1·00	0·54	0·76	0·12	0·90	0·53	0·59
	·95	0·95	·55	·76	·15	·90	·56	·55
	·95	·95	·55	·78	·14	·87	·52	·55
	·98	·97	·56	·76	·13	·87	·58	·58
	·95	·95	·55	·76	·13	·88	·53	·55
	·96	·97	·55	·76	·12	·87	·55	·54
	·97	·96	·54	·75	·12	·89	·50	·53
	·95	·95	·56	·77	·13	·90	·55	·53
	·98	·95	·54	·76	·15	·90	·50	·50
	·97	·97	·54	·75	·14	·90	·55	·60
	·95	·97	·53	·75	·12	·90	·50	·59
	·99	·96	·54	·77	·15	·90	·54	·58
	·97	·95	·54	·76	·14	·90	·56	·53
	·99	·97	·55	·76	·13	·91	·54	·55
	·95	·94	·52	·75	·12	·90	·58	·56
	1·00	·98	·52	·75	·14	·90	·53	·55
	0·97	·97	·53	·74	·13	·90	·57	·54
	·97	·99	·54	·75	·14	·91	·55	·60
	·95	·97	·55	·75	·13	·90	·59	·55
	·95	·98	·55	·74	·13	·90	·56	·55
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	10 32 11	10 33 19	10 35 21	10 36 18	11 42 3	11 42 40	11 45 11	11 46 11
			s	s	s	s		
			+0·543	+0·757	+0·133	+0·895		
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	10 23 1	10 24 9	10 26 11	10 27 11	11 32 55	11 33 30	11 36 1	11 37 1
	s	s					s	s
	+0·965	+0·965					+0·545	+0·556
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	9 9·035*	9 9·035*	9 10·543	9 7·757	9 8·133	9 10·895	9 9·455*	9 9·444*

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 March 15	s	s	s	s	s	s	s	s
	0·25	0·30	0·20	0·45	0·94	0·95	0·55	0·79
	·29	·29	·20	·44	·95	·95	·54	·75
	·25	·29	·20	·45	·91	·95	·55	·79
	·28	·29	·20	·44	·95	·95	·54	·77
	·29	·30	·20	·44	·92	·96	·55	·79
	·30	·30	·20	·44	·96	·95	·55	·79
	·25	·30	·20	·44	·94	·95	·54	·80
	·29	·30	·20	·45	·92	·95	·55	·77
	·29	·30	·20	·45	·90	·95	·55	·79
	·30	·30	·19	·44	·96	·96	·55	·79
	·30	·31	·20	·45	·96	·95	·55	·77
	·30	·30	·20	·45	·95	·93	·55	·79
	·29	·31	·20	·45	·92	·95	·55	·80
	·29	·30	·20	·45	·98	·95	·56	·79
	·30	·30	·20	·44	·90	·95	·56	·79
	·29	·30	·19	·44	·95	·95	·56	·78
	·30	·30	·20	·45	·93	·95	·56	·78
	·30	·29	·20	·41	·93	·95	·54	·79
	·30	·30	·20	·44	·93	·94	·55	·79
	·32	·30	·20	·45	·90	·95	·55	·80
Corresponding Mean Observed Times by E Clock	h m s 10 32 29	h m s 10 33 28	h m s 10 35 11 s +0·199	h m s 10 36 12 s +0·444	h m s 11 41 50	h m s 11 43 5	h m s 11 44 53 s +0·550	h m s 11 45 50 s +0·786
Corresponding Mean Observed Times by W Clock	h m s 10 23 12 s +0·289	h m s 10 24 11 s +0·299	h m s 10 25 53	h m s 10 26 57	h m s 11 32 32 s +0·935	h m s 11 33 47 s +0·950	h m s 11 35 35	h m s 11 36 35
Difference	m s 9 16·711*	m s 9 16·701*	m s 9 18·199	m s 9 15·444	m s 9 17·065*	m s 9 17·050*	m s 9 18·550	m s 9 15·786

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 March 16	s	s	s	s	s	s	s	s
	0·80	0·78	0·73	0·95	0·43	0·40	0·01	0·27
	·79	·82	·73	·95	·43	·40	·04	·30
	·79	·80	·71	·94	·45	·41	·03	·29
	·78	·80	·70	·95	·47	·40	·05	·29
	·77	·77	·70	·95	·45	·40	·05	·29
	·80	·80	·72	·96	·45	·41	·04	·30
	·75	·76	·70	·95	·47	·40	·03	·30
	·78	·80	·70	·97	·49	·40	·06	·30
	·77	·77	·70	·96	·47	·40	·04	·29
	·76	·79	·70	·97	·47	·40	·04	·30
	·80	·76	·70	·95	·44	·40	·04	·30
	·75	·80	·70	·96	·49	·40	·04	·30
	·78	·79	·70	·95	·47	·40	·04	·30
	·80	·80	·70	·96	·45	·40	·05	·30
	·77	·76	·71	·95	·50	·40	·03	·30
	·76	·80	·70	·95	·45	·39	·06	·30
	·79	·79	·70	·94	·45	·39	·04	·29
	·77	·81	·70	·96	·47	·40	·05	·29
	·79	·78	·70	·94	·46	·40	·05	·30
	·80	·80	·70	·95	·46	·40	·06	·30
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	10 32 36	10 33 47	10 35 36	10 36 33	11 42 36	11 43 50	11 45 16	11 46 13
			s	s			s	s
			+0·705	+0·953			+0·043	+0·296
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	10 23 11	10 24 22	10 26 11	10 27 11	11 33 11	11 34 25	11 35 50	11 36 50
	s	s			s	s		
	+0·780	+0·789			+0·461	+0·400		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	9 24·220*	9 24·211*	9 25·705	9 22·953	9 24·539*	9 24·600*	9 26·043	9 23·296

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
March 17	0·10	0·10	0·45	0·70	0·95	0·50	0·80	0·00
	·07	·05	·45	·69	·99	·47	·77	·00
	·05	·10	·45	·69	·99	·40	·79	·00
	·09	·05	·44	·70	1·00	·40	·78	·00
	·09	·07	·44	·70	0·97	·38	·79	·00
	·10	·08	·44	·69	1·00	·38	·77	·00
	·09	·12	·44	·69	0·99	·40	·79	·00
	·10	·08	·45	·69	1·00	·40	·78	·00
	·09	·07	·43	·69	1·00	·40	·80	·00
	·09	·09	·45	·69	1·03	·40	·78	·00
	·08	·06	·44	·69	1·01	·40	·80	·00
	·05	·02	·43	·69	1·01	·40	·79	·00
	·09	·03	·44	·69	1·00	·43	·80	·00
	·09	·05	·44	·68	1·05	·45	·78	·00
	·07	·05	·44	·69	1·00	·47	·80	·00
	·05	·09	·43	·67	1·05	·46	·79	·00
	·07	·09	·45	·68	1·02	·50	·79	·00
	·07	·07	·44	·69	1·04	·48	·78	·00
	·06	·04	·44	·69	1·04	·45	·79	·00
	·09	·10	·44	·69	1·05	·38	·77	·00
Corresponding Mean Observed Times by E Clock	*h m s* 10 32 22	*h m s* 10 33 30	*h m s* 10 35 44 *s* +0·442	*h m s* 10 36 41 *s* +0·690	*h m s* 11 42 25	*h m s* 11 43 47	*h m s* 11 45 18 *s* +0·787	*h m s* 11 46 11 *s* +0·000
Corresponding Mean Observed Times by W Clock	*h m s* 10 22 50 *s* +0·080	*h m s* 10 23 58 *s* +0·071	*h m s* 10 26 11	*h m s* 10 27 11	*h m s* 11 32 50 *s* +1·010	*h m s* 11 34 16 *s* +0·428	*h m s* 11 35 45	*h m s* 11 36 40
Difference	*m s* 9 31·920*	*m s* 9 31·929*	*m s* 9 33·442	*m s* 9 30·690	*m s* 9 33·990	*m s* 9 30·572	*m s* 9 33·787	*m s* 9 31·000

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 March 18	s	s	s	s	s	s	s	s
	0·60	0·03	0·10	0·37	0·25	0 63	0·48	0·70
	·60	·05	·12	·36	·22	·62	·48	·70
	·60	·05	·11	·39	·20	·64	·49	·71
	·63	·00	·11	·35	·20	·65	·49	·72
	·60	·02	·10	·39	·22	·70	·48	·71
	·60	·03	·11	·39	·23	·69	·49	·71
	·56	·02	·10	·39	·26	·73	·48	·70
	·59	·06	·12	·36	·24	·72	·48	·71
	·60	·03	·10	·37	·29	·72	·48	·72
	·64	·07	·12	·35	·30	·70	·49	·72
	·67	·03	·10	·39	·30	·71	·49	·72
	·68	·06	·12	·38	·32	·70	·49	·73
	·70	·05	·10	·37	·30	·70	·46	·71
	·70	·04	·12	·36	·30	·71	·49	·70
	·68	·04	·10	·37	·30	·73	·48	·71
	·66	·09	·12	·37	·30	·71	·49	·72
	·66	·08	·10	·39	·30	·70	·47	·71
	·66	·10	·12	·39	·30	·73	·48	·71
	·69	·10	·11	·38	·30	·73	·49	·72
	·70	·10	·10	·39	·29	·70	·50	·70
Corresponding Mean Observed Times by E Clock	h m s 10 32 53	h m s 10 34 5	h m s 10 36 11 s +0·109	h m s 10 37 13 s +0·376	h m s 11 42 57	h m s 11 44 7	h m s 11 45 11 s +0·484	h m s 11 46 11 s +0·712
Corresponding Mean Observed Times by W Clock	h m s 10 23 11 s +0·641	h m s 10 24 27 s +0·053	h m s 10 26 30	h m s 10 27 35	h m s 11 33 15 s +0·271	h m s 11 34 28 s +0·696	h m s 11 35 30	h m s 11 36 33
Difference	m s 9 41·359	m s 9 37·947	m s 9 41·109	m s 9 38·376	m s 9 41·729	m s 9 38·304	m s 9 41·484	m s 9 38·712

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883	s	s	s	s	s	s	s	s
March 19	0·85	0·86	0·62	0·85	0·70	0·21	1·00	0·20
	·88	·89	·62	·85	·70	·23	1·00	·20
	·89	·90	·61	·84	·70	·23	1·00	·20
	·90	·89	·60	·84	·80	·26	0·98	·20
	·86	·90	·60	·84	·80	·26	·99	·20
	·86	·89	·60	·83	·80	·29	·98	·20
	·90	·90	·60	·84	·82	·24	·98	·20
	·90	·89	·62	·85	·81	·22	·98	·20
	·89	·90	·60	·84	·89	·20	·97	·20
	·89	·89	·60	·83	·85	·23	·96	·20
	·90	·90	·60	·82	·88	·21	·95	·20
	·90	·90	·60	·85	·89	·20	·96	·20
	·90	·90	·60	·84	·85	·20	·99	·20
	·86	·90	·60	·85	·89	·21	·98	·20
	·86	·89	·61	·85	·86	·21	·96	·20
	·90	·87	·60	·85	·89	·22	·97	·20
	·89	·86	·60	·85	·89	·20	·99	·20
	·84	·89	·62	·87	·84	·20	·99	·20
	·86	·90	·62	·84	·85	·22	·99	·20
	·88	·89	·60	·85	·83	·22	·97	·20
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	10 32 24	10 35 11	10 36 11	10 37 11	11 43 25	11 44 41	11 46 10	11 47 11
			s	s			s	s
			+0·606	+0·844			+0·980	+0·200
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	10 22 36	10 25 23	10 26 23	10 27 26	11 33 35	11 34 55	11 36 22	11 37 25
	s	s			s	s		
	+0·881	+0·891			+0·827	+0·223		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	9 47·119*	9 47·109*	9 48·606	9 45·844	9 49·173	9 45·777	9 48·980	9 46·200

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 March 20	s	s	s	s	s	s	s	s
	0·69	0·04	0·12	0·37	1·00	0·05	0·44	0·70
	·66	·02	·15	·38	1·00	·05	·45	·69
	·65	·00	·11	·35	1·00	·03	·45	·70
	·70	·01	·14	·35	0·99	·05	·45	·70
	·68	·00	·13	·35	1·00	·10	·45	·70
	·69	·02	·14	·34	1·00	·04	·45	·70
	·65	·01	·13	·35	1·00	·04	·47	·70
	·69	·03	·13	·35	1·00	·05	·45	·70
	·69	·03	·11	·34	1·00	·05	·48	·70
	·70	·09	·15	·33	1·00	·05	·48	·70
	·70	·10	·13	·34	0·99	·05	·48	·70
	·73	·10	·12	·38	1·00	·04	·48	·70
	·76	·10	·10	·37	1·00	·00	·46	·69
	·75	·11	·13	·35	1·00	·00	·49	·70
	·74	·12	·12	·35	1·00	·05	·47	·70
	·74	·13	·14	·33	1·03	·05	·47	·70
	·72	·13	·10	·34	1·00	·05	·46	·70
	·72	·13	·12	·35	1·00	·05	·48	·70
	·75	·10	·10	·34	1·00	·05	·48	·70
	·73	·10	·13	·34	1·00	·05	·50	·70
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	10 32 27	10 34 11	10 36 0	10 37 11	11 43 1	11 44 24	11 45 26	11 46 23
			s	s			s	s
			+0·125	+0·350			+0·467	+0·699
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	10 22 30	10 24 18	10 26 4	10 27 18	11 33 5	11 34 29	11 35 30	11 36 30
	s	s			s	s		
	+0·707	+0·069			+1·001	+0·045		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	9 56·293	9 52·931	9 56·125	9 53·350	9 54·999*	9 54·955*	9 56·467	9 53·699

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Agra* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 March 28	s	s	s	s	s	s	s	s
	0·44	0·56	0·93	0·11	0·59	0·60	0·90	0·09
	·50	·55	·90	·11	·57	·60	·90	·09
	·56	·59	·92	·11	·60	·60	·89	·09
	·56	·56	·90	·10	·58	·60	·89	·09
	·50	·58	·94	·13	·58	·59	·89	·09
	·50	·55	·92	·12	·59	·55	·89	·09
	·55	·52	·90	·10	·59	·64	·89	·09
	·54	·53	·91	·10	·58	·53	·89	·09
	·57	·53	·92	·11	·60	·60	·89	·10
	·56	·55	·94	·11	·57	·60	·89	·09
	·55	·54	·93	·10	·60	·56	·87	·09
	·54	·55	·92	·11	·60	·59	·87	·09
	·56	·54	·93	·11	·60	·60	·87	·09
	·56	·54	·94	·11	·60	·60	·88	·10
	·56	·50	·94	·12	·60	·63	·87	·10
	·50	·57	·95	·12	·60	·60	·87	·09
	·53	·53	·94	·13	·60	·61	·86	·10
	·53	·55	·90	·13	·58	·60	·88	·10
	·56	·55	·92	·13	·59	·60	·88	·09
	·54	·57	·94	·13	·59	·60	·89	·09
Corresponding Mean Observed Times by E Clock	h m s 11 41 43	h m s 11 43 11	h m s 11 44 55 s +0·925	h m s 11 45 46 s +0·115	h m s 12 42 45	h m s 12 44 11	h m s 12 45 25 s +0·883	h m s 12 45 55 s +0·093
Corresponding Mean Observed Times by W Clock	h m s 11 25 35 s +0·536	h m s 11 27 3 s +0·548	h m s 11 28 47	h m s 11 29 40	h m s 12 26 37 s +0·591	h m s 12 28 3 s +0·595	h m s 12 29 17	h m s 12 29 49
Difference	m s 16 7·464*	m s 16 7·452*	m s 16 8·925	m s 16 6·115	m s 16 7·409*	m s 16 7·405*	m s 16 8·883	m s 16 6·093

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Agra* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 March 29	s	s	s	s	s	s	s	s
	0·29	0·32	0·15	0·39	0·90	1·00	0·08	0·30
	·30	·33	·15	·38	·90	1·00	·08	·29
	·30	·32	·16	·40	·90	1·00	·06	·29
	·30	·32	·16	·38	·90	1·00	·05	·30
	·25	·30	·15	·39	·90	1·00	·06	·29
	·29	·32	·15	·39	·90	1·00	.05	·30
	·29	·30	·15	·38	·86	1·00	·10	·28
	·30	·30	·14	·36	·85	1·00	·05	·30
	·30	·30	·16	·37	·85	1·00	·07	·28
	·30	·30	·16	·35	·88	1·00	·06	·30
	·30	·30	·15	·38	·83	1·00	·05	·29
	·32	·33	·15	·38	·84	0·98	·05	·29
	·30	·32	·15	·39	·84	·98	·07	·29
	·31	·30	·14	·39	·88	·97	·05	·29
	·30	·30	·18	·39	·84	·97	·07	·30
	·30	·30	·16	·39	·84	·95	·05	·30
	·31	·30	·17	·39	·84	·95	·06	·29
	·30	·32	·16	·38	·86	·95	·06	·30
	·30	·30	·17	·39	·82	·95	·08	·30
	·30	·30	·14	·39	·86	·95	·05	·30
Corresponding Mean Observed Times by E Clock	h m s 11 42 26	h m s 11 43 38	h m s 11 45 50 s +0·155	h m s 11 46 45 s +0·383	h m s 13 9 22	h m s 13 10 16	h m s 13 11 48 s +0·063	h m s 13 12 30 s +0·294
Corresponding Mean Observed Times by W Clock	h m s 11 26 19 s +0·298	h m s 11 27 31 s +0·309	h m s 11 29 42	h m s 11 30 40	h m s 12 53 13 s +0·865	h m s 12 54 10 s +0·983	h m s 12 55 40	h m s 12 56 25
Difference	m s 16 6·702*	m s 16 6·691*	m s 16 8·155	m s 16 5·383	m s 16 8·135	m s 16 5·017	m s 16 8·063	m s 16 5·294

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Agra* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 March 30	s	s	s	s	s	s	s	s
	0·73	0·89	0·20	0·40	0·60	0·89	0·16	0·39
	·74	·90	·20	·41	·60	·88	·18	·40
	·74	·90	·20	·40	·60	·90	·16	·40
	·73	·90	·18	·40	·62	·88	·17	·40
	·74	·89	·20	·41	·69	·89	·14	·39
	·72	·90	·20	·40	·70	·88	·19	·40
	·73	·88	·19	·40	·75	·87	·15	·40
	·70	·90	·20	·41	·80	·87	·17	·40
	·71	·90	·20	·41	·80	·88	·15	·40
	·70	·90	·20	·40	·80	·86	·16	·40
	·73	·90	·20	·40	·78	·90	·15	·39
	·75	·90	·20	·40	·79	·88	·15	·40
	·75	·90	·20	·40	·80	·90	·15	·40
	·76	·90	·20	·40	·80	·88	·18	·40
	·77	·95	·20	·42	·80	·89	·16	·39
	·77	·95	·20	·42	·79	·85	·17	·39
		·90	·20	·43	·78	·85	·16	·39
		·95	·20	·41	·79	·84	·16	·39
		·89	·20	·42	·79	·85	·15	·37
		·89	·20	·43	·80	·82	·15	·38
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	11 41 35	11 42 48	11 44 49	11 45 44	12 41 20	12 41 45	12 43 24	12 44 15
			s	s			s	s
			+0·199	+0·409			+0·161	+0·394
W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	11 25 27	11 26 43	11 28 42	11 29 40	12 25 12	12 25 40	12 27 17	12 28 11
	s	s			s	s		
	+0·736	+0·905			+0·744	+0·873		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	16 7·264	16 4·095	16 7·199	16 4·409	16 7·256	16 4·127	16 7·161	16 4·394

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Agra* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 March 31	s	s	s	s	s	s	s	s
	0·20	0·37	0·60	0·84	0·27	0·45	0·55	0·79
	·20	·38	·60	·83	·30	·46	·56	·79
	·20	·40	·60	·84	·30	·50	·55	·79
	·20	·39	·60	·83	·30	·49	·55	·78
	·20	·40	·60	·85	·29	·49	·55	·79
	·20	·40	·60	·82	·29	·49	·55	·75
	·23	·44	·60	·85	·24	·50	·55	·78
	·25	·48	·60	·83	·29	·50	·54	·75
	·25	·50	·61	·84	·30	·50	·57	·78
	·29	·48	·60	·85	·30	·50	·55	·75
	·25	·48	·60	·85	·29	·49	·57	·79
	·25	·46	·60	·84	·29	·47	·55	·76
	·24	·49	·61	·84	·30	·45	·56	·78
	·25	·50	·62	·83	·30	·45	·56	·74
	·26	·51	·61	·86	·30	·47	·55	·78
	·30	·50	·61	·82	·30	·48	·56	·79
	·29	·52	·60	·85	·30	·49	·56	·77
	·29	·50	·62	·84	·31	·48	·57	·73
	·29	·53	·61	·85	·30	·46	·55	·79
	·30	·50	·60	·85	·31	·47	·58	·75
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	11 41 50	11 43 11	11 44 46	11 45 43	12 42 50	12 43 33	12 45 2	12 45 29
			s	s			s	s
			+0·605	+0·841			+0·557	+0·772
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	11 25 43	11 27 7	11 28 40	11 29 40	12 26 43	12 27 29	12 28 56	12 29 26
	s	s			s	s		
	+0·247	+0·462			+0·294	+0·480		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	16 6·753	16 3·538	16 6·605	16 3·841	16 6·706	16 3·520	16 6·557	16 3·772

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Agra* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q+$	$Q-$
1883	s	s	s	s	s	s	s	s
April 3	1·00	0·06	0·12	0·89	0·60	0·63	0·83	0·05
	1·00	·03	·14	·90	·62	·63	·84	·05
	0·99	·02	·13	·89	·60	·64	·83	·04
	1·00	·00	·13	·90	·61	·64	·86	·09
	0·95	·00	·12	·89	·60	·63	·83	·07
	·96	·00	·12	·90	·61	·64	·87	·08
	·95	·00	·10	·90	·60	·60	·83	·04
	·98	·00	·11	·90	·60	·64	·84	·06
	·97	·01	·12	·93	·59	·60	·82	·04
	1·00	·00	·12	·90	·62	·57	·85	·07
	0·97	·03	·12	·91	·60	·60	·82	·04
	·97	·02	·14	·90	·62	·62	·84	·05
	·97	·03	·12	·93	·60	·61	·81	·03
	·99	·03	·13	·90	·64	·62	·86	·06
	·97	·03	·11	·91	·62	·60	·84	·06
	1·00	·04	·14	·90	·65	·65	·86	·05
	0·99	·04	·13	·93	·60	·61	·81	·04
	·98	·04	·13	·89	·63	·66	·84	·05
	1·00	·04	·11	·90	·64	·62	·83	·05
	1·00	·05	·13	·90	·60	·63	·86	·05
Corresponding Mean Observed Times by E Clock	h m s 11 42 15	h m s 11 43 12	h m s 11 45 48 s +0·124	h m s 11 46 48 s +0·904	h m s 12 41 24	h m s 12 42 50	h m s 12 39 38 s +0·839	h m s 12 44 24 s +0·054
Corresponding Mean Observed Times by W Clock	h m s 11 26 10 s +0·982	h m s 11 27 11 s +0·024	h m s 11 29 47	h m s 11 30 45	h m s 12 25 21 s +0·613	h m s 12 26 47 s +0·622	h m s 12 23 35	h m s 12 28 23
Difference	m s 16 4·018	m s 16 0·976	m s 16 1·124	m s 16 3·904	m s 16 2·387*	m s 16 2·378*	m s 16 3·839	m s 16 1·054

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Fyzabad (E) *and Agra* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883	s	s	s	s	s	s	s	s
April 4	0·10	0·21	0·75	1·00	0·75	0·68	0·70	0·95
	·10	·23	·77	1·01	·75	·80	·69	·90
	·10	·24	·76	0·99	·74	·77	·69	·93
	·11	·27	·77	1·01	·75	·80	·67	·93
	·10	·26	·75	0·99	·80	·80	·69	·94
	·10	·29	·78	1·00	·80	·72	.68	·90
	·09	·27	·75	0·99	·75	·75	·67	·93
	·09	·28	·79	1·00	·80	·70	·68	·92
	·10	·26	·77	1·00	·78	·77	·68	·95
	·12	·27	·80	1·01	·78	·74	·68	·90
	·10	·24	·79	0·99	·78	·80	·69	·92
	·13	·29	·76	1·00	·78	·80	·69	·95
	·14	·29	·75	0·99	·78	·77	·69	·95
	·13	·31	·77	1·00	·78	·78	·68	·95
	·10	·32	·77	1·00	·78	·77	·69	·90
	·10	·31	·76	1·00	·77	·78	·69	·93
	·10	·32	·75	1·00	·75	·75	·70	·92
	·10	·33	·77	1·00	·75	·79	·70	·93
	·12	·32	·75	1·00	·78	·75	·70	·91
	·10	·38	·77	1·00	·77	·75	·69	·93
Corresponding Mean Observed Times by E Clock	h m s 11 42 40	h m s 11 43 20	h m s 11 45 13 s +0·767	h m s 11 45 54 s +0·999	h m s 12 42 13	h m s 12 42 59	h m s 12 38 42 s +0·688	h m s 12 44 59 s +0·927
Corresponding Mean Observed Times by W Clock	h m s 11 26 37 s +0·107	h m s 11 27 20 s +0·285	h m s 11 29 11	h m s 11 29 55	h m s 12 26 11 s +0·771	h m s 12 26 57 s +0·764	h m s 12 22 40	h m s 12 29 0
Difference	m s 16 2·893	m s 15 59·715	m s 16 2·767	m s 15 59·999	m s 16 1·229*	m s 16 1·236*	m s 16 2·688	m s 15 59·927

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s			+	
December 4	4 28 11	28 14·055	E			28 14·059	γ	at W, Q = 1·725		D = 28 15·944
	29 26	14·870	W			14·872	β		s 0·123	
	31 11	17·510	E			17·508	α	at E, Q = 1·159		T_E = 4 51 29
	32 28	17·193	W			17·189	δ			
	4 30 19	28 15·907		s +0·106 at 5h 11m						
"	5 49 11	28 14·207	E			28 14·211	γ	at W, Q = 1·740		D = 28 15·980
	50 26	14·988	W			14·990	β		0·098	
	52 30	17·694	E			17·692	α	at E, Q = 1·157		T_E = 5 11 44
	54 2	17·309	W			17·305	δ			
	5 51 32	28 16·050								
December 5	4 28 15	28 19·397	E			28 19·402	α	at W, Q = 1·746		D = 28 17·800
	31 45	15·909	E			15·910	γ		0·122	
	33 34	19·072	W			19·071	δ	at E, Q = 1·172		T_E = 4 51 29
	36 28	16·732	W			16·727	β			
	4 32 31	28 17·778		s +0·070 at 5h 12m						
"	5 50 28	28 16·857	W			28 16·859	β	at W, Q = 1·734		D = 28 17·824
	51 41	19·484	E			19·484	α		0·120	
	52 6	16·017	E			16·017	γ	at E, Q = 1·133		T_E = 5 11 43
	53 30	19·126	W			19·124	δ			
	5 51 56	28 17·871								
December 6	4 28 55	28 21·299	E			28 21·302	α	at W, Q = 1·752		D = 28 19·688
	30 30	18·591	W			18·592	β		0·111	
	31 29	17·799	E			17·798	γ	at E, Q = 1·180		T_E = 4 51 14
	33 32	20·956	W			20·953	δ			
	4 31 7	28 19·661		s +0·082 at 5h 11m						
"	5 49 32	28 21·422	E			28 21·425	α	at W, Q = 1·733		D = 28 19·717
	50 30	18·668	W			18·670	β		0·080	
	52 29	17·959	E			17·958	γ	at E, Q = 1·181		T_E = 5 12 23
	54 21	21·035	W			21·031	δ			
	5 51 43	28 19·771								

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
December 7	4 28 11	28 23·144	E			28 23·148	α	at W, Q = 1·711	+ 0·135	D = 28 21·605
	29 32	20·533	W			20·534	β			
	31 5	19·728	E			19·727	γ	at E, Q = 1·173		T_E = 4 50 26
	32 55	22·885	W			22·881	δ			
	4 30 26	28 21·573		s +0·096 at 5h 11m						
,,	5 49 11	28 23·300	E			28 23·303	α	at W, Q = 1·701		D = 28 21·640
	50 34	20·629	W			20·630	β		0·100	
	51 31	19·900	E			19·900	γ	at E, Q = 1·173		T_E = 5 12 22
	53 48	22·979	W			22·975	δ			
	5 51 16	28 21·702								
December 8	4 28 33	28 21·616	E			28 21·619	γ	at W, Q = 1·713		D = 28 23·501
	29 33	22·453	W			22·455	β		0·142	
	31 37	25·046	E			25·045	α	at E, Q = 1·160		T_E = 4 50 24
	33 11	24·779	W			24·776	δ			
	4 30 44	28 23·474		s +0·082 at 5h 11m						
,,	5 48 50	28 21·755	E			28 21·758	γ	at W, Q = 1·719		D = 28 23·531
	50 12	22·529	W			22·530	β		0·107	
	51 37	25·196	E			25·195	α	at E, Q = 1·161		T_E = 5 12 21
	53 12	24·855	W			24·852	δ			
	5 50 58	28 23·584								
December 9	4 28 35	28 23·647	E			28 23·650	γ	at W, Q = 1·710		D = 28 25·519
	29 35	24·448	W			24·450	β		0·129	
	31 11	27·072	E			27·071	α	at E, Q = 1·169		T_E = 4 50 23
	33 11	26·792	W			26·788	δ			
	4 30 38	28 25·490		s +0·089 at 5h 11m						
,,	5 48 59	28 23·778	E			28 23·781	γ	at W, Q = 1·708		D = 28 25·552
	50 11	24·540	W			24·541	β		0·121	
	52 11	27·199	E			27·197	α	at E, Q = 1·190		T_E = 5 12 19
	53 11	26·923	W			26·920	δ			
	5 51 8	28 25·610								

Arc Jalpaiguri (E) *and Fyzabad* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
December 11	4 27 11	28 27·502	E			28 27·507	γ	at W, Q = 1·729 s	+	D = 28 29·380 m s
	29 58	28·281	W			28·281	β		0·112 s	
	31 11	30·966	E			30·965	α	at E, Q = 1·178		T_E = 4 50 20 h m s
	32 42	30·641	W			30·637	δ			
	4 30 16	28 29·348		+0·097 s at 5h 10m						
»	5 48 11	28 27·676	E			28 27·679	γ	at W, Q = 1·710		D = 28 29·416 m s
	49 11	28·393	W			28·394	β		0·089	
	50 42	30·740	W			30·739	δ	at E, Q = 1·172		T_E = 5 12 16 h m s
	51 11	31·100	E			31·098	α			
	5 49 49	28 29·477								

Arc Jalpaiguri (E) *and Calcutta* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s			+	
December 21	4 58 4	1 1·226	E			1 1·226	γ	at W, Q = 1·668 s		D = 1 2·937 m s
	58 11	4·562	E			4·562	α		0·043 s	
	59 47	1·524	W			1·524	β	at E, Q = 1·457		T_E = 5 18 33 h m s
	61 11	4·437	W			4·437	δ			
	4 59 18	1 2·937		−0·001 s at 5h 24m						
»	5 46 55	1 1·511	W			1 1·511	β	at W, Q = 1·674		D = 1 2·936 m s
	47 49	4·429	W			4·429	δ		0·034	
	49 32	1·229	E			1·229	γ	at E, Q = 1·459		T_E = 5 33 51 h m s
	50 35	4·576	E			4·576	α			
	5 48 43	1 2·936								

Arc Jalpaiguri (E) *and Calcutta* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$ at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	h m s	m s				m s				
December 26	4 59 0	0 59·101	E			0 59·101	γ	at W, Q = 1·665	+	D = 1 0·822
	59 55	1 2·431	E			1 2·431	α		0·059	
	5 1 39	0 59·453	W			0 59·453	β	at E, Q = 1·431		T_E = 5 16 55
	2 52	1 2·315	W			1 2·315	δ			
	5 0 52	1 0·825		−0·012 at 5h 23m						
"	5 43 55	0 59·099	E			0 59·099	γ	at W, Q = 1·664		D = 1 0·819
	44 45	1 2·427	E			1 2·427	α		0·053	
	46 40	0 59·428	W			0 59·428	β	at E, Q = 1·441		T_E = 5 31 21
	47 52	1 2·311	W			1 2·311	δ			
	5 45 48	1 0·816								
December 27	4 59 40	0 58·413	E			0 58·412	γ	at W, Q = 1·670		D = 1 0·141
	5 0 50	1 1·753	E			1 1·753	α		0·067	
	2 12	0 58·771	W			0 58·771	β	at E, Q = 1·445		T_E = 5 17 41
	3 27	1 1·659	W			1 1·660	δ			
	5 1 32	1 0·149		−0·031 at 5h 24m						
"	5 44 40	0 58·405	E			0 58·404	γ	at W, Q = 1·670		D = 1 0·132
	45 40	1 1·744	E			1 1·744	α		0·052	
	46 59	0 58·739	W			0 58·739	β	at E, Q = 1·438		T_E = 5 33 58
	47 52	1 1·615	W			1 1·616	δ			
	5 46 18	1 0·126								
December 28	5 0 11	0 57·806	E			0 57·806	γ	at W, Q = 1·664		D = 0 59·515
	1 13	1 1·133	E			1 1·133	α		0·046	
	3 48	0 58·115	W			0 58·115	β	at E, Q = 1·446		T_E = 5 17 38
	4 36	1 1·007	W			1 1·007	δ			
	5 2 27	0 59·515		−0·001 at 5h 24m						
"	5 43 56	0 57·805	E			0 57·805	γ	at W, Q = 1·668		D = 0 59·514
	44 50	1 1·141	E			1 1·141	α		0·041	
	46 59	0 58·105	W			0 58·105	β	at E, Q = 1·450		T_E = 5 34 46
	47 56	1 1·004	W			1 1·004	δ			
	5 45 55	0 59·514								

Arc Jalpaiguri (E) *and Calcutta* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1882	*h m s*	*m s*				*m s*				
December 29	4 59 50	0 57·321	E			0 57·320	γ	at W, $Q = 1^s\cdot665$	+	D = 0 59·025
	5 1 0	1 0·652	E			1 0·651	α		$0^s\cdot044$	
	4 18	0 57·624	W			0 57·625	β	at E, $Q = 1^s\cdot449$		T_E = 5 17 35
	5 16	1 0·522	W	$-0^s\cdot022$ at $5^h\,24^m$		1 0·523	δ			
	5 2 36	0 59·030								
"	5 44 11	0 57·300	E			0 57·299	γ	at W, $Q = 1^s\cdot675$		D = 0 59·018
	45 12	1 0·649	E			1 0·649	α		$0^s\cdot040$	
	46 56	0 57·598	W			0 57·598	β	at E, $Q = 1^s\cdot456$		T_E = 5 33 52
	47 59	1 0·509	W			1 0·510	δ			
	5 46 5	0 59·014								
1883										
January 2	5 0 35	0 54·316	E			0 54·316	γ	at W, $Q = 1^s\cdot665$		D = 0 56·041
	1 35	57·645	E			57·645	α		$0^s\cdot063$	
	3 50	54·670	W			54·670	β	at E, $Q = 1^s\cdot436$		T_E = 5 17 23
	4 50	57·542	W			57·542	δ			
	5 2 43	0 56·043		$-0^s\cdot010$ at $5^h\,24^m$						
"	5 43 20	0 54·305	E			0 54·305	γ	at W, $Q = 1^s\cdot671$		D = 0 56·038
	44 30	57·647	E			57·647	α		$0^s\cdot060$	
	46 40	54·648	W			54·648	β	at E, $Q = 1^s\cdot448$		T_E = 5 33 40
	47 45	57·543	W			57·543	δ			
	5 45 34	0 56·036								

Arc Chittagong (E) *and Jalpaiguri* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = -\frac{\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
January 12	7 7 35	13 3·061	E			13 3·064	α	at W, Q = 1·464	+ 0·117	D = 13 1·738
	8 40	0·135	E			0·136	γ			
	10 44	3·565	W			3·564	δ	at E, Q = 1·731		T_E = 7 27 21
	11 40	0·104	W			0·102	β			
	7 9 40	13 1·716		s +0·075 at 7h 42m						
,,	8 12 48	13 3·120	E			13 3·122	α	at W, Q = 1·437		D = 13 1·769
	13 49	0·248	E			0·249	γ		0·111	
	15 12	3·639	W			3·638	δ	at E, Q = 1·731		T_E = 7 51 59
	16 11	0·179	W			0·177	β			
	8 14 30	13 1·797								
January 13	7 7 25	13 5·656	E			13 5·659	α	at W, Q = 1·513		D = 13 4·260
	8 35	2·632	E			2·633	γ		0·076	
	9 31	6·016	W			6·015	δ	at E, Q = 1·717		T_E = 7 27 20
	10 28	2·583	W			2·580	β			
	7 9 0	13 4·222		s +0·124 at 7h 42m						
,,	8 12 35	13 5·743	E			13 5·746	α	at W, Q = 1·481		D = 13 4·309
	13 35	2·783	E			2·784	γ		* 0·091	
	14 40	4·443	W			4·442*	δ	at E, Q = 1·717*		T_E = 7 51 12
	15 29	4·454	W			4·451*	β			
	8 14 5	13 4·356								
January 14	7 7 49	13 8·312	E			13 8·315	α	at W, Q = 1·520		D = 13 6·927
	8 48	5·274	E			5·275	γ		0·108	
	10 54	7·027	W			7·025*	δ	at E, Q = 1·710*		T_E = 7 27 6
	11 45	7·000	W			6·997*	β			
	7 9 49	13 6·903		s +0·085 at 7h 42m						
,,	8 12 40	13 8·383	E			13 8·386	α	at W, Q = 1·510		D = 13 6·962
	13 35	5·364	E			5·366	γ		0·119	
	15 40	7·126	W			7·125*	β	at E, Q = 1·710*		T_E = 7 51 11
	16 44	7·106	W			7·103*	δ			
	8 14 40	13 6·995								

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Chittagong (E) *and Jalpaiguri* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$ s; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
January 15	7 7 48	13 10·916	E			13 10·920	α	at W, Q = 1·544 s	τ = s 0·083	D = 13 9·489
	8 47	7·829	E			7·831	γ			
	10 50	7·892	W			7·890	β	at E, Q = 1·652		T_E = 7 27 5
	11 51	11·198	W	s +0·103 at $7^h 42^m$		11·194	δ			
	7 9 49	13 9·459								
„	8 12 35	13 11·000	E			13 11·003	α	at W, Q = 1·528	0·094	D = 13 9·530
	13 50	7·947	E			7·948	γ			
	15 22	11·349	W			11·348	δ	at E, Q = 1·685		T_E = 7 51 9
	16 19	7·982	W			7·979	β			
	8 14 32	13 9·570								
January 17	7 7 48	13 15·804	E			13 15·807	α	at W, Q = 1·520	0·117	D = 13 14·429
	8 46	12·765	E			12·766	γ			
	10 27	16·241	W			16·240	δ	at E, Q = 1·719		T_E = 7 27 1
	11 42	12·804	W	s +0·088 at $7^h 42^m$		12·801	β			
	7 9 41	13 14·404								
„	8 13 0	13 15·921	E			13 15·924	α	at W, Q = 1·511	0·087	D = 13 14·467
	13 48	12·901	E			12·903	γ			
	15 58	12·906	W			12·905	β	at E, Q = 1·683		T_E = 7 52 8
	16 56	16·273	W			16·270	δ			
	8 14 56	13 14·500								
January 18	7 7 46	13 18·117	E			13 18·120	α	at W, Q = 1·498	0·132	D = 13 16·786
	8 50	15·122	E			15·123	γ			
	10 12	18·575	W			18·574	δ	at E, Q = 1·688		T_E = 7 26 59
	11 11	15·201	W	s +0·111 at $7^h 42^m$		15·198	β			
	7 9 30	13 16·754								
„	8 13 0	13 18·292	E			13 18·295	α	at W, Q = 1·539	0·117	D = 13 16·831
	13 50	15·217	E			15·218	γ			
	15 12	18·673	W			18·672	δ	at E, Q = 1·681		T_E = 7 51 4
	16 11	15·313	W			15·310	β			
	8 14 33	13 16·874								

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	*h m s*	*m s*				*m s*				
January 23	7 48 13	14 1·206	E			14 1·203	α	at W, Q = 1·562	+	D = 13 59·698
	49 13	13 58·080	E			13 58·079	γ		0·074	
	50 21	14 1·482	W			14 1·483	δ	at E, Q = 1·694		T_E = 8 0 26
	51 48	13 58·093	W			13 58·096	β			
	7 49 54	13 59·715		s −0·097 at $8^h\ 17^m$						
„	8 42 50	14 1·101	E			14 1·098	α	at W, Q = 1·555		D = 13 59·670
	43 50	13 57·991	E			13 57·989	γ		0·083	
	46 12	58·047	W			58·049	β	at E, Q = 1·660		T_E = 8 17 34
	46 50	14 1·366	W			14 1·369	δ			
	8 44 56	13 59·626								
January 24	7 48 50	13 57·795	E			13 57·791	α	at W, Q = 1·563		D = 13 56·271
	49 50	54·665	E			54·664	γ		0·073	
	50 43	58·070	W			58·071	δ	at E, Q = 1·697		T_E = 8 2 10
	51 44	54·672	W			54·676	β			
	7 50 17	13 56·301		s −0·153 at $8^h\ 18^m$						
„	8 42 50	13 57·666	E			13 57·661	α	at W, Q = 1·576		D = 13 56·228
	43 50	54·512	E			54·510	γ		0·077	
	45 43	57·931	W			57·933	δ	at E, Q = 1·694		T_E = 8 19 4
	46 40	54·540	W			54·545	β			
	8 44 46	13 56·162								
January 25	7 47 11	13 54·179	E			13 54·175	α	at W, Q = 1·565		D = 13 52·650
	48 45	51·046	E			51·045	γ		0·065	
	50 11	54·448	W			54·450	δ	at E, Q = 1·710		T_E = 8 2 5
	51 21	51·026	W			51·030	β			
	7 49 22	13 52·675		s −0·120 at $8^h\ 17^m$						
„	8 42 47	13 54·059	E			13 54·055	α	at W, Q = 1·554		D = 13 52·615
	43 40	50·949	E			50·946	γ		0·063	
	46 2	50·907	W			50·909	β	at E, Q = 1·718		T_E = 8 19 24
	47 5	54·341	W			54·345	δ			
	8 44 54	13 52·564								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $= \frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
January 26	7 48 20	13 50·615	E			13 50·610	α	at W, Q = 1·539	+	D = 13 49·125
	50 20	47·533	E			47·532	γ		0·078	
	51 59	47·516	W			47·518	β	at E, Q = 1·709		T_E = 8 2 5
	52 50	50·932	W	s −0·126 at 8h 18m		50·936	δ			
	7 50 52	13 49·149								
"	8 42 30	13 50·527	E			13 50·522	α	at W, Q = 1·560		D = 13 49·089
	44 11	47·404	E			47·403	γ		0·074	
	45 41	50·815	W			50·817	δ	at E, Q = 1·707		T_E = 8 19 37
	46 37	47·399	W			47·403	β			
	8 44 45	13 49·036								
January 28	7 47 56	13 44·176	E			13 44·173	α	at W, Q = 1·560		D = 13 42·642
	48 56	41·053	E			41·052	γ		0·054	
	49 55	44·463	W			44·464	δ	at E, Q = 1·743		T_E = 8 1 58
	50 52	40·975	W	s −0·120 at 8h 17m		40·978	β			
	7 49 25	13 42·667								
"	8 42 56	13 44·063	E			13 44·059	α	at W, Q = 1·574		D = 13 42·606
	43 57	40·914	E			40·912	γ		0·070	
	45 34	44·323	W			44·325	δ	at E, Q = 1·700		T_E = 8 19 32
	46 31	40·922	W			40·926	β			
	8 44 45	13 42·556								
January 29	7 47 56	13 41·547	E			13 41·544	α	at W, Q = 1·573		D = 13 40·026
	48 56	38·400	E			38·398	γ		0·079	
	50 32	41·831	W			41·833	δ	at E, Q = 1·703		T_E = 8 1 55
	51 28	38·423	W	s −0·116 at 8h 17m		38·426	β			
	7 49 43	13 40·050								
"	8 42 56	13 41·435	E			13 41·432	α	at W, Q = 1·562		D = 13 39·993
	43 56	38·310	E			38·308	γ		0·074	
	45 31	41·721	W			41·723	δ	at E, Q = 1·706		T_E = 8 19 30
	46 30	38·308	W			38·311	β			
	8 44 43	13 39·944								

Arc Chittagong (E) *and Calcutta* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
January 30	7 46 56	13 38·927	E			13 38·922	α	at W, Q = 1·544	+ s 0·067	D = 13 37·421
	48 56	35·834	E			35·833	γ			
	50 30	39·201	W			39·203	δ	at E, Q = 1·692		T_E = 8 1 52
	51 31	35·816	W			35·820	β			
	7 49 28	13 37·445		s −0·118 at $8^h 17^m$						
„	8 42 56	13 38·833	E			13 38·829	α	at W, Q = 1·562		D = 13 37·386
	43 56	35·707	E			35·705	γ		0·069	
	45 30	39·099	W			39·101	δ	at E, Q = 1·696		T_E = 8 19 27
	46 31	35·705	W			35·709	β			
	8 44 43	13 37·336								

Arc Calcutta (E) *and Fyzabad* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
February 8	9 24 15	24 3·758	E			24 3·752	α	at W, Q = 1·666	+ s 0·068	D = 24 2·096
	25 12	0·423	E			0·421	γ			
	26 30	3·849	W			3·851	δ	at E, Q = 1·630		T_E = 9 41 32
	27 31	0·586	W			0·592	β			
	9 25 52	24 2·154		s −0·224 at $10^h 3^m$						
„	10 38 30	24 3·485	E			24 3·479	α	at W, Q = 1·679		D = 24 2·021
	39 31	0·122	E			0·120	γ		0·077	
	40 44	3·580	W			3·582	δ	at E, Q = 1·627		T_E = 10 1 38
	41 40	0·321	W			0·327	β			
	10 40 6	24 1·877								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Calcutta (E), *and Fyzabad* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	*h m s*	*m s*				*m s*				
February 9	9 24 15	23 58·568	E			23 58·562	α	at W, $Q = 1^s{\cdot}655$	+	D = 23 56·919
	25 15	55·254	E			55·252	γ		$0^s{\cdot}061$	
	26 30	58·672	W			58·674	δ	at E, $Q = 1^s{\cdot}645$		T_E = 9 38 55
	27 25	55·379	W			55·385	β			
	9 25 51	23 56·968		$-0^s{\cdot}226$ at $10^h\ 3^m$						
,,	10 37 40	23 58·299	E			23 58·291	α	at W, $Q = 1^s{\cdot}659$		†D =
	38 40	54·977	E			54·973	γ		$0^s{\cdot}058$	
	40 50	58·386	W			58·390	δ	at E, $Q = 1^s{\cdot}643$		†T_E =
	41 45	55·096	W			55·104	β			
	10 39 44	23 56·690								
February 10	9 22 15	23 53·632	E			23 53·626	α	at W, $Q = 1^s{\cdot}664$		D = 23 51·992
	23 20	50·301	E			50·299	γ		$0^s{\cdot}074$	
	24 35	53·746	W			53·748	δ	at E, $Q = 1^s{\cdot}638$		T_E = 9 37 18
	25 31	50·467	W			50·472	β			
	9 23 55	23 52·037		$-0^s{\cdot}200$ at $10^h\ 1^m$						
,,	10 37 15	23 53·397	E			23 53·392	α	at W, $Q = 1^s{\cdot}673$		D = 23 51·913
	38 21	50·047	E			50·046	γ		$0^s{\cdot}069$	
	39 11	53·486	W			53·487	δ	at E, $Q = 1^s{\cdot}630$		T_E = 10 1 11
	40 11	50·222	W			50·227	β			
	10 38 45	23 51·788								
February 11	9 27 11	23 49·084	E			23 49·079	α	at W, $Q = 1^s{\cdot}669$		D = 23 47·448
	28 12	45·743	E			45·741	γ		$0^s{\cdot}079$	
	29 24	49·184	W			49·186	δ	at E, $Q = 1^s{\cdot}618$		T_E = 9 41 30
	30 25	45·945	W			45·950	β			
	9 28 48	23 47·489		$-0^s{\cdot}196$ at $10^h\ 4^m$						
,,	10 36 30	23 47·159*	E			23 47·153*	α	at W, $Q = 1^s{\cdot}642$*		D = 23 47·381
	37 25	47·179*	E			47·176*	γ		$0^s{\cdot}096$	
	39 25	48·984	W			48·987	δ	at E, $Q = 1^s{\cdot}629$		T_E = 10 1 36
	40 26	45·722	W			45·728	β			
	10 38 27	23 47·261								

* Owing to irregular Chronograph Rate the Pen Equation has been determined and applied graphically before reading off the signals. † Owing to clouds intervening the group of stars, for which these quantities would be required, have not been observed.

Arc Calcutta (E) *and Fyzabad* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$ at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
February 13	9 24 22	23 41·630	E			23 41·626	α	at W, Q = 1·665	+ 0·096	D = 23 40·018
	25 20	38·298	E			38·296	γ			
	26 35	41·791	W			41·793	δ	at E, Q = 1·640		T_E = 9 41 29
	27 32	38·509	W			38·513	β			
	9 25 57	23 40·057		−0·152 at 10h 2m						
„	10 36 20	23 41·457	E			23 41·453	α	at W, Q = 1·658		D = 23 39·967
	37 20	38·138	E			38·136	γ		0·081	
	38 35	41·591	W			41·593	δ	at E, Q = 1·637		T_E = 10 1 35
	39 30	38·315	W			38·319	β			
	10 37 56	23 39·875								
February 14	9 23 31	23 38·028	E			23 38·023	α	at W, Q = 1·661		D = 23 36·391
	24 30	34·704	E			34·702	γ		0·067	
	26 26	38·134	W			38·136	δ	at E, Q = 1·639		T_E = 9 41 28
	27 12	34·854	W			34·858	β			
	9 25 25	23 36·430		−0·146 at 10h 3m						
„	10 39 0	23 34·701	W			23 34·696	β	at W, Q = 1·685		D = 23 36·342
	40 12	37·945	W			37·943	δ		0·073	
	42 13	37·856	E			37·859	α	at E, Q = 1·624		T_E = 10 1 35
	43 11	34·483	E			34·488	γ			
	10 41 9	23 36·246								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Calcutta (E) *and Jubbulpore* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
February 22	9 43 32	33 46·667	E			33 46·672	α	at W, Q = 1·700 s	+ 0·087 s	D = 33 45·095 m s
	44 40	43·270	E			43·273	γ			
	46 50	46·780	W			46·777	δ	at E, Q = 1·631		T$_E$ = 10 0 17 h m s
	47 55	43·521	W			43·516	β			
	9 45 44	33 45·060		+0·146 s at 10h 24m						
"	11 0 30	33 46·822	E			33 46·826	α	at W, Q = 1·674	0·095	D = 33 45·135 m s
	1 40	43·475	E			43·477	γ			
	3 2	46·973	W			46·971	δ	at E, Q = 1·629		T$_E$ = 10 16 18 h m s
	3 58	43·716	W			43·712	β			
	11 2 20	33 45·247								
February 23	9 44 20	33 48·163	E			33 48·168*	α	at W, Q = 1·704*	0·092	D = 33 48·282 m s
	45 45	48·147	E			48·149*	γ			
	47 27	49·990	W			49·988	δ	at E, Q = 1·645		T$_E$ = 10 0 16 h m s
	48 24	46·702	W			46·698	β			
	9 46 29	33 48·251		+0·137 s at 10h 24m						
"	11 0 36	33 48·323	E			33 48·327*	α	at W, Q = 1·700*	0·101	D = 33 48·319 m s
	1 17	48·316	E			48·318*	γ			
	3 1	50·148	W			50·146	δ	at E, Q = 1·622		T$_E$ = 10 16 17 h m s
	3 58	46·907	W			46·903	β			
	11 2 13	33 48·424								
February 24	9 43 39	33 51·162	E			33 51·167*	α	at W, Q = 1·772*	0·096	D = 33 51·285 m s
	44 54	51·138	E			51·140*	γ			
	46 33	52·993	W			52·991	δ	at E, Q = 1·646		T$_E$ = 10 0 15 h m s
	47 30	49·703	W			49·698	β			
	9 45 39	33 51·249		+0·148 s at 10h 24m						
"	11 0 33	33 53·077	E			33 53·082	α	at W, Q = 1·731	0·087	D = 33 51·328 m s
	2 1	49·619	E			49·621	γ			
	3 43	53·165	W			53·163	δ	at E, Q = 1·637		T$_E$ = 10 17 49 h m s
	4 40	49·895	W			49·890	β			
	11 2 44	33 51·439								

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

Arc Calcutta (E) *and Jubbulpore* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	*h m s*	*m s*				*m s*				
February 28	9 43 50	34 6·872	E			34 6·877*	α	at W, Q = 1·689*	+	D = 34 7·025
	45 0	6·889	E			6·891*	γ		*s* 0·106	
	46 55	8·726	W			8·724	δ	at E, Q = 1·628		T_E = 10 0 9
	48 5	5·472	W	*s* +0·147 at $10^h\ 24^m$		5·467	β			
	9 45 58	34 6·990								
,,	10 59 55	34 7·073	E			34 7·078*	α	at W, Q = 1·692*		D = 34 7·064
	11 1 11	7·083	E			7·085*	γ		0·095	
	2 35	8·906	W			8·904	δ	at E, Q = 1·634		T_E = 10 16 10
	3 35	5·641	W			5·637	β			
	11 1 49	34 7·176								
March 2	9 43 50	34 13·197	E			34 13·201*	α	at W, Q = 1·683*		D = 34 13·295
	44 56	13·181	E			13·182*	γ		0·075	
	46 35	14·985	W			14·984	δ	at E, Q = 1·642		T_E = 10 0 7
	47 35	11·704	W	*s* +0·116 at $10^h\ 24^m$		11·700	β			
	9 45 44	34 13·267								
,,	11 0 30	34 13·350	E			34 13·353*	α	at W, Q = 1·701*		D = 34 13·326
	1 37	13·318	E			13·319*	γ		0·079	
	2 59	15·113	W			15·112	δ	at E, Q = 1·617		T_E = 10 16 8
	3 57	11·880	W			11·877	β			
	11 2 16	34 13·415								
March 3	9 43 45	34 18·006	E			34 18·011	α	at W, Q = 1·687		†D =
	45 11	14·637	E			14·638	γ		0·087	
	46 23	18·144	W			18·142	δ	at E, Q = 1·643		†T_E =
	47 26	14·860	W	*s* +0·148 at $10^h\ 24^m$		14·856	β			
	9 45 41	34 16·412								
,,	10 59 54	34 18·186	E			34 18·191	α	at W, Q = 1·680		D = 34 16·492
	11 1 9	14·829	E			14·831	γ		0·089	
	2 34	18·308	W			18·306	δ	at E, Q = 1·616		T_E = 10 18 13
	3 35	15·078	W			15·074	β			
	11 1 48	34 16·600								

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals. † Owing to clouds intervening, the groups of stars for which these

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
March 14	10 32 11	9 9·035	E			9 9·047*	α	at W, $Q = 1{\cdot}688^s$*	+ 0·049	D = 9 9·172
	33 19	9·035	E			9·040*	γ			
	35 22	10·543	W			10·537	δ	at E, $Q = 1{\cdot}396$		T_E = 10 48 27
	36 19	7·757	W			7·746	β			
	10 34 18	9 9·093		+0·335 at 11h 9m						
,,	11 42 3	9 8·133	W			9 8·144	β	at W, $Q = 1{\cdot}699$*		D = 9 9·320
	42 41	10·895	W			10·903	δ		0·042	
	45 11	9·455	E			9·449*	α	at E, $Q = 1{\cdot}379$		T_E = 11 14 58
	46 11	9·444	E			9·432*	γ			
	11 44 2	9 9·482								
March 15	10 32 29	9 16·711	E			9 16·720*	α	at W, $Q = 1{\cdot}699$*		D = 9 16·846
	33 28	16·701	E			16·705*	γ		0·051	
	35 11	18·199	W			18·195	δ	at E, $Q = 1{\cdot}380$		T_E = 10 50 39
	36 12	15·444	W			15·435	β			
	10 34 20	9 16·764		+0·301 at 11h 9m						
,,	11 41 50	9 17·065	E			9 17·075*	α	at W, $Q = 1{\cdot}699$*		D = 9 16·958
	43 5	17·050	E			17·054*	γ		0·048	
	44 54	18·550	W			18·545	δ	at E, $Q = 1{\cdot}385$		T_E = 11 13 4
	45 51	15·786	W			15·776	β			
	11 43 55	9 17·113								
March 16	10 32 36	9 24·220	E			9 24·230*	α	at W, $Q = 1{\cdot}689$*		D = 9 24·352
	33 47	24·211	E			24·215*	γ		0·049	
	35 37	25·705	W			25·700	δ	at E, $Q = 1{\cdot}378$		T_E = 10 50 44
	36 34	22·953	W			22·943	β			
	10 34 39	9 24·272		+0·299 at 11h 10m						
,,	11 42 36	9 24·539	E			9 24·548*	α	at W, $Q = 1{\cdot}689$*		D = 9 24·464
	43 50	24·600	E			24·603*	γ		0·044	
	45 16	26·043	W			26·039	δ	at E, $Q = 1{\cdot}376$		T_E = 11 13 9
	46 13	23·296	W			23·287	β			
	11 44 29	9 24·620								

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883 *	h m s	m s				m s				
March 17	10 32 22	9 31·920	E			9 31·931*	α	at W, Q = 1·713*	+	D = 9 32·075
	33 30	31·929	E			31·934*	γ		0·063	
	35 44	33·442	W			33·436	δ	at E, Q = 1·378		T_E = 10 50 50
	36 42	30·690	W	s +0·294 at 11h 10m		30·680	β			
	10 34 35	9 31·995								
"	11 42 25	9 33·990	E			9 34·000	α	at W, Q = 1·713		D = 9 32·172
	43 47	30·572	E			30·575	γ		0·050	
	45 19	33·787	W			33·783	δ	at E, Q = 1·396		T_E = 11 10 40
	46 11	31·000	W			30·991	β			
	11 44 26	9 32·337								
March 18	10 32 53	9 41·359	E			9 41·370	α	at W, Q = 1·709		D = 9 39·780
	34 5	37·947	E			37·952	γ		0·037	
	36 11	41·109	W			41·103	δ	at E, Q = 1·369		T_E = 10 50 55
	37 13	38·376	W	s +0·310 at 11h 10m		38·365	β			
	10 35 6	9 39·698								
"	11 42 57	9 41·729	E			9 41·738	α	at W, Q = 1·716		D = 9 39·890
	44 7	38·304	E			38·306	γ		0·035	
	45 11	41·484	W			41·481	δ	at E, Q = 1·389		T_E = 11 12 21
	46 12	38·712	W			38·704	β			
	11 44 37	9 40·057								
March 19	10 32 24	9 47·119	E			9 47·134*	α	at W, Q = 1·701*		D = 9 47·252
	35 11	47·109	E			47·109*	γ		0·048	
	36 12	48·606	W			48·601	δ	at E, Q = 1·383		T_E = 10 51 1
	37 12	45·844	W	s +0·311 at 11h 10m		45·834	β			
	10 35 15	9 47·170								
"	11 43 25	9 49·173	E			9 49·183	α	at W, Q = 1·701		D = 9 47·362
	44 41	45·777	E			45·780	γ		0·051	
	46 11	48·980	W			48·976	δ	at E, Q = 1·393		T_E = 11 12 27
	47 11	46·200	W			46·191	β			
	11 45 22	9 47·533								

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

Arc Fyzabad (E) *and Jubbulpore* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
March 20	10 32 27	9 56·293	E			9 56·306	α	at W, Q = 1·686	+ 0·054	D = 9 54·757
	34 11	52·931	E			52·935	γ			
	36 0	56·125	W			56·120	δ	at E, Q = 1·390		T_E = 10 51 6
	37 11	53·350	W			53·339	β			
	10 34 57	9 54·675		s +0·305 at 11h 10m						
"	11 43 1	9 54·999	E			9 55·008*	α	at W, Q = 1·686*		D = 9 54·871
	44 24	54·955	E			54·957*	γ		0·048	
	45 26	56·467	W			56·464	δ	at E, Q = 1·387		T_E = 11 13 31
	46 24	53·699	W			53·691	β			
	11 44 49	9 55·030								

Arc Fyzabad (E) *and Agra* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
March 28	11 41 43	16 7·464	E			16 7·463*	α	at W, Q = 1·580*	+ 0·032	D = 16 7·479
	43 11	7·452	E			7·452*	γ			
	44 56	8·925	W			8·926	δ	at E, Q = 1·405		T_E = 11 58 32
	45 46	6·115	W			6·116	β			
	11 43 54	16 7·489		s −0·041 at 12h 14m						
"	12 42 45	16 7·409	E			16 7·408*	α	at W, Q = 1·580*		D = 16 7·467
	44 11	7·405	E			7·405*	γ		0·041	
	45 26	8·883	W			8·884	δ	at E, Q = 1·395		T_E = 12 17 23
	45 55	6·093	W			6·094	β			
	12 44 34	16 7·448								

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

Arc Fyzabad (E) *and Agra* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
March 29	11 42 26	16 6·702	E			16 6·699*	α	at W, Q = 1·570*	+	D = 16 6·714
	43 38	6·691	E			6·690*	γ		0·038	
	45 50	8·155	W			8·156	δ	at E, Q = 1·385		T_E = 11 59 58
	46 45	5·383	W			5·386	β			
	11 44 40	16 6·733		s −0·074 at 12h 28m						
"	13 9 22	16 8·135	E			16 8·133	α	at W, Q = 1·559		D = 16 6·692
	10 16	5·017	E			5·016	γ		0·053	
	11 48	8·063	W			8·064	δ	at E, Q = 1·384		T_E = 12 18 24
	12 30	5·294	W			5·296	β			
	13 10 59	16 6·627								
March 30	11 41 35	16 7·264	E			16 7·264	α	at W, Q = 1·584		D = 16 5·740
	42 48	4·095	E			4·095	γ		0·062	
	44 49	7·199	W			7·199	δ	at E, Q = 1·395		T_E = 11 58 10
	45 44	4·409	W			4·409	β			
	11 43 44	16 5·742		s −0·007 at 12h 13m						
"	12 41 20	16 7·256	E			16 7·256	α	at W, Q = 1·565		D = 16 5·738
	41 45	4·127	E			4·127	γ		0·043	
	43 24	7·161	W			7·161	δ	at E, Q = 1·384		T_E = 12 17 56
	44 15	4·394	W			4·394	β			
	12 42 41	16 5·735								
March 31	11 41 50	16 6·753	E			16 6·751	α	at W, Q = 1·607		D = 16 5·174
	43 11	3·538	E			3·537	γ		0·040	
	44 47	6·605	W			6·606	δ	at E, Q = 1·382		T_E = 11 57 0
	45 44	3·841	W			3·842	β			
	11 43 53	16 5·184		s −0·045 at 12h 14m						
"	12 42 50	16 6·706	E			16 6·705	α	at W, Q = 1·592		D = 16 5·159
	43 33	3·520	E			3·520	γ		0·027	
	45 3	6·557	W			6·558	δ	at E, Q = 1·392		T_E = 12 17 39
	45 30	3·772	W			3·773	β			
	12 44 14	16 5·139								

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Fyzabad (E) *and Agra* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
April 3	11 42 15	16 4·018	E			16 4·014	α	at W, Q = 1·520 s	+ s 0·011	D = 16 m 2·483 s
	43 12	0·976	E			0·974	γ			
	45 48	1·124	W			1·126	β	at E, Q = 1·391		T_E = 1 h 58 m 56 s
	46 49	3·904	W			3·908	δ			
	11 44 31	16 2·506		s −0·095 at 12h 13m						
„	12 39 39	16 3·839	W			16 3·835	δ	at W, Q = 1·520*		D = 16 m 2·453 s
	41 24	2·387	E			2·386*	α		0·032	
	42 50	2·378	E			2·379*	γ	at E, Q = 1·389		T_E = 12 h 17 m 55 s
	44 24	1·054	W			1·058	β			
	12 42 4	16 2·415								
April 4	11 42 40	16 2·893	E			16 2·891	α	at W, Q = 1·589		D = 16 m 1·325 s
	43 20	15 59·715	E			15 59·714	γ		0·041	
	45 14	16 2·767	W			16 2·768	δ	at E, Q = 1·383		T_E = 11 h 59 m 5 s
	45 55	15 59·999	W			0·001	β			
	11 44 17	16 1·344		s −0·077 at 12h 13m						
„	12 38 43	16 2·688	W			16 2·683	δ	at W, Q = 1·589*		D = 16 m 1·301 s
	42 13	1·229	E			1·229*	α		0·037	
	42 59	1·236	E			1·237*	γ	at E, Q = 1·376		T_E = 12 h 18 m 1 s
	45 0	15 59·927	W			15 59·931	β			
	12 42 14	16 1·270								

* Owing to irregular Chronograph Rate, the Pen Equation has been determined and applied graphically before reading off the signals.

TABLE V. ABSTRACT OF OBSERVED VALUES OF PERSONAL EQUATION

Between Majors Strahan and Heaviside.

OBSERVED WITH TELESCOPE No. 2.

BY STARS OF	AT JALPAIGURI						AT JUBBULPORE					
	December 17, 1882			December 18*, 1882			March 7, 1883			March 8, 1883		
	Star	Declination	Equation S − H	Star	Declination	Equation S − H	Star	Declination	Equation S − H	Star	Declination	Equation S − H
		° ′	s		° ′	s		° ′	s		° ′	s
NORTH ASPECT	8206	+ 30 41	+ 0·01	8261	+ 45 46	+ 0·05	1935	+ 37 58	− 0·04	1772	+ 29 9	+ 0·03
	8237	+ 43 41	− ·05	4	+ 28 27	− ·04	2001	+ 29 32	+ ·05	1804	+ 49 46	− ·06
	8256	+ 28 43	·00	52	+ 38 2	+ ·04	2014	+ 35 11	+ ·08	1850	+ 32 5	− ·06
	8261	+ 45 46	− ·08	100	+ 43 45	+ ·01	2058	+ 25 6	− ·08	1935	+ 37 58	− ·14
	8284	+ 28 11	− ·07	109	+ 29 6	+ ·07	2081	+ 46 46	+ ·13	1942	+ 38 30	− ·01
	4	+ 28 27	+ ·19	166	+ 30 13	− ·02	2097	+ 28 18	+ ·07	2001	+ 29 32	− ·08
	16	+ 45 25	+ ·04	963	+ 40 30	+ ·01				2014	+ 35 11	+ ·05
	52	+ 38 2	+ ·04	980	+ 26 26	− ·09				2058	+ 25 6	·00
	100	+ 43 45	− ·02	989	+ 26 48	+ ·02				2905	+ 32 56	+ ·12
	109	+ 29 6	− ·06	1017	+ 33 48	+ ·09				2965	+ 29 11	− ·14
	197	+ 47 13	+ ·06	1063	+ 49 27	+ ·07				2965	+ 29 11	− 10
	235	+ 50 55	− ·01	1071	+ 47 35	+ ·04				3000	+ 28 42	+ ·17
	245	+ 48 3	+ ·06	1105	+ 42 12	·00				3056	+ 32 52	+ ·09
	963	+ 40 30	+ ·09	1123	+ 37 12	− ·10				3068	+ 32 43	− ·02
				1132	+ 33 35	+ ·14				3079	+ 24 55	− ·09
				1138	+ 31 55	− ·04				3088	+ 28 22	+ ·09
				1219	+ 39 40	+ ·14				3097	+ 38 55	+ ·01
				1228	+ 35 27	+ ·01				3162	+ 37 18	+ ·06
				1269	+ 37 44	+ ·05				3183	+ 25 40	− ·02
				1291	+ 40 11	+ ·08				3194	+ 25 41	− ·05
										3255	+ 28 53	·00
										3327	+ 24 1	− ·06
										3341	+ 46 34	− ·08
										3358	+ 54 37	+ ·10
	Mean ($S_N - H_N$)		+ 0·014 ± 0·013			+ 0·027 ± 0·010			+ 0·035 ± 0·021			− 0·008 ± 0·011
SOUTH ASPECT	8296	+ 21 1	+ 0·16	8337	+ 26 16	+ 0·07	1893	+ 9 29	+ 0·08	1742	+ 23 58	+ 0·07
	8324	+ 24 30	+ ·03	8370	+ 12 45	+ ·11	1907	+ 12 48	+ ·10	1792	+ 16 28	·00
	8354	+ 7 50	+ ·16	36	+ 8 10	+ ·06	1925	+ 22 24	+ ·20	1907	+ 12 48	+ ·03
	8370	+ 12 45	+ ·02	63	+ 15 36	+ ·11	1958	+ 14 47	− ·09	1925	+ 22 24	+ ·05
	26	+ 14 32	+ ·03	73	+ 12 50	− ·05	1971	+ 23 8	+ ·10	1958	+ 14 47	− ·12
	36	+ 8 10	− ·09	82	+ 13 40	·00	1987	+ 22 56	·00	1971	+ 23 8	+ ·08
	63	+ 15 36	+ ·03	130	+ 19 39	− ·04	2038	+ 21 11	·00	1987	+ 22 56	− ·09
	73	+ 12 50	+ ·13	142	+ 12 44	+ ·04	2047	+ 22 34	− ·01	2038	+ 21 11	+ ·11
	82	+ 13 40	+ ·03	957	+ 24 48	·00				2047	+ 22 34	− ·01
	130	+ 19 39	+ ·12	999	+ 20 37	− ·05				2937	+ 21 53	− ·03
	142	+ 12 44	− ·07	1053	+ 20 23	− ·03				3017	+ 20 25	− ·10
	178	+ 23 59	+ ·06	1084	+ 10 56	+ ·05				3031	+ 14 38	+ ·23
	215	+ 23 38	+ ·11	1095	+ 24 4	− ·06				3111	+ 11 8	+ ·16
	223	+ 16 19	− ·02	1151	+ 24 6	+ ·09				3122	+ 12 3	− ·11
	949	+ 3 37	− ·05	1166	+ 23 45	− ·01				3129	+ 18 31	+ ·17
	957	+ 24 48	+ ·15	1192	+ 25 14	+ ·12				3138	+ 21 46	+ ·01
				1206	+ 16 55	− ·05				3209	+ 17 6	·00
				1238	+ 22 52	+ ·05				3227	+ 9 34	+ ·04
				1257	+ 21 46	+ ·01				3270	+ 13 11	+ ·15
				1279	+ 26 10	− ·05				3278	+ 16 58	− ·03
										3299	+ 13 50	+ ·21
										3312	+ 10 25	− ·04
										3318	+ 20 44	+ ·13
										3380	+ 6 30	+ ·15
	Mean ($S_S - H_S$)		+ 0·050 ± 0·014			+ 0·019 ± 0·009			+ 0·048 ± 0·021			+ 0·044 ± 0·014

* The Bohnenberger eye-piece of Telescope No. 1 was used on this day.

TABLE V. ABSTRACT OF OBSERVED VALUES OF PERSONAL EQUATION

Between Majors Strahan and Heaviside.

OBSERVED WITH TELESCOPE No. 2.

By Stars of	At JUBBULPORE			At AGRA					
	March 9, 1883			April 7, 1883			April 8*, 1883		
	Star	Declination	Equation S − H	Star	Declination	Equation S − H	Star	Declination	Equation S − H
North Aspect	1824	+ 39 30	+ 0·06	2798	+ 42 23	− 0·03	3666	+ 26 57	− 0·04
	1850	+ 32 5	+ ·06	2815	+ 28 17	− ·01	3735	+ 26 7	− ·06
	1863	+ 27 35	+ ·01	2860	+ 36 50	− ·03	3751	+ 26 8	+ ·03
	1875	+ 31 41	+ ·08	2905	+ 32 56	− ·03	3784	+ 38 52	+ ·05
	1935	+ 37 58	+ ·03	2908	+ 29 11	+ ·02	3811	+ 36 57	− ·08
	1942	+ 38 30	− ·05	3727	+ 28 29	− ·07	3851	+ 32 11	− ·06
				3785	+ 26 7	− ·01	3868	+ 44 7	+ ·01
				3751	+ 26 8	− ·15	3905	+ 39 59	+ ·05
				3765	+ 39 50	− ·01	3937	+ 28 26	·00
				3784	+ 38 52	+ ·04	3952	+ 44 17	+ ·05
				3811	+ 36 57	− ·03	3973	+ 42 23	+ ·04
				3851	+ 32 11	+ ·08	3998	+ 35 36	·00
				3868	+ 44 7	− ·07	4010	+ 38 34	− ·03
				3905	+ 39 59	+ ·02	4057	+ 43 42	− ·03
				3937	+ 28 26	·00	4100	+ 27 57	+ ·04
				3952	+ 44 17	+ ·05	4139	+ 26 40	− ·10
				3973	+ 42 23	− ·01	4169	+ 26 30	+ ·05
				3998	+ 35 36	+ ·09	4178	+ 26 30	− ·05
	Mean ($S_N - H_N$)		+ 0·032 ± 0·013			− 0·008 ± 0·009			− 0·007 ± 0·008
South Aspect	1958	+ 14 47	+ 0·01	2759	+ 18 1	− 0·02	3687	+ 8 8	+ 0·11
	1971	+ 23 8	− ·02	2778	+ 9 33	+ ·02	3720	+ 4 12	+ ·09
	1987	+ 22 56	+ ·09	2788	+ 21 7	+ ·01	3776	+ 20 48	+ ·08
	2002	+ 22 32	− ·01	2833	+ 24 32	+ ·11	3795	+ 2 31	+ ·06
	2038	+ 21 11	+ ·15	2888	+ 15 43	+ ·18	3824	+ 15 2	+ ·11
	2047	+ 22 34	− ·06	2925	+ 20 0	+ ·09	3831	+ 20 46	+ ·07
				2937	+ 21 53	+ ·04	3843	+ 13 57	+ ·08
				3776	+ 20 48	− ·07	3877	+ 11 11	+ ·03
				3795	+ 2 31	− ·01	3886	+ 17 5	+ ·15
				3824	+ 15 2	+ ·04	3894_1	+ 3 40	+ ·07
				3831	+ 20 46	+ ·08	3894_2	+ 3 40	+ ·02
				3843	+ 13 57	·00	3915	+ 19 3	+ ·03
				3877	+ 11 11	+ ·15	3932	+ 17 27	+ ·09
				3886	+ 17 5	·00	3964	+ 22 1	+ ·06
				3894	+ 3 40	+ ·06	3979	+ 8 55	+ ·03
				3915	+ 19 3	+ ·08	3990	+ 20 53	+ ·08
				3932	+ 17 27	− ·06	4039	+ 4 8	+ ·02
				3964	+ 22 1	+ ·07	4081	+ 14 10	+ ·02
							4114	+ 10 55	+ ·01
							4125	+ 15 33	+ ·05
	Mean ($S_S - H_S$)		+ 0·027 ± 0·022			+ 0·043 ± 0·011			+ 0·063 ± 0·006

* The Bohnenberger eye-piece of Telescope No. 1 was used on this day.

TABLE V. ABSTRACT OF OBSERVED VALUES OF PERSONAL EQUATION

Between Major Strahan and Lieut.-Colonel Campbell.

By Stars of	Observed with Telescope No. 1.						Observed with Telescope No. 2.					
	At CALCUTTA						At JALPAIGURI					
	November 17, 1882			November 19, 1882			December 24, 1882			December 25, 1882		
	Star	Declination	Equation S − C	Star	Declination	Equation S − C	Star	Declination	Equation S − C	Star	Declination	Equation S − C
North Aspect		° ′	s		° ′	s		° ′	s		° ′	s
	614	+ 53 55	+ 0·12	727	+ 40 50	+ 0·14	52	+ 38 2	− 0·05	109	+ 29 6	+ 0·05
	624	+ 32 43	− ·17	752	+ 31 15	− ·10	100	+ 43 45	+ ·01	166	+ 30 13	− ·12
	647	+ 25 6	+ ·09	761	+ 38 35	− ·05	109	+ 29 6	− ·09	197	+ 47 13	− ·03
	656	+ 34 24	− ·12	786	+ 34 9	+ ·02	166	+ 30 13	+ ·04	235	+ 50 55	− ·09
	675	+ 29 43	+ ·12	813	+ 26 32	− ·22	197	+ 47 13	− ·08	245	+ 48 3	− ·01
	691	+ 32 47	− ·14	861	+ 28 44	− ·10	235	+ 50 55	− ·09	256	+ 26 35	− ·03
	727	+ 40 50	− ·14	904	+ 31 29	− ·21	245	+ 48 3	− ·03	283	+ 40 43	+ ·02
	752	+ 31 15	− ·20	936	+ 31 56	− ·08	256	+ 26 35	− ·12	299	+ 29 3	− ·04
	761	+ 38 35	+ ·11	957	+ 24 48	− ·12	283	+ 40 43	− ·07			
	786	+ 34 9	− ·13	963	+ 40 30	+ ·08	299	+ 29 3	− ·03			
	796	+ 24 7	+ ·09									
	936	+ 31 56	+ ·09									
	957	+ 24 48	+ ·02									
	963	+ 40 30	− ·19									
	980	+ 26 26	+ ·06									
	989	+ 26 48	− ·16									
	993	+ 42 3	+ ·11									
	1008	+ 38 51	− ·16									
	Mean ($S_N - C_N$)		− 0·033			− 0·064			− 0·051			− 0·031
			± 0·021			± 0·025			± 0·011			± 0·013
South Aspect	561	+ 10 27	+ 0·18	771	+ 17 9	+ 0·02	26	+ 14 32	− 0·02	36	+ 8 10	− 0·04
	593	+ 23 1	− ·15	780	+ 14 29	+ ·03	36	+ 8 10	+ ·14	63	+ 15 36	+ ·18
	707	+ 19 19	+ ·08	796	+ 24 7	+ ·01	73	+ 12 50	+ ·12	73	+ 12 50	− ·03
	741	+ 9 9	+ ·09	808	+ 21 26	+ ·09	82	+ 13 40	− ·06	82	+ 13 40	+ ·02
	771	+ 17 9	− ·08	845	+ 9 36	+ ·05	130	+ 19 39	+ ·09	130	+ 19 39	− ·06
	780	+ 14 29	+ ·05	920	+ 21 10	+ ·01	142	+ 12 44	− ·03	142	+ 12 44	+ ·08
	808	+ 21 26	− ·04	949	+ 3 37	+ ·06	178	+ 23 59	− ·07	178	+ 23 59	·00
	949	+ 3 37	− ·04	986	+ 19 17	− ·18	215	+ 23 38	− ·07	215	+ 23 38	+ ·06
	1028	+ 26 39	+ ·11				223	+ 16 19	+ ·12	223	+ 16 19	− ·10
	1034	+ 20 43	− ·12				274	+ 5 51	·09	274	+ 5 51	− ·07
	1057	+ 8 37	+ ·01									
	1064	+ 18 21	− ·14									
	1087	+ 12 32	+ ·06									
	1095	+ 24 4	− ·12									
	1107	+ 22 50	+ ·18									
	1119	+ 16 10	− ·08									
	Mean ($S_S - C_S$)		− 0·001			+ 0·011			+ 0·022			+ 0·004
			± 0·019			± 0·020			± 0·018			± 0·018

Between Majors Strahan and Heaviside.

Season	By Stars of North Aspect					By Stars of South Aspect				
	Astronomical Date	Telescope in use	Mean Value of Equation $S_N - H_N$	Combination Weight	General Mean $S_N - H_N$	Astronomical Date	Telescope in use	Mean Value of Equation $S_S - H_S$	Combination Weight	General Mean $S_S - H_S$
1882-83	1882 December 17	No. 2	s + 0·014	59	s + 0·022	1882 December 17	No. 2	s + 0·050	51	s + 0·028
	„ 18*	„ 2	+ ·027	100		„ 18*	„ 2	+ ·019	123	
	1883 March 7	No. 2	+ 0·035	23		1883 March 7	No. 2	+ 0·048	23	
	„ 8	„ 2	− ·008	83	+ 0·012	„ 8	„ 2	+ ·044	51	+ 0·041
	„ 9	„ 2	+ ·032	59		„ 9	„ 2	+ ·027	21	
	April 7	No. 2	− 0·008	123	− 0·007	April 7	No. 2	+ 0·043	83	+ 0·058
	„ 8*	„ 2	− ·007	156		„ 8*	„ 2	+ ·063	278	

* The Bohnenberger eye-piece of Telescope No. 1 was used on these days.

Between Major Strahan and Lieut.-Colonel Campbell.

Season	By Stars of North Aspect					By Stars of South Aspect				
	Astronomical Date	Telescope in use	Mean Value of Equation $S_N - C_N$	Combination Weight	General Mean $S_N - C_N$	Astronomical Date	Telescope in use	Mean Value of Equation $S_S - C_S$	Combination Weight	General Mean $S_S - C_S$
1882-83	1882 November 17	No. 1	s − 0·033	23	s − 0·043	1882 November 17	No. 1	s − 0·001	28	s + 0·009
	„ 19	„ 1	− ·064	16		„ 19	„ 1	+ ·011	25	
	December 24	„ 2	− ·051	83		December 24	„ 2	+ ·022	31	
	„ 25	„ 2	− ·031	59		„ 25	„ 2	+ ·004	31	

Final Values of the Equation adopted.

The observations for the first seven Arcs were taken between the 1st of December 1882 and the 21st of March 1883, and the values employed for these Arcs are

$$S_N - H_N = +0^s\cdot017, \quad \text{and } S_S - H_S = +0^s\cdot035.$$

The observations for the eighth Arc were taken between the 27th of March and the 5th of April 1883, and the values employed for this Arc are

$$S_N - H_N = -0^s\cdot007, \quad \text{and } S_S - H_S = +0^s\cdot058.$$

For the nights on which Lieut.-Colonel Campbell observed, the values employed are

$$S_N - C_N = -0^s\cdot043, \quad \text{and } S_S - C_S = +0^s\cdot009.$$

In these equations the general symbols S − H and S − C signify quantities which must be added to times observed by Major Heaviside and Lieut.-Colonel Campbell respectively, before they are compared with those observed by Major Strahan.

TABLE VII. ABSTRACT OF OBSERVED VALUES OF THE ABSOLUTE (N – S) EQUATIONS

Of Lieut.-Colonel Campbell and Majors Strahan and Heaviside, Season 1882-83.

Arc Jalpaiguri–Fyzabad

Strahan at Jalpaiguri			Campbell at Fyzabad			Heaviside at Fyzabad		
Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed
	s			s			s	
1040	+ 0·12	N	1040	+ 0·16	N	1040	+ 0·03	N
	+ ·03	„		+ ·12	„		– ·01	„
	+ ·05	„		+ ·11	„	1192	– ·07	S
	+ ·03	„		+ ·06	„		– ·10	„
	+ ·05	„	1192	– ·13	S		– ·07	„
	– ·01	„		– ·05	„		– ·08	„
	+ ·06	„		+ ·03	„	1497	·00	„
1192	– ·05	S	1497	+ ·09	N		+ ·01	„
	– ·03	„		+ ·01	S		+ ·04	N
	– ·05	„	1528	+ ·15	N		– ·09	S
	+ ·02	„	1648	– ·01	S	1528	+ ·01	„
	+ ·03	„	1681	+ ·15	N		·00	N
	– ·06	„	2058	– ·03	S		+ ·02	„
	– ·01	„		– ·10	„		+ ·14	„
1497	– ·08	„		– ·04	„	1648	– ·03	S
	– ·01	„	2097	+ ·10	N		+ ·05	„
	+ ·02	„		+ ·16	„		– ·06	„
	·00	„		+ ·20	„		– ·01	„
	·00	„	2178	+ ·01	„	2058	– ·03	„
1648	– ·02	„		+ ·09	„		– ·07	„
	– ·10	„		+ ·15	„		+ ·06	„
	– ·04	„	2194	– ·02	S		– ·03	„
	– ·02	„		– ·05	„	2097	+ ·18	N
	– ·01	„		·00	„		+ ·18	„
2097	+ ·05	N		– ·04	„		+ ·05	„
	+ ·04	„	Mean	+ 0·045		2178	+ ·09	„
	+ ·03	„		± 0·012			+ ·09	„
	– ·02	„					+ ·09	„
	– ·01	„				2194	– ·13	S
	+ ·02	„					– ·08	„
	+ ·13	„					+ ·03	„
	+ ·13	„					– ·11	„
2178	+ ·02	„				Mean	+ 0·003	
	– ·02	S					± 0·010	
	– ·03	„						
	– ·07	„						
	·00	„						
	+ ·02	„						
Mean	+ 0·006							
	± 0·006							

Arc Jalpaiguri–Calcutta

Strahan at Jalpaiguri			Heaviside at Calcutta		
Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed
	s			s	
1444	+ 0·05	N	1527	– 0·04	S
	+ ·10	„		·00	„
	+ ·06	„		– ·03	„
	+ ·04	„		– ·02	„
	+ ·08	„		– ·10	„
	+ ·05	„	1637	·00	„
1648	·00	S		– ·13	„
	·00	„		– ·08	„
	– ·02	„		– ·03	„
	– ·04	„		– ·13	„
	– ·01	„	1714	– ·01	N
1754	– ·07	„		+ ·13	„
	– ·05	„		+ ·01	„
	– ·10	„		+ ·05	„
	– ·05	„	1742	– ·07	S
	– ·01	„		– ·08	„
	– ·07	„		– ·01	„
2001	+ ·01	„		– ·03	„
	– ·02	„	1938	– ·03	„
	+ ·06	„		+ ·08	„
	+ ·02	„		– ·10	„
	– ·02	„		– ·03	„
	·00	„		+ ·01	„
2133	– ·04	„	1987	+ ·04	N
	– ·10	„		+ ·10	„
	– ·04	„		+ ·10	„
	– ·06	„		+ ·01	„
	– ·03	„		+ ·08	„
Mean	– 0·009			+ ·02	„
	± 0·007		2047	+ ·04	„
			Mean	– 0·008	
				± 0·008	

NOTE.—The symbol, N – S, signifies a quantity which must be added to the times observed for Stars of South Aspect, before they can be compared with those for Stars of North Aspect, by the same observer.

TABLE VII. ABSTRACT OF OBSERVED VALUES OF THE ABSOLUTE (N − S) EQUATIONS

Of Majors Strahan and Heaviside, Season 1882-83.

Arc Chittagong–Jalpaiguri						Arc Chittagong–Calcutta						Arc Calcutta–Fyzabad					
Heaviside at Chittagong			Strahan at Jalpaiguri			Heaviside at Chittagong			Strahan at Calcutta			Heaviside at Calcutta			Strahan at Fyzabad		
Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed	Star	Equation N − S	Aspect first observed
	s			s			s			s			s			s	
2047	+0·04	N	2133	+0·06	S	2313	+0·05	N	2313	+0·02	N	2937	+0·01	S	2841	0·00	N
	+ ·03	,,		·00	,,		+ ·08	,,		+ ·12	,,		·00	,,		+ ·09	,,
	+ ·10	,,		− ·01	,,		+ ·10	,,		− ·01	,,		− ·03	,,		·00	,,
	+ ·02	,,		− ·02	,,		+ ·05	,,		+ ·08	,,		·00	,,		− ·02	,,
	− ·02	,,		− ·03	,,		+ ·11	,,		+ ·15	,,		− ·10	,,		+ ·05	,,
2233	+ ·02	,,	2275	− ·05	,,		+ ·01	,,		− ·10	,,	3017	+ ·01	N		+ ·07	,,
	− ·05	,,		− ·03	,,	2460	+ ·01	S	2460	+ ·10	S		− ·01	S	3000	− ·05	S
	+ ·03	,,		− ·02	,,		− ·03	,,		+ ·07	,,		+ ·09	N		+ ·05	,,
	+ ·02	,,		·00	,,		+ ·04	,,		− ·04	,,		+ ·03	,,		− ·01	,,
	+ ·09	,,		− ·07	,,		+ ·05	,,		− ·05	,,		+ ·09	,,		− ·07	,,
	+ ·05	,,		− ·03	,,		− ·01	,,		+ ·03	,,		+ ·03	,,		+ ·02	,,
2544	− ·10	S	2493	− ·05	,,		− ·06	,,		− ·04	,,	3355	+ ·04	,,		+ ·02	,,
	+ ·02	,,		+ ·01	,,	2700	+ ·10	N	2700	+ ·04	N		+ ·06	,,	3309	− ·08	,,
	− ·05	,,	2617	− ·04	,,		− ·02	,,		·00	,,		+ ·01	,,		+ ·02	,,
	− ·03	,,		− ·04	,,		+ ·08	,,		+ ·03	,,		+ ·08	,,		·00	,,
	− ·07	,,		·00	,,		− ·01	,,		+ ·06	,,		+ ·07	,,		− ·05	,,
	+ ·04	,,		− ·05	,,		+ ·11	,,		+ ·03	,,		− ·14	S		− ·02	,,
2676	− ·05	,,		− ·02	,,		+ ·04	,,		+ ·14	,,	3485	− ·03	,,		− ·02	,,
	− ·11	,,		− ·07	,,		+ ·05	,,		+ ·01	,,		·00	,,	3371	+ ·06	N
	− ·04	,,	3088	+ ·08	N	2788	+ ·01	,,	2788	+ ·13	,,		− ·03	,,		+ ·01	,,
	+ ·02	,,		+ ·08	,,		+ ·06	,,		+ ·12	,,		− ·03	,,		+ ·05	,,
	− ·05	,,		+ ·15	,,		+ ·08	,,		+ ·02	,,		− ·09	,,		+ ·05	,,
	+ ·01	,,		+ ·07	,,		+ ·07	,,		+ ·02	,,	3776	+ ·01	N		− ·02	,,
2937	− ·15	,,		+ ·05	,,		+ ·05	,,		+ ·15	,,		+ ·06	,,	3751	+ ·01	S
	− ·03	,,		+ ·09	,,		− ·07	,,		+ ·08	,,		·00	,,		− ·09	,,
	− ·01	,,	Mean	+0·002		3138	+ ·02	S	3138	− ·04	S		+ ·06	,,		·00	,,
	− ·04	,,		±0·008			+ ·04	,,		− ·04	,,		+ ·06	,,		− ·05	,,
	− ·06	,,					− ·05	,,		+ ·02	,,	3842	− ·02	S		− ·05	,,
	+ ·03	,,					− ·02	,,		− ·03	,,		+ ·04	,,	Mean	−0·001	
3123	+ ·08	N					− ·03	,,		+ ·03	,,		− ·05	,,		±0·006	
	·00	,,					− ·09	,,		− ·06	,,		− ·11	,,			
3138	− ·07	S				3246	− ·02	,,	3246	− ·09	,,						
	− ·10	,,					·00	,,		+ ·01	,,	Mean	+0·004				
	− ·20	,,					− ·06	,,		+ ·04	,,		±0·007				
	+ ·01	,,					− ·01	,,		+ ·10	,,						
Mean	−0·018						− ·03	,,		+ ·01	,,						
	±0·008						− ·05	,,		+ ·05	,,						
						Mean	+0·018			− ·09	,,						
							±0·006		Mean	+0·028							
										±0·007							

NOTE.—The symbol, N − S, signifies a quantity which must be added to the times observed for Stars of South Aspect, before they can be compared with those for Stars of North Aspect, by the same observer.

TABLE VII. ABSTRACT OF OBSERVED VALUES OF THE ABSOLUTE (N – S) EQUATIONS

Of Majors Strahan and Heaviside, Season 1882-83.

ARC CALCUTTA–JUBBULPORE

Heaviside at Calcutta			Strahan at Jubbulpore		
Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed
	s			s	
3117	+0·02	N	3117	+0·03	N
	+ ·06	,,		+ ·10	,,
	+ ·07	,,		+ ·10	,,
	+ ·08	,,		·00	,,
	+ ·10	,,		+ ·05	,,
3138	– ·03	S	3138	+ ·06	S
	– ·05	,,		– ·03	,,
	– ·04	,,		+ ·03	,,
	+ ·05	,,	3246	– ·02	,,
	+ ·01	,,		– ·02	,,
3246	– ·09	,,		– ·12	,,
	– ·03	,,		+ ·05	,,
	– ·05	,,		– ·04	,,
	– ·04	,,	3423	– ·15	,,
	– ·05	,,		– ·03	,,
	– ·12	,,		– ·02	,,
3423	– ·11	,,		– ·16	,,
	+ ·05	,,		– ·12	,,
	– ·07	,,	3511	+ ·11	N
	– ·05	,,		+ ·03	,,
	– ·08	,,		+ ·08	,,
3511	+ ·10	N		– ·15	,,
	+ ·03	,,		– ·04	,,
	+ ·01	,,	3776	+ ·07	,,
	+ ·09	,,		+ ·16	,,
	+ ·10	,,		+ ·03	,,
3776	+ ·10	,,		+ ·02	,,
	+ ·05	,,		+ ·14	,,
	+ ·09	,,		+ ·06	,,
	+ ·05	,,	Mean	+0·008	
	+ ·08	,,		±0·011	
	+ ·10	,,			
Mean	+0·013				
	±0·008				

ARC FYZABAD–JUBBULPORE

Heaviside at Fyzabad			Strahan at Jubbulpore		
Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed
	s			s	
3371	+0·14	N	3423	+0·07	N
	+ ·10	,,		+ ·01	,,
	+ ·07	,,		+ ·03	,,
	+ ·09	,,		– ·01	,,
	+ ·09	,,		+ ·11	,,
	+ ·05	,,	3511	+ ·01	,,
	+ ·04	,,		+ ·08	,,
3735	+ ·08	,,		+ ·02	,,
	+ ·06	,,		+ ·03	,,
3751	– ·09	S		+ ·08	,,
	– ·02	,,		+ ·10	,,
	– ·06	,,	3842	– ·02	S
	– ·09	,,		+ ·10	,,
	– ·04	,,		– ·08	,,
	– ·04	,,		– ·08	,,
4100	+ ·04	,,		+ ·04	,,
	– ·04	,,		+ ·03	,,
	– ·02	,,	4066	+ ·08	N
	– ·11	,,		+ ·06	,,
	– ·04	,,		+ ·10	,,
	– ·06	,,		+ ·22	,,
	– ·02	,,		+ ·05	,,
4169	+ ·02	,,		+ ·13	,,
	– ·01	,,		+ ·11	,,
4181	– ·04	,,	4240	– ·04	S
	– ·09	,,		– ·07	,,
	+ ·01	,,		+ ·07	,,
	– ·08	,,		– ·05	,,
	– ·07	,,		+ ·06	,,
4191	+ ·10	N		– ·11	,,
	+ ·14	,,		+ ·01	,,
	+ ·16	,,	Mean	+0·037	
	+ ·14	,,		±0·009	
	+ ·12	,,			
4199	+ ·13	,,			
	+ ·11	,,			
4205	+ ·13	,,			
	+ ·07	,,			
	+ ·15	,,			
	+ ·13	,,			
	+ ·15	,,			
Mean	+0·034				
	±0·009				

ARC FYZABAD–AGRA

Heaviside at Fyzabad			Strahan at Agra		
Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed
	s			s	
3797	+0·03	S	3797	+0·02	S
	+ ·02	,,		– ·05	,,
	+ ·02	,,		+ ·01	,,
	+ ·01	,,		– ·03	,,
	·00	,,		– ·02	,,
4100	·00	,,	4100	+ ·02	,,
	– ·01	,,		– ·07	,,
	– ·01	,,		+ ·08	,,
	– ·03	,,		– ·02	,,
	– ·05	,,		– ·02	,,
4169	+ ·05	N	4169	+ ·06	N
	+ ·07	,,		+ ·08	,,
	+ ·08	,,		+ ·17	,,
	+ ·13	,,		+ ·08	,,
	+ ·13	,,		·00	,,
4178	+ ·09	,,		+ ·03	,,
	– ·05	S	4178	– ·09	S
	+ ·02	,,		– ·04	,,
	+ ·01	,,		– ·07	,,
	– ·04	,,		+ ·08	,,
	– ·02	,,		– ·02	,,
4205	+ ·13	N		– ·07	,,
	+ ·15	,,	4205	+ ·09	N
	+ ·15	,,		+ ·04	,,
	+ ·08	,,		+ ·12	,,
	+ ·16	,,		+ ·09	,,
	+ ·19	,,		+ ·02	,,
4393	+ ·11	,,		+ ·07	,,
	+ ·11	,,	4393	– ·03	,,
	+ ·11	,,		+ ·08	,,
	+ ·09	,,	Mean	+0·020	
	+ ·18	,,		±0·008	
4526	– ·06	S			
	+ ·07	,,			
	– ·03	,,			
	– ·01	,,			
Mean	+0·052				
	±0·008				

NOTE.—The symbol, N – S, signifies a quantity which must be added to the times observed for Stars of South Aspect, before they can be compared with those for Stars of North Aspect, by the same observer.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5ʰ 55ᵐ 7ˢ: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5ʰ 28ᵐ 42ˢ.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Campbell, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl Equations $S_N - S_S = +0^s.006$, $C_N - C_S = +0.045$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Dec. 4	1476	+ 37 17	N	*I. P. W.*	4 43 12·85	+1·32	14·17	N	*I. P. W.*	4 41 19·45	+1·89	21·34	−1 52·83				
	1520	+ 32 59	N	*d* c − 0·1 b + 0·8 *a* −26 9	50 33·08	+1·26	34·34	N	*d* c − 0·7 b + 5·6 *a* − 3·9	48 39·62	+1·87	41·49	52·85				
	1558	+ 41 5	N		59 29·30	+1·38	30·68	N		57 36·06	+1·90	37·96	52·72	*m s* −1 52·830	+ 0·054	+ 0·020	−1 52·756
	1485	+ 15 42	S	*s* *Q* +1·16	44 12·98	+1·06	14·04	S	*s* *Q* +1·73	42 19·27	+1·82	21·09	52·95				
	1539	+ 15 44	S		54 11·90	+1·06	12·96	S		52 18·37	+1·82	20·19	52·77				
	1551	+ 21 25	S		57 16·63	+1·12	17·75	S		55 23·06	+1·83	24·89	52·86				
				Mean, T_E	4 51 29												
Dec. 4	1602	+ 38 21	N	*I. P. W.*	5 6 38·37	−0·98	37·39	N	*I P. W.*	5 4 46·08	−1·57	44·51	−1 52·88				
	1609	+ 46 17	N	*d* c − 0·1 b + 0·8 *a* −26·9	8 60·44	−0·84	59·60	N	*d* c − 0·7 b + 5·6 *a* − 3·9	7 8·31	−1·54	6·77	52·83				
	1663	+ 37 17	N		17 55·07	−1·00	54·07	N		16 2·87	−1·57	1·30	52·77	*m s* −1 52·843	+ 0·054	+ 0·017	−1 52·772
	1681	+ 28 31	N	*s* *Q* −1·16	20 6·58	−1·12	5·46	N	*s* *Q* −1·73	18 14·28	−1·61	12·67	52·79				
	1591	+ 15 27	S		4 12·98	−1·26	11·72	S		2 20·45	−1·64	18·81	52·91				
	1624	+ 11 13	S		10 46·91	−1·30	45·61	S		8 54·37	−1·65	52·72	52·89				
	1637	+ 21 59	S		13 27·64	−1·19	26·45	S		11 35·24	−1·62	33·62	52·83				
				Mean, T_E	5 11 44												
Dec. 5	1476	+ 37 17	N	*I. P. E.*	4 43 12·08	+1·22	13·30	N	*I. P. E.*	4 41 16·26	+2·06	18·32	−1 54·98				
	1520	+ 32 59	N	*d* c − 0·6 b + 0·1 *a* −16·8	50 32·21	+1·18	33·39	N	*d* c − 1·0 b +12·0 *a* − 4·1	48 36·48	+2·04	38·52	54·87				
	1558	+ 41 5	N		59 28·51	+1·26	29·77	N		57 32·77	+2·09	34·86	54·91	*m s* −1 54·925	+ 0·056	+ 0·020	−1 54·849
	1485	+ 15 42	S	*s* *Q* +1·15	44 12·00	+1·07	13·07	S	*s* *Q* +1·74	42 16·22	+1·97	18·19	54·88				
	1539	+ 15 44	S		54 10·99	+1·07	12·06	S		52 15·12	+1·98	17·10	54·96				
	1551	+ 21 25	S		57 15·71	+1·10	16·81	S		55 19·86	+2·00	21·86	54·95				
				Mean, T_E	4 51 29												
Dec. 5	1602	+ 38 21	N	*I. P. E.*	5 6 37·58	−1·07	36·51	N	*I. P. E.*	5 4 42·90	−1·41	41·49	−1 55·02				
	1609	+ 46 17	N	*d* c − 0·6 b + 0·1 *a* −16·8	8 59·72	−0·99	58·73	N	*d* c − 1·0 b +12·0 *a* − 4·1	7 5·03	−1·35	3·68	55·05				
	1663	+ 37 17	N		17 54·30	−1·08	53·22	N		15 59·61	−1·42	58·19	55·03	*m s* −1 55·063	+ 0·056	+ 0·017	−1 54·990
	1681	+ 28 31	N	*s* *Q* −1·15	20 5·75	−1·15	4·60	N	*s* *Q* −1·74	18 10·99	−1·46	9·53	55·07				
	1591	+ 15 27	S		4 12·05	−1·24	10·81	S		2 17·28	−1·51	15·77	55·04				
	1624	+ 11 13	S		10 46·06	−1·26	44·80	S		8 51·18	−1·52	49·66	55·14				
	1637	+ 21 59	S		13 26·77	−1·19	25·58	S		11 31·97	−1·48	30·49	55·09				
				Mean, T_E	5 11 43												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl Equations $S_N - S_E = +0^s.006$, $H_N - H_S = +0.003$	M_N
	B.A.C Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 6	1476	+ 37 17	N	*I. P. W.*	4 43 10·56	+1·20	11·76	N	*I. P. W.*	4 41 13·33	+1·77	15·10	−1 56·66				
	1497	+ 27 42	N	d c − 1·5 b + 1·1 a − 6·5	46 36·78	+1·17	37·95	N	d c − 0·5 b − 0·2 a − 9·5	44 39·63	+1·72	41·35	56·60				
	1520	+ 32 59	N		50 30·74	+1·19	31·93	N		48 33·47	+1·75	35·22	56·71	m s −1 56·648			
	1558	+ 41 5	N	s Q +1·18	59 27·08	+1·22	28·30	N	s Q +1·74	57 29·88	+1·79	31·67	56·63		0·058	0·002	−1 56·592
	1497	+ 27 42	S		46 36·86	+1·17	38·03	S		44 39·63	+1·72	41·35	56·68		+	−	
	1528	+ 24 52	S		52 7·88	+1·17	9·05	S		50 10·69	+1·72	12·41	56·64				
	1539	+ 15 44	S		54 9·39	+1·14	10·53	S		52 12·25	+1·69	13·94	56·59				
	1551	+ 21 25	S		57 14·18	+1·16	15·34	S		55 16·96	+1·71	18·67	56·67				
				Mean, T_E	4 51 14												
Dec. 6	1602	+ 38 21	N	*I. P. W.*	5 6 36·06	−1·15	34·91	N	*I. P. W.*	5 4 39·99	−1·71	38·28	−1 56·63				
	1609	+ 46 17	N	d c − 1·5 b + 1·1 a − 6·5	8 58·25	−1·13	57·12	N	d c − 0·5 b − 0·2 a − 9·5	7 2·15	−1·67	0·48	56·64				
	1648	+ 27 50	N		14 49·08	−1·19	47·89	N		12 52·91	−1·75	51·16	56·73				
	1663	+ 37 17	N	s Q −1·18	17 52·79	−1·16	51·63	N	s Q −1·74	15 56·66	−1·71	54·95	56·68	m s −1 56·684			
	1681	+ 28 31	N		20 4·24	−1·18	3·06	N		18 8·12	−1·75	6·37	56·69		0·028	0·001	−1 56·627
	1591	+ 15 27	S		4 10·45	−1·22	9·23	S		2 14·39	−1·79	12·60	56·63		+	−	
	1624	+ 11 13	S		10 44·43	−1·23	43·20	S		8 48·30	−1·81	46·49	56·71				
	1637	+ 21 59	S		13 25·24	−1·20	24·04	S		11 29·08	−1·77	27·31	56·73				
	1648	+ 27 50	S		14 49·10	−1·19	47·91	S		12 52·94	−1·75	51·19	56·72				
				Mean, T_B	5 12 23												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s : AND* FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Campbell, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s{\cdot}006$ $C_N - C_S = +0^s{\cdot}045$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 7	1476	+ 37 17	N	*I. P. E.*	4 43 9·31	+1·44	10·75	N	*I. P. E.*	4 41 10·16	+1·71	11·87	−1 58·88				
	1497	+ 27 42	N	*d* c + 1·7 b + 3·1 *a* −25·3	46 35·60	+1·30	36·90	N	*d* c − 1·4 b + 0·9 *a* − 3·8	44 36·59	+1·69	38·28	58·62				
	1520	+ 32 59	N		50 29·53	+1·38	30·91	N		48 30·54	+1·70	32·24	58·67				
	1558	+ 41 5	N	*s* *Q* +1·17	59 25·78	+1·50	27·28	N	*s* *Q* +1·71	57 26·86	+1·73	28·59	58·69	m s			
	1485	+ 15 42	S		44 9·39	+1·17	10·56	S		42 10·16	+1·68	11·84	58·72	−1 58·707	0·061	0·022	−1 58·624
	1497	+ 27 42	S		46 35·61	+1·30	36·91	S		44 36·58	+1·69	38·27	58·64		+	+	
	1528	+ 24 52	S		52 6·74	+1·27	8·01	S		50 7·52	+1·70	9·22	58·79				
	1539	+ 15 44	S		54 8·34	+1·17	9·51	S		52 9·17	+1·68	10·85	58·66				
	1551	+ 21 25	S		57 13·05	+1·23	14·28	S		55 13·90	+1·69	15·59	58·69				
				Mean, T_E	4 50 26												
Dec. 7	1602	+ 38 21	N	*I. P. E.*	5 6 34·74	−0·88	33·86	N	*I. P. E.*	5 4 36·94	−1·70	35·24	−1 58·62				
	1609	+ 46 17	N	*d* c + 1·7 b + 3·1 *a* −25·3	8 56·83	−0·74	56·09	N	*d* c − 1·4 b + 0·9 *a* − 3·8	6 59·08	−1·69	57·39	58·70				
	1648	+ 27 50	N		14 47·79	−1·03	46·76	N		12 49·81	−1·73	48·08	58·68				
	1663	+ 37 17	N	*s* *Q* −1·17	17 51·49	−0·90	50·59	N	*s* *Q* −1·71	15 53·57	−1·71	51·86	58·73	m s			
	1681	+ 28 31	N		20 3·07	−1·03	2·04	N		18 5·00	−1·73	3·27	58·77	−1 58·719	0·061	0·017	−1 58·641
	1591	+ 15 27	S		4 9·36	−1·17	8·19	S		2 11·25	−1·74	9·51	58·68		+	+	
	1624	+ 11 13	S		10 43·35	−1·21	42·14	S		8 45·13	−1·74	43·39	58·75				
	1637	+ 21 59	S		13 24·08	−1·10	22·98	S		11 25·94	−1·73	24·21	58·77				
	1648	+ 27 50	S		14 47·89	−1·03	46·86	S		12 49·82	−1·73	48·09	58·77				
				Mean, T_E	5 12 22												

NOTE.—1^d = $0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Time (W − E)		Rate of W Clock	Corrns for Persl Equations	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group	Correction for Rate of W Clock	$S_N - S_S = +0^s.006$ $H_N - H_S = +0^s.003$	
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 8	1476	+ 37 17	N	*I. P. W.*	4 43 7·70	+1·33	9·03	N	*I. P. W.*	4 41 6·73	+1·73	8·46	−2 0·57				
	1497	+ 27 42	N	d c − 1·6 b − 0·6 a −45·8	46 34·12	+1·12	35·24	N	d c − 0·7 b − 0·6 a − 9·4	44 33·03	+1·68	34·71	0·53				
	1520	+ 32 59	N		50 27·94	+1·24	29·18	N		48 26·99	+1·71	28·70	0·48				
	1558	+ 41 5	N	s Q +1·16	59 24·15	+1·44	25·59	N	s Q +1·72	57 23·24	+1·75	24·99	0·60	m s −2 0·513	0·062	0·002	−2 0·453
	1485	+ 15 42	S		44 7·93	+0·91	8·84	S		42 6·68	+1·65	8·33	0·51				
	1497	+ 27 42	S		46 34·10	+1·12	35·22	S		44 33·02	+1·68	34·70	0·52		+		
	1528	+ 24 52	S		52 5·18	+1·08	6·26	S		50 4·07	+1·68	5·75	0·51				
	1539	+ 15 44	S		54 6·88	+0·91	7·79	S		52 5·69	+1·65	7·34	0·45				
	1551	+ 21 25	S		57 11·51	+1·01	12·52	S		55 10·40	+1·67	12·07	0·45				
				Mean, T_E	4 50 24												
Dec. 8	1602	+ 38 21	N	*I. P. W.*	5 6 33·17	−0·96	32·21	N	*I. P. W.*	5 4 33·38	−1·71	31·67	−2 0·54				
	1609	+ 46 17	N	d c − 1·6 b − 0·6 a −45·8	8 55·21	−0·73	54·48	N	d c − 0·7 b − 0·6 a − 9·4	6 55·50	−1·66	53·84	0·64				
	1648	+ 27 50	N		14 46·28	−1·19	45·09	N		12 46·30	−1·75	44·55	0·54				
	1663	+ 37 17	N	s Q −1·16	17 49·91	−0·99	48·92	N	s Q −1·72	15 50·08	−1·71	48·37	0·55	m s −2 0·547	0·062	0·001	−2 0·486
	1681	+ 28 31	N		20 1·48	−1·18	0·30	N		17 61·51	−1·75	59·76	0·54				
	1591	+ 15 27	S		4 7·91	−1·42	6·49	S		2 7·67	−1·79	5·88	0·61		+		
	1624	+ 11 13	S		10 41·88	−1·48	40·40	S		8 41·76	−1·81	39·95	0·45				
	1637	+ 21 59	S		13 22·55	−1·30	21·25	S		11 22·60	−1·77	20·83	0·42				
	1648	+ 27 50	S		14 46·32	−1·19	45·13	S		12 46·25	−1·75	44·50	0·63				
				Mean, T_E	5 12 21												
Dec. 9	1476	+ 37 17	N	*I. P. E.*	4 43 6·54	+1·34	7·88	N	*I. P. E.*	4 41 3·45	+1·69	5·14	−2 2·74				
	1497	+ 27 42	N	d c − 0·2 b 0·0 a −32·2	46 32·94	+1·19	34·13	N	d c − 1·3 b − 1·2 a − 9·5	44 29·79	+1·65	31·44	2·69				
	1520	+ 32 59	N		50 26·82	+1·27	28·09	N		48 23·68	+1 68	25·36	2·73				
	1558	+ 41 5	N	s Q +1·18	59 23·08	+1·41	24·49	N	s Q +1·71	57 20·12	+1·71	21·83	2·66	m s −2 2·682	0·060	0·002	−2 2·624
	1485	+ 15 42	S		44 6·76	+1·04	7·80	S		42 3·50	+1·61	5·11	2·69				
	1497	+ 27 42	S		46 32·94	+1·19	34·13	S		44 29·75	+1·65	31·40	2·73		+		
	1528	+ 24 52	S		52 4·05	+1·16	5·21	S		50 0·96	+1·64	2·60	2·61				
	1539	+ 15 44	S		54 5·72	+1·04	6·76	S		52 2·49	+1·61	4·10	2·66				
	1551	+ 21 25	S		57 10·38	+1·11	11·49	S		55 7·23	+1·63	8·86	2·63				
				Mean, T_E	4 50 23												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5ʰ 55ᵐ 7ˢ: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5ʰ 28ᵐ 42ˢ.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.006$ $H_N - H_S = +0^s.003$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Dec. 9	1602	+ 38 21	N	*I. P. E.*	5 6 32·10	−1·00	31·10	N	*I. P. E.*	5 4 30·19	−1·73	28·46	−2 2·64				
	1609	+ 46 17	N	*d* c − 0·2 b 0·0 *a* −32·2	8 54 20	−0·84	53·36	N	*d* c − 1·3 b − 1·2 *a* − 9·5	6 52·33	−1·69	50·64	2·72				
	1648	+ 27 50	N		14 45·25	−1·17	44·08	N		12 43·12	−1·76	41·36	2·72				
	1663	+ 37 17	N	*s* *Q* −1·18	17 48·82	−1·02	47·80	N	*s* *Q* −1·71	15 46·87	−1·73	45·14	2·66	*m s* −2 2·666			
	1681	+ 28 31	N		19 60·44	−1·16	59·28	N		17 58·31	−1·76	56·55	2·73				
	1591	+ 15 27	S		4 6·70	−1·32	5·38	S		2 4·60	−1·81	2·79	2·59		+		− 2 2·607
	1624	+ 11 13	S		10 40·66	−1·37	39·29	S		8 38·52	−1·83	36·69	2·60				
	1637	+ 21 59	S		13 21·43	−1·24	20·19	S		11 19·33	−1·79	17·54	2·65				
	1648	+ 27 50	S		14 45·27	−1·17	44·10	S		12 43·18	−1·76	41·42	2·68				
				Mean, T_E	5 12 19												
Dec. 11	1476	+ 37 17	N	*I. P. W.*	4 43 3·56	+1·25	4·81	N	*I. P. W.*	4 40 56·59	+1·73	58·32	−2 6·49				
	1497	+ 27 42	N	*d* c − 1·9 b − 0·4 *a* −23·9	46 29·88	+1·13	31·01	N	*d* c − 1·5 b − 1·5 *a* −17·7	44 22·89	+1·65	24·54	6·47				
	1520	+ 32 59	N		50 23·77	+1·19	24·96	N		48 16·80	+1·69	18·49	6·47				
	1558	+ 41 5	N	*s* *Q* +1·18	59 20·06	+1·29	21·35	N	*s* *Q* +1·72	57 13·02	+1·77	14·79	6·56	*m s* −2 6·471			
	1485	+ 15 42	S		44 3·59	+1·02	4·61	S		41 56·59	+1·57	58·16	6·45				
	1497	+ 27 42	S		46 29·88	+1·13	31·01	S		44 22·98	+1·65	24·63	6·38		+		− 2 6·410
	1528	+ 24 52	S		52 0·97	+1·10	2·07	S		49 53·91	+1·62	55·53	6·54				
	1539	+ 15 44	S		54 2·53	+1·02	3·55	S		51 55·53	+1·58	57·11	6·44				
	1551	+ 21 25	S		57 7·27	+1·07	8·34	S		55 0·30	+1·60	1·90	6·44				
				Mean, T_E	4 50 20												
Dec. 11	1602	+ 38 21	N	*I. P. W.*	5 6 29·05	−1·10	27·95	N	*I. P. W.*	5 4 23·25	−1·70	21·55	−2 6·40				
	1609	+ 46 17	N	*d* c − 1·9 b − 0·4 *a* −23·9	8 51·17	−0·99	50·18	N	*d* c − 1·5 b − 1·5 *a* −17·7	6 45·46	−1·63	43·83	6·35				
	1648	+ 27 50	N		14 42·10	−1·23	40·87	N		12 36·23	−1·79	34·44	6·43				
	1663	+ 37 17	N	*s* *Q* −1·18	17 45·75	−1·11	44·64	N	*s* *Q* −1·72	15 39·95	−1·71	38·24	6·40	*m s* −2 6·382			
	1681	+ 28 31	N		19 57·25	−1·22	56·03	N		17 51·37	−1·79	49·58	6·45				
	1591	+ 15 27	S		4 3·59	−1·34	2·25	S		1 57·77	−1·87	55·90	6·35		+		− 2 6·320
	1624	+ 11 13	S		10 37·49	−1·37	36·12	S		8 31·72	−1·89	29·83	6·29				
	1637	+ 21 59	S		13 18·30	−1 29	17·01	S		11 12·51	−1·84	10·67	6·34				
	1648	+ 27 50	S		14 42·11	−1·23	40·88	S		12 36·24	−1·79	34·45	6·43				
				Mean, T_E	5 12 16												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Campbell, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.006$, $C_N - C_S = +0^s.045$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 2	1040	+ 27 11	N	*I. P. E.*	3 16 22·86	+1·23	24·09	N	*I. P. E.*	3 42 45·43	+1·22	46·65	26 22·56				
	1078	+ 47 28	N	*d* c + 0·4 b + 1·9 a + 0·8	24 31·42	+1·23	32·65	N	*d* c − 1·0 b − 2·5 a + 3·2	50 54·00	+1·16	55·16	22·51				
	1123	+ 37 12	N		34 43·58	+1·23	44·81	N		61 6·11	+1·19	7·30	22·49	m s 26 22·505	+ 0·015	+ 0·013	26 22·533
	1132	+ 33 35	N	*s* Q +1·17	36 10·26	+1·23	11·49	N	*s* Q +1·31	62 32·76	+1·20	33·96	22·47				
	1040	+ 27 11	S		16 22·76	+1·23	23·99	S		42 45·27	+1·22	46·49	22·50				
	1087	+ 12 32	S		25 36·95	+1·22	38·17	S		51 59·42	+1·25	60·67	22·50				
Dec. 4	1040	+ 27 11	N	*I. P. W.*	3 16 20·97	+1·19	22·16	N	*I. P. W.*	3 42 43·34	+1·85	45·19	26 23·03				
	1071	+ 47 35	N	*d* c − 0·1 b + 0·8 a −26·9	23 30·63	+1·50	32·13	N	*d* c − 0·7 b + 5·6 a − 3·9	49 53·30	+1·93	55·23	23·10				
	1123	+ 37 12	N		34 41·65	+1·32	42·97	N		61 4·11	+1·89	6·00	23·03	m s 26 23·010	+ 0·017	+ 0·020	26 23·047
	1132	+ 33 35	N	*s* Q +1·16	36 8·34	+1·27	9·61	N	*s* Q +1·73	62 30·74	+1·87	32·61	23·00				
	1040	+ 27 11	S		16 20·94	+1·19	22·13	S		42 43·22	+1·85	45·07	22·94				
	1052	+ 24 19	S		18 34·49	+1·16	35·65	S		44 56·73	+1·85	58·58	22·93				
	1057	+ 8 37	S		19 41·44	+0·99	42·43	S		46 3·59	+1·80	5·39	22·96				
	1087	+ 12 32	S		25 35·24	+1·03	36·27	S		51 57·55	+1·81	59·36	23·09				
Dec. 4	1192	+ 25 14	N	*I. P. W.*	3 44 29·77	−1·15	28·62	N	*I. P. W.*	4 10 53·26	−1·61	51·65	26 23·03				
	1207	+ 31 32	N	*d* c − 0·1 b + 0·8 a −26·9	47 59·62	−1·08	58·54	N	*d* c − 0·7 b + 5·6 a − 3·9	14 23·23	−1·59	21·64	23·10				
	1219	+ 39 40	N		51 13·29	−0·96	12·33	N		17 37·00	−1·56	35·44	23·11				
	1228	+ 35 27	N	*s* Q −1·16	52 35·47	−1·02	34·45	N	*s* Q −1·73	18 59·06	−1·58	57·48	23·03	m s 26 23·054	+ 0·017	+ 0·020	26 23·091
	1166	+ 23 45	S		41 44·68	−1·17	43·51	S		8 8·11	−1·62	6·49	22·98				
	1171	+ 23 59	S		42 43·86	−1·17	42·69	S		9 8·34	−1·61	6·73	23·04				
	1192	+ 25 14	S		44 29·82	−1·15	28·67	S		10 53·39	−1·61	51·78	23·11				
	1257	+ 21 46	S		58 59·53	−1·19	58·34	S		25 22·99	−1·62	21·37	23·03				

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* $5^h\ 55^m\ 7^s$: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* $5^h\ 28^m\ 42^s$.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Campbell, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S$ = + 0ˢ·006, $C_N - C_S$ = + 0·045	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Dec. 5	1040	+ 27 11	N	*I. P. E.*	3 16 20·19	+1·14	21·33	N	*I. P. E.*	3 42 42·08	+2·01	44·09	26 22·76				
	1078	+ 47 28	N	*d* c − 0·6	24 28·57	+1·33	29·90	N	*d* c − 1·0	50 50·53	+2·13	52·66	22·76				
	1123	+ 37 12	N	b + 0·1 a −16·8	34 40·83	+1·22	42·05	N	b +12·0 a − 4·1	61 2·85	+2·06	4·91	22·86				
	1132	+ 33 35	N	*s* Q +1·15	36 7·51	+1·19	8·70	N	*s* Q +1·74	62 29·50	+2·04	31·54	22·84	*m s* 26 22·755	+ 0·022	+ 0·020	26 22·797
	1040	+ 27 11	S		16 20·14	+1·14	21·28	S		42 41·97	+2·01	43·98	22·70				
	1052	+ 24 19	S		18 33·60	+1·12	34·72	S		44 55·48	+2·02	57·50	22·78				
	1057	+ 8 37	S		19 40·63	+1·02	41·65	S		46 2·33	+1·95	4·28	22·63				
	1087	+ 12 32	S		25 34·34	+1·05	35·39	S		51 56·13	+1·97	58·10	22·71				
Dec. 5	1192	+ 25 14	N	*I. P. E.*	3 44 29·02	−1·17	27·85	N	*I. P. E.*	4 10 51·97	−1·46	50·51	26 22·66				
	1207	+ 31 32	N	*d* c − 0·6	47 58·86	−1·13	57·73	N	*d* c − 1·0	14 21·92	−1·44	20·48	22·75				
	1228	+ 35 27	N	b + 0·1 a −16·8	52 34·74	−1·10	33·64	N	b +12·0 a − 4·1	18 57·76	−1·42	56·34	22·70	*m s* 26 22·715	+ 0·022	+ 0·020	26 22·757
	1192	+ 25 14	S	*s* Q −1·15	44 29·05	−1·17	27·88	S	*s* Q −1·74	10 52·02	−1·46	50·56	22·68				
	1238	+ 22 52	S		55 11·97	−1·19	10·78	S		21 35·01	−1·48	33·53	22·75				
	1257	+ 21 46	S		58 58·74	−1·19	57·55	S		25 21·78	−1·48	20·30	22·75				

NOTE. $1^d = 0^s{\cdot}0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Persl. Equations $S_N - S_S = +0^s.006$, $H_N - H_S = +0^s.003$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 6	1040	+ 27 11	N	*I. P. W.*	3 16 18·69	+1·17	19·86	N	*I. P. W.*	3 42 40·95	+1·72	42·67	26 22·81				
	1071	+ 47 35	N	d c − 1·5 b + 1·1 a − 6·5	23 28·62	+1·24	29·86	N	d c − 0·5 b − 0·2 a − 9·5	49 50·75	+1·82	52·57	22·71				
	1078	+ 47 28	N		24 27·21	+1·24	28·45	N		50 49·38	+1·82	51·20	22·75				
	1123	+ 37 12	N	s Q +1·18	34 39·48	+1·20	40·68	N	s Q +1·74	61 1·68	+1·77	3·45	22·77	m s 26 22·809	+ 0·024	− 0·001	26 22·832
	1132	+ 33 35	N		36 6·07	+1·19	7·26	N		62 28·34	+1·75	30·09	22·83				
	1040	+ 27 11	S		16 18·66	+1·17	19·83	S		42 40·92	+1·72	42·64	22·81				
	1052	+ 24 19	S		18 32·07	+1·16	33·23	S		44 54·43	+1·72	56·15	22·92				
	1057	+ 8 37	S		19 38·88	+1·12	40·00	S		46 1·19	+1·66	2·85	22·85				
	1087	+ 12 32	S		25 32·77	+1·13	33·90	S		51 55·05	+1·68	56·73	22·83				
Dec. 6	1192	+ 25 14	N	*I. P. W.*	3 44 27·40	−1·19	26·21	N	*I. P. W.*	4 10 50·92	−1·76	49·16	26 22·95				
	1207	+ 31 32	N	d c − 1·5 b + 1·1 a − 6·5	47 57·35	−1·18	56·17	N	d c − 0·5 b − 0·2 a − 9·5	14 20·90	−1·74	19·16	22·99				
	1219	+ 39 40	N		51 11·10	−1·15	9·95	N		17 34·63	−1·70	32·93	22·98				
	1228	+ 35 27	N	s Q −1·18	52 33·22	−1·16	32·06	N	s Q −1·74	18 56·76	−1·72	55·04	22·98	m s 26 22·956	+ 0·024	− 0·002	26 22·978
	1166	+ 23 45	S		41 42·27	−1·20	41·07	S		8 5·69	−1·76	3·93	22·86				
	1171	+ 23 59	S		42 42·52	−1·20	41·32	S		9 6·00	−1·76	4·24	22·92				
	1192	+ 25 14	S		44 27·45	−1·19	26·26	S		10 50·99	−1·76	49·23	22·97				
	1238	+ 22 52	S		55 10·33	−1·20	9·13	S		21 33·90	−1·77	32·13	23·00				
	1257	+ 21 46	S		58 57·13	−1·20	55·93	S		25 20·65	−1·77	18·88	22·95				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Campbell, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.006$, $C_N - C_S = +0^s.045$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 7	1040	+ 27 11	N	*I. P. E.*	3 16 17·40	+1·30	18·70	N	*I. P. E.*	3 42 39·71	+1·69	41·40	26 22·70				
	1071	+ 47 35	N	*d* c + 1·7 b + 3·1 *a* −25·3	23 27·06	+1·63	28·69	N	*d* c − 1·4 b + 0·9 *a* − 3·8	49 49·68	+1·73	51·41	22·72				
	1123	+ 37 12	N		34 38·08	+1·44	39·52	N		61 0·64	+1·71	2·35	22·83	m s 26 22 754	+ 0·026	+ 0·017	26 22·797
	1132	+ 33 35	N	*s* *Q* +1·17	36 4·74	+1·38	6·12	N	*s* *Q* +1·71	62 27·28	+1·70	28·98	22·86				
	1040	+ 27 11	S		16 17·35	+1·30	18·65	S		42 39·65	+1·69	41·34	22·69				
	1052	+ 24 19	S		18 30·88	+1·27	32·15	S		44 53·18	+1·70	54·88	22·73				
	1057	+ 8 37	S		19 37·84	+1·10	38·94	S		46 0·02	+1·67	1·69	22·75				
Dec. 7	1192	+ 25 14	N	*I. P. E.*	3 44 26·22	−1·06	25·16	N	*I. P. E.*	4 10 49·76	−1·72	48·04	26 22·88				
	1207	+ 31 32	N	*d* c + 1·7 b + 3·1 *a* −25·3	47 56·06	−0·99	55·07	N	*d* c − 1·4 b + 0·9 *a* − 3·8	14 19·64	−1·72	17·92	22·85				
	1219	+ 39 40	N		51 9·67	−0·86	8·81	N		17 33·40	−1·70	31·70	22·89				
	1228	+ 35 27	N	*s* *Q* −1·17	52 31·90	−0·93	30·97	N	*s* *Q* −1·71	18 55·49	−1·71	53·78	22·81	m s 26 22·856	+ 0·026	+ 0·022	26 22·904
	1166	+ 23 45	S		41 41·08	−1·08	40·00	S		8 4·62	−1·72	2·90	22·90				
	1171	+ 23 59	S		42 41·34	−1·08	40·26	S		9 4·82	−1·72	3·10	22·84				
	1192	+ 25 14	S		44 26·20	−1·06	25·14	S		10 49·73	−1·72	48·01	22·87				
	1238	+ 22 52	S		55 9·18	−1·09	8·09	S		21 32·67	−1·73	30·94	22·85				
	1257	+ 21 46	S		58 55·95	−1·10	54·85	S		25 19·39	−1·73	17·66	22·81				

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s{\cdot}006$, $H_N - H_S = +0^s{\cdot}003$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 8	1071	+ 47 35	N	*I. P. W.*	3 23 25·38	+1·64	27·02	N	*I. P. W.*	3 49 48·08	+1·79	49·87	26 22·85				
	1078	+ 47 28	N	d c − 1·6 b − 0·6 a −45·8	24 23·96	+1·64	25·60	N	d c − 0·7 b − 0·6 a − 9·4	50 46·69	+1·79	48·48	22·88				
	1123	+ 37 12	N		34 36·50	+1·33	37·83	N		4 0 58·88	+1·73	60·61	22·78	m s 26 22·838	+ 0·026	− 0·002	26 22·862
	1052	+ 24 19	S	s Q +1·16	18 29·38	+1·07	30·45	S	s Q +1·72	3 44 51·59	+1·68	53·27	22·82				
	1057	+ 8 37	S		19 36·43	+0·79	37·22	S		45 58·39	+1·62	60·01	22·79				
	1087	+ 12 32	S		25 30·20	+0·85	31·05	S		51 52·32	+1·64	53·96	22·91				
Dec. 8	1192	+ 25 14	N	*I. P. W.*	3 44 24·70	−1·23	23·47	N	*I. P. W.*	4 10 48·04	−1·76	46·28	26 22·81				
	1207	+ 31 32	N	d c − 1·6 b − 0·6 a −45·8	47 54·53	−1·11	53·42	N	d c − 0·7 b − 0·6 a − 9·4	14 18·03	−1·74	16·29	22·87				
	1219	+ 39 40	N		51 8·12	−0·92	7·20	N		17 31·86	−1·70	30·16	22·96				
	1228	+ 35 27	N	s Q −1·16	52 30·37	−1·02	29·35	N	s Q −1·72	18 53·94	−1·72	52·22	22·87	m s 26 22·909	+ 0·026	− 0·002	26 22·933
	1166	+ 23 45	S		41 39·58	−1·26	38·32	S		8 2·97	−1·76	1·21	22·89				
	1171	+ 23 59	S		42 39·81	−1·26	38·55	S		9 3·19	−1·76	1·43	22·88				
	1192	+ 25 14	S		44 24·67	−1·23	23·44	S		10 48·14	−1·76	46·38	22·94				
	1238	+ 22 52	S		55 7·68	−1·28	6·40	S		21 31·13	−1·77	29·36	22·96				
	1257	+ 21 46	S		58 54·50	−1·30	53·20	S		25 17·97	−1·77	16·20	23·00				
Dec. 9	1071	+ 47 35	N	*I. P. E.*	3 23 24·29	+1·56	25·85	N	*I. P. E.*	3 49 46·91	+1·74	48·65	26 22·80				
	1078	+ 47 28	N	d c − 0·2 b 0·0 a −32·2	24 22·92	+1·55	24·47	N	d c − 1·3 b − 1·2 a − 9·5	50 45·48	+1·74	47·22	22·75				
	1123	+ 37 12	N		34 35·32	+1·34	36·66	N		4 0 57·83	+1·69	59·52	22·86	m s 26 22·793	+ 0·024	− 0·001	26 22·816
	1132	+ 33 35	N	s Q +1·18	36 2·03	+1·28	3·31	N	s Q +1·71	2 24·49	+1·67	26·16	22·85				
	1057	+ 8 37	S		19 35·19	+0·95	36·14	S		3 45 57·29	+1·58	58·87	22·73				
	1087	+ 12 32	S		25 28·99	+1·00	29·99	S		51 51·16	+1·60	52·76	22·77				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s* : AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perel. Equations $S_N - S_S = +0^s{\cdot}006$ $H_N - H_S = +0^s{\cdot}003$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 9	1192	+ 25 14	N	*I. P. E.*	3 44 23·50	−1·20	22·30	N	*I. P. E.*	4 10 46·92	−1·78	45·14	26 22·84				
	1207	+ 31 32	N	*d* c − 0·2 b 0·0 *a* −32·2	47 53·37	−1·12	52·25	N	*d* c − 1·3 b − 1·2 *a* − 9·5	14 16·82	−1·75	15·07	22·82				
	1219	+ 39 40	N		51 6·99	−0·97	6·02	N		17 30·60	−1·72	28·88	22·86				
	1228	+ 35 27	N	*s* *Q* −1·18	52 29·15	−1·05	28·10	N	*s* *Q* −1·71	18 52·71	−1·74	50·97	22·87				
	1166	+ 23 45	S		41 38·39	−1·22	37·17	S		8 1·80	−1·78	0·02	22·85	m s 26 22·851	+ 0·024	− 0·002	26 22·873
	1171	+ 23 59	S		42 38·65	−1·21	37·44	S		9 2·01	−1·78	0·23	22·79				
	1192	+ 25 14	S		44 23·56	−1·20	22·36	S		10 46·99	−1·78	45·21	22·85				
	1238	+ 22 52	S		55 6·46	−1·23	5·23	S		21 29·94	−1·79	28·15	22·92				
	1257	+ 21 46	S		58 53·27	−1·24	52·03	S		25 16·68	−1·79	14·89	22·86				
Dec 11	1040	+ 27 11	N	*I. P. W.*	3 16 11·71	+1·13	12·84	N	*I. P. W.*	3 42 34·02	+1·64	35·66	26 22·82				
	1071	+ 47 35	N	*d* c − 1·9 b − 0·4 *a* −23·9	23 21·39	+1·40	22·79	N	*d* c − 1·5 b − 1·5 *a* −17·7	49 43·84	+1·83	45·67	22·88				
	1078	+ 47 28	N		24 20·01	+1·39	21·40	N		50 42·50	+1·83	44·33	22·93				
	1123	+ 37 12	N	*s* *Q* +1·18	34 32·37	+1·24	33·61	N	*s* *Q* +1·72	4 0 54·77	+1·73	56·50	22·89	m s 26 22·911	+ 0·027	− 0·001	26 22·937
	1132	+ 33 35	N		35 59·07	+1·20	60·27	N		2 21·47	+1·70	23·17	22·90				
	1040	+ 27 11	S		16 11·65	+1·13	12·78	S		3 42 34·03	+1·64	35·67	22·89				
	1052	+ 24 19	S		18 25·14	+1·10	26·24	S		44 47·58	+1·62	49·20	22·96				
	1087	+ 12 32	S		25 25·83	+1·00	26·83	S		51 48·29	+1·56	49·85	23·02				
Dec 11	1192	+ 25 14	N	*I. P. W.*	3 44 20·45	−1·25	19·20	N	*I. P. W.*	4 10 44·00	−1·81	42·19	26 22·99				
	1207	+ 31 32	N	*d* c − 1·9 b − 0·4 *a* −23·9	47 50·32	−1·19	49·13	N	*d* c − 1·5 b − 1·5 *a* −17·7	14 13·89	−1·76	12·13	23·00				
	1219	+ 39 40	N		51 4·09	−1·09	3·00	N		17 27·59	−1·68	25·91	22·91				
	1228	+ 35 27	N	*s* *Q* −1·18	52 26·24	−1·14	25·10	N	*s* *Q* −1·72	18 49·74	−1·73	48·01	22·91	m s 26 22·978	+ 0·027	− 0·002	26 23·003
	1166	+ 23 45	S		41 35·36	−1·27	34·09	S		7 58·91	−1·82	57·09	23·00				
	1171	+ 23 59	S		42 35·56	−1·27	34·29	S		8 59·13	−1·82	57·31	23·02				
	1192	+ 25 14	S		44 20·46	−1·25	19·21	S		10 44·08	−1·81	42·27	23·06				
	1238	+ 22 52	S		55 3·48	−1·28	2·20	S		21 27·00	−1·83	25·17	22·97				
	1257	+ 21 46	S		58 50·23	−1·29	48·94	S		25 13·72	−1·84	11·88	22·94				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Campbell, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.006$ $C_N - C_S = +0^s.045$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 2	2001	+ 29 32	N	*I. P. E.*	5 40 55·72	+1·23	56·95	N	*I. P. E.*	6 7 18·51	+1·22	19·73	26 22·78				
	2081	+ 46 46	N	*d* c + 0·4 b + 1·9 *a* + 0·8	54 19·21	+1·23	20·44	N	*d* c − 1·0 b − 2·5 *a* + 3·2	20 42·08	+1·16	43·24	22·80				
	2097	+ 28 18	N		55 59·37	+1·23	60·60	N		22 22·10	+1·22	23·32	22·72				
	1971	+ 23 8	S	*s* *Q* +1·17	35 38·10	+1·23	39·33	S	*s* *Q* +1·31	2 0·79	+1·24	2·03	22·70	m s 26 22·737	+ 0·055	+ 0·026	26 22·818
	1975	+ 23 1	S		36 24·42	+1·23	25·65	S		2 47·12	+1·24	48·36	22·71				
	1987	+ 22 56	S		38 13·82	+1·23	15·05	S		4 36·55	+1·24	37·79	22·74				
	2047	+ 22 34	S		48 53·21	+1·23	54·44	S		15 15·95	+1·24	17·19	22·75				
	2058	+ 25 6	S		50 31·65	+1·23	32·88	S		16 54·41	+1·23	55·64	22·76				
	2097	+ 28 18	S		55 59·32	+1·23	60·55	S		22 22·00	+1·22	23·22	22·67				
Dec. 2	2194	+ 25 15	N	*I. P. E.*	6 9 46·52	−1·11	45·41	N	*I. P. E.*	6 36 9·58	−1·39	8·19	26 22·78				
	2201	+ 48 55	N	*d* c + 0·4 b + 1·9 *a* + 0·8	11 47·30	−1·11	46·19	N	*d* c − 1·0 b − 2·5 *a* + 3·2	38 10·43	−1·46	8·97	22·78				
	2235	+ 39 1	N		18 1·14	−1·12	0·02	N		44 24·26	−1·43	22·83	22·81	m s 26 22·788	+ 0·055	+ 0·020	26 22·863
	2129	+ 14 15	S	*s* *Q* −1·17	5 59 59·98	−1·12	58·86	S	*s* *Q* −1·31	26 23·00	−1·37	21·63	22·77				
	2163	+ 16 30	S		6 3 59·65	−1·12	58·53	S		30 22·68	−1·38	21·30	22·77				
	2216	+ 8 10	S		13 60·99	−1·11	59·88	S		40 24·06	−1·36	22·70	22·82				
Dec. 4	2001	+ 29 32	N	*I. P. W.*	5 40 49·53	+1·22	50·75	N	*I. P. W.*	6 7 12·13	+1·85	13·98	26 23·23				
	2081	+ 46 46	N	*d* c − 0·1 b + 0·8 *a* −26·9	54 12·86	+1·48	14·34	N	*d* c − 0·7 b + 5·6 *a* − 3·9	20 35·77	+1·92	37·69	23·35				
	2097	+ 28 18	N		55 53·14	+1·20	54·34	N		22 15·86	+1·85	17·71	23·37				
	1971	+ 23 8	S	*s* *Q* +1·16	35 31·89	+1·14	33·03	S	*s* *Q* +1·73	1 54·47	+1·84	56·31	23·28	m s 26 23·284	+ 0·054	+ 0·026	26 23·364
	1975	+ 23 1	S		36 18·21	+1·14	19·35	S		2 40·82	+1·84	42·66	23·31				
	1987	+ 22 56	S		38 7·64	+1·14	8·78	S		4 30·13	+1·84	31·97	23·19				
	2047	+ 22 34	S		48 47·00	+1·13	48·13	S		15 9·55	+1·84	11·39	23·26				
	2058	+ 25 6	S		50 25·43	+1·16	26·59	S		16 48·06	+1·85	49·91	23·32				
	2097	+ 28 18	S		55 53·10	+1·20	54·30	S		22 15·70	+1·85	17·55	23·25				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *sii*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Campbell, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.006$ $C_N - C_S = +0^s.045$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 4	2194	+ 25 15	N	*I. P. W.*	6 9 40·32	−1·15	39·17	N	*I. P. W.*	6 36 4·08	−1·61	2·47	26 23·30				
	2201	+ 48 55	N	d c − 0·1 b + 0·8 a −26·9	11 40·88	−0·78	40·10	N	d c − 0·7 b + 5·6 a − 3·9	38 4·89	−1·52	3·37	23·27				
	2235	+ 39 1	N		17 54·87	−0·97	53·90	N		44 18·77	−1·57	17·20	23·30				
	2129	+ 14 15	S	s Q −1·16	5 59 53·88	−1·28	52·61	S	s Q −1·73	26 17·50	−1·64	15·86	23·25	m s 26 23·261	+ 0·054	+ 0·024	26 23·339
	2149	+ 16 54	S		6 2 11·97	−1·24	10·73	S		28 35·57	−1·64	33·93	23·20				
	2163	+ 16 30	S		3 53·49	−1·25	52·24	S		30 17·10	−1·64	15·46	23·22				
	2178	+ 28 18	S		6 54·81	−1·12	53·69	S		33 18·56	−1·61	16·95	23·26				
	2216	+ 8 10	S		13 54·93	−1·33	53·60	S		40 18·55	−1·66	16·89	23·29				
Dec. 5	2001	+ 29 32	N	*I. P. E.*	5 40 46·84	+1·15	47·99	N	*I. P. E.*	6 6 8·94	+2·02	10·96	26 22·97				
	2081	+ 46 46	N	d c − 0·6 b + 0·1 a −16·8	54 10·25	+1·32	11·57	N	d c − 1·0 b +12·0 a − 4·1	20 32·45	+2·13	34·58	23·01				
	2097	+ 28 18	N		55 50·41	+1·14	51·55	N		22 12·51	+2·02	14·53	22·98	m s 26 22·998	+ 0·056	+ 0·020	26 23·074
	1971	+ 23 8	S	s Q +1·15	35 29·14	+1·12	30·26	S	s Q +1·74	1 51·23	+2·00	53·23	22·97				
	1975	+ 23 1	S		36 15·52	+1·11	16·63	S		2 37·63	+2·00	39·63	23·00				
	1987	+ 22 56	S		38 4·84	+1·11	5·95	S		4 27·01	+2·00	29·01	23·06				
Dec. 5	2194	+ 25 15	N	*I. P. E.*	6 9 37·65	−1·17	36·48	N	*I. P. E.*	6 35 60·84	−1·46	59·38	26 22·90				
	2201	+ 48 55	N	d c − 0·6 b + 0·1 a −16·8	11 38·27	−0·95	37·32	N	d c − 1·0 b +12·0 a − 4·1	38 1·62	−1·34	0·28	22·96				
	2235	+ 39 1	N		17 52·18	−1·06	51·12	N		44 15·46	−1·40	14·06	22·94				
	2129	+ 14 15	S	s Q −1·15	5 59 51·09	−1·24	49·85	S	s Q −1·74	26 14·31	−1·51	12·80	22·95	m s 26 22·949	+ 0·056	+ 0·022	26 23·027
	2149	+ 16 54	S		6 2 9·21	−1·23	7·98	S		28 32·44	−1·50	30·94	22·96				
	2163	+ 16 30	S		3 50·72	−1·23	49·49	S		30 13·96	−1·50	12·46	22·97				
	2216	+ 8 10	S		13 52·11	−1·28	50·83	S		40 15·32	−1·53	13·79	22·96				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.006$, $H_N - H_S = +0.003$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 6	2001	+ 29 32	N	*I. P. W.*	5 40 43·52	+1·18	44·70	N	*I. P. W.*	6 7 6·07	+1·73	7·80	26 23·10				
	2081	+ 46 46	N	d c − 1·5 b + 1·1 a − 6·5	54 7·05	+1·23	8·28	N	d c − 0·5 b − 0·2 a − 9·5	20 29·59	+1·82	31·41	23·13				
	2097	+ 28 18	N		55 47·12	+1·18	48·30	N		22 9·72	+1·73	11·45	23·15				
	1971	+ 23 8	S	s Q +1·18	35 25·81	+1·16	26·97	S	s Q +1·74	1 48·30	+1·72	50·02	23·05	m s 26 23·074	+ 0·058	− 0·002	26 23·130
	1975	+ 23 1	S		36 12·12	+1·16	13·28	S		2 34·65	+1·72	36·37	23·09				
	1987	+ 22 56	S		38 1·57	+1·16	2·73	S		4 24·06	+1·71	25·77	23·04				
	2047	+ 22 34	S		48 40·91	+1·16	42·07	S		15 3·45	+1·71	5·16	23·09				
	2058	+ 25 6	S		50 19·40	+1·17	20·57	S		16 41·92	+1·72	43·64	23·07				
	2097	+ 28 18	S		55 47·14	+1·18	48·32	S		22 9·54	+1·73	11·27	22·95				
Dec. 6	2178	+ 28 18	N	*I. P. W.*	6 6 48·78	−1·18	47·60	N	*I. P. W.*	6 33 12·58	−1·75	10·83	26 23·23				
	2194	+ 25 15	N	d c − 1·5 b + 1·1 a − 6·5	9 34·28	−1·19	33·09	N	d c − 0·5 b − 0·2 a − 9·5	35 57·95	−1·76	56·19	23·10				
	2201	+ 48 55	N		11 35·04	−1·12	33·92	N		37 58·78	−1·65	57·13	23·21				
	2235	+ 39 1	N	s Q −1·18	17 48·89	−1·15	47·74	N	s Q −1·74	44 12·63	−1·70	10·93	23·19				
	2129	+ 14 15	S		5 59 47·67	−1·22	46·45	S		26 11·46	−1·80	9·66	23·21	m s 26 23·187	+ 0·058	− 0·002	26 23·243
	2149	+ 16 54	S		6 2 5·77	−1·22	4·55	S		28 29·55	−1·79	27·76	23·21				
	2163	+ 16 30	S		3 47·33	−1·22	46·11	S		30 11·09	−1·79	9·30	23·19				
	2178	+ 28 18	S		6 48·81	−1·18	47·63	S		33 12·49	−1·75	10·74	23·11				
	2216	+ 8 10	S		13 48·70	−1·24	47·46	S		40 12·51	−1·82	10·69	23·23				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Campbell, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.006$ $C_N - C_S = +0^s.045$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 7	2001	+ 29 32	N	*I. P. E.*	5 40 40·27	+1·32	41·59	N	*I. P. E.*	6 7 3·00	+1·69	4·69	26 23·10				
	2081	+ 46 46	N	*d* c + 1·7 b + 3·1 *a* −25·3	54 3·56	+1·62	5·18	N	*d* c − 1·4 b + 0·9 *a* − 3·8	20 26·50	+1·73	28·23	23·05				
	2097	+ 28 18	N		55 43·89	+1·31	45·20	N		22 6·61	+1·69	8·30	23·10				
	1971	+ 23 8	S	*s* Q +1·17	35 22·62	+1·25	23·87	S	*s* Q +1·71	1 45·23	+1·69	46·92	23·05	*s* 26 23·046			
	1975	+ 23 1	S		36 8·98	+1·25	10·23	S		2 31·62	+1·69	33·31	23·08				
	1987	+ 22 56	S		37 58·42	+1·25	59·67	S		4 21·00	+1·69	22·69	23·02	*m* 26	+ 0·061	+ 0·026	26 23·133
	2047	+ 22 34	S		48 37·78	+1·25	39·03	S		15 0·36	+1·69	2·05	23·02				
	2058	+ 25 6	S		50 16·19	+1·28	17·47	S		16 38·87	+1·70	40·57	23·10				
	2097	+ 28 18	S		55 43·90	+1·31	45·21	S		22 6·41	+1·69	8·10	22·89				
Dec. 7	2178	+ 28 18	N	*I. P. E.*	6 6 45·60	−1·03	44·57	N	*I. P. E.*	6 33 9·45	−1·73	7·72	26 23·15				
	2194	+ 25 15	N	*d* c + 1·7 b + 3·1 *a* −25·3	9 31·14	−1·06	30·08	N	*d* c − 1·4 b + 0·9 *a* − 3·8	35 54·80	−1·72	53·08	23·00				
	2201	+ 48 55	N		11 31·64	−0·68	30·96	N		37 55·65	−1·68	53·97	23·01				
	2235	+ 39 1	N	*s* Q −1·17	17 45·59	−0·87	44·72	N	*s* Q −1·71	44 9·49	−1·70	7·79	23·07	*s* 26 23·024			
	2129	+ 14 15	S		5 59 44·68	−1·19	43·49	S		26 8·24	−1·74	6·50	23·01		+ 0·061	+ 0·022	26 23·107
	2149	+ 16 54	S		6 2 2·76	−1·16	1·60	S		28 26·35	−1·74	24·61	23·01	*m* 26			
	2163	+ 16 30	S		3 44·27	−1·16	43·11	S		30 7·88	−1·74	6·14	23·03				
	2178	+ 28 18	S		6 45·67	−1·03	44·64	S		33 9·30	−1·73	7·57	22·93				
	2216	+ 8 10	S		13 45·72	−1·24	44·48	S		40 9·24	−1·75	7·49	23·01				

NOTE. $1^d = 0^s.0225$. Transcribing Equation *sil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s; AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.006$, $H_N - H_S = +0^s.003$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 8	2001	+ 29 32	N	*I. P. W.*	5 40 36·84	+1·16	38·00	N	*I. P. W.*	6 6 59·51	+1·69	61·20	26 23·20				
	2081	+ 46 46	N	d c − 1·6 b − 0·6 a −45·8	54 0·03	+1·61	1·64	N	d c − 0·7 b − 0·6 a − 9·4	20 23·09	+1·79	24·88	23·24				
	2097	+ 28 18	N		55 40·49	+1·14	41·63	N		22 3·17	+1·69	4·86	23·23				
	1971	+ 23 8	S	s Q +1·16	35 19·23	+1·04	20·27	S	s Q +1·72	1 41·77	+1·68	43·45	23·18	m s 26 23·196	+ 0·062	− 0·002	
	1975	+ 23 1	S		36 5·64	+1·04	6·68	S		2 28·15	+1·68	29·83	23·15				
	1987	+ 22 56	S		37 55·00	+1·04	56·04	S		4 17·55	+1·67	19·22	23·18				
	2047	+ 22 34	S		48 34·37	+1·03	35·40	S		14 56·91	+1·67	58·58	23·18				
	2058	+ 25 6	S		50 12·80	+1·08	13·88	S		16 35·41	+1·68	37·09	23·21				
Dec. 8	2178	+ 28 18	N	*I. P. W.*	6 6 42·21	−1·18	41·03	N	*I. P. W.*	6 33 5·94	−1·75	4·19	26 23·16				
	2194	+ 25 15	N	d c − 1·6 b − 0·6 a −45·8	9 27·69	−1·23	26·46	N	d c − 0·7 b − 0·6 a − 9·4	35 51·32	−1·76	49·56	23·10				
	2201	+ 48 55	N		11 28·05	−0·63	27·42	N		37 52·13	−1·64	50·49	23·07				
	2235	+ 39 1	N	s Q −1·16	17 42·10	−0·94	41·16	N	s Q −1·72	44 6·06	−1·70	4·36	23·20	m s 26 23·123	+ 0·062	− 0·002	
	2129	+ 14 15	S		5 59 41·28	−1·44	39·84	S		26 4·76	−1·80	2·96	23·12				
	2149	+ 16 54	S		6 1 59·39	−1·39	58·00	S		28 22·90	−1·79	21·11	23·11				
	2163	+ 16 30	S		3 40·88	−1·40	39·48	S		30 4·37	−1·79	2·58	23·10				
	2178	+ 28 18	S		6 42·21	−1·18	41·03	S		33 5·85	−1·75	4·10	23·07				
	2216	+ 8 10	S		13 42·40	−1·54	40·86	S		40 5·86	−1·82	4·04	23·18				
Dec. 9	2001	+ 29 32	N	*I. P. E.*	5 40 33·68	+1·21	34·89	N	*I. P. E.*	6 6 56·27	+1·66	57·93	26 23·04				
	2097	+ 28 18	N	d c − 0·2 b 0·0 a −32·2	55 37·30	+1·20	38·50	N	d c − 1·3 b − 1·2 a − 9·5	21 59·91	+1·66	61·57	23·07				
	1971	+ 23 8	S		35 16·13	+1·13	17·26	S		1 38·59	+1·64	40·23	22·97				
	1975	+ 23 1	S	s Q +1·18	36 2·38	+1·13	3·51	S	s Q +1·71	2 24·90	+1·64	26·54	23·03	m s 26 23·018	+ 0·060	− 0·002	
	1987	+ 22 56	S		37 51·80	+1·13	52·93	S		4 14·40	+1·64	16·04	23·11				
	2047	+ 22 34	S		48 31·18	+1·13	32·31	S		14 53·62	+1·63	55·25	22·94				
	2058	+ 25 6	S		50 9·65	+1·16	10·81	S		16 32·13	+1·64	33·77	22·96				
	2097	+ 28 18	S		55 37·27	+1·20	38·37	S		21 59·73	+1·66	61·39	23·02				

Dec. 8														26 23·196			26 23·256
Dec. 8														26 23·123			26 23·183
Dec. 9														26 23·018			26 23·076

NOTE. $1^d = 0^s.9225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s : AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.006$ $H_N - H_S = +0^s.003$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 9	2194	+ 25 15	N	*I. P. E.*	6 9 24·59	−1·20	23·39	N	*I. P. E.*	6 35 48·09	−1·78	46·31	26 22·92				
	2201	+ 48 55	N	d c − 0·2 b 0·0 a −32·2	11 25·04	−0·77	24·27	N	d c − 1·3 b − 1·2 a − 9·5	37 48·96	−1·67	47·29	23·02				
	2235	+ 39 1	N		17 38·97	−0·99	37·98	N		44 2·68	−1·72	0·96	22·98	m s 26 23·034	+ 0·060	− 0·003	
	2129	+ 14 15	S	s Q −1·18	5 59 38·09	−1·34	36·75	S	s Q −1·71	25 61·64	−1·82	59·82	23·07				26 23·092
	2149	+ 16 54	S		6 1 56·16	−1·31	54·85	S		28 19·74	−1·81	17·93	23·08				
	2163	+ 16 30	S		3 37·67	−1·31	36·36	S		29 61·24	−1·81	59·43	23·07				
	2216	+ 8 10	S		13 39·18	−1·41	37·77	S		40 2·71	−1·84	0·87	23·10				
Dec. 11	2001	+ 29 32	N	*I. P. W.*	5 40 26·84	+1·15	27·99	N	*I. P. W.*	6 6 49·38	+1·66	51·04	26 23·05				
	2081	+ 46 46	N	d c − 1·9 b − 0·4 a −23·9	53 50·22	+1·38	51·60	N	d c − 1·5 b − 1·5 a −17·7	20 12·84	+1·82	14·66	23·06				
	2097	+ 28 18	N		55 30·57	+1·14	31·71	N		21 53·02	+1·65	54·67	22·96				
	1971	+ 23 8	S	s Q +1·18	35 9·10	+1·09	10·19	S	s Q +1·72	1 31·64	+1·61	33·25	23·06	m s 26 23·064	+ 0·063	− 0·002	
	1975	+ 23 1	S		35 55·45	+1·08	56·53	S		2 17·99	+1·61	19·60	23·07				26 23·125
	1987	+ 22 56	S		37 44·85	+1·08	45·93	S		4 7·51	+1·61	9·12	23·19				
	2047	+ 22 34	S		48 24·29	+1·08	25·37	S		14 46·82	+1·61	48·43	23·06				
	2058	+ 25 6	S		50 2·74	+1·11	3·85	S		16 25·31	+1·63	26·94	23·09				
	2097	+ 28 18	S		55 30·44	+1·14	31·58	S		21 52·97	+1·65	54·62	23·04				
Dec. 11	2178	+ 28 18	N	*I. P. W.*	6 6 32·18	−1·22	30·96	N	*I. P. W.*	6 32 55·84	−1·79	54·05	26 23·09				
	2194	+ 25 15	N	d c − 1·9 b − 0·4 a −23·9	9 17·62	−1·25	16·37	N	d c − 1·5 b − 1·5 a −17·7	35 41·24	−1·81	39·43	23·06				
	2201	+ 48 55	N		11 18·26	−0·95	17·31	N		37 41·90	−1·59	40·31	23·00				
	2235	+ 39 1	N	s Q −1·18	17 32·18	−1·10	31·08	N	s Q −1·72	43 55·80	−1·69	54·11	23·03	m s 26 23·074	+ 0·063	− 0·002	
	2129	+ 14 15	S		5 59 31·12	−1·35	29·77	S		25 54·74	−1·87	52·87	23·10				26 23·135
	2149	+ 16 54	S		6 1 49·22	−1·32	47·90	S		28 12·84	−1·86	10·98	23·08				
	2163	+ 16 30	S		3 30·72	−1·33	29·39	S		29 54·38	−1·86	52·52	23·13				
	2178	+ 28 18	S		6 32·16	−1·22	30·94	S		32 55·75	−1·79	53·96	23·02				
	2216	+ 8 10	S		13 32·16	−1·40	30·76	S		39 55·83	−1·91	53·92	23·16				

NOTE. $1^s = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s : AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.009$ $H_N - H_S = -0^s.008$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 21	1669	+ 31 2	N	*I. P. W.*	5 17 5·95	+1·50	7·45	N	*I. P. W.*	5 17 33·35	+1·81	35·16	+0 27·71				
	1681	+ 28 31	N	*d* c + 0·5 b + 1·3 *a* + 1·5	18 53·44	+1·50	54·94	N	*d* c + 1·9 b + 1·2 *a* −15·0	19 20·76	+1·79	22·55	27·61				
	1709	+ 29 6	N		22 14·34	+1·50	15·84	N		22 41·73	+1·79	43·52	27·68	m s			
	1637	+ 21 59	S	*s* *Q* +1·46	12 14·33	+1·50	15·83	S	*s* *Q* +1·67	12 41·78	+1·75	43·53	27·70	+0 27·680	0·002	0·001	27·683
	1656	+ 8 19	S		15 20·72	+1·51	22·23	S		15 48·27	+1·66	49·93	27·70	+	+	+	+
	1692	+ 17 52	S		20 20·01	+1·51	21·52	S		20 47·50	+1·71	49·21	27·69				
	1714	+ 22 22	S		23 39·14	+1·50	40·64	S		24 6·56	+1·75	8·31	27·67				
				Mean, T_E	5 18 33												
Dec. 21	1754	+ 26 51	N	*I. P. W.*	5 29 52·97	−1·42	51·59	N	*I. P. W.*	5 30 20·74	−1·56	19·18	+0 27·59				
	1772	+ 29 9	N	*d* c + 0·5 b + 1·3 *a* + 1·5	31 54·57	−1·42	53·15	N	*d* c + 1·9 b + 1·2 *a* −15·0	32 22·33	−1·54	20·79	27·64				
	1824	+ 39 30	N		40 46·62	−1·42	45·20	N		41 14·21	−1·45	12·76	27·56	m s			
	1742	+ 23 58	S	*s* *Q* −1·46	28 20·86	−1·42	19·44	S	*s* *Q* −1·67	28 48·70	−1·58	47·12	27·68	+0 27·664	0·002	0·001	27·667
	1782	+ 4 3	S		33 2·61	−1·41	1·20	S		33 30·66	−1·71	28·95	27·75	+	+	+	+
	1792	+ 16 28	S		34 34·29	−1·41	32·88	S		35 2·20	−1·64	0·56	27·68				
	1811	+ 18 39	S		38 21·62	−1·42	20·20	S		38 49·57	−1·62	47·95	27·75				
				Mean, T_E	5 33 51												
Dec. 26	1648	+ 27 50	N	*I. P. E.*	5 13 26·07	+1·53	27·60	N	*I. P. E.*	5 13 55·07	+1·64	56·71	+0 29·11				
	1669	+ 31 2	N	*d* c + 0·6 b + 2·6 *a* − 0·3	16 53·76	+1·53	55·29	N	*d* c + 0·2 b + 0·6 *a* +20·8	17 22·78	+1·61	24·39	29·10				
	1681	+ 28 31	N		18 41·27	+1·53	42·80	N		19 10·27	+1·63	11·90	29·10				
	1709	+ 29 6	N	*s* *Q* +1·44	22 2·21	+1·53	3·74	N	*s* *Q* +1·66	22 31·24	+1·63	32·87	29·13	m s			
	1637	+ 21 59	S		12 2·27	+1·51	3·78	S		12 31·20	+1·67	32·87	29·09	+0 29·096	0·002	0·000	29·098
	1656	+ 8 19	S		15 8·62	+1·51	10·13	S		15 37·38	+1·79	39·17	29·04	+	+	+	+
	1692	+ 17 52	S		20 7·88	+1·51	9·39	S		20 36·78	+1·71	38·49	29·10				
				Mean, T_E	5 16 55												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s{\cdot}009$, $H_N - H_S = -0^s{\cdot}008$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 26	1754	+ 26 51	N	*I. P. E.*	5 29 40·76	−1·35	39·41	N	*I. P. E.*	5 30 10·27	−1·67	8·60	+0 29·19				
	1772	+ 29 9	N	*d* c + 0·6	31 42·34	−1·35	40·99	N	*d* c + 0·2	32 11·87	−1·69	10·18	29·19	m s	0·002	0·001	0 29·125
	1742	+ 23 58	S	b + 2·6 a − 0·3	28 8·68	−1·37	7·31	S	b + 0·6 a + 20·8	28 38·11	−1·66	36·45	29·14	+0 29·122			
	1782	+ 4 3	S	*s* Q −1·44	32 50·54	−1·38	49·16	S	*s* Q −1·66	33 19·66	−1·50	18·16	29·00		+	+	+
	1792	+ 16 28	S		34 22·17	−1·37	20·80	S		34 51·49	−1·60	49·89	29·09				
				Mean, T_E	5 31 21												
Dec. 27	1648	+ 27 50	N	*I. P. W.*	5 13 23·00	+1·38	24·38	N	*I. P. W.*	5 13 52·83	+1·85	54·68	+0 30·30				
	1669	+ 31 2	N	*d* c − 1·3	16 50·62	+1·39	52·01	N	*d* c + 3·9	17 20·52	+1·82	22·34	30·33				
	1681	+ 28 31	N	b − 1·2 a − 3·4	18 38·14	+1·38	39·52	N	b + 5·1 a + 19·9	19 8·00	+1·85	9·85	30·33	m s	0·002	0·001	0 30·357
	1709	+ 29 6	N	*s* Q +1·44	21 59·10	+1·38	60·48	N	*s* Q +1·67	22 28·99	+1·84	30·83	30·35	+0 30·354			
	1637	+ 21 59	S		11 59·11	+1·37	60·48	S		12 28·99	+1·88	30·87	30·39		+	+	+
	1656	+ 8 19	S		15 5·48	+1·36	6·84	S		15 35·21	+1·98	37·19	30·35				
	1692	+ 17 52	S		20 4·75	+1·37	6·12	S		20 34·56	+1·92	36·48	30·36				
	1714	+ 22 22	S		23 23·85	+1·37	25·22	S		23 53·76	+1·88	55·64	30·42				
				Mean, T_E	5 17 41												
Dec. 27	1754	+ 26 51	N	*I. P. W.*	5 29 37·61	−1·50	36·11	N	*I. P. W.*	5 30 8·04	−1·48	6·56	+0 30·45				
	1772	+ 29 9	N	*d* c − 1·3	31 39·27	−1·50	37·77	N	*d* c + 3·9	32 9·61	−1·50	8·11	30·34				
	1804	+ 49 46	N	b − 1·2 a − 3·4	36 38·17	−1·48	36·69	N	b + 5·1 a + 19·9	37 8·85	−1·69	7·16	30·47	m s	0·002	0·001	0 30·429
	1824	+ 39 30	N	*s* Q −1·44	40 31·18	−1·49	29·69	N	*s* Q −1·67	41 1·70	−1·59	0·11	30·42	+0 30·426			
	1742	+ 23 58	S		28 5·47	−1·50	3·97	S		28 35·90	−1·45	34·45	30·48		+	+	+
	1782	+ 4 3	S		32 47·35	−1·52	45·83	S		33 17·59	−1·33	16·26	30·43				
	1792	+ 16 28	S		34 19·01	−1·51	17·50	S		34 49·35	−1·41	47·94	30·44				
	1811	+ 18 39	S		38 6·35	−1·51	4·84	S		38 36·65	−1·43	35·22	30·38				
				Mean, T_E	5 33 58												

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.009$, $H_N - H_S = -0^s.008$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 28	1648	+ 27 50	N	*I. P. E.*	5 13 20·29	+1·48	21·77	N	*I. P. E.*	5 13 50·38	+1·84	52·22	+0 30·45				
	1669	+ 31 2	N	d c + 0·6 b + 0·6 a + 17·1	16 48·03	+1·45	49·48	N	d c + 1·6 b + 6·5 a + 11·1	17 18·10	+1·84	19·94	30·46				
	1681	+ 28 31	N		18 35·57	+1·47	37·04	N		19 5·56	+1·85	7·41	30·37	m s 30·456			
	1709	+ 29 6	N	s Q + 1·45	21 56·47	+1·47	57·94	N	s Q + 1·67	22 26·56	+1·85	28·41	30·47		0·002	0·001	
	1637	+ 21 59	S		11 56·43	+1·50	57·93	S		12 26·51	+1·87	28·38	30·45	0			+ 0 30·459
	1656	+ 8 19	S		15 2·67	+1·59	4·26	S		15 32·86	+1·91	34·77	30·51	+	+	+	
	1692	+ 17 52	S		20 2·05	+1·53	3·58	S		20 32·16	+1·88	34·04	30·46				
	1714	+ 22 22	S		23 21·17	+1·50	22·67	S		23 51·28	+1·87	53·15	30·48				
				Mean, T_E	5 17 38												
Dec. 28	1754	+ 26 51	N	*I. P. E.*	5 29 35·02	−1·41	33·61	N	*I. P. E.*	5 30 5·57	−1·49	4·08	+0 30·47				
	1772	+ 29 9	N	d c + 0·6 b + 0·6 a + 17·1	31 36·66	−1·43	35·23	N	d c + 1·6 b + 6·5 a + 11·1	32 7·15	−1·49	5·66	30·43				
	1804	+ 49 46	N		36 35·84	−1·64	34·20	N		37 6·29	−1·59	4·70	30·50	m s 30·466			
	1824	+ 39 30	N	s Q − 1·45	40 28·67	−1·52	27·15	N	s Q − 1·67	40 59·14	−1·53	57·61	30·46		0·002	0·000	
	1782	+ 4 3	S		32 44·59	−1·28	43·31	S		33 15·16	−1·41	13·75	30·44	0			+ 0 30·468
	1792	+ 16 28	S		34 16·35	−1·36	14·99	S		34 46·90	−1·45	45·45	30·46	+	+		
	1811	+ 18 39	S		38 3·67	−1·38	2·29	S		38 34·25	−1·46	32·79	30·50				
				Mean, T_E	5 34 46												
Dec. 29	1648	+ 27 50	N	*I. P. W.*	5 13 17·30	+1·40	18·70	N	*I. P. W.*	5 13 48·25	+1·84	50·09	+0 31·39				
	1669	+ 31 2	N	d c − 1·6 b − 0·7 a − 8·9	16 44·94	+1·41	46·35	N	d c + 2·3 b + 5·6 a + 12·7	17 15·98	+1·83	17·81	31·46				
	1681	+ 28 31	N		18 32·46	+1·40	33·86	N		19 3·46	+1·84	5·30	31·44	m s 31·415			
	1709	+ 29 6	N	s Q + 1·45	21 53·44	+1·40	54·84	N	s Q + 1·67	22 24·44	+1·83	26·27	31·43		0·003	0·001	
	1637	+ 21 59	S		11 53·47	+1·37	54·84	S		12 24·27	+1·87	26·14	31·30	0			+ 0 31·419
	1656	+ 8 19	S		14 59·80	+1·33	61·13	S		15 30·59	+1·91	32·50	31·37	+	+	+	
	1692	+ 17 52	S		19 59·05	+1·36	60·41	S		20 30·01	+1·88	31·89	31·48				
	1714	+ 22 22	S		23 18·19	+1·37	19·56	S		23 49·14	+1·87	51·01	31·45				
				Mean, T_E	5 17 35												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Strphan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.009$ $H_N - H_S = -0^s.008$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 29	1754	+ 26 51	N	*I. P. W.*	5 29 32·02	−1·51	30·51	N	*I. P. W.*	5 30 3·38	−1·49	1·89	+0 31·38				
	1772	+ 29 9	N	d c − 1·6 b − 0·7 a − 8·9	31 33·63	−1·50	32·13	N	d c + 2·3 b + 5·6 a + 12·7	32 5·05	−1·51	3·54	31·41				
	1804	+ 49 46	N		36 32·56	−1·41	31·15	N		37 4·25	−1·62	2·63	31·48				
	1824	+ 39 30	N	s Q −1·45	40 25·61	−1·46	24·15	N	s Q −1·67	40 57·08	−1·55	55·53	31·38	m s +0 31·415	+0·003	+0·001	+0 31·419
	1742	+ 23 58	S		27 59·91	−1·52	58·39	S		28 31·27	−1·48	29·79	31·40				
	1782	+ 4 3	S		32 41·71	−1·58	40·13	S		33 13·00	−1·41	11·59	31·46				
	1792	+ 16 28	S		34 13·44	−1·55	11·89	S		34 44·72	−1·46	43·26	31·37				
	1811	+ 18 39	S		37 60·72	−1·54	59·18	S		38 32·09	−1·47	30·62	31·44				
				Mean, T_E	5 33 52												
1883																	
Jan. 2	1648	+ 27 50	N	*I. P. E.*	5 13 4·94	+1·38	6·32	N	*I. P. E.*	5 13 38·75	+1·50	40·25	+0 33·93				
	1669	+ 31 2	N	d c − 1·0 b − 1·1 a + 0·9	16 32·68	+1·38	34·06	N	d c − 2·3 b − 4·1 a + 3·6	17 6·48	+1·49	7·97	33·91				
	1681	+ 28 31	N		18 20·18	+1·38	21·56	N		18 53·94	+1·50	55·44	33·88				
	1709	+ 29 6	N	s Q +1·44	21 41·09	+1·38	42·47	N	s Q +1·67	22 14·92	+1·50	16·42	33·95	m s +0 33·918	+0·002	+0·001	+0 33·921
	1637	+ 21 59	S		11 41·04	+1·39	42·43	S		12 14·95	+1·51	16·46	34·03				
	1656	+ 8 19	S		14 47·44	+1·41	48·85	S		15 21·16	+1·55	22·71	33·86				
	1692	+ 17 52	S		19 46·78	+1·39	48·17	S		20 20·56	+1·53	22·09	33·92				
	1714	+ 22 22	S		23 5·89	+1·39	7·28	S		23 39·63	+1·51	41·14	33·86				
				Mean, T_E	5 17 23												
Jan. 2	1754	+ 26 51	N	*I. P. E.*	5 29 19·62	−1·50	18·12	N	*I. P. E.*	5 29 53·95	−1·84	52·11	+0 33·99				
	1772	+ 29 9	N	d c − 1·0 b − 1·1 a + 0·9	31 21·28	−1·50	19·78	N	d c − 2·3 b − 4·1 a + 3·6	31 55·54	−1·84	53·70	33·92				
	1804	+ 49 46	N		36 20·36	−1·52	18·84	N		36 54·59	−1·94	52·65	33·81				
	1824	+ 39 30	N	s Q −1·44	40 13·20	−1·51	11·69	N	s Q −1·67	40 47·51	−1·88	45·63	33·94	m s +0 33·885	+0·002	+0·001	+0 33·888
	1742	+ 23 58	S		27 47·56	−1·49	46·07	S		28 21·77	−1·83	19·94	33·87				
	1782	+ 4 3	S		32 29·36	−1·47	27·89	S		33 3·44	−1·78	1·66	33·77				
	1792	+ 16 28	S		33 60·99	−1·49	59·50	S		35 35·20	−1·81	33·39	33·89				
	1811	+ 18 39	S		37 48·31	−1·49	46·82	S		38 22·52	−1·81	20·71	33·89				
				Mean, T_E	5 33 40												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s: AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s{\cdot}009$, $H_N - H_S = -0^s{\cdot}008$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 21	1408	+ 28 43	N	*I. P. W.*	4 27 18·41	+1·50	19·91	N	*I. P. W.*	4 28 48·63	+1·79	50·42	1 30·51				
	1414	+ 41 1	N	*d* c + 0·5 b + 1·3 a + 1·5	28 35·12	+1·50	36·62	N	*d* c + 1·9 b + 1·2 a −15·0	30 5·24	+1·90	7·14	30·52				
	1424	+ 53 15	N		30 42·62	+1·49	44·11	N		32 12·55	+2·07	14·62	30·51				
	1444	+ 28 22	N	*s* Q +1·46	34 0·11	+1·50	1·61	N	*s* Q +1·67	35 30·31	+1·79	32·10	30·49	m s 1 30·538	+ 0·003	+ 0·001	1 30·542
	1376	+ 18 55	S		21 46·52	+1·50	48·02	S		23 16·88	+1·73	18·61	30·59				
	1390	+ 15 23	S		23 27·70	+1·51	29·21	S		24 58·10	+1·69	59·79	30·58				
	1392	+ 15 26	S		23 57·83	+1·51	59·34	S		25 28·18	+1·70	29·88	30·54				
	1402	+ 15 36	S		25 10·15	+1·51	11·66	S		26 40·52	+1·70	42·22	30·56				
Dec. 21	1475	+ 32 23	N	*I. P. W.*	4 41 47·65	−1·42	46·23	N	*I. P. W.*	4 43 18·31	−1·52	16·79	1 30·56				
	1492	+ 36 30	N	*d* c + 0·5 b + 1·3 a + 1·5	44 50·93	−1·42	49·51	N	*d* c + 1·9 b + 1·2 a −15·0	46 21·54	−1·49	20·05	30·54				
	1540	+ 43 39	N		53 37·54	−1·41	36·13	N		55 8·06	−1·41	6·65	30·52	m s 1 30·538	+ 0·003	+ 0·001	1 30·542
	1468	+ 18 31	S	*s* Q −1·46	39 29·29	−1·42	27·87	S	*s* Q −1·67	40 60·00	−1·63	58·37	30·50				
	1512	+ 16 12	S		48 13·94	−1·41	12·53	S		49 44·72	−1·64	43·08	30·55				
	1527	+ 23 46	S		50 45·25	−1·42	43·83	S		52 15·97	−1·58	14·39	30·56				
Dec. 26	1408	+ 28 43	N	*I. P. E.*	4 27 6·28	+1·53	7·81	N	*I. P. E.*	4 28 35·96	+1·63	37·59	1 29·78				
	1414	+ 41 1	N	*d* c + 0·6 b + 2·6 a − 0·3	28 22·92	+1·54	24·46	N	*d* c + 0·2 b + 0·6 a +20·8	29 52·87	+1·49	54·36	29·90	m s 1 29·855	+ 0·003	0·000	1 29·858
	1424	+ 53 15	N		30 30·36	+1·56	31·92	N		32 0·53	+1·29	1·82	29·90				
	1444	+ 28 22	N	*s* Q +1·44	33 47·96	+1·53	49·49	N	*s* Q +1·66	35 17·69	+1·64	19·33	29·84				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s·: AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 86s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.009$ $H_N - H_S = -0^s.008$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 26	1475	+ 32 23	N	*I. P. E.*	4 41 35·51	−1·35	34·16	N	*I. P. E.*	4 43 5·79	−1·73	4·06	1 29·90				
	1490	+ 36 27	N	*d* c + 0·6 b + 2·6 a − 0·3	44 20·81	−1·35	19·46	N	*d* c + 0·2 b + 0 6 a +20·8	45 51·23	−1·77	49·46	30·00				
	1492	+ 36 30	N		44 38·69	−1·35	37·34	N		46 9·05	−1·77	7·28	29·94				
	1540	+ 43 39	N	*s* Q −1·44	53 25·36	−1·34	24·02	N	*s* Q −1·66	54 55·79	−1·87	53·92	29·90	m s 1 29·921	+ 0·003	+ 0·001	1 29·925
	1468	+ 18 31	S		39 17·17	−1·37	15·80	S		40 47·31	−1·61	45·70	29·90				
	1500	+ 14 3	S		45 44·93	−1·37	43·56	S		47 15·08	−1·58	13·50	29·94				
	1512	+ 16 12	S		48 1·81	−1·37	0·44	S		49 31·93	−1·60	30·33	29·89				
	1527	+ 23 46	S		50 33·12	−1·37	31·75	S		52 3·31	−1·66	1·65	29·90				
Dec. 27	1408	+ 28 43	N	*I. P. W.*	4 27 3·17	+1·38	4·55	N	*I. P. W.*	4 28 33·15	+1·84	34·99	1 30·44				
	1414	+ 41 1	N	*d* c − 1·3 b − 1·2 a − 3·4	28 19·92	+1·40	21·32	N	*d* c + 3·9 b + 5·1 a +19·9	29 49·96	+1·74	51·70	30·38				
	1424	+ 53 15	N		30 27·30	+1·41	28·71	N		31 57·64	+1·60	59·24	30·53				
	1444	+ 28 22	N	*s* Q +1·44	33 44·86	+1·38	46·24	N	*s* Q +1·67	35 14·84	+1·85	16·69	30·45	m s 1 30·524	+ 0·003	+ 0·001	0 33·921
	1376	+ 18 55	S		21 31·26	+1·37	32·63	S		23 1·19	+1·91	3·10	30·47				
	1390	+ 15 23	S		23 12·44	+1·36	13·80	S		24 42·47	+1·94	44·41	30·61				
	1392	+ 15 26	S		23 42·59	+1·36	43·95	S		25 12·63	+1·94	14·57	30·62				
	1402	+ 15 36	S		24 54·89	+1·36	56·25	S		26 25·00	+1·94	26·94	30·69				
Dec. 27	1475	+ 32 23	N	*I. P. W.*	4 41 32·36	−1·49	30·87	N	*I. P. W.*	4 42 2·82	−1·53	1·29	1 30·42				
	1490	+ 36 27	N	*d* c − 1·3 b − 1·2 a − 3·4	44 17·67	−1·49	16·18	N	*d* c + 3·9 b + 5·1 a +19·9	45 48·17	−1·55	46·62	30·44				
	1492	+ 36 30	N		44 35·59	−1·49	34·10	N		46 6·03	−1·55	4·48	30·38				
	1540	+ 43 39	N	*s* Q −1·44	53 22·16	−1·49	20·67	N	*s* Q −1·67	54 52·75	−1·62	51·13	30·46	m s 1 30·465	+ 0·003	+ 0·001	1 30·469
	1468	+ 18 31	S		39 13·98	−1·51	12·47	S		40 44·38	−1·43	42·95	30·48				
	1500	+ 14 3	S		45 41·74	−1·52	40·22	S		47 12·10	−1·39	10·71	30·49				
	1512	+ 16 12	S		47 58·58	−1·51	57·07	S		49 28·96	−1·41	27·55	30·48				
	1527	+ 23 46	S		50 29·86	−1·50	28·36	S		51 60·38	−1·45	58·93	30·57				

NOTE.—1^d = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s : AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.009$, $H_N - H_S = -0^s.008$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 28	1408	+ 28 43	N	*I. P. E.*	4 27 0·49	+1·47	1·96	N	*I. P. E.*	4 28 30·08	+1·85	31·93	1 29·97				
	1414	+ 41 1	N	*d* c + 0·6 b + 0·6 *a* + 17·1	28 17·32	+1·36	18·68	N	*d* c + 1·6 b + 6·5 *a* + 11·1	29 46·82	+1·80	48·62	29·94				
	1424	+ 53 15	N		30 24·89	+1·20	26·09	N		31 54·42	+1·73	56·15	30·06				
	1444	+ 28 22	N	*s* *Q* + 1·45	33 42·11	+1·48	43·59	N	*s* *Q* + 1·67	35 11·69	+1·85	13·54	29·95	m s 1 29·960	+ 0·003	+ 0·001	1 29·964
	1376	+ 18 55	S		21 28·59	+1·52	30·11	S		22 58·15	+1·88	60·03	29·92				
	1390	+ 15 23	S		23 9·75	+1·55	11·30	S		24 39·32	+1·89	41·21	29·91				
	1392	+ 15 26	S		23 39·77	+1·55	41·32	S		25 9·45	+1·89	11·34	30·02				
	1402	+ 15 36	S		24 52·20	+1·55	53·75	S		26 21·77	+1·89	23·66	29·91				
Dec. 28	1475	+ 32 23	N	*I. P. E.*	4 41 29·75	−1·46	28·29	N	*I. P. E.*	4 42 59·86	−1·51	58·35	1 30·06				
	1490	+ 36 27	N	*d* c + 0·6 b + 0·6 *a* + 17·1	44 15·10	−1·49	13·61	N	*d* c + 1·6 b + 6·5 *a* + 11·1	45 45·22	−1·52	43·70	30·09				
	1492	+ 36 30	N		44 33·01	−1·49	31·52	N		46 3·08	−1·52	1·56	30·04				
	1540	+ 43 39	N	*s* *Q* − 1·45	53 19·69	−1·57	18·12	N	*s* *Q* − 1·67	54 49·71	−1·56	48·15	30·03	m s 1 30·063	+ 0·003	+ 0·001	1 30·067
	1468	+ 18 31	S		39 11·29	−1·37	9·92	S		40 41·45	−1·46	39·99	30·07				
	1500	+ 14 3	S		45 39·05	−1·34	37·71	S		47 9·61	−1·44	7·72	30·01				
	1512	+ 16 12	S		47 55·88	−1·36	54·52	S		49 26·02	−1·45	24·57	30·05				
	1527	+ 23 46	S		50 27·21	−1·41	25·80	S		51 57·43	−1·48	55·95	30·15				
Dec. 29	1408	+ 28 43	N	*I. P. W.*	4 26 57·48	+1·40	58·88	N	*I. P. W.*	4 28 27·56	+1·82	29·38	1 30·50				
	1414	+ 41 1	N	*d* c − 1·6 b − 0·7 *a* − 8·9	28 14·15	+1·45	15·60	N	*d* c + 2·3 b + 5·2 *a* + 12·7	29 44·41	+1·77	46·18	30·58				
	1424	+ 53 15	N		30 21·60	+1·52	23·12	N		31 52·04	+1·69	53·73	30·61				
	1444	+ 28 22	N	*s* *Q* + 1·45	33 39·19	+1·40	40·59	N	*s* *Q* + 1·67	35 9·13	+1·83	10·96	30·37	m s 1 30·479	+ 0·003	+ 0·001	1 30·483
	1376	+ 18 55	S		21 25·67	+1·36	27·03	S		22 55·58	+1·86	57·44	30·41				
	1390	+ 15 23	S		23 6·83	+1·35	8·18	S		24 36·78	+1·88	38·66	30·48				
	1392	+ 15 26	S		23 36·94	+1·35	38·29	S		25 6·85	+1·88	8·73	30·44				
	1402	+ 15 36	S		24 49·28	+1·35	50·63	S		26 19·19	+1·88	21·07	30·44				

NOTE.—1d = 0s·0325. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s{\cdot}009$, $H_N - H_S = -0^s{\cdot}008$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 29	1475	+ 32 23	N	*I. P. W.*	4 41 26·71	−1·49	25·22	N	*I. P. W.*	4 42 57·20	−1·53	55·67	1 30·45				
	1490	+ 36 27	N	*d* c − 1·6 b − 0·7 *a* − 8·9	44 12·02	−1·47	10·55	N	*d* c + 2·3 b + 5·2 *a* + 12·7	45 42·53	−1·56	40·97	30·42				
	1492	+ 36 30	N		44 29·93	−1·47	28·46	N		45 60·44	−1·56	58·88	30·42				
	1540	+ 43 39	N	*s* *Q* −1·45	53 16·54	−1·44	15·10	N	*s* *Q* −1·67	54 47·13	−1·59	45·54	30·44	m s 1 30·433	+ 0·003	+ 0·001	1 30·437
	1468	+ 18 31	S		39 8·38	−1·54	6·84	S		40 38·72	−1·48	37·24	30·40				
	1500	+ 14 3	S		45 36·13	−1·55	34·58	S		47 6·49	−1·46	5·03	30·45				
	1512	+ 16 12	S		47 53·00	−1·55	51·45	S		49 23·31	−1·47	21·84	30·39				
	1527	+ 23 46	S		50 24·26	−1·52	22·74	S		51 54·72	−1·49	53·23	30·49				
1883																	
Jan. 2	1408	+ 28 43	N	*I. P. E.*	4 26 45·10	+1·38	46·48	N	*I. P. E.*	4 28 14·93	+1·50	16·43	1 29·95				
	1414	+ 41 1	N	*d* c − 1·0 b − 1·1 *a* + 0·9	28 1·85	+1·37	3·22	N	*d* c − 2·3 b − 4·1 *a* + 3·6	29 31·68	+1·45	33·13	29·91				
	1424	+ 53 15	N		30 9·30	+1·34	10·64	N		31 39·21	+1·38	40·59	29·95	m s 1 29·924	+ 0·003	0·000	1 29·927
	1444	+ 28 22	N	*s* *Q* +1·44	33 26·77	+1·38	28·15	N	*s* *Q* +1·67	34 56·56	+1·50	58·06	29·91				
	1390	+ 15 23	S		21 54·43	+1·39	55·82	S		23 24·18	+1·53	25·71	29·89				
	1392	+ 15 26	S		23 24·45	+1·39	25·84	S		24 54·27	+1·53	55·80	29·96				
	1402	+ 15 36	S		24 36·86	+1·39	38·25	S		26 6·62	+1·53	8·15	29·90				
Jan. 2	1475	+ 32 23	N	*I. P. E.*	4 41 14·40	−1·50	12·90	N	*I. P. E.*	4 42 44·68	−1·86	42·82	1 29·92				
	1490	+ 36 27	N	*d* c − 1·0 b − 1·1 *a* + 0·9	43 59·74	−1·50	58·24	N	*d* c − 2·3 b − 4·1 *a* + 3·6	45 30·05	−1·86	28·19	29·95				
	1492	+ 36 30	N		44 17·60	−1·50	16·10	N		45 47·91	−1·86	46·05	29·95	m s 1 29·977	+ 0·003	0·000	1 29·980
	1540	+ 43 39	N	*s* *Q* −1·44	53 4·13	−1·51	2·62	N	*s* *Q* −1·67	54 34·56	−1·90	32·66	30·04				
	1500	+ 14 3	S		45 23·76	−1·48	22·28	S		46 54·08	−1·80	52·28	30·00				
	1512	+ 16 12	S		47 40·65	−1·49	39·16	S		49 10·87	−1·81	9·06	29·90				
	1527	+ 23 46	S		50 11·82	−1·49	10·33	S		51 42·24	−1·83	40·41	30·08				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 53m 7s: AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perd. Equations $S_N - S_S = 0^s{\cdot}009$ $H_N - H_S = -0^s{\cdot}008$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 21	1947	+ 38 6	N	*I. P. W.*	5 58 26·33	+1·50	27·83	N	*I. P. W.*	5 59 56·48	+1·87	58·35	1 30·52				
	2001	+ 29 32	N	*d* c + 0·5 b + 1·3 a + 1·5	6 6 52·10	+1·50	53·60	N	*d* c + 1·9 b + 1·2 a −15·0	6 8 22·23	+1·80	24·03	30·43				
	2014	+ 35 11	N		8 40·40	+1·50	41·90	N		10 10·54	+1·84	12·38	30·48				
	1938	+ 23 16	S	*s* Q +1·46	5 55 57·01	+1·50	58·51	S	*s* Q +1·67	5 57 27·43	+1·75	29·18	30·67	m s 1 30·558	+ 0·002	+ 0·001:	1 30·561
	1958	+ 14 47	S		59 49·84	+1·51	51·35	S		6 1 20·28	+1·69	21·97	30·62				
	1971	+ 23 8	S		6 1 34·22	+1·50	35·72	N		3 4·56	+1·75	6·31	30·59				
	1975	+ 23 1	S		2 20·65	+1·50	22·15	N		3 50·96	+1·75	52·71	30·56				
	1987	+ 22 56	S		4 10·02	+1·50	11·52	S		5 40·36	+1·75	42·11	30·59				
Dec. 21	2170	+ 28 22	N	*I. P. W.*	6 31 9·96	−1·42	8·54	N	*I. P. W.*	6 32 40·73	−1·55	39·18	1 30·64				
	2047	+ 22 34	S	*d* c + 0·5 b + 1·3 a + 1·5	14 52·29	−1·42	50·87	S	*d* c + 1·9 b + 1·2 a −15·0	16 23·07	−1·59	21·48	30·61	m s 1 30·635	+ 0·002	+ 0·001	1 30·638
	2059	+ 4 39	S		16 33·26	−1·41	31·85	S		18 4·21	−1·70	2·51	30·66				
	2080	+ 20 52	S	*s* Q −1·46	19 47·52	−1·42	46·10	S	*s* Q −1·67	21 18·33	−1·60	16·73	30·63				
Dec. 26	2001	+ 29 32	N	*I. P. E.*	6 6 41·95	+1·53	43·48	N	*I. P. E.*	6 8 11·78	+1·62	13·40	1 29·92				
	2014	+ 35 11	N	*d* c + 0·6 b + 2·6 a − 0·3	8 30·37	+1·53	31·90	N	*d* c + 0·2 b + 0·6 a +20·8	10 0·19	+1·57	1·76	29·86				
	1938	+ 23 16	S		5 55 46·96	+1·51	48·47	S		5 57 16·73	+1·66	18·39	29·92	m s 1 29·913	+ 0·002	+ 0·001	1 29·916
	1958	+ 14 47	S	*s* Q +1·44	59 39·87	+1·51	41·38	S	*s* Q +1·66	6 1 9·55	+1·74	11·29	29·91				
	1975	+ 23 1	S		6 2 10·56	+1·51	12·07	N		3 40·33	+1·67	42·00	29·93				
	1987	+ 22 56	S		3 59·91	+1·51	61·42	S		5 29·69	+1·67	31·36	29·94				

NOTE.—$1^d = 0^s{\cdot}9225$. Transcribing Equation *xii*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s : AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s{\cdot}009$ $H_N - H_S = -0^s{\cdot}008$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 26	2097	+ 28 18	N	*I. P. E.*	6 21 48·45	−1·35	47·10	N	*I. P. E.*	6 23 18·75	−1·68	17·07	1 29·97				
	2133	+ 28 7	N	d c + 0·6 b + 2·6 a − 0·3	26 39·24	−1·35	37·89	N	d c + 0·2 b + 0·6 a + 20·8	28 9·64	−1·68	7·96	30·07				
	2170	+ 28 22	N		30 59·74	−1·35	58·39	N		32 30·14	−1·68	28·46	30·07	m s 1 30·023	+ 0·002	+ 0·001	1 30·026
	2059	+ 4 39	S	s Q −1·44	16 23·19	−1·38	21·81	S	s Q −1·66	17 53·37	−1·51	51·86	30·05				
	2080	+ 20 52	S		19 37·42	−1·37	36·05	S		21 7·72	−1·64	6·08	30·03				
	2111	+ 15 59	S		23 42·79	−1·37	41·42	S		25 13·01	−1·59	11·42	30·00				
	2163	+ 16 30	S		29 46·37	−1·37	45·00	S		31 16·57	−1·60	14·97	29·97				
Dec. 27	1947	+ 38 6	N	*I. P. W.*	5 58 13·84	+1·39	15·23	N	*I. P. W.*	5 59 44·02	+1·77	45·79	1 30·56				
	2001	+ 29 32	N	d c − 1·3 b − 1·2 a − 3·4	6 6 39·54	+1·38	40·92	N	d c + 3·9 b + 5·1 a + 19·9	6 8 9·61	+1·84	11·45	30·53				
	2014	+ 35 11	N		8 27·88	+1·38	29·26	N		9 58·12	+1·80	59·92	30·66				
	1938	+ 23 16	S	s Q +1·44	5 55 44·53	+1·38	45·91	S	s Q +1·67	5 57 14·71	+1·88	16·59	30·68	m s 1 30·601	+ 0·002	+ 0·001	1 30·604
	1958	+ 14 47	S		59 37·44	+1·36	38·80	S		6 1 7·42	+1·94	9·36	30·56				
	1971	+ 23 8	S		6 1 21·76	+1·38	23·14	N		2 51·85	+1·88	53·73	30·59				
	1975	+ 23 1	S		2 8·09	+1·37	9·46	N		3 38·24	+1·89	40·13	30·67				
	1987	+ 22 56	S		3 57·52	+1·37	58·89	S		5 27·56	+1·89	29·45	30·56				
Dec. 27	2097	+ 28 18	N	*I. P. W.*	6 21 46·05	−1·50	44·55	N	*I. P. W.*	6 23 16·56	−1·49	15·07	1 30·52				
	2170	+ 28 22	N	d c − 1·3 b − 1·2 a − 3·4	30 57·36	−1·50	55·86	N	d c + 3·9 b + 5·1 a + 19·9	32 27·90	−1·49	26·41	30·55				
	2178	+ 28 18	N		32 45·49	−1·50	43·99	N		34 15·95	−1·49	14·46	30·47				
	2059	+ 4 39	S	s Q −1·44	16 20·72	−1·53	19·19	S	s Q −1·67	17 51·13	−1·33	49·80	30·61	m s 1 30·561	+ 0·002	+ 0·001	1 30·564
	2080	+ 20 52	S		19 34·97	−1·51	33·46	S		21 5·51	−1·45	4·06	30·60				
	2111	+ 15 59	S		23 40·34	−1·51	38·83	S		25 10·84	−1·41	9·43	30·60				
	2163	+ 16 30	S		29 43·94	−1·51	42·43	S		31 14·42	−1·41	13·01	30·58				

NOTE.—$1^s = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat. 26° 31′, Long. 5h 55m 7s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S$ / $H_N - H_S$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 28	1947	+ 38 6	N	*I. P. E.*	5 58 11·84	+1·39	13·23	N	*I. P. E.*	5 59 41·48	+1·81	43·29	1 30·06				
	2001	+ 29 32	N	d c + 0·6	6 6 37·44	+1·47	38·91	N	d c + 1·6	6 8 7·15	+1·84	8·99	30·08				
	2014	+ 35 11	N	b + 0·6 a + 17·1	8 25·89	+1·42	27·31	N	b + 6·5 a + 11·1	9 55·65	+1·81	57·46	30·15				
	1938	+ 23 16	S	s Q + 1·45	5 55 42·46	+1·49	43·95	S	s Q + 1·67	5 57 12·19	+1·87	14·06	30·11	m s 1 30·094	+ 0·002	+ 0·001	1 30·097
	1958	+ 14 47	S		59 35·23	+1·55	36·78	S		6 1 4·91	+1·90	6·81	30·03				
	1971	+ 23 8	S		6 1 19·65	+1·49	21·14	N		2 49·40	+1·87	51·27	30·13				
	1975	+ 23 1	S		2 6·03	+1·50	7·53	N		3 35·78	+1·87	37·65	30·12				
	1987	+ 22 56	S		3 55·43	+1·50	56·93	S		5 25·13	+1·87	27·00	30·07				
Dec. 28	2097	+ 28 18	N	*I. P. E.*	6 21 43·95	−1·42	42·53	N	*I. P. E.*	6 23 14·14	−1·49	12·65	1 30·12				
	2133	+ 28 7	N	d c + 0·6	26 34·79	−1·42	33·37	N	d c + 1·6	28 5·00	−1·49	3·51	30·14				
	2170	+ 28 22	N	b + 0·6 a + 17·1	30 55·31	−1·42	53·89	N	b + 6·5 a + 11·1	32 25·49	−1·49	24·00	30·11				
	2178	+ 28 18	N	s Q − 1·45	32 43·38	−1·42	41·96	N	s Q − 1·67	34 13·54	−1·49	12·05	30·09	m s 1 30·093	+ 0·002	+ 0·001	1 30·096
	2059	+ 4 39	S		16 18·55	−1·29	17·26	S		17 48·76	−1·41	47·35	30·09				
	2080	+ 20 52	S		19 32·89	−1·39	31·50	S		21 3·11	−1·46	1·65	30·15				
	2111	+ 15 59	S		23 38·27	−1·36	36·91	S		25 8·39	−1·45	6·94	30·03				
	2163	+ 16 30	S		29 41·81	−1·36	40·45	S		31 11·91	−1·45	10·46	30·01				
Dec. 29	1947	+ 38 6	N	*I. P. W.*	5 58 9·26	+1·43	10·69	N	*I. P. W.*	5 59 39·56	+1·79	41·35	1 30·66				
	2001	+ 29 32	N	d c − 1·6	6 6 34·90	+1·40	36·30	N	d c + 2·3	6 8 4·98	+1·83	6·81	30·51				
	2014	+ 35 11	N	b − 0·7 a − 8·9	8 23·30	+1·43	24·73	N	b + 5·6 a + 12·7	9 53·49	+1·80	55·29	30·56				
	1938	+ 23 16	S	s Q + 1·45	5 55 39·96	+1·38	41·34	S	s Q + 1·67	5 57 10·15	+1·87	12·02	30·68	m s 1 30·581	+ 0·003	+ 0·001	1 30·585
	1958	+ 14 47	S		59 32·80	+1·35	34·15	S		6 1 2·80	+1·89	4·69	30·54				
	1971	+ 23 8	S		6 1 17·15	+1·38	18·53	N		2 47·26	+1·87	49·13	30·60				
	1975	+ 23 1	S		2 3·60	+1·38	4·98	N		3 33·64	+1·87	35·51	30·53				
	1987	+ 22 56	S		3 52·96	+1·38	54·34	S		5 23·04	+1·87	24·91	30·57				

NOTE.—$1^d = 0^s \cdot 0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

JALPAIGURI (E) *Lat.* 26° 31′, *Long.* 5h 55m 7s: AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Peral. Equations $S_N - S_S = -0^s{\cdot}009$, $H_N - H_S = -0{\cdot}008$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1882		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 29	2097	+ 28 18	N	*I. P. W.*	6 21 41·47	−1·50	39·97	N	*I. P. W.*	6 23 12·06	−1·50	10·56	1 30·59				
	2133	+ 28 7	N	d c − 1·6 b − 0·7 a − 8·9	26 32·34	−1·50	30·84	N	d c + 2·3 b + 5·6 a + 12·7	28 2·92	−1·50	1·42	30·58				
	2170	+ 28 22	N		30 52·83	−1·50	51·33	N		32 23·40	−1·50	21·90	30·57				
	2178	+ 28 18	N	s Q −1·45	32 40·89	−1·50	39·39	N	s Q −1·67	34 11·44	−1·50	9·94	30·55	m s 1 30·570	+ 0·003	+ 0·001	1 30·574
	2059	+ 4 39	S		16 16·19	−1·57	14·62	S		17 46·62	−1·41	45·21	30·59				
	2080	+ 20 52	S		19 30·44	−1·53	28·91	S		20 60·95	−1·47	59·48	30·57				
	2111	+ 15 59	S		23 35·84	−1·55	34·29	S		25 6·31	−1·46	4·85	30·56				
	2163	+ 16 30	S		29 39·37	−1·55	37·82	S		31 9·83	−1·46	8·37	30·55				
1883																	
Jan. 2	1947	+ 38 6	N	*I. P. E.*	5 57 59·99	+1·37	61·36	N	*I. P. E.*	5 59 29·80	+1·46	31·26	1 29·90				
	2001	+ 29 32	N	d c − 1·0 b − 1·1 a + 0·9	6 6 25·59	+1·38	26·97	N	d c − 2·3 b − 4·1 a + 3·6	6 7 55·49	+1·49	56·98	30·01				
	2014	+ 35 11	N		8 13·97	+1·38	15·35	N		9 43·93	+1·48	45·41	30·06				
	1958	+ 14 47	S	s Q +1·44	5 59 23·48	+1·39	24·87	S	s Q +1·67	0 53·28	+1·54	54·82	29·95	m s 1 29·980	+ 0·002	0·000	1 29·982
	1971	+ 23 8	S		6 1 7·87	+1·39	9·26	N		2 37·73	+1·51	39·24	29·98				
	1975	+ 23 1	S		1 54·20	+1·39	55·59	N		3 24·06	+1·51	25·57	29·98				
	1987	+ 22 56	S		3 43·60	+1·39	44·99	S		5 13·46	+1·51	14·97	29·98				
Jan. 2	2097	+ 28 18	N	*I. P. E.*	6 21 32·10	−1·50	30·60	N	*I. P. E.*	6 23 2·53	−1·84	0·69	1 30·09				
	2133	+ 28 7	N	d c − 1·0 b − 1·1 a + 0·9	26 22·95	−1·50	21·45	N	d c − 2·3 b − 4·1 a + 3·6	27 53·39	−1·84	51·55	30·10				
	2170	+ 28 22	N		30 43·50	−1·50	42·00	N		32 13·87	−1·84	12·03	30·03				
	2178	+ 28 18	N	s Q −1·44	32 31·56	−1·50	30·06	N	s Q −1·67	34 1·93	−1·84	0·09	30·03	m s 1 30·035	+ 0·002	+ 0·001	1 30·038
	2059	+ 4 39	S		16 6·77	−1·47	5·30	S		17 37·14	−1·79	35·35	30·05				
	2080	+ 20 52	S		19 21·12	−1·49	19·63	S		20 51·39	−1·83	49·56	29·93				
	2111	+ 15 59	S		23 26·47	−1·49	24·98	S		24 56·83	−1·81	55·02	30·04				
	2163	+ 16 30	S		29 29·99	−1·49	28·50	S		30 60·32	−1·81	58·51	30·01				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s:* AND JALPAIGURI (W) *Lat. 26° 31′, Long. 5h 55m 7s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 12	2469	+ 28 9	N	*I. P. E.*	7 21 58·52	+1·76	60·28	N	*I. P. E.*	7 21 22·34	+1·42	23·76	−0 36·52				
	2472	+ 28 10	N	*d* c − 1·7 b + 1·4 *a* −11·5	22 49·69	+1·76	51·45	N	*d* c − 0·6 b − 0·4 *a* + 6·6	22 13·45	+1·42	14·87	36·58				
	2493	+ 27 9	N		28 9·17	+1·76	10·93	N		27 32·89	+1·42	34·31	36·62				
	2509	+ 34 51	N	*s* Q +1·73	30 58·26	+1·79	60·05	N	*s* Q +1·45	30 21·95	+1·39	23·34	36·71	m s −0 36·580	+0·034	+0·010	−0 36·536
	2462	+ 8 31	S		20 14·62	+1·66	16·28	S		19 38·29	+1·48	39·77	36·51				
	2480	+ 2 10	S		25 27·58	+1·63	29·21	S		24 51·20	+1·49	52·69	36·52				
	2526	+ 5 30	S		33 20·40	+1·65	22·05	S		32 44·00	+1·49	45·49	36·56				
	2544	+ 22 41	S		35 50·48	+1·72	52·20	S		35 14·14	+1·44	15·58	36·62				
				Mean, T_E	7 27 21												
Jan. 12	2650	+ 57 36	N	*I. P. E.*	7 52 34·55	−1·47	33·08	N	*I. P. E.*	7 51 57·82	−1·62	56·20	−0 36·88				
	2663	+ 25 25	N	*d* c − 1·7 b + 1·4 *a* −11·5	54 10·17	−1·72	8·45	N	*d* c − 0·6 b − 0·4 *a* + 6·6	53 33·25	−1·47	31·78	36·67				
	2688	+ 27 52	N		57 56·65	−1·70	54·95	N		57 19·73	−1·48	18·25	36·70				
	2605	+ 19 37	S	*s* Q −1·73	44 38·32	−1·75	36·57	S	*s* Q −1·45	43 61·33	−1·45	59·88	36·69	m s −0 36·721	+0·034	+0·011	−0 36·676
	2632	+ 20 12	S		48 20·04	−1·75	18·29	S		47 43·00	−1·45	41·55	36·74				
	2639	+ 16 6	S		49 50·65	−1·77	48·88	S		49 13·65	−1·44	12·21	36·67				
	2676	+ 22 24	S		56 25·83	−1·74	24·09	S		55 48·86	−1·47	47·39	36·70				
				Mean, T_E	7 51 59												
Jan. 13	2469	+ 28 9	N	*I. P. W.*	7 21 57·41	+1·65	59·06	N	*I. P. W.*	7 21 18·11	+1·37	19·48	−0 39·58				
	2472	+ 28 10	N	*d* c − 0·5 b − 2·9 *a* − 5·8	22 48·52	+1·65	50·17	N	*d* c − 2·5 b − 2·8 *a* − 1·2	22 9·21	+1·37	10·58	39·59				
	2493	+ 27 9	N		28 8·05	+1·65	9·70	N		27 28·70	+1·37	30·07	39·63				
	2509	+ 34 51	N	*s* Q +1·72	30 57·13	+1·66	58·79	N	*s* Q +1·50	30 17·84	+1·35	19·19	39·60	m s −0 39·623	+0·035	+0·010	−0 39·578
	2462	+ 8 31	S		20 13·45	+1·62	15·07	S		19 34·08	+1·37	35·45	39·62				
	2480	+ 2 10	S		25 26·32	+1·60	27·92	S		24 46·96	+1·37	48·33	39·59				
	2526	+ 5 30	S		33 19·24	+1·61	20·85	S		32 39·82	+1·37	41·19	39·66				
	2544	+ 22 41	S		35 49·35	+1·64	50·99	S		35 9·91	+1·37	11·28	39·71				
				Mean, T_E	7 27 20												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *xii*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CHITTAGONG (E) *Lat. 22° 20', Long. 6h 7m 31s*: AND JALPAIGURI (W) *Lat. 26° 31', Long. 5h 55m 7s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 13	2617	+ 27 4	N	*I. P. W.*	7 45 49·01	−1·79	47·22	N	*I. P. W.*	7 45 9·08	−1·63	7·45	−0 39·77				
	2650	+ 57 36	N	d c − 0·5 b − 2·9 a − 5·8	52 33·52	−1·70	31·82	N	d c − 2·5 b − 2·8 a − 1·2	51 53·84	−1·68	52·16	39·66				
	2663	+ 25 25	N		54 9·06	−1·79	7·27	N		53 29·24	−1·63	27·61	39·66				
	2688	+ 27 52	N	s Q −1·72	57 55·50	−1·79	53·71	N	s Q −1·50	57 15·74	−1·63	14·11	39·60	m s −0 39·697	+ 0·035	+ 0·010	−0 39·652
	2605	+ 19 37	S		44 37·24	−1·81	35·43	S		43 57·28	−1·63	55·65	39·78				
	2632	+ 20 12	S		48 18·91	−1·81	17·10	S		47 39·00	−1·63	37·37	39·73				
	2639	+ 16 6	S		49 49·49	−1·82	47·67	S		49 9·63	−1·63	8·00	39·67				
	2676	+ 22 24	S		56 24·73	−1·80	22·93	S		55 44·85	−1·63	43·22	39·71				
				Mean, T_E	7 51 12												
Jan. 14	2469	+ 28 9	N	*I. P. E.*	7 21 55·91	+1·73	57·64	N	*I. P. E.*	7 21 14·16	+1·50	15·66	−0 41·98				
	2472	+ 28 10	N	d c − 0·5 b + 1·7 a + 5·6	22 47·03	+1·73	48·76	N	d c − 0·9 b + 0·1 a − 3·0	22 5·29	+1·50	6·79	41·97				
	2509	+ 34 51	N		30 55·62	+1·72	57·34	N		30 13·84	+1·51	15·35	41·99				
	2462	+ 8 31	S	s Q +1·71	20 11·86	+1·77	13·63	S	s Q +1·52	19 30·14	+1·48	31·62	42·01	m s −0 41·991	+ 0·035	+ 0·013	−0 41·943
	2480	+ 2 10	S		25 24·77	+1·78	26·55	S		24 43·12	+1·47	44·59	41·96				
	2487	+ 3 33	S		26 27·16	+1·78	28·94	S		25 45·41	+1·47	46·88	42·06				
	2526	+ 5 30	S		33 17·55	+1·78	19·33	S		32 35·92	+1·47	37·39	41·94				
	2544	+ 22 41	S		35 47·73	+1·74	49·47	S		35 5·95	+1·50	7·45	42·02				
				Mean, T_E	7 27 6												
Jan. 14	2617	+ 27 4	N	*I. P. E.*	7 45 47·36	−1·69	45·67	N	*I. P. E.*	7 45 5·13	−1·54	3·59	−0 42·08				
	2650	+ 57 36	N	d c − 0·5 b + 1·7 a + 5·6	52 32·13	−1·80	30·33	N	d c − 0·9 b + 0·1 a − 3·0	51 49·81	−1·50	48·31	42·02				
	2663	+ 25 25	N		54 7·52	−1·69	5·83	N		53 25·28	−1·54	23·74	42·09				
	2688	+ 27 52	N	s Q −1·71	57 54·01	−1·69	52·32	N	s Q −1·52	57 11·76	−1·54	10·22	42·10	m s −0 42·045	+ 0·035	+ 0·010	−0 42·000
	2605	+ 19 37	S		44 35·45	−1·67	33·78	S		43 53·38	−1·55	51·83	41·95				
	2632	+ 20 12	S		48 17·27	−1·67	15·60	S		47 35·12	−1·55	33·57	42·03				
	2639	+ 16 6	S		49 47·86	−1·67	46·19	S		49 5·71	−1·55	4·16	42·03				
	2676	+ 22 24	S		56 23·16	−1·68	21·48	S		55 40·97	−1·55	39·42	42·06				
				Mean, T_E	7 51 11												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* $6^h\ 7^m\ 31^s$; AND JALPAIGURI (W) *Lat.* 26° 31′, *Long.* $5^h\ 55^m\ 7^s$.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 15	2469	+ 28 9	N	*I. P. W.*	7 21 54·56	+1·47	56·03	N	*I. P. W.*	7 21 9·81	+1·51	11·32	−0 44·71				
	2472	+ 28 10	N	d c − 3·2 b − 2·4 a +24·6	22 45·67	+1·47	47·14	N	d c − 0·7 b − 0·5 a + 2·1	22 0·89	+1·51	2·40	44·74				
	2509	+ 34 51	N		30 54·38	+1·37	55·75	N		30 9·45	+1·50	10·95	44·80				
	2462	+ 8 31	S	s Q +1·67	20 10·36	+1·68	12·04	S	s Q +1·54	19 25·77	+1·52	27·29	44·75	m s −0 44·769	+ 0·036	+ 0·013	−0 44·720
	2480	+ 2 10	S		25 23·28	+1·74	25·02	S		24 38·67	+1·53	40·20	44·82				
	2487	+ 3 33	S		26 25·62	+1·73	27·35	S		25 41·05	+1·53	42·58	44·77				
	2526	+ 5 30	S		33 16·05	+1·71	17·76	S		32 31·47	+1·53	33·00	44·76				
	2544	+ 22 41	S		35 46·42	+1·53	47·95	S		35 1·64	+1·51	3·15	44·80				
				Mean, T_E	7 27 5												
Jan. 15	2617	+ 27 4	N	*I. P. W.*	7 45 45·98	−1·86	44·12	N	*I. P. W.*	7 44 60·84	−1·57	59·27	−0 44·85				
	2650	+ 57 36	N	d c − 3·2 b − 2·4 a +24·6	52 31·02	−2·47	28·55	N	d c − 0·7 b − 0·5 a + 2·1	51 45·56	−1·63	43·93	44·62				
	2663	+ 25 25	N		54 6·07	−1·84	4·23	N		53 20·94	−1·57	19·37	44·86				
	2688	+ 27 52	N	s Q* −1·67	57 52·55	−1·87	50·68	N	s Q −1·54	57 7·48	−1·57	5·91	44·77	m s −0 44·814	+ 0·036	+ 0·010	−0 44·768
	2605	+ 19 37	S		44 30·77	+1·56	32·33	S		43 49·03	−1·56	47·47	44·86				
	2632	+ 20 12	S		48 15·78	−1·79	13·99	S		47 30·75	−1·56	29·19	44·80				
	2639	+ 16 6	S		49 46·43	−1·74	44·69	S		48 61·34	−1·56	59·78	44·91				
	2676	+ 22 24	S		56 21·63	−1·81	19·82	S		55 36·55	−1·57	34·98	44·84				
				Mean, T_E	7 51 9												
Jan. 17	2469	+ 28 9	N	*I. P. E.*	7 21 51·05	+1·62	52·67	N	*I. P. E.*	7 21 1·63	+1·57	3·20	−0 49·47				
	2472	+ 28 10	N	d c − 1·8 b − 0·3 a + 6·2	22 42·09	+1·62	43·71	N	d c + 0·1 b + 1·8 a + 3·5	22 52·75	+1·57	54·32	49·39				
	2509	+ 34 51	N		30 50·79	+1·60	52·39	N		30 1·38	+1·56	2·94	49·45				
	2462	+ 8 31	S	s Q +1·70	20 7·02	+1·68	8·70	S	s Q +1·52	19 17·65	+1·58	19·23	49·47	m s −0 49·491	+ 0·036	+ 0·013	−0 49·442
	2480	+ 2 10	S		25 19·93	+1·70	21·63	S		24 30·57	+1·59	32·16	49·47				
	2487	+ 3 33	S		26 22·33	+1·70	24·03	S		25 32·84	+1·59	34·43	49·60				
	2526	+ 5 30	S		33 12·78	+1·69	14·47	S		32 23·36	+1·59	24·95	49·52				
	2544	+ 22 41	S		35 42·93	+1·65	44·58	S		34 53·45	+1·57	55·02	49·56				
				Mean, T_E	7 27 1												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.
* *Q* is + for star No. 2605 only.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* $6^h\ 7^m\ 31^s$: AND JALPAIGURI (W) *Lat.* 26° 31′, *Long.* $5^h\ 55^m\ 7^s$.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perpl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 17	2617	+ 27 4	N	*I. P. E.*	7 45 42·37	−1·77	40·60	N	*I. P. E.*	7 44 52·67	−1·47	51·20	−0 49·40				
	2650	+ 57 36	N	d c − 1·8 b − 0·3 a + 6·2	52 27·13	−1·93	25·20	N	d c + 0·1 b + 1·8 a + 3·5	51 37·42	−1·53	35·89	49·31	m s −0 49·367	+ 0·036	+ 0·005	−0 49·326
	2663	+ 25 25	N		54 2·47	−1·76	0·71	N		53 12·88	−1·47	11·41	49·30				
	2676	+ 22 24	S	s Q −1·70	56 18·16	−1·75	16·41	S	s Q −1·52	55 28·42	−1·47	26·95	49·46				
				Mean, T_E	7 52 8												
Jan. 18	2469	+ 28 9	N	*I. P. W.*	7 21 49·30	+1·67	50·97	N	*I. P. W.*	7 20 57·23	+1·47	58·70	−0 52·27				
	2472	+ 28 10	N	d c − 0·7 b + 0·5 a + 0·8	22 40·42	+1·67	42·09	N	d c − 1·0 b − 0·6 a + 3·7	21 48·34	+1·47	49·81	52·28				
	2509	+ 34 51	N		30 49·07	+1·67	50·74	N		29 56·96	+1·46	58·42	52·32				
	2462	+ 8 31	S	s Q +1·68	20 5·31	+1·67	6·98	S	s Q +1·52	19 13·22	+1·52	14·74	52·24	m s −0 52·276	+ 0·036	+ 0·013	−0 52·227
	2480	+ 2 10	S		25 18·21	+1·68	19·89	S		24 26·13	+1·52	27·65	52·24				
	2487	+ 3 33	S		26 20·55	+1·68	22·23	S		25 28·46	+1·52	29·98	52·25				
	2526	+ 5 30	S		33 11·11	+1·68	12·79	S		32 18·94	+1·52	20·46	52·33				
	2544	+ 22 41	S		35 41·16	+1·67	42·83	S		34 49·05	+1·50	50·55	52·28				
				Mean, T_E	7 26 59												
Jan. 18	2617	+ 27 4	N	*I. P. W.*	7 45 40·73	−1·69	39·04	N	*I. P. W.*	7 44 48·25	−1·57	46·68	−0 52·36				
	2650	+ 57 36	N	d c − 0·7 b + 0·5 a + 0·8	52 25·62	−1·71	23·91	N	d c − 1·0 b − 0·6 a + 3·7	51 32·98	−1·65	31·33	52·58				
	2663	+ 25 25	N		53 61·02	−1·69	59·33	N		53 8·40	−1·56	6·84	52·49				
	2688	+ 27 52	N	s Q −1·68	57 47·40	−1·69	45·71	N	s Q −1·52	56 54·92	−1·57	53·35	52·36	m s −0 52·408	+ 0·036	+ 0·010	−0 52·362
	2605	+ 19 37	S		44 28·99	−1·69	27·30	S		43 36·52	−1·54	34·98	52·32				
	2632	+ 20 12	S		48 10·76	−1·69	9·07	S		47 18·17	−1·54	16·63	52·44				
	2639	+ 16 6	S		49 41·33	−1·69	39·64	S		48 48·82	−1·53	47·29	52·35				
	2676	+ 22 24	S		56 16·53	−1·69	14·84	S		55 24·02	−1·54	22·48	52·36				
				Mean, T_E	7 51 4												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s*: AND JALPAIGURI (W) *Lat. 26° 31′, Long. 5h 55m 7s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perel. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 12	2097	+ 28 18	N	*I. P. E.*	6 22 25·65	+1·76	27·41	N	*I. P. E.*	6 34 51·04	+1·41	52·45	12 25·04				
	2155	+ 39 30	N	d c − 1·7 b + 1·4 a −11·5	29 59·88	+1·82	61·70	N	d c − 0·6 b − 0·4 a + 6·6	42 25·27	+1·38	26·65	24·95	m s 12 25·025	0·012		
	2170	+ 28 22	N		31 37·02	+1·76	38·78	N		44 2·36	+1·41	3·77	24·99			+ 0·005	12 25·042
	2080	+ 20 52	S	s Q +1·73	20 14·62	+1·71	16·33	S	s Q +1·45	32 40·00	+1·45	41·45	25·12		+		
Jan. 12	2223	+ 41 55	N	*I. P. E.*	6 41 59·81	−1·62	58·19	N	*I. P. E.*	6 54 24·78	−1·53	23·25	12 25·06				
	2254	+ 25 31	N	d c − 1·7 b + 1·4 a −11·5	47 36·94	−1·72	35·22	N	d c − 0·6 b − 0·4 a + 6·6	7 0 1·69	−1·47	0·22	25·00				
	2275	+ 26 14	N		51 4·79	−1·71	3·08	N		3 29·45	−1·48	27·97	24·89	m s 12 25·019	0·012		
	2278	+ 26 4	N	s Q −1·73	51 44·48	−1·71	42·77	N	s Q −1·45	4 9·26	−1·48	7·78	25·01			+ 0·009	12 25·040
	2233	+ 21 54	S		44 2·23	−1·74	0·49	S		6 56 27·01	−1·46	25·55	25·06		+		
	2265	+ 17 53	S		48 58·14	−1·76	56·38	S		7 1 22·89	−1·45	21·44	25·06				
	2285	+ 16 15	S		53 2·23	−1·77	0·46	S		5 26·95	−1·44	25·51	25·05				
Jan. 13	2097	+ 28 18	N	*I. P. W.*	6 22 24·54	+1·66	26·20	N	*I. P. W.*	6 34 49·43	+1·37	50·80	12 24·60				
	2133	+ 28 7	N	d c − 0·5 b − 2·9 a − 5·8	27 15·43	+1·65	17·08	N	d c − 2·5 b − 2·8 a − 1·2	39 40·27	+1·37	41·64	24·56				
	2155	+ 39 30	N		29 58·90	+1·68	60·58	N		41 23·72	+1·36	25·08	24·50				
	2170	+ 28 22	N	s Q +1·72	31 35·92	+1·66	37·58	N	s Q +1·50	44 0·81	+1·37	2·18	24·60	m s 12 24·535	0·012	+ 0·010	12 24·557
	2047	+ 22 34	S		15 18·28	+1·64	19·92	S		27 43·04	+1·37	44·41	24·49		+		
	2059	+ 4 39	S		16 59·34	+1·61	60·95	S		29 24·01	+1·37	25·38	24·43				
	2080	+ 20 52	S		20 13·52	+1·64	15·16	S		32 38·36	+1·37	39·73	24·57				
	2111	+ 15 59	S		24 18·93	+1·62	20·55	S		36 43·71	+1·37	45·08	24·53				

NOTE.—$1^s = 6^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* 6ʰ 7ᵐ 31ˢ: AND JALPAIGURI (W) *Lat.* 26° 31′, *Long.* 5ʰ 55ᵐ 7ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 13	2223	+ 41 55	N	*I. P. W.*	6 41 58·75	−1·76	56·99	N	*I. P. W.*	6 54 23·20	−1·65	21·55	12 24·56				
	2254	+ 25 31	N	*d* c − 0·5 b + 2·9 a − 5·8	47 35·88	−1·79	34·09	N	*d* c − 2·5 b − 2·8 a − 1·2	59 60·22	−1·63	58·59	24·50				
	2275	+ 26 14	N		51 3·63	−1·79	1·84	N		7 3 27·99	−1·63	26·36	24·52	m s 12 24·523	+ 0·012	+ 0·011	12 24·546
	2216	+ 8 10	S	*s* Q −1·72	40 27·23	−1·82	25·41	S	*s* Q −1·50	6 52 51·61	−1·63	49·98	24·57				
	2233	+ 21 54	S		43 61·15	−1·80	59·35	S		56 25·49	−1·63	23·86	24·51				
	2265	+ 17 53	S		48 57·02	−1·81	55·21	S		7 1 21·36	−1·63	19·73	24·52				
	2285	+ 16 15	S		52 61·17	−1·82	59·35	S		5 25·46	−1·63	23·83	24·48				
Jan. 14	2097	+ 28 18	N	*I. P. E.*	6 22 23·01	+1·72	24·73	N	*I. P. E.*	6 34 51·11	−1·54	49·57	12 24·84				
	2133	+ 28 7	N	*d* c − 0·5 b + 1·7 a + 5·6	27 13·89	+1·73	15·62	N	*d* c − 0·9 b + 0·1 a − 3·0	39 41·96	−1·54	40·42	24·80				
	2155	+ 39 30	N		29 57·37	+1·70	59·07	N		42 25·41	−1·53	23·88	24·81				
	2047	+ 22 34	S	*s* Q +1·71	15 16·71	+1·74	18·45	S	*s* Q −1·52	27 44·84	−1·55	43·29	24·84	m s 12 24·861	+ 0·013	+ 0·013	12 24·887
	2059	+ 4 39	S		16 57·52	+1·78	59·30	S		29 25·83	−1·57	24·26	24·96				
	2080	+ 20 52	S		20 11·89	+1·76	13·65	S		32 40·12	−1·55	38·57	24·92				
	2111	+ 15 59	S		24 17·27	+1·75	19·02	S		36 45·48	−1·55	43·93	24·91				
	2173	+ 19 46	S		32 31·14	+1·75	32·89	S		44 59·25	−1·55	57·70	24·81				
Jan. 14	2223	+ 41 55	N	*I. P. E.*	6 41 57·20	−1·74	55·46	N	*I. P. E.*	6 54 18·94	+1·51	20·45	12 24·99				
	2254	+ 25 31	N	*d* c − 0·5 b + 1·7 a + 5·6	47 34·19	−1·69	32·50	N	*d* c − 0·9 b + 0·1 a − 3·0	59 55·92	+1·50	57·42	24·92				
	2275	+ 26 14	N		51 2·02	−1·69	0·33	N		7 3 23·67	+1·50	25·17	24·84				
	2278	+ 26 4	N	*s* Q −1·71	51 41·75	−1·69	40·06	N	*s* Q +1·52	4 3·46	+1·50	4·96	24·90	m s 12 24·879	+ 0·013	+ 0·010	12 24·902
	2216	+ 8 10	S		40 25·62	−1·65	23·97	S		6 52 47·36	+1·48	48·84	24·87				
	2233	+ 21 54	S		43 59·46	−1·68	57·78	S		56 21·18	+1·49	22·67	24·89				
	2265	+ 17 53	S		48 55·43	−1·67	53·76	S		7 1 17·07	+1·49	18·56	24·80				
	2285	+ 16 15	S		52 59·52	−1·67	57·85	S		5 21·18	+1·49	22·67	24·82				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *vii*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s*: AND JALPAIGURI (W) *Lat. 26° 31′, Long. 5h 55m 7s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perel. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 15	2097	+ 28 18	N	*I. P. W.*	6 22 21·71	+1·46	23·17	N	*I. P. W.*	6 34 46·21	+1·51	47·72	12 24·55				
	2133	+ 28 7	N	*d* c − 3·2 b − 2·4 *a* +24·6	27 12·60	+1·47	14·07	N	*d* c − 0·7 b − 0·5 *a* + 2·1	39 37·12	+1·51	38·63	24·56				
	2155	+ 39 30	N		29 56·14	+1·30	57·44	N		42 20·54	+1·50	22·04	24·60				
	2047	+ 22 34	S	*s* *Q* +1·67	15 15·35	+1·53	16·88	S	*s* *Q* +1·54	27 39·95	+1·51	41·46	24·58	m s 12 24·546	+ 0·014	+ 0·013	12 24·573
	2059	+ 4 39	S		16 56·20	+1·72	57·92	S		29 20·90	+1·53	22·43	24·51				
	2080	+ 20 52	S		20 10·69	+1·54	12·23	S		32 35·17	+1·52	36·69	24·46				
	2111	+ 15 59	S		24 15·94	+1·60	17·54	S		36 40·55	+1·52	42·07	24·53				
	2173	+ 19 46	S		32 29·70	+1·56	31·26	S		44 54·32	+1·52	55·84	24·58				
Jan. 15	2223	+ 41 55	N	*I. P. W.*	6 41 55·93	−2·09	53·84	N	*I. P. W.*	6 54 20·13	−1·59	18·54	12 24·70				
	2254	+ 25 31	N	*d* c − 3·2 b − 2·4 *a* +24·6	47 32·84	−1·84	31·00	N	*d* c − 0·7 b − 0·5 *a* + 2·1	59 57·10	−1·57	55·53	24·53				
	2275	+ 26 14	N		50 60·62	−1·85	58·77	N		7 3 24·90	−1·57	23·33	24·56				
	2278	+ 26 4	N	*s* *Q* −1·67	51 40·34	−1·85	38·49	N	*s* *Q* −1·54	4 4·73	−1·57	3·16	24·67	m s 12 24·577	+ 0·014	+ 0·010	12 24·601
	2216	+ 8 10	S		40 24·10	−1·65	22·45	S		6 52 48·57	−1·55	47·02	24·57				
	2233	+ 21 54	S		43 58·14	−1·81	56·33	S		56 22·40	−1·57	20·83	24·50				
	2265	+ 17 53	S		48 53·85	−1·77	52·08	S		7 1 18·30	−1·56	16·74	24·66				
	2285	+ 16 15	S		52 58·12	−1·75	56·37	S		5 22·36	−1·56	20·80	24·43				
Jan. 17	2097	+ 28 18	N	*I. P. E.*	6 22 18·12	+1·62	19·74	N	*I. P. E.*	6 34 43·04	+1·57	44·61	12 24·87				
	2133	+ 28 7	N	*d* c − 1·8 b − 0·3 *a* + 6·2	27 8·98	+1·62	10·60	N	*d* c + 0·1 b + 1·8 *a* + 3·5	39 33·92	+1·57	35·49	24·89				
	2155	+ 39 30	N		29 52·44	+1·59	54·03	N		42 17·37	+1·55	18·92	24·89				
	2047	+ 22 34	S	*s* *Q* +1·70	15 11·88	+1·65	13·53	S	*s* *Q* +1·52	27 36·82	+1·57	38·39	24·86	m s 12 24·855	+ 0·016	+ 0·013	12 24·884
	2059	+ 4 39	S		16 52·71	+1·69	54·40	S		29 17·70	+1·59	19·29	24·89				
	2080	+ 20 52	S		20 7·16	+1·65	8·81	S		32 32·02	+1·57	33·59	24·78				
	2111	+ 15 59	S		24 12·50	+1·67	14·17	S		36 37·41	+1·58	38·99	24·82				
	2173	+ 19 46	S		32 26·26	+1·66	27·92	S		44 51·19	+1·57	52·76	24·84				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* 6ᵐ 7ʰ 31ˢ: AND JALPAIGURI (W) *Lat.* 26° 31′, *Long.* 5ʰ 55ᵐ 7ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Jan. 17	2223	+ 41 55	N	*I. P. E.*	6 41 52·40	−1·82	50·58	N	*I. P. E.*	6 54 16·89	−1·50	15·39	12 24·81				
	2254	+ 25 31	N	*d* c − 1·8	47 29·37	−1·76	27·61	N	*d* c + 0·1	59 53·89	−1·47	52·42	24·81				
	2275	+ 26 14	N	b − 0·3 a + 6·2	50 57·16	−1·77	55·39	N	b + 1·8 a + 3·5	7 3 21·65	−1·47	20·18	24·79				
	2278	+ 26 4	N	*s* Q −1·70	51 36·90	−1·77	35·13	N	*s* Q −1·52	4 1·49	−1·47	0·02	24·89				
	2216	+ 8 10	S		40 20·72	−1·72	19·00	S		6 52 45·33	−1·45	43·88	24·88	*m s* 12 24·838	+ 0·016	+ 0·010	12 24·864
	2233	+ 21 54	S		43 54·58	−1·75	52·83	S		56 19·21	−1·47	17·74	24·91				
	2265	+ 17 53	S		48 50·53	−1·74	48·79	S		7 1 15·07	−1·47	13·60	24·81				
	2285	+ 16 15	S		52 54·64	−1·73	52·91	S		5 19·18	−1·47	17·71	24·80				
Jan. 18	2097	+ 28 18	N	*I. P. W.*	6 22 16·43	+1·67	18·10	N	*I. P. W.*	6 34 41·04	+1·47	42·51	12 24·41				
	2133	+ 28 7	N	*d* c − 0·7	27 7·31	+1·67	8·98	N	*d* c − 1·0	39 31·90	+1·47	33·37	24·39				
	2155	+ 39 30	N	b + 0·5 a + 0·8	29 50·76	+1·66	52·42	N	b − 0·6 a + 3·7	42 15·38	+1·45	16·83	24·41				
	2047	+ 22 34	S	*s* Q +1·68	15 10·19	+1·67	11·86	S	*s* Q +1·52	6 27 34·78	+1·50	36·28	24·42	*m s* 12 24·412	+ 0·016	+ 0·013	12 24·441
	2059	+ 4 39	S		16 51·09	+1·68	52·77	S		29 15·67	+1·52	17·19	24·42				
	2080	+ 20 52	S		20 5·40	+1·67	7·07	S		32 30·01	+1·50	31·51	24·44				
	2111	+ 15 59	S		24 10·80	+1·67	12·47	S		36 35·37	+1·51	36·88	24·41				
	2173	+ 19 46	S		32 24·60	+1·67	26·27	S		44 49·17	+1·50	50·67	24·40				
Jan. 18	2223	+ 41 55	N	*I. P. W.*	6 41 50·59	−1·70	48·89	N	*I. P. W.*	6 54 14·87	−1·60	13·27	12 24·38				
	2254	+ 25 31	N	*d* c − 0·7	47 27·55	−1·69	25·86	N	*d* c − 1·0	59 51·84	−1·56	50·28	24·42				
	2275	+ 26 14	N	b + 0·5 a + 0·8	50 55·40	−1·69	53·71	N	b − 0·6 a + 3·7	7 3 19·57	−1·57	18·00	24·29				
	2278	+ 26 4	N	*s* Q −1·68	51 35·20	−1·69	33·51	N	*s* Q −1·52	3 59·39	−1·57	57·82	24·31	*m s* 12 24·373	+ 0·016	+ 0·010	12 24·399
	2216	+ 8 10	S		40 19·01	−1·69	17·32	S		6 52 43·25	−1·52	41·73	24·41				
	2233	+ 21 54	S		43 52·85	−1·69	51·16	S		56 17·12	−1·54	15·58	24·42				
	2265	+ 17 53	S		48 48·74	−1·69	47·05	S		7 1 12·97	−1·54	11·43	24·38				
	2285	+ 16 15	S		52 52·85	−1·69	51·16	S		5 17·06	−1·53	15·53	24·37				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s:* AND JALPAIGURI (W) *Lat. 26° 31′, Long. 5h 55m 7s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 12	2860	+ 36 50	N	*I. P. E.*	8 12 15·82	+1·80	17·62	N	*I. P. E.*	8 24 41·42	+1·39	42·81	12 25·19				
	2871	+ 36 49	N	d c − 1·7 b + 1·4 a −11·5	13 37·30	+1·80	39·10	N	d c − 0·6 b − 0·4 a + 6·6	26 2·85	+1·39	4·24	25·14				
	2905	+ 32 56	N		18 38·83	+1·78	40·61	N		31 4·36	+1·40	5·76	25·15				
	2965	+ 29 11	N	s Q +1·73	26 1·31	+1·77	3·08	N	s Q +1·45	38 26·83	+1·41	28·24	25·16	m s 12 25·165	+ 0·034	+ 0·010	12 25·209
	2888	+ 15 43	S		15 58·40	+1·69	60·09	S		28 23·82	+1·46	25·28	25·19				
	2922	+ 19 57	S		20 8·63	+1·71	10·34	S		32 34·08	+1·45	35·53	25·19				
	2925	+ 20 0	S		20 37·91	+1·71	39·62	S		33 3·36	+1·45	4·81	25·19				
	2937	+ 21 53	S		22 55·27	+1·72	56·99	S		35 20·66	+1·44	22·10	25·11				
Jan. 12	3059	+ 42 13	N	*I. P. E.*	8 39 30·43	−1·62	28·81	N	*I. P. E.*	8 51 55·47	−1·53	53·94	12 25·13				
	3069	+ 28 22	N	d c − 1·7 b + 1·4 a −11·5	41 18·05	−1·70	16·35	N	d c − 0·6 b − 0·4 a + 6·6	53 42·96	−1·49	41·47	25·12				
	3088	+ 28 22	N		43 39·17	−1·70	37·47	N		56 4·06	−1·49	2·57	25·10				
	3097	+ 38 55	N	s Q −1·73	45 32·91	−1·65	31·26	N	s Q −1·45	57 57·88	−1·52	56·36	25·10	m s 12 25·153	+ 0·034	+ 0·009	12 25·196
	3111	+ 11 8	S		47 52·17	−1·79	50·38	S		9 0 17·06	−1·43	15·63	25·25				
	3123	+ 22 28	S		50 5·09	−1·74	3·35	S		2 30·01	−1·46	28·55	25·20				
	3129	+ 18 31	S		51 50·16	−1·76	48·40	S		4 15·02	−1·45	13·57	25·17				
Jan. 13	2860	+ 36 50	N	*I. P. W.*	8 12 12·20	+1·67	13·87	N	*I. P. W.*	8 24 37·19	+1·36	38·55	12 24·68				
	2871	+ 36 49	N	d c − 0·5 b − 2·9 a − 5·8	13 33·68	+1·67	35·35	N	d c − 2·5 b − 2·8 a − 1·2	25 58·69	+1·36	60·05	24·70				
	2905	+ 32 56	N		18 35·23	+1·66	36·89	N		31 0·14	+1·36	1·50	24·61				
	2965	+ 29 11	N	s Q +1·72	25 57·69	+1·66	59·35	N	s Q +1·50	38 22·70	+1·37	24·07	24·72	m s 12 24·667	+ 0·035	+ 0·010	12 24·712
	2888	+ 15 43	S		15 54·64	+1·62	56·26	S		28 19·63	+1·37	21·00	24·74				
	2922	+ 19 57	S		20 5·01	+1·63	6·64	S		32 29·92	+1·37	31·29	24·65				
	2925	+ 20 0	S		20 34·31	+1·63	35·94	S		32 59·20	+1·37	60·57	24·63				
	2937	+ 21 53	S		22 51·57	+1·64	53·21	S		35 16·45	+1·37	17·82	24·61				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* $6^h\ 7^m\ 31^s$: AND JALPAIGURI (W) *Lat.* 26° 31′, *Long.* $5^h\ 55^m\ 7^s$.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Jan. 13	3059	+ 42 13	N	*I. P. W.*	8 39 26·69	−1·76	24·93	N	*I. P. W.*	8 51 51·47	−1·65	49·82	12 24·89				
	3069	+ 28 22	N	*d* c − 0·5 b − 2·9 *a* − 5·8	41 14·29	−1·78	12·51	N	*d* c − 2·5 b − 2·8 *a* − 1·2	53 39·01	−1·63	37·38	24·87				
	3088	+ 28 22	N		43 35·38	−1·78	33·60	N		55 60·16	−1·63	58·53	24·93				
	3097	+ 38 55	N	*s* *Q* −1·72	45 29·13	−1·76	27·37	N	*s* *Q* −1·50	57 53·92	−1·64	52·28	24·91	*m s* 12 24·833	+ 0·035	+ 0·009	12 24·877
	3111	+ 11 8	S		47 48·43	−1·82	46·61	S		9 0 13·01	−1·63	11·38	24·77				
	3123	+ 22 28	S		49 61·38	−1·80	59·58	S		2 25·99	−1·63	24·36	24·78				
	3129	+ 18 31	S		51 46·52	−1·81	44·71	S		4 11·02	−1·63	9·39	24·68				
Jan. 14	2860	+ 36 50	N	*I. P. E.*	8 12 8·04	+1·71	9·75	N	*I. P. E.*	8 24 33·20	+1·51	34·71	12 24·96				
	2871	+ 36 49	N	*d* c − 0·5 b + 1·7 *a* + 5·6	13 29·45	+1·71	31·16	N	*d* c − 0·9 b + 0·1 *a* − 3·0	25 54·65	+1·51	56·16	25·00				
	2905	+ 32 56	N		18 30·98	+1·71	32·69	N		30 56·19	+1·51	57·70	25·01				
	2965	+ 29 11	N	*s* *Q* +1·71	25 53·47	+1·72	55·19	N	*s* *Q* +1·52	38 18·66	+1·50	20·16	24·97	*m s* 12 24·988	+ 0·035	+ 0·010	12 25·033
	2888	+ 15 43	S		15 50·35	+1·75	52·10	S		28 15·63	+1·49	17·12	25·02				
	2922	+ 19 57	S		20 0·66	+1·75	2·41	S		32 25·95	+1·49	27·44	25·03				
	2925	+ 20 0	S		20 29·98	+1·75	31·73	S		32 55·20	+1·49	56·69	24·96				
	2937	+ 21 53	S		22 47·26	+1·74	49·00	S		35 12·46	+1·49	13·95	24·95				
Jan. 14	3059	+ 42 13	N	*I. P. E.*	8 39 22·57	−1·74	20·83	N	*I. P. E.*	8 51 47·50	−1·53	45·97	12 25·14				
	3069	+ 28 22	N	*d* c − 0·5 b + 1·7 *a* + 5·6	41 10·07	−1·70	8·37	N	*d* c − 0·9 b + 0·1 *a* − 3·0	53 35·00	−1·54	33·46	25·09				
	3088	+ 28 22	N		43 31·22	−1·70	29·52	N		55 56·18	−1·54	54·64	25·12				
	3097	+ 38 55	N	*s* *Q* −1·71	45 24·98	−1·72	23·26	N	*s* *Q* −1·52	57 49·94	−1·53	48·41	25·15	*m s* 12 25·087	+ 0·035	+ 0·010	12 25·132
	3111	+ 11 8	S		47 44·11	−1·65	42·46	S		9 0 9·07	−1·56	7·51	25·05				
	3122	+ 12 3	S		49 44·32	−1·66	42·66	S		2 9·31	−1·56	7·75	25·09				
	3129	+ 18 31	S		51 42·12	−1·67	40·45	S		4 7·05	−1·55	5·50	25·05				
	3138	+ 21 46	S		53 15·86	−1·68	14·18	S		5 40·74	−1·55	39·19	25·01				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s:* AND JALPAIGURI (W) *Lat. 26° 31′, Long. 6h 55m 7s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 15	2860	+ 36 50	N	*I. P. W.*	8 12 4·15	+1·35	5·50	N	*I. P. W.*	8 24 28·95	+1·50	30·45	12 24·95				
	2871	+ 36 49	N	d c − 3·2 b − 2·4 a +24·6	13 25·64	+1·35	26·99	N	d c − 0·7 b − 0·5 a + 2·1	25 50·45	+1·50	51·95	24·96				
	2905	+ 32 56	N		18 27·15	+1·38	28·53	N		30 51·93	+1·50	53·43	24·90				
	2965	+ 29 11	N	s Q +1·67	25 49·53	+1·45	50·98	N	s Q +1·54	38 14·38	+1·51	15·89	24·91	m s 12 24·891	+ 0·036	+ 0·010	12 24·937
	2888	+ 15 43	S		15 46·46	+1·61	48·07	S		28 11·37	+1·52	12·89	24·82				
	2922	+ 19 57	S		19 56·71	+1·56	58·27	S		32 21·64	+1·52	23·16	24·89				
	2925	+ 20 0	S		20 26·04	+1·56	27·60	S		32 50·94	+1·52	52·46	24·86				
	2937	+ 21 53	S		22 43·37	+1·53	44·90	S		35 8·23	+1·51	9·74	24·84				
Jan. 15	3059	+ 42 13	N	*I. P. W.*	8 39 18·84	−2·11	16·73	N	*I. P. W.*	8 51 43·24	−1·59	41·65	12 24·92				
	3069	+ 28 22	N	d c − 3·2 b − 2·4 a +24·6	41 6·22	−1·88	4·34	N	d c − 0·7 b − 0·5 a + 2·1	53 30·77	−1·57	29·20	24·86				
	3088	+ 28 22	N		43 27·32	−1·88	25·44	N		55 51·94	−1·57	50·37	24·93				
	3097	+ 38 55	N	s Q −1·67	45 21·26	−2·03	19·23	N	s Q −1·54	57 45·72	−1·58	44·14	24·91	m s 12 24·813	+ 0·036	+ 0·010	12 24·859
	3111	+ 11 8	S		47 40·10	−1·68	38·42	S		9 0 4·70	−1·56	3·14	24·72				
	3122	+ 12 3	S		49 40·46	−1·69	38·77	S		2 5·03	−1·56	3·47	24·70				
	3129	+ 18 31	S		51 38·27	−1·77	36·50	S		4 2·80	−1·56	1·24	24·74				
	3138	+ 21 46	S		53 12·00	−1·81	10·19	S		5 36·48	−1·57	34·91	24·72				
Jan. 17	2871	+ 36 49	N	*I. P. E.*	8 13 17·13	+1·60	18·73	N	*I. P. E.*	8 25 42·23	+1·55	43·78	12 25·05				
	2905	+ 32 56	N	d c − 1·8 b − 0·3 a + 6·2	18 18·58	+1·61	20·19	N	d c + 0·1 b + 1·8 a + 3·5	30 43·81	+1·56	45·37	25·18				
	2965	+ 29 11	N		25 41·08	+1·62	42·70	N		38 6·25	+1·57	7·82	25·12				
	2888	+ 15 43	S	s Q +1·70	15 38·07	+1·67	39·74	S	s Q +1·52	28 3·24	+1·58	4·82	25·08	m s 12 25·079	+ 0·036	+ 0·011	12 25·126
	2922	+ 19 57	S		19 48·39	+1·66	50·05	S		32 13·52	+1·57	15·09	25·04				
	2925	+ 20 0	S		20 17·65	+1·66	19·31	S		32 42·79	+1·57	44·36	25·05				
	2937	+ 21 53	S		22 34·93	+1·65	36·58	S		35 0·04	+1·57	1·61	25·03				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s*: AND JALPAIGURI (W) *Lat. 26° 31′, Long. 5h 55m 7s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = -0^s.018$ $S_N - S_S = +0^s.002$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 17	3059	+ 42 13	N	*I. P. E.*	8 39 10·28	−1·83	8·45	N	*I. P. E.*	8 51 35·16	−1·50	33·66	12 25·21				
	3069	+ 28 22	N	*d* c − 1·8	40 57·77	−1·78	55·99	N	*d* c + 0·1	53 22·57	−1·47	21·10	25·11				
	3088	+ 28 22	N	b − 0·3 a + 6·2	43 18·85	−1·78	17·07	N	b + 1·8 a + 3·5	55 43·69	−1·47	42·22	25·15				
	3097	+ 38 55	N	*s* Q −1·70	45 12·68	−1·81	10·87	N	*s* Q −1·52	57 37·60	−1·49	36·11	25·24	m s 12 25·123	+ 0·036	+ 0·009	12 25·168
	3111	+ 11 8	S		47 31·80	−1·72	30·08	S		59 56·62	−1·46	55·16	25·08				
	3122	+ 12 3	S		49 32·06	−1·72	30·34	S		9 1 56·87	−1·46	55·41	25·07				
	3138	+ 21 46	S		53 3·62	−1·75	1·87	S		5 28·34	−1·47	26·87	25·00				
Jan. 18	2860	+ 36 50	N	*I. P. W.*	8 11 51·58	+1·66	53·24	N	*I. P. W.*	8 24 16·46	+1·45	17·91	12 24·67				
	2871	+ 36 49	N	*d* c − 0·7	13 13·05	+1·66	14·71	N	*d* c − 1·0	25 37·91	+1·45	39·36	24·65				
	2905	+ 32 56	N	b + 0·5 a + 0·8	18 14·62	+1·67	16·29	N	b − 0·6 a + 3·7	30 39·42	+1·46	40·88	24·59				
	2965	+ 29 11	N	*s* Q +1·68	25 37·00	+1·67	38·67	N	*s* Q +1·52	38 1·86	+1·47	3·33	24·66	m s 12 24·632	+ 0·036	+ 0·010	12 24·678
	2888	+ 15 43	S		15 34·03	+1·67	35·70	S		27 58·76	+1·51	60·27	24·57				
	2922	+ 19 57	S		19 44·33	+1·67	46·00	S		32 9·11	+1·50	10·61	24·61				
	2925	+ 20 0	S		20 13·59	+1·67	15·26	S		32 38·38	+1·50	39·88	24·62				
	2937	+ 21 53	S		22 30·85	+1·67	32·52	S		34 55·71	+1·50	57·21	24·69				
Jan. 18	3059	+ 42 13	N	*I. P. W.*	8 39 6·14	−1·70	4·44	N	*I. P. W.*	8 51 30·75	−1·60	29·15	12 24·71				
	3069	+ 28 22	N	*d* c − 0·7	40 53·71	−1·69	52·02	N	*d* c − 1·0	53 18·26	−1·57	16·69	24·67				
	3088	+ 28 22	N	b + 0·5 a + 0·8	43 14·84	−1·69	13·15	N	b − 0·6 a + 3·7	55 39·40	−1·57	37·83	24·68				
	3097	+ 38 55	N	*s* Q −1·68	45 8·50	−1·70	6·80	N	*s* Q −1·52	57 33·21	−1·59	31·62	24·82	m s 12 24·690	+ 0·036	+ 0·010	12 24·736
	3111	+ 11 8	S		47 27·77	−1·69	26·08	S		59 52·23	−1·53	50·70	24·62				
	3122	+ 12 3	S		49 27·97	−1·69	26·28	S		9 1 52·45	−1·53	50·92	24·64				
	3129	+ 18 31	S		51 25·73	−1·69	24·04	S		3 50·27	−1·54	48·73	24·69				
	3138	+ 21 46	S		52 59·44	−1·69	57·75	S		5 23·98	−1·54	22·44	24·69				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 23	2672	+ 28 8	N	*I. P. W.*	7 56 28·18	+1·59	29·77	N	*I. P. W.*	7 56 23·59	+1·45	25·04	−0 4·73				
	2700	+ 22 58	N	d c − 0·8 b − 2·2 a + 4·4	59 30·67	+1·61	32·28	N	d c − 1·1 b − 3·7 a − 2·1	59 26·02	+1·44	27·46	4·82	m s −0 4·768	0·014	+0·006	−0 4·776
	2700	+ 22 58	S		59 30·57	+1·61	32·18	S		59 25·98	+1·44	27·42	4·76				
	2714	+ 21 55	S	s Q +1·68	8 1 0·90	+1·61	2·51	S	s Q +1·56	8 0 56·31	+1·44	57·75	4·76	−	−	+	
	2744	+ 18 0	S		5 38·16	+1·62	39·78	S		5 33·57	+1·44	35·01	4·77				
				Mean, T_E	8 0 26												
Jan. 23	2799	+ 18 43	S	*I. P. W.*	8 16 51·34	−1·74	49·60	S	*I. P. W.*	8 16 46·54	−1·68	44·86	−0 4·74				
	2810	+ 17 34	S	d c − 0·8 b − 2·2 a + 4·4	18 17·42	−1·74	15·68	S	d c − 1·1 b − 3·7 a − 2·1	18 12·58	−1·68	10·90	4·78	m s −0 4·760	0·014	+0·010	−0 4·764
				s Q −1·68					s Q −1·56					−	−	+	
				Mean, T_E	8 17 34												
Jan. 24	2672	+ 28 8	N	*I. P. E.*	7 56 25·96	+1·72	27·68	N	*I. P. E.*	7 56 24·91	+1·67	26·58	−0 1·10				
	2700	+ 22 58	N	d c − 0·1 b + 1·4 a + 8·2	59 28·47	+1·73	30·20	N	d c + 1·5 b + 5·3 a + 29·7	59 27·32	+1·73	29·05	1·15				
	2727	+ 26 11	N		8 3 14·89	+1·73	16·62	N		8 3 13·77	+1·69	15·46	1·16				
	2700	+ 22 58	S	s Q +1·70	7 59 28·49	+1·73	30·22	S	s Q +1·57	7 59 27·32	+1·73	29·05	1·17	m s −0 1·106	0·014	+0·006	−0 1·114
	2714	+ 21 55	S		8 0 58·66	+1·73	60·39	S		8 0 57·67	+1·75	59·42	0·97	−	−	+	
	2737	+ 14 59	S		4 30·31	+1·76	32·07	S		4 29·14	+1·81	30·95	1·12				
	2744	+ 18 0	S		5 36·00	+1·74	37·74	S		5 34·82	+1·80	36·62	1·12				
	2759	+ 18 1	S		7 35·16	+1·74	36·90	S		7 34·04	+1·80	35·84	1·06				
				Mean, T_E	8 2 10												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* 6h 7m 31s: AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 24	2788	+ 21 7	N	*I. P. E.*	8 13 40·82	−1·67	39·15	N	*I. P. E.*	8 13 39·50	−1·38	38·12	−0 1·03				
	2833	+ 24 32	N	d c − 0·1 b + 1·4 a + 8·2	21 49·90	−1·68	48·22	N	d c + 1·5 b + 5·3 a + 29·7	21 48·56	−1·43	47·13	1·09				
	2840	+ 24 44	N		22 52·78	−1·68	51·10	N		22 51·47	−1·43	50·04	1·06				
	2860	+ 36 50	N	s Q −1·70	25 60·91	−1·72	59·19	N	s Q −1·57	25 59·75	−1·60	58·15	1·04	m s −0 1·071	0·014	+0·005	−0 1·080
	2788	+ 21 7	S		13 40·81	−1·67	39·14	S		13 39·37	−1·38	37·99	1·15		−	+	
	2799	+ 18 43	S		16 49·12	−1·66	47·46	S		16 47·75	−1·35	46·40	1·06				
	2810	+ 17 34	S		18 15·20	−1·65	13·55	S		18 13·84	−1·34	12·50	1·05				
	2816	+ 17 26	S		19 21·79	−1·65	20·14	S		19 20·39	−1·34	19·05	1·09				
				Mean, T_E	8 19 4												
Jan. 25	2672	+ 28 8	N	*I. P. W.*	7 56 23·84	+1·70	25·54	N	*I. P. W.*	7 56 26·41	+1·53	27·94	+0 2·40				
	2700	+ 22 58	N	d c 0·0 b + 0·8 a + 10·7	59 26·30	+1·73	28·03	N	d c − 0·8 b + 2·3 a + 27·3	59 28·72	+1·59	30·31	2·28				
	2718	+ 27 49	N		8 1 44·09	+1·71	45·80	N		8 1 46·63	+1·53	48·16	2·36				
	2727	+ 26 11	N	s Q +1·71	3 12·71	+1·71	14·42	N	s Q +1·56	3 15·13	+1·56	16·69	2·27	m s +0 2·316	0·013	+0·006	+0 2·309
	2700	+ 22 58	S		7 59 26·22	+1·73	27·95	S		7 59 28·69	+1·59	30·28	2·33		+	+	
	2714	+ 21 55	S		8 0 56·53	+1·73	58·26	S		8 0 58·91	+1·61	60·52	2·26				
	2737	+ 14 59	S		4 28·20	+1·76	29·96	S		4 30·60	+1·67	32·27	2·31				
	2744	+ 18 0	S		5 33·82	+1·75	35·57	S		5 36·17	+1·64	37·81	2·24				
	2759	+ 18 1	S		7 33·01	+1·75	34·76	S		7 35·51	+1·64	37·15	2·39				
				Mean, T_E	8 2 5												
Jan. 25	2788	+ 21 7	N	*I. P. W.*	8 13 38·73	−1·68	37·05	N	*I. P. W.*	8 13 40·94	−1·50	39·44	+0 2·39				
	2840	+ 24 44	N	d c 0·0 b + 0·8 a + 10·7	22 50·71	−1·70	49·01	N	d c − 0·8 b + 2·3 a + 27·3	22 52·91	−1·55	51·36	2·35				
	2850	+ 24 28	N		24 42·63	−1·70	40·93	N		24 44·96	−1·54	43·42	2·49				
	2860	+ 36 50	N	s Q −1·71	25 58·70	−1·77	56·93	N	s Q −1·56	25 61·09	−1·71	59·38	2·45	m s +0 2·375	0·013	+0·005	+0 2·367
	2788	+ 21 7	S		13 38·67	−1·68	36·99	S		13 40·82	−1·50	39·32	2·33		+	+	
	2799	+ 18 43	S		16 47·06	−1·67	45·39	S		16 49·16	−1·49	47·67	2·28				
	2810	+ 17 34	S		18 13·04	−1·67	11·37	S		18 15·21	−1·47	13·74	2·37				
	2816	+ 17 26	S		19 19·60	−1·67	17·93	S		19 21·74	−1·47	20·27	2·34				
				Mean, T_E	8 19 24												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* 6h 7m 31s: AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 26	2672	+ 28 8	N	*I. P. E.*	7 56 21·35	+1·67	23·02	N	*I. P. E.*	7 56 27·54	+1·69	29·23	+0 6·21				
	2700	+ 22 58	N	d c − 1·8	59 23·89	+1·65	25·54	N	d c − 1·0	59 29·93	+1·77	31·70	6·16				
	2727	+ 26 11	N	b − 0·9 a −10·3	8 3 10·20	+1·66	11·86	N	b +10·3 a +36·6	8 3 16·40	+1·72	18·12	6·26				
	2700	+ 22 58	S	s Q +1·71	7 59 23·90	+1·65	25·55	S	s Q +1·55	7 59 29·87	+1·77	31·64	6·09	m s +0 6·199	0·010	0·006	6·195
	2714	+ 21 55	S		8 0 54·14	+1·65	55·79	S		8 1 0·19	+1·79	1·98	6·19		1	+	+
	2737	+ 14 59	S		4 25·79	+1·62	27·41	S		4 31·79	+1·88	33·67	6·26				
	2744	+ 18 0	S		5 31·44	+1·63	33·07	S		5 37·40	+1·84	39·24	6·17				
	2759	+ 18 1	S		7 30·63	+1·63	32·26	S		7 36·67	+1·84	38·51	6·25				
				Mean, T_E	8 2 5												
Jan. 26	2788	+ 21 7	N	*I. P. E.*	8 13 36·29	−1·78	34·51	N	*I. P. E.*	8 13 42·06	−1·30	40·76	+0 6·25				
	2833	+ 24 32	N	d c − 1·8	21 45·28	−1·76	43·52	N	d c − 1·0	21 51·17	−1·35	49·82	6·30				
	2840	+ 24 44	N	b − 0·9 a −10·3	22 48·19	−1·76	46·43	N	b +10·3 a +36·6	22 54·06	−1·36	52·70	6·27				
	2850	+ 24 28	N	s Q −1·71	24 40·14	−1·76	38·38	N	s Q −1·55	24 46·00	−1·35	44·65	6·27	m s +0 6·306	0·010	0·004	6·300
	2860	+ 36 50	N		25 56·21	−1·71	54·50	N		26 2·34	−1·56	0·78	6·28				
	2788	+ 21 7	S		13 36·21	−1·78	34·43	S		13 42·04	−1·30	40·74	6·31		1	+	+
	2799	+ 18 43	S		16 44·57	−1·79	42·78	S		16 50·39	−1·27	49·12	6·34				
	2810	+ 17 34	S		18 10·63	−1·79	8·84	S		18 16·43	−1·25	15·18	6·34				
	2816	+ 17 26	S		19 17·16	−1·79	15·37	S		19 23·01	−1·25	21·76	6·39				
				Mean, T_E	8 19 37												
Jan. 28	2672	+ 28 8	N	*I. P. W.*	7 56 16·67	+1·66	18·33	N	*I. P. W.*	7 56 29·10	+1·54	30·64	+0 12·31				
	2700	+ 22 58	N	d c + 0·1	59 19·16	+1·69	20·85	N	d c + 1·0	59 31·49	+1·62	33·11	12·26				
	2718	+ 27 49	N	b − 1·3 a +11·9	8 1 36·93	+1·66	38·59	N	b + 1·7 a +39·1	8 1 49·40	+1·55	50·95	12·36				
	2727	+ 26 11	N	s Q +1·72	3 5·55	+1·67	7·22	N	s Q +1·57	3 17·94	+1·58	19·52	12·30	m s +0 12·297	0·003	0·006	12·300
	2700	+ 22 58	S		7 59 19·05	+1·69	20·74	S		7 59 31·46	+1·62	33·08	12·34				
	2714	+ 21 55	S		8 0 49·35	+1·69	51·04	S		8 1 1·73	+1·64	3·37	12·33		1	+	+
	2737	+ 14 59	S		4 21·10	+1·73	22·83	S		4 33·30	+1·75	35·05	12·22				
	2744	+ 18 0	S		5 26·70	+1·71	28·41	S		5 38·93	+1·70	40·63	12·22				
	2759	+ 18 1	S		7 25·83	+1·71	27·54	S		7 38·17	+1·70	39·87	12·33				
				Mean, T_E	8 1 58												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* 6h 7m 31s: AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns for Persl. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 28	2788	+ 21 7	N	*I. P. W.*	8 13 31·58	−1·74	29·84	N	*I. P. W.*	8 13 43·59	−1·49	42·10	+0 12·26				
	2833	+ 24 32	N	d c + 0·1 b − 1·3 a + 11·9	21 40·64	−1·76	38 88	N	d c + 1·0 b + 1·7 a + 39·1	21 52·73	−1·55	51·18	12·30				
	2840	+ 24 44	N		22 43·50	−1·76	41·74	N		22 55·66	−1·55	54·11	12·37				
	2850	+ 24 28	N	s Q −1·72	24 35·41	−1·76	33·65	N	s Q −1·57	24 47·62	−1·55	46·07	12·42	m s +0 12·334	0·003	+0·004	+0 12·335
	2860	+ 36 50	N		25 51·58	−1·84	49·74	N		26 3·92	−1·76	2·16	12·42				
	2788	+ 21 7	S		13 31·51	−1·74	29·77	S		13 43·57	−1·49	42·08	12·31		1	+	
	2799	+ 18 43	S		16 39·87	−1·73	38·14	S		16 51·86	−1·45	50·41	12·27				
	2810	+ 17 34	S		18 5·89	−1·73	4·16	S		18 17·90	−1·43	16·47	12·31				
	2816	+ 17 26	S		19 12·45	−1·73	10·72	S		19 24·50	−1·43	23·07	12·35				
				Mean, T_E	8 19 32												
Jan. 29	2672	+ 28 8	N	*I. P. E.*	7 56 13·84	+1·65	15·49	N	*I. P. E.*	7 56 29·29	+1·58	30·87	+0 15·38				
	2700	+ 22 58	N	d c − 2·2 b + 0·3 a − 1·4	59 16·31	+1·66	17·97	N	d c 0·0 b + 1·9 a + 17·6	59 31·80	+1·62	33·42	15·45				
	2718	+ 27 49	N		8 1 34·14	+1·65	35·79	N		8 1 49·57	+1·58	51·15	15·36				
	2727	+ 26 11	N	s Q +1·70	3 2·69	+1·65	4·34	N	s Q +1·57	3 18·19	+1·59	19·78	15·44	m s +0 15·386	0·001	+0·006	+0 15·393
	2700	+ 22 58	S		7 59 16·27	+1·66	17·93	S		7 59 31·66	+1·62	33·28	15·35				
	2714	+ 21 55	S		8 0 46·61	+1·66	48·27	S		8 1 2·00	+1·62	3·62	15·35		+	+	
	2737	+ 14 59	S		4 18·20	+1·66	19·86	S		4 33·58	+1·66	35·24	15·38				
	2744	+ 18 0	S		5 23·85	+1·66	25·51	S		5 39·19	+1·64	40·83	15·32				
	2759	+ 18 1	S		7 23·03	+1·66	24·69	S		7 38·49	+1·64	40·13	15·44				
				Mean, T_E	8 1 55												
Jan. 29	2788	+ 21 7	N	*I. P. E.*	8 13 28·74	−1·74	27·00	N	*I. P. E.*	8 13 43·97	−1·51	42·46	+0 15·46				
	2833	+ 24 32	N	d c − 2·2 b + 0·3 a − 1·4	21 37·81	−1·74	36·07	N	d c 0·0 b + 1·9 a + 17·6	21 52·98	−1·54	51·44	15·37				
	2840	+ 24 44	N		22 40·68	−1·74	38·94	N		22 55·88	−1·54	54·34	15·40				
	2850	+ 24 28	N	s Q −1·70	24 32·60	−1·74	30·86	N	s Q −1·57	24 47·82	−1·54	46·28	15·42	m s +0 15·374	0·001	+0·004	+0 15·379
	2860	+ 36 50	N		25 48·79	−1·74	47·05	N		26 4·01	−1·64	2·37	15·32				
	2788	+ 21 7	S		13 28·69	−1·74	26·95	S		13 43·82	−1·51	42·31	15·36		+	+	
	2799	+ 18 43	S		16 37·06	−1·74	35·32	S		16 52·17	−1·49	50·68	15·36				
	2810	+ 17 34	S		18 3·18	−1·74	1·44	S		18 18·21	−1·49	16·72	15·28				
	2816	+ 17 26	S		19 9·65	−1·74	7·91	S		19 24·80	−1·49	23·31	15·40				
				Mean, T_E	8 19 30												

NOTE.—1^d = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 30	2672	+ 28 8	N	*I. P. W.*	7 56 11·13	+1·62	12·75	N	*I. P. W.*	7 56 28·99	+1·46	30·45	+0 17·70				
	2700	+ 22 58	N	*d* c − 1·8 b − 0·2 *a* + 2·3	59 13·58	+1·65	15·23	N	*d* c − 1·1 b − 1·5 *a* + 9·3	59 31·40	+1·48	32·88	17·65				
	2718	+ 27 49	N		8 1 31·40	+1·62	33·02	N		8 1 49·34	+1·46	50·80	17·78				
	2727	+ 26 11	N	*s* *Q* +1·69	2 59·97	+1·63	61·60	N	*s* *Q* +1·55	3 17·81	+1·47	19·28	17·68	m s +0 17·699			
	2700	+ 22 58	S		7 59 13·53	+1·65	15·18	S		7 59 31·39	+1·48	32·87	17·69				
	2714	+ 21 55	S		8 0 43·81	+1·65	45·46	S		8 1 1·70	+1·48	3·18	17·72		+0·003	+0·006	+0 17·708
	2737	+ 14 59	S		4 15·55	+1·66	17·21	S		4 33·40	+1·52	34·92	17·71				
	2744	+ 18 0	S		5 21·17	+1·65	22·82	S		5 38·92	+1·50	40·42	17·60				
	2759	+ 18 1	S		7 20·30	+1·65	21·95	S		7 38·21	+1·50	39·71	17·76				
				Mean, T_E	8 1 52												
Jan. 30	2788	+ 21 7	N	*I. P. W.*	8 13 25·91	−1·73	24·18	N	*I. P. W.*	8 13 43·54	−1·61	41·93	+0 17·75				
	2833	+ 24 32	N	*d* c − 1·8 b − 0·2 *a* + 2·3	21 34·99	−1·73	33·26	N	*d* c − 1·1 b − 1·5 *a* + 9·3	21 52·65	−1·63	51·02	17·76				
	2840	+ 24 44	N		22 37·91	−1·73	36·18	N		22 55·58	−1·63	53·95	17·77				
	2850	+ 24 28	N	*s* *Q* −1·69	24 29·85	−1·73	28·12	N	*s* *Q* −1·55	24 47·56	−1·63	45·93	17·81	m s +0 17·778	+0·003	+0·004	+0 17·785
	2860	+ 36 50	N		25 45·93	−1·77	44·16	N		26 3·72	−1·68	2·04	17·88				
	2788	+ 21 7	S		13 25·98	−1·73	24·25	S		13 43·46	−1·61	41·85	17·60				
	2799	+ 18 43	S		16 34·24	−1·73	32·51	S		16 51·92	−1·61	50·31	17·80				
	2810	+ 17 34	S		17 60·29	−1·73	58·56	S		18 17·99	−1·60	16·39	17·83				
	2816	+ 17 26	S		19 6·84	−1·73	5·11	S		19 24·51	−1·60	22·91	17·80				
				Mean, T_E	8 19 27												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CHITTAGONG (E) *Lat. 22° 20', Long. 6h 7m 31s*: AND CALCUTTA (W) *Lat. 22° 33', Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}018$ $S_N - S_S = +0^s{\cdot}028$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 23	2347	+ 15 32	S	*I. P. W.*	7 4 43·95	+1·62	45·57	S	*I. P. W.*	7 18 39·10	+1·43	40·53	13 54·96				
	2359	+ 15 23	S	d c − 0·8	6 15·89	+1·62	17·51	S	d c − 1·1	20 11·06	+1·43	12·49	54·98	m s 13 54·957	+ 0·019	+ 0·010	13 54·986
	2373	+ 3 19	S	b − 2·2 a + 4·4	8 20·13	+1·64	21·77	S	b − 3·7 a − 2·1	22 15·26	+1·44	16·70	54·93				
				s Q +1·68					s Q +1·56								
Jan. 23	2442	+ 28 2	N	*I. P. W.*	7 18 39·25	−1·77	37·48	N	*I. P. W.*	7 32 34·03	−1·67	32·36	13 54·88				
	2469	+ 28 9	N	d c − 0·8	22 43·80	−1·77	42·03	N	d c − 1·1	36 38·51	−1·67	36·84	54·81				
	2472	+ 28 10	N	b − 2·2 a + 4·4	23 34·85	−1·77	33·08	N	b − 3·7 a − 2·1	37 29·65	−1·67	27·98	54·90	m s 13 54·860	+ 0·019	+ 0·005	13 54·884
	2455	+ 21 46	S	s Q −1·68	20 6·87	−1·75	5·12	S	s Q −1·56	34 1·71	−1·68	0·03	54·91				
	2460	+ 21 41	S		20 59·21	−1·75	57·46	S		34 53·99	−1·68	52·31	54·85				
	2480	+ 2 10	S		26 12·65	−1·72	10·93	S		40 7·42	−1·68	5·74	54·81				
Jan. 24	2301	+ 29 32	N	*I. P. E.*	6 56 10·50	+1·71	12·21	N	*I. P. E.*	7 10 5·53	+1·66	7·19	13 54·98				
	2313	+ 22 49	N	d c − 0·1	58 21·90	+1·73	23·63	N	d c + 1·5	12 16·89	+1·74	18·63	55·00				
	2331	+ 30 19	N	b + 1·4 a + 8·2	7 1 58·22	+1·71	59·93	N	b + 5·3 a +29·7	15 53·26	+1·64	54·90	54·97				
	2340	+ 30 26	N	s Q +1·70	3 47·84	+1·71	49·55	N	s Q +1·57	17 42·92	+1·64	44·56	55·01				
	2313	+ 22 49	S		6 58 21·85	+1·73	23·58	S		12 16·87	+1·74	18·61	55·03	m s 13 55·004	+ 0·020	+ 0·006	13 55·030
	2322	+ 9 22	S		59 20·47	+1·77	22·24	S		13 15·36	+1·88	17·24	55·00				
	2347	+ 15 32	S		7 4 41·86	+1·75	43·61	S		18 36·90	+1·82	38·72	55·11				
	2359	+ 15 23	S		6 13·90	+1·75	15·65	S		20 8·86	+1·82	10·68	55·03				
	2373	+ 3 19	S		8 18·06	+1·79	19·85	S		22 12·83	+1·93	14·76	54·91				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* 6ʰ 7ᵐ 31ˢ: AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5ʰ 53ᵐ 36ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Peral. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			ʰ ᵐ ˢ	ˢ	ˢ			ʰ ᵐ ˢ	ˢ	ˢ	ᵐ ˢ				
Jan. 24	2431	+ 25 17	N	*I. P. E.*	7 16 30·05	−1·68	28·37	N	*I. P. E.*	7 30 24·85	−1·44	23·41	13 55·04				
	2442	+ 28 2	N	d c − 0·1 b + 1·4 a + 8·2	18 37·13	−1·68	35·45	N	d c + 1·5 b + 5·3 a + 29·7	32 31·97	−1·47	30·50	55·05				
	2460	+ 21 41	N		20 57·08	−1·67	55·41	N		34 51·95	−1·39	50·56	55·15				
	2469	+ 28 9	N	s Q −1·70	22 41·66	−1·68	39·98	N	s Q −1·57	36 36·47	−1·47	35·00	55·02				
	2472	+ 28 10	N		23 32·75	−1·68	31·07	N		37 27·56	−1·47	26·09	55·02	ᵐ ˢ 13 55·061	+ 0·020	+ 0·004	13 55·085
	2423	+ 20 40	S		15 12·06	−1·66	10·40	S		29 6·88	−1·38	5·50	55·10				
	2455	+ 21 46	S		20 4·83	−1·67	3·16	S		33 59·61	−1·39	58·22	55·06				
	2460	+ 21 41	S		20 57·11	−1·67	55·44	S		34 51·85	−1·39	50·46	55·02				
	2480	+ 2 10	S		26 10·45	−1·61	8·84	S		40 5·13	−1·20	3·93	55·09				
Jan. 25	2301	+ 29 32	N	*I. P. W.*	6 56 8·30	+1·69	9·99	N	*I. P. W.*	7 10 3·46	+1·51	4·97	13 54·98				
	2318	+ 22 49	N	d c 0·0 b + 0·8 a + 10·7	58 19·68	+1·73	21·41	N	d c − 0·8 b + 2·3 a + 27·3	12 14·73	+1·60	16·33	54·92				
	2331	+ 30 19	N		7 1 55·99	+1·69	57·68	N		15 51·11	+1·50	52·61	54·93				
	2340	+ 30 26	N	s Q +1·71	3 45·61	+1·69	47·30	N	s Q +1·56	17 40·67	+1·50	42·17	54·87				
	2313	+ 22 49	S		6 58 19·60	+1·73	21·33	S		12 14·61	+1·60	16·21	54·88	ᵐ ˢ 13 54·924	+ 0·022	+ 0·006	13 54·952
	2322	+ 9 22	S		59 18·25	+1·78	20·03	S		13 13·15	+1·73	14·88	54·85				
	2347	+ 15 32	S		7 4 39·66	+1·76	41·42	S		18 34·78	+1·67	36·45	55·03				
	2359	+ 15 23	S		6 11·62	+1·76	13·38	S		20 6·69	+1·67	8·36	54·98				
	2373	+ 3 19	S		8 15·85	+1·81	17·66	S		22 10·75	+1·79	12·54	54·88				
Jan. 25	2431	+ 25 17	N	*I. P. W.*	7 16 27·86	−1·70	26·16	N	*I. P. W.*	7 30 22·62	−1·55	21·07	13 54·91				
	2442	+ 28 2	N	d c 0·0 b + 0·8 a + 10·7	18 34·95	−1·72	33·23	N	d c − 0·8 b + 2·3 a + 27·3	32 29·72	−1·59	28·13	54·90				
	2460	+ 21 41	N		20 54·97	−1·69	53·28	N		34 49·69	−1·51	48·18	54·90				
	2469	+ 28 9	N	s Q −1·71	22 39·50	−1·72	37·78	N	s Q −1·56	36 34·26	−1·59	32·67	54·89	ᵐ ˢ 13 54·894	+ 0·022	+ 0·004	13 54·920
	2472	+ 28 10	N		23 30·63	−1·72	28·91	N		37 25·40	−1·59	23·81	54·90				
	2423	+ 20 40	S		15 9·87	−1·68	8·19	S		29 4·63	−1·50	3·13	54·94				
	2455	+ 21 46	S		20 2·73	−1·69	1·04	S		33 57·36	−1·51	55·85	54·81				
	2460	+ 21 41	S		20 54·93	−1·69	53·24	S		34 49·62	−1·51	48·11	54·87				
	2480	+ 2 10	S		26 8·29	−1·61	6·68	S		40 2·93	−1·32	1·61	54·93				

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.018$ $\delta_N - \delta_S = +0^s.028$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 26	2301	+ 29 32	N	*I. P. E.*	6 56 5·84	+1·67	7·51	N	*I. P. E.*	7 10 1·11	+1·66	2·77	13 55·26				
	2313	+ 22 49	N	*d* c − 1·8 b − 0·9 *a* −10·3	58 17·30	+1·65	18·95	N	*d* c − 1·0 b +10·3 *a* +36·6	12 12·43	+1·78	14·21	55·26				
	2331	+ 30 19	N		7 1 53·55	+1·68	55·23	N		15 48·84	+1·66	50·50	55·27				
	2340	+ 30 26	N	*s* *Q* +1·71	3 43·12	+1·68	44·80	N	*s* *Q* +1·55	17 38·42	+1·66	40·08	55·28	m s 13 55·302	+ 0·023	+ 0·006	13 55·331
	2313	+ 22 49	S		6 58 17·20	+1·65	18·85	S		12 12·44	+1·78	14·22	55·37				
	2322	+ 9 22	S		59 15·97	+1·60	17·57	S		13 10·95	+1·95	12·90	55·33				
	2347	+ 15 32	S		7 4 37·30	+1·62	38·92	S		18 32·39	+1·88	34·27	55·35				
	2359	+ 15 23	S		6 9·34	+1·62	10·96	S		20 4·38	+1·88	6·26	55·30				
	2373	+ 3 19	S		8 13·56	+1·57	15·13	S		22 8·41	+2·02	10·43	55·30				
Jan. 26	2431	+ 25 17	N	*I. P. E.*	7 16 25·34	−1·76	23·58	N	*I. P. E.*	7 30 20·38	−1·35	19·03	13 55·45				
	2442	+ 28 2	N	*d* c − 1·8 b − 0·9 *a* −10·3	18 32·39	−1·75	30·64	N	*d* c − 1·0 b +10·3 *a* +36·6	32 27·52	−1·41	26·11	55·47				
	2460	+ 21 41	N		20 52·46	−1·77	50·69	N		34 47·37	−1·31	46·06	55·37				
	2469	+ 28 9	N	*s* *Q* −1·71	22 36·93	−1·75	35·18	N	*s* *Q* −1·55	36 31·99	−1·41	30·58	55·40				
	2472	+ 28 10	N		23 28·05	−1·75	26·30	N		37 23·13	−1·41	21·72	55·42	m s 13 55·422	+ 0·023	+ 0·004	13 55·449
	2423	+ 20 40	S		15 7·41	−1·78	5·63	S		29 2·35	−1·29	1·06	55·43				
	2455	+ 21 46	S		19 60·15	−1·77	58·38	S		33 55·09	−1·31	53·78	55·40				
	2460	+ 21 41	S		20 52·41	−1·77	50·64	S		34 47·41	−1·31	46·10	55·46				
	2480	+ 2 10	S		26 5·96	−1·85	4·11	S		39 60·57	−1·06	59·51	55·40				
Jan. 28	2313	+ 22 49	N	*I. P. W.*	6 58 12·56	+1·69	14·25	N	*I. P. W.*	7 12 7·46	+1·63	9·09	13 54·84				
	2331	+ 30 19	N	*d* c + 0·1 b − 1·3 *a* +11·9	7 1 48·94	+1·65	50·59	N	*d* c + 1·0 b + 1·7 *a* +39·1	15 43·87	+1·50	45·37	54·78				
	2340	+ 30 26	N		3 38·50	+1·65	40·15	N		17 33·50	+1·50	35·00	54·85				
	2313	+ 22 49	S	*s* *Q* +1·72	6 58 12·51	+1·69	14·20	S	*s* *Q* +1·57	12 7·38	+1·63	9·01	54·81	m s 13 54·876	+ 0·025	+ 0·006	13 54·907
	2322	+ 9 22	S		59 11·10	+1·75	12·85	S		13 5·94	+1·84	7·78	54·93				
	2347	+ 15 32	S		7 4 32·58	+1·72	34·30	S		18 27·42	+1·74	29·16	54·86				
	2359	+ 15 23	S		6 4·52	+1·72	6·24	S		19 59·53	+1·75	61·28	55·04				
	2373	+ 3 19	S		8 8·72	+1·78	10·50	S		22 3·48	+1·92	5·40	54·90				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}018$ $\delta_N - \delta_S = +0^s{\cdot}028$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 28	2431	+ 25 17	N	*I. P. W.*	7 16 20·77	−1·77	19·00	N	*I. P. W.*	7 30 15·44	−1·56	13·88	13 54·88				
	2442	+ 28 2	N	d c + 0·1 b − 1·3 a + 11·9	18 27·89	−1·78	26·11	N	d c + 1·0 b + 1·7 a + 39·1	32 22·63	−1·60	21·03	54·92				
	2460	+ 21 41	N		20 47·78	−1·75	46·03	N		34 42·47	−1·50	40·97	54·94				
	2469	+ 28 9	N	s Q −1·72	22 32·37	−1·78	30·59	N	s Q −1·57	36 27·13	−1·60	25·53	54·94	m s 13 54·907	+ 0·025	+ 0·004	13 54·936
	2472	+ 28 10	N		23 23·46	−1·78	21·68	N		37 18·21	−1·60	16·61	54·93				
	2423	+ 20 40	S		15 2·74	−1·74	1·00	S		28 57·36	−1·48	55·88	54·88				
	2455	+ 21 46	S		19 55·52	−1·75	53·77	S		33 50·19	−1·50	48·69	54·92				
	2460	+ 21 41	S		20 47·79	−1·75	46·04	S		34 42·52	−1·50	41·02	54·98				
	2480	+ 2 10	S		25 61·22	−1·66	59·56	S		39 55·54	−1·21	54·33	54·77				
Jan. 29	2301	+ 29 32	N	*I. P. E.*	6 55 58·41	+1·65	60·06	N	*I. P. E.*	7 9 53·75	+1·56	55·31	13 55·25				
	2313	+ 22 49	N	d c − 2·2 b + 0·3 a − 1·4	58 9·84	+1·66	11·50	N	d c 0·0 b + 1·9 a + 17·6	12 5·16	+1·62	6·78	55·28				
	2331	+ 30 19	N		7 1 46·12	+1·66	47·78	N		15 41·38	+1·56	42·94	55·16				
	2313	+ 22 49	S	s Q +1·70	6 58 9·73	+1·66	11·39	S	s Q +1·57	12 5·01	+1·62	6·63	55·24	m s 13 55·261	+ 0·027	+ 0·006	13 55·294
	2322	+ 9 22	S		59 8·40	+1·65	10·05	S		13 3·62	+1·70	5·32	55·27				
	2347	+ 15 32	S		7 4 29·84	+1·66	31·50	S		18 25·12	+1·66	26·78	55·28				
	2359	+ 15 23	S		6 1·78	+1·66	3·44	S		19 57·12	+1·66	58·78	55·34				
	2373	+ 3 19	S		8 6·08	+1·65	7·73	S		22 1·26	+1·74	3·00	55·27				
Jan. 29	2431	+ 25 17	N	*I. P. E.*	7 16 17·96	−1·74	16·22	N	*I. P. E.*	7 30 12·96	−1·54	11·42	13 55·20				
	2442	+ 28 2	N	d c − 2·2 b + 0·3 a − 1·4	18 25·06	−1·75	23·31	N	d c 0·0 b + 1·9 a + 17·6	32 20·18	−1·56	18·62	55·31				
	2469	+ 28 9	N		22 29·54	−1·75	27·79	N		36 24·66	−1·56	23·10	55·31				
	2472	+ 28 10	N	s Q −1·70	23 20·67	−1·75	18·92	N	s Q −1·57	37 15·80	−1·56	14·24	55·32	m s 13 55·289	+ 0·027	+ 0·005	13 55·321
	2423	+ 20 40	S		14 60·00	−1·74	58·26	S		28 54·98	−1·51	53·47	55·21				
	2455	+ 21 46	S		19 52·69	−1·74	50·95	S		33 47·80	−1·51	46·29	55·34				
	2460	+ 21 41	S		20 45·00	−1·74	43·26	S		34 40·09	−1·51	38·58	55·32				
	2480	+ 2 10	S		25 58·49	−1·75	56·74	S		39 53·43	−1·39	52·04	55·30				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.018$ $\delta_N - \delta_S = +0''.028$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 30	2301	+ 29 32	N	*I. P. W.*	6 55 55·57	+1·62	57·19	N	*I. P. W.*	7 9 50·72	+1·45	52·17	13 54·98				
	2313	+ 22 49	N	*d* c − 1·8 b − 0·2 *a* + 2·3	58 6·97	+1·65	8·62	N	*d* c − 1·1 b − 1·5 *a* + 9·3	12 2·09	+1·48	3·57	54·95				
	2331	+ 30 19	N		7 1 43·25	+1·62	44·87	N		15 38·46	+1·45	39·91	55·04				
	2340	+ 30 26	N	*s* *Q* + 1·69	3 32·92	+1·62	34·54	N	*s* *Q* + 1·55	17 28·15	+1·45	29·60	55·06	m s 13 55·069	+ 0·029	+ 0·006	13 55·104
	2313	+ 22 49	S		6 58 6·96	+1·65	8·61	S		12 2·19	+1·48	3·67	55·06				
	2322	+ 9 22	S		59 5·50	+1·66	7·16	S		13 0·84	+1·54	2·38	55·22				
	2347	+ 15 32	S		7 4 27·01	+1·66	28·67	S		18 22·28	+1·52	23·80	55·13				
	2359	+ 15 23	S		5 58·91	+1·66	60·57	S		19 54·18	+1·52	55·70	55·13				
	2378	+ 3 19	S		8 3·13	+1·67	4·80	S		21 58·28	+1·57	59·85	55·05				
Jan. 30	2431	+ 25 17	N	*I. P. W.*	7 16 15·17	−1·73	13·44	N	*I. P. W.*	7 30 10·08	−1·63	8·45	13 55·01				
	2442	+ 28 2	N	*d* c − 1·8 b − 0·2 *a* + 2·3	18 22·22	−1·76	20·46	N	*d* c − 1·1 b − 1·5 *a* + 9·3	32 17·10	−1·64	15·46	55·00				
	2460	+ 21 41	N		20 42·19	−1·73	40·46	N		34 37·14	−1·62	35·52	55·06				
	2469	+ 28 9	N	*s* *Q* − 1·69	22 26·80	−1·76	25·04	N	*s* *Q* − 1·55	36 21·59	−1·65	19·94	54·90				
	2472	+ 28 10	N		23 17·93	−1·76	16·17	N		37 12·86	−1·64	11·22	55·05	m s 13 55·012	+ 0·029	+ 0·004	13 55·045
	2423	+ 20 40	S		14 57·15	−1·73	55·42	S		28 52·11	−1·61	50·50	55·08				
	2455	+ 21 46	S		19 49·98	−1·73	48·25	S		33 44·80	−1·62	43·18	54·93				
	2460	+ 21 41	S		20 42·25	−1·73	40·52	S		34 37·18	−1·62	35·56	55·04				
	2480	+ 2 10	S		25 55·67	−1·71	53·96	S		39 50·53	−1·53	49·00	55·04				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 23	3111	+ 11 8	S	*I. P. W.*	8 47 32·79	+1·63	34·42	S	*I. P. W.*	9 1 27·99	+1·44	29·43	13 55·01				
	3122	+ 12 3	S	d c − 0·8 b − 2·2 a + 4·4 s Q +1·68	49 33·14	+1·63	34·77	S	d c − 1·1 b − 3·7 a − 2·1 s Q +1·56	3 28·25	+1·44	29·69	54·92	m s 13 54·965	− 0·014	+ 0·010	13 54·961
Jan. 23	3183	+ 25 40	N	*I. P. W.*	9 0 34·15	−1·76	32·39	N	*I. P. W.*	9 14 28·97	−1·68	27·29	13 54·90				
	3194	+ 25 41	N	d c − 0·8	2 57·37	−1·76	55·61	N	d c − 1·1	16 52·25	−1·68	50·57	54·96				
	3246	+ 23 29	N	b − 2·2 a + 4·4	11 14·40	−1·75	12·65	N	b − 3·7 a − 2·1	25 9·23	−1·68	7·55	54·90				
	3255	+ 28 53	N	s Q −1·68	12 38·97	−1·77	37·20	N	s Q −1·56	26 33·81	−1·67	32·14	54·94	m s 13 54·943	− 0·014	+ 0·004	13 54·933
	3171	+ 18 12	S		8 58 38·86	−1·74	37·12	S		12 33·69	−1·68	32·01	54·89				
	3270	+ 13 11	S		9 14 50·21	−1·73	48·48	S		28 45·19	−1·68	43·51	55·03				
	3278	+ 16 58	S		16 46·90	−1·74	45·16	S		30 41·82	−1·68	40·14	54·98				
Jan. 24	3079	+ 24 55	N	*I. P. E.*	8 42 3·48	+1·72	5·20	N	*I. P. E.*	8 55 58·67	+1·71	60·38	13 55·18				
	3088	+ 28 22	N	d c − 0·1	43 21·16	+1·72	22·88	N	d c + 1·5	57 16·38	+1·67	18·05	55·17				
	3097	+ 38 55	N	b + 1·4 a + 8·2	45 15·03	+1·67	16·70	N	b + 5·3 a +29·7	59 10·32	+1·52	11·84	55·14				
	3100	+ 38 45	N	s Q +1·70	45 32·42	+1·67	34·09	N	s Q +1·57	59 27·78	+1·52	29·30	55·21	m s 13 55·180	− 0·014	+ 0·004	13 55·170
	3138	+ 21 46	N		53 5·89	+1·73	7·62	N		9 7 1·01	+1·75	2·76	55·14				
	3111	+ 11 8	S		47 34·11	+1·77	35·88	S		1 29·20	+1·86	31·06	55·18				
	3122	+ 12 3	S		49 34·31	+1·76	36·07	S		3 29·44	+1·85	31·29	55·22				
	3129	+ 18 31	S		51 32·15	+1·74	33·89	S		5 27·28	+1·79	29·07	55·18				
	3138	+ 21 46	S		53 5·87	+1·73	7·60	S		7 1·05	+1·75	2·80	55·20				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 24	3183	+ 25 40	N	*I. P. E.*	9 0 35·34	−1·68	33·66	N	*I. P. E.*	9 14 30·27	−1·44	28·83	13 55·17				
	3194	+ 25 41	N	d c − 0·1 b + 1·4 a + 8·2	2 58·57	−1·68	56·89	N	d c + 1·5 b + 5·3 a + 29·7	16 53·58	−1·44	52·14	55·25				
	3246	+ 23 29	N		11 15·63	−1·67	13·96	N		25 10·54	−1·41	9·13	55·17				
	3255	+ 28 53	N	s Q −1·70	12 40·22	−1·68	38·54	N	s Q −1·57	26 35·16	−1·47	33·69	55·15				
	3171	+ 18 12	S		8 58 39·95	−1·66	38·29	S		12 34·93	−1·35	33·58	55·29	m s 13 55·207	− 0·014	+ 0·006	13 55·199
	3228	+ 8 42	S		9 8 28·20	−1·63	26·57	S		22 23·07	−1·26	21·81	55·24				
	3246	+ 23 29	S		11 15·65	−1·67	13·98	S		25 10·53	−1·41	9·12	55·14				
	3270	+ 13 11	S		14 51·49	−1·64	49·85	S		28 46·40	−1·31	45·09	55·24				
	3278	+ 16 58	S		16 48·14	−1·65	46·49	S		30 43·04	−1·34	41·70	55·21				
Jan. 25	3079	+ 24 55	N	*I. P. W.*	8 42 4·94	+1·72	6·66	N	*I. P. W.*	8 56 0·16	+1·57	1·73	13 55·07				
	3088	+ 28 22	N	d c 0·0 b + 0·8 a +10·7	43 22·63	+1·70	24·33	N	d c − 0·8 b + 2·3 a +27·3	57 17·87	+1·53	19·40	55·07				
	3097	+ 38 55	N		45 16·44	+1·64	18·08	N		59 11·80	+1·38	13·18	55·10				
	3100	+ 38 45	N	s Q +1·71	45 33·84	+1·64	35·48	N	s Q +1·56	59 29·28	+1·38	30·66	55·18	m s 13 55·091	− 0·013	+ 0·004	13 55·082
	3188	+ 21 46	N		53 7·29	+1·73	9·02	N		9 7 2·50	+1·61	4·11	55·09				
	3111	+ 11 8	S		47 35·52	+1·78	37·30	S		1 30·63	+1·72	32·35	55·05				
	3122	+ 12 3	S		49 35·74	+1·77	37·51	S		3 30·87	+1·70	32·57	55·06				
	3129	+ 18 31	S		51 33·55	+1·75	35·30	S		5 28·69	+1·64	30·33	55·03				
	3188	+ 21 46	S		53 7·25	+1·73	8·98	S		7 2·54	+1·61	4·15	55·17				
Jan. 25	3183	+ 25 40	N	*I. P. W.*	9 0 36·86	−1·71	35·15	N	*I. P. W.*	9 14 31·69	−1·56	30·13	13 54·98				
	3194	+ 25 41	N	d c 0·0 b + 0·8 a +10·7	2 60·05	−1·71	58·34	N	d c − 0·8 b + 2·3 a +27·3	16 55·01	−1·56	53·45	55·11				
	3246	+ 23 29	N		11 17·10	−1·70	15·40	N		25 12·05	−1·53	10·52	55·12				
	3255	+ 28 53	N	s Q −1·71	12 41·67	−1·72	39·95	N	s Q −1·56	26 36·63	−1·60	35·03	55·08				
	3171	+ 18 12	S		8 58 41·55	−1·67	39·88	S		12 36·26	−1·48	34·78	54·90	m s 13 55·060	− 0·013	+ 0·006	13 55·053
	3228	+ 8 42	S		9 8 29·67	−1·63	28·04	S		22 24·53	−1·38	23·15	55·11				
	3246	+ 23 29	S		11 17·10	−1·70	15·40	S		25 12·01	−1·53	10·48	55·08				
	3270	+ 13 11	S		14 53·01	−1·65	51·36	S		28 47·87	−1·43	46·44	55·08				
	3278	+ 16 58	S		16 49·61	−1·67	47·94	S		30 44·49	−1·47	43·02	55·08				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s*: AND CALCUTTA (W) *Lat. 23° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns for Persl. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 26	3079	+ 24 55	N	*I. P. E.*	8 42 5·96	+1·66	7·62	N	*I. P. E.*	8 56 1·32	+1·75	3·07	13 55·45				
	3088	+ 28 22	N	d c − 1·8 b − 0·9 a −10·3	43 23·62	+1·67	25·29	N	d c − 1·0 b +10·3 a +36·6	57 19·03	+1·68	20·71	55·42				
	3097	+ 38 55	N		45 17·44	+1·73	19·17	N		59 13·04	+1·51	14·55	55·38				
	3100	+ 38 45	N	s Q +1·71	45 34·83	+1·72	36·55	N	s Q +1·55	59 30·49	+1·52	32·01	55·46	m s 13 55·442	− 0·010	+ 0·004	13 55·436
	3138	+ 21 46	N		53 8·38	+1·65	10·03	N		9 7 3·74	+1·79	5·53	55·50				
	3111	+ 11 8	S		47 36·72	+1·60	38·32	S		1 31·84	+1·93	33·77	55·45				
	3122	+ 12 3	S		49 36·93	+1·61	38·54	S		3 32·10	+1·91	34·01	55·47				
	3129	+ 18 31	S		51 34·71	+1·63	36·34	S		5 29·93	+1·83	31·76	55·42				
	3138	+ 21 46	S		53 8·43	+1·65	10·08	S		7 3·72	+1·79	5·51	55·43				
Jan. 26	3183	+ 25 40	N	*I. P. E.*	9 0 37·87	−1·75	36·12	N	*I. P. E.*	9 14 32·91	−1·36	31·55	13 55·43				
	3194	+ 25 41	N	d c − 1·8 b − 0·9 a −10·3	2 61·15	−1·75	59·40	N	d c − 1·0 b +10·3 a +36·6	16 56·17	−1·36	54·81	55·41				
	3246	+ 23 29	N		11 18·16	−1·76	16·40	N		25 13·26	−1·33	11·93	55·53				
	3255	+ 28 53	N	s Q −1·71	12 42·68	−1·75	40·93	N	s Q −1·55	26 37·86	−1·42	36·44	55·51	m s 13 55·482	− 0·010	+ 0·006	13 55·478
	3171	+ 18 12	S		8 58 42·60	−1·79	40·81	S		12 37·53	−1·26	36·27	55·46				
	3228	+ 8 42	S		9 8 30·77	−1·83	28·94	S		22 25·69	−1·14	24·55	55·61				
	3246	+ 23 29	S		11 18·22	−1·76	16·46	S		25 13·16	−1·33	11·83	55·37				
	3270	+ 13 11	S		14 54·11	−1·81	52 30	S		28 49·04	−1·20	47·84	55·54				
	3278	+ 16 58	S		16 50·75	−1·79	48·96	S		30 45·69	−1·25	44·44	55·48				
Jan. 28	3079	+ 24 55	N	*I. P. W.*	8 42 7·77	+1·68	9·45	N	*I. P. W.*	8 56 2·92	+1·59	4·51	13 55·06				
	3088	+ 28 22	N	d c + 0·1 b − 1·3 a +11·9	43 25·47	+1·66	27·13	N	d c + 1·0 b + 1·7 a +39·1	57 20·60	+1·54	22·14	55·01				
	3097	+ 38 55	N		45 19·31	+1·58	20·89	N		59 14·64	+1·33	15·97	55·08				
	3100	+ 38 45	N	s Q +1·72	45 36·73	+1·58	38·31	N	s Q +1·57	59 32·11	+1·34	33·45	55·14	m s 13 55·039	− 0·003	+ 0·004	13 55·040
	3138	+ 21 46	N		53 10·13	+1·69	11·82	N		9 7 5·21	+1·64	6·85	55·03				
	3111	+ 11 8	S		47 38·35	+1·74	40·09	S		1 33·31	+1·81	35·12	55·03				
	3122	+ 12 3	S		49 38·65	+1·74	40·39	S		3 33·58	+1·79	35·37	54·98				
	3129	+ 18 31	S		51 36·46	+1·71	38·17	S		5 31·45	+1·70	33·15	54·98				
	3138	+ 21 46	S		53 10·15	+1·69	11·84	S		7 5·24	+1·64	6·88	55·04				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CHITTAGONG (E) *Lat.* 22° 20′, *Long.* 6h 7m 31s·: AND CALCUTTA (W) *Lat.* 22° 33′, *Long.* 5h 53m 36s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}018$ $S_N - S_S = +0^s{\cdot}028$	$\delta L_N + \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 28	3183	+ 25 40	N	*I. P. W.*	9 0 39·66	−1·77	37·89	N	*I. P. W.*	9 14 34·46	−1·56	32·90	13 55·01				
	3194	+ 25 41	N	c^d + 0·1 b − 1·3 a +11·9	3 3·00	−1·77	1·23	N	c^d + 1·0 b + 1·7 a +39·1	16 57·71	−1·56	56·15	54·92				
	3246	+ 23 29	N		11 19·96	−1·76	18·20	N		25 14·77	−1·53	13·24	55·04				
	3255	+ 28 53	N	s Q −1·72	12 44·56	−1·78	42·78	N	s Q −1·57	26 39·43	−1·61	37·82	55·04				
	3171	+ 18 12	S		8 58 44·26	−1·73	42·53	S		12 39·08	−1·44	37·64	55·11	m s 13 55·012	− 0·003	+ 0·006	13 55·015
	3228	+ 8 42	S		9 8 32·60	−1·69	30·91	S		22 27·19	−1·29	25·90	54·99				
	3246	+ 23 29	S		11 19·97	−1·76	18·21	S		25 14·76	−1·53	13·23	55·02				
	3270	+ 13 11	S		14 55·94	−1·71	54·23	S		28 50·55	−1·37	49·18	54·95				
	3278	+ 16 58	S		16 52·46	−1·72	50·74	S		30 47·19	−1·42	45·77	55·03				
Jan. 29	3079	+ 24 55	N	*I. P. E.*	8 42 7·59	+1·66	9·25	N	*I. P. E.*	8 56 3·06	+1·60	4·66	13 55·41				
	3088	+ 28 22	N	c^d − 2·2 b + 0·3 a − 1·4	43 25·28	+1·65	26·93	N	c^d 0·0 b + 1·9 a +17·6	57 20·80	+1·57	22·37	55·44				
	3097	+ 38 55	N		45 19·07	+1·66	20·73	N		59 14·69	+1·48	16·17	55·44				
	3100	+ 38 45	N	s Q +1·70	45 36·50	+1·66	38·16	N	s Q +1·57	59 32·13	+1·48	33·61	55·45				
	3138	+ 21 46	N		53 9·96	+1·66	11·62	N		9 7 5·50	+1·63	7·13	55·51	m s 13 55·444	+ 0·001	+ 0·004	13 55·449
	3111	+ 11 8	S		47 38·26	+1·65	39·91	S		1 33·62	+1·69	35·31	55·40				
	3122	+ 12 3	S		49 38·47	+1·65	40·12	S		3 33·89	+1·68	35·57	55·45				
	3129	+ 18 31	S		51 36·25	+1·66	37·91	S		5 31·71	+1·65	33·36	55·45				
	3138	+ 21 46	S		53 9·99	+1·66	11·65	S		7 5·47	+1·63	7·10	55·45				
Jan. 29	3183	+ 25 40	N	*I. P. E.*	9 0 39·47	−1·74	37·73	N	*I. P. E.*	9 14 34·72	−1·54	33·18	13 55·45				
	3194	+ 25 41	N	c^d − 2·2 b + 0·3 a − 1·4	3 2·70	−1·74	0·96	N	c^d 0·0 b + 1·9 a +17·6	16 58·03	−1·54	56·49	55·53				
	3246	+ 23 29	N		11 19·73	−1·74	17·99	N		25 14·89	−1·53	13·36	55·37				
	3255	+ 28 53	N	s Q −1·70	12 44·23	−1·75	42·48	N	s Q −1·57	26 39·55	−1·57	37·98	55·50				
	3171	+ 18 12	S		8 58 44·10	−1·74	42·36	S		12 39·36	−1·50	37·86	55·50	m s 13 55·430	+ 0·001	+ 0·006	13 55·437
	3228	+ 8 42	S		9 8 32·41	−1·75	30·66	S		22 27·47	−1·43	26·04	55·38				
	3246	+ 23 29	S		11 19·76	−1·74	18·02	S		25 14·84	−1·53	13·31	55·29				
	3270	+ 13 11	S		14 55·68	−1·75	53·93	S		28 50·85	−1·46	49·39	55·46				
	3278	+ 16 58	S		16 52·27	−1·74	50·53	S		30 47·41	−1·49	45·92	55·39				

NOTE.—1^d = $0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CHITTAGONG (E) *Lat. 22° 20′, Long. 6h 7m 31s:* AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.018$ $S_N - S_S = +0^s.028$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 30	3079	+ 24 55	N	*I. P. W.*	8 42 7·37	+1·65	9·02	N	*I. P. W.*	8 56 2·80	+1·47	4·27	13 55·25				
	3088	+ 28 22	N	$c - 1^d.8$	43 25·03	+1·62	26·65	N	$c - 1^d.1$	57 20·46	+1·46	21·92	55·27				
	3097	+ 38 55	N	$b - 0^s.2$ $a + 2^s.3$	45 18·87	+1·61	20·48	N	$b - 1^s.5$ $a + 9^s.3$	59 14·34	+1·40	15·74	55·26				
	3100	+ 38 45	N	$Q + 1^s.69$	45 36·31	+1·61	37·92	N	$Q + 1^s.55$	59 31·82	+1·40	33·22	55·30	m s 13 55·214	+ 0·003	+ 0·004	13 55·221	
	3138	+ 21 46	N		53 9·83	+1·65	11·48	N		9 7 5·14	+1·48	6·62	55·14				
	3111	+ 11 8	S		47 38·08	+1·66	39·74	S		1 33·37	+1·53	34·90	55·16				
	3122	+ 12 3	S		49 38·31	+1·66	39·97	S		3 33·67	+1·53	35·20	55·23				
	3129	+ 18 31	S		51 36·09	+1·65	37·74	S		5 31·45	+1·50	32·95	55·21				
	3138	+ 21 46	S		53 9·92	+1·65	11·57	S		7 5·20	+1·48	6·68	55·11				
Jan. 30	3183	+ 25 40	N	*I. P. W.*	9 0 39·33	−1·73	37·60	N	*I. P. W.*	9 14 34·39	−1·63	32·76	13 55·16				
	3194	+ 25 41	N	$c - 1^d.8$	3 2·57	−1·73	0·84	N	$c - 1^d.1$	16 57·64	−1·63	56·01	55·17				
	3246	+ 23 29	N	$b - 0^s.2$ $a + 2^s.3$	11 19·53	−1·73	17·80	N	$b - 1^s.5$ $a + 9^s.3$	25 14·62	−1·62	13·00	55·20				
	3255	+ 28 53	N	$Q - 1^s.69$	12 44·11	−1·76	42·35	N	$Q - 1^s.55$	26 39·23	−1·65	37·58	55·23	m s 13 55·181	+ 0·003	+ 0·006	13 55·190	
	3171	+ 18 12	S		8 58 44·02	−1·73	42·29	S		12 39·07	−1·60	37·47	55·18				
	3228	+ 8 42	S		9 8 32·27	−1·72	30·55	S		22 27·21	−1·56	25·65	55·10				
	3246	+ 23 29	S		11 19·58	−1·73	17·85	S		25 14·71	−1·62	13·09	55·24				
	3270	+ 13 11	S		14 55·52	−1·72	53·80	S		28 50·60	−1·58	49·02	55·22				
	3278	+ 16 58	S		16 52·14	−1·72	50·42	S		30 47·15	−1·60	45·55	55·13				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.004$ $S_N - S_S = -0^s.001$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 8	3309	+ 26 27	N	*I. P. E.*	9 34 7·68	+1·71	9·39	N	*I. P. E.*	9 34 58·53	+1·60	60·13	+0 50·74				
	3317	+ 30 31	N	d c + 0·5 b + 3·4 a + 10·4	35 54·88	+1·69	56·57	N	d c − 0·9 b − 1·8 a − 0·9	36 45·69	+1·60	47·29	50·72				
	3371	+ 26 34	N		45 19·61	+1·71	21·32	N		46 10·54	+1·60	12·14	50·82	m s +0 50·817	0·068	0·002	+0 50·747
	3392	+ 32 56	N	s Q +1·63	48 52·71	+1·68	54·39	N	s Q +1·67	49 43·62	+1·60	45·22	50·83				
	3333	+ 21 2	S		38 53·47	+1·73	55·20	S		39 44·44	+1·61	46·05	50·85		1	1	
	3343	+ 21 9	S		40 22·45	+1·72	24·17	S		41 13·43	+1·61	15·04	50·87				
	3386	+ 5 30	S		47 12·59	+1·78	14·37	S		48 3·66	+1·60	5·26	50·89				
				Mean, T_E	9 41 32												
Feb. 8	3420	+ 32 6	N	*I. P. E.*	9 54 33·58	−1·58	32·00	N	*I. P. E.*	9 55 24·59	−1·74	22·85	+0 50·85				
	3427	+ 33 13	N	d c + 0·5 b + 3·4 a + 10·4	56 25·93	−1·58	24·35	N	d c − 0·9 b − 1·8 a − 0·9	57 16·93	−1·74	15·19	50·84				
	3456	+ 32 11	N		10 0 46·63	−1·58	45·05	N		10 1 37·67	−1·74	35·93	50·88				
	3500	+ 29 53	N	s Q −1·63	8 51·80	−1·56	50·24	N	s Q −1·67	9 42·88	−1·74	41·14	50·90	m s +0 50·911	0·068	0·003	+0 50·840
	3440	+ 8 33	S		9 58 9·59	−1·49	8·10	S		9 58 60·78	−1·74	59·04	50·94		1	1	
	3463	+ 6 45	S		10 2 23·04	−1·49	21·55	S		10 3 14·27	−1·74	12·53	50·98				
	3475	+ 13 56	S		4 36·70	−1·50	35·20	S		5 27·91	−1·73	26·18	50·98				
	3485	+ 21 45	S		7 19·54	−1·54	18·00	S		8 10·65	−1·73	8·92	50·92				
				Mean, T_E	10 1 38												
Feb. 9	3309	+ 26 27	N	*I. P. W.*	9 34 6·95	+1·52	8·47	N	*I. P. W.*	9 35 2·59	+1·52	4·11	+0 55·64				
	3317	+ 30 31	N	d c − 2·8 b − 1·7 a + 6·0	35 54·05	+1·51	55·56	N	d c − 1·6 b − 4·1 a + 2·8	36 49·71	+1·51	51·22	55·66				
	3371	+ 26 34	N		45 18·82	+1·52	20·34	N		46 14·58	+1·52	16·10	55·76	m s +0 55·704	0·070	0·002	+0 55·632
	3333	+ 21 2	S	s Q +1·64	38 52·72	+1·53	54·25	S	s Q +1·66	39 48·45	+1·53	49·98	55·73		1	1	
	3343	+ 21 9	S		40 21·66	+1·53	23·19	S		41 17·39	+1·53	18·92	55·73				
				Mean, T_E	9 38 55												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}004$ $S_N - S_S = -0^s{\cdot}001$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 10	3309	+ 26 27	N	*I. P. E.*	9 34 6·14	+1·23	7·37	N	*I. P. E.*	9 35 6·64	+1·57	8·21	+ 1 0·84				
	3317	+ 30 31	N	d c − 9·3 b − 6·2 a + 2·8	35 53·29	+1·22	54·51	N	d c − 1·2 b − 2·7 a + 3·7	36 53·78	+1·56	55·34	0·83	m s + 1 0·885	0·069	0·003	
	3333	+ 21 2	S		38 51·86	+1·26	53·12	S		39 52·44	+1·59	54·03	0·91				
	3343	+ 21 9	S	s Q +1·63	40 20·83	+1·26	22·09	S	s Q +1·67	41 21·46	+1·59	23·05	0·96		−	−	+ 1 0·813
				Mean, T_E	9 37 18												
Feb. 10	3420	+ 32 6	N	*I. P. E.*	9 54 31·98	−2·05	29·93	N	*I. P. E.*	9 55 32·66	−1·78	30·88	+ 1 0·95				
	3427	+ 33 13	N	d c − 9·3 b − 6·2 a + 2·8	56 24·38	−2·05	22·83	N	d c − 1·2 b − 2·7 a + 3·7	57 24·99	−1·78	23·21	0·88				
	3456	+ 32 11	N		10 0 45·04	−2·05	42·99	N		10 1 45·77	−1·78	43·99	1·00	m s + 1 0·963	0·069	0·002	
	3500	+ 29 53	N	s Q −1·63	8 50·27	−2·04	48·23	N	s Q −1·67	9 50·93	−1·78	49·15	0·92				
	3440	+ 8 33	S		9 58 7·95	−1·96	5·99	S		9 59 8·77	−1·73	7·04	1·05		−	−	+ 1 0·892
	3463	+ 6 45	S		10 2 21·51	−1·96	19·55	S		10 3 22·24	−1·73	20·51	0·96				
	3485	+ 21 45	S		7 17·94	−2·00	15·94	S		8 18·68	−1·76	16·92	0·98				
				Mean, T_E	10 1 11												
Feb. 11	3309	+ 26 27	N	*I. P. W.*	9 34 5·35	+1·39	6·74	N	*I. P. W.*	9 35 10·33	+1·52	11·85	+ 1 5·11				
	3317	+ 30 31	N	d c − 4·1 b − 4·9 a + 6·4	35 52·43	+1·36	53·79	N	d c − 1·3 b − 4·4 a + 1·2	36 57·52	+1·52	59·04	5·25				
	3371	+ 26 34	N		45 17·23	+1·39	18·62	N		46 22·34	+1·52	23·86	5·24	m s + 1 5·200	0·064	0·002	
	3392	+ 32 56	N	s Q +1·62	48 50·37	+1·35	51·72	N	s Q +1·66	49 55·46	+1·50	56·96	5·24				
	3333	+ 21 2	S		38 51·14	+1·40	52·54	S		39 56·19	+1·52	57·71	5·17		−	−	+ 1 5·134
	3343	+ 21 9	S		40 20·11	+1·40	21·51	S		41 25·20	+1·52	26·72	5·21				
	3386	+ 5 30	S		47 10·32	+1·46	11·78	S		48 15·41	+1·55	16·96	5·18				
				Mean, T_E	9 41 30												

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *sil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.004$ $S_N - S_S = -0^s.001$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 11	3420	+ 32 6	N	*I. P. W.*	9 54 31·26	−1·89	29·37	N	*I. P. W.*	9 55 36·41	−1·82	34·59	+1 5·22				
	3427	+ 33 13	N	d c − 4·1 b − 4·9 a + 6·4	56 23·61	−1·89	21·72	N	d c − 1·3 b − 4·4 a + 1·2	57 28·83	−1·82	27·01	5·29				
	3456	+ 32 11	N		10 0 44·32	−1·89	42·43	N		10 1 49·55	−1·82	47·73	5·30				
	3500	+ 29 53	N	s Q − 1·62	8 49·54	−1·88	47·66	N	s Q − 1·66	9 54·75	−1·80	52·95	5·29	m s +1 5·246	−0·064	−0·003	+1 5·179
	3440	+ 8 33	S		9 58 7·32	−1·78	5·54	S		9 59 12·53	−1·78	10·75	5·21				
	3463	+ 6 45	S		10 2 20·83	−1·78	19·05	S		10 3 26·03	−1·77	24·26	5·21				
	3475	+ 13 56	S		4 34·49	−1·80	32·69	S		5 39·69	−1·78	37·91	5·22				
	3485	+ 21 45	S		7 17·25	−1·84	15·41	S		8 22·44	−1·80	20·64	5·23				
				Mean, T_E	10 1 36												
Feb. 13	3309	+ 26 27	N	*I. P. E.*	9 34 4·42	+1·54	5·96	N	*I. P. E.*	9 35 17·10	+1·60	18·70	+1 12·74				
	3317	+ 30 31	N	d c + 1·5 b − 5·2 a + 8·2	35 51·64	+1·52	53·16	N	d c − 1·6 b − 0·9 a − 1·4	37 4·26	+1·60	5·86	12·70				
	3371	+ 26 34	N		45 16·43	+1·54	17·97	N		46 29·10	+1·60	30·70	12·73				
	3392	+ 32 56	N	s Q + 1·64	48 49·55	+1·50	51·05	N	s Q + 1·66	50 2·22	+1·60	3·82	12·77	m s +1 12·751	−0·057	−0·002	+1 12·692
	3333	+ 21 2	S		38 50·32	+1·55	51·87	S		40 3·02	+1·60	4·62	12·75				
	3343	+ 21 9	S		40 19·30	+1·55	20·85	S		41 32·01	+1·60	33·61	12·76				
	3386	+ 5 30	S		47 9·42	+1·61	11·03	S		48 22·25	+1·59	23·84	12·81				
				Mean, T_E	9 41 29												
Feb. 13	3420	+ 32 6	N	*I. P. E.*	9 54 30·41	−1·78	28·63	N	*I. P. E.*	9 55 43·22	−1·72	41·50	+1 12·87				
	3427	+ 33 13	N	d c + 1·5 b − 5·2 a + 8·2	56 22·70	−1·78	20·92	N	d c − 1·6 b − 0·9 a − 1·4	57 35·51	−1·72	33·79	12·87				
	3456	+ 32 11	N		10 0 43·39	−1·78	41·61	N		10 1 56·19	−1·72	54·47	12·86				
	3500	+ 29 53	N	s Q − 1·64	8 48·66	−1·76	46·90	N	s Q − 1·66	9 61·46	−1·72	59·74	12·84	m s +1 12·865	−0·057	−0·003	+1 12·805
	3440	+ 8 33	S		9 58 6·36	−1·67	4·69	S		9 59 19·36	−1·73	17·63	12·94				
	3463	+ 6 45	S		10 2 19·88	−1·67	18·21	S		10 3 32·82	−1·73	31·09	12·88				
	3475	+ 13 56	S		4 33·60	−1·70	31·90	S		5 46·46	−1·73	44·73	12·83				
	3485	+ 21 45	S		7 16·36	−1·73	14·63	S		8 29·18	−1·72	27·46	12·83				
				Mean, T_E	10 1 35												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s : AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}004$, $S_N - S_S = -0^s{\cdot}001$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 14	3309	+ 26 27	N	*I. P. W.*	9 34 4·24	+1·46	5·70	N	*I. P. W.*	9 35 20·15	+1·75	21·90	+1 16·20				
	3317	+ 30 31	N	*d* c − 4·5 b − 3·2 *a* − 9·3	35 51·33	+1·46	52·79	N	*d* c − 2·0 b + 5·2 *a* + 5·6	37 7·29	+1·75	9·04	16·25				
	3371	+ 26 34	N		45 16·13	+1·46	17·59	N		46 32·06	+1·75	33·81	16·22		0·056		
	3392	+ 32 56	N	*s* *Q* +1·63	48 49·25	+1·48	50·73	N	*s* *Q* +1·67	50 5·22	+1·74	6·96	16·23	m s +1 16·241		0·002	
	3333	+ 21 2	S		38 50·08	+1·43	51·51	S		40 6·02	+1·75	7·77	16·26		−	−	+1 16·183
	3343	+ 21 9	S		40 19·07	+1·44	20·51	S		41 35·03	+1·75	36·78	16·27				
	3386	+ 5 30	S		47 9·35	+1·40	10·75	S		48 25·23	+1·78	27·01	16·26				
				Mean, T_E	9 41 28												
Feb. 14	3420	+ 32 6	N	*I. P. W.*	9 54 30·13	−1·79	28·34	N	*I. P. W.*	9 55 46·22	−1·59	44·63	+1 16·29				
	3427	+ 33 13	N	*d* c − 4·5 b − 3·2 *a* − 9·3	56 22·45	−1·78	20·67	N	*d* c − 2·0 b + 5·2 *a* + 5·6	57 38·58	−1·60	36·98	16·31				
	3456	+ 32 11	N		10 0 43·26	−1·79	41·47	N		10 1 59·26	−1·59	57·67	16·20				
	3500	+ 29 53	N	*s* *Q* −1·63	8 48·40	−1·80	46·60	N	*s* *Q* −1·67	10 4·52	−1·60	2·92	16·32	m s +1 16·259	0·056	0·003	
	3440	+ 8 33	S		9 58 6·39	−1·85	4·54	S		9 59 22·40	−1·57	20·83	16·29		−	−	+1 16·200
	3463	+ 6 45	S		10 2 19·88	−1·86	18·02	S		10 3 35·83	−1·57	34·26	16·24				
	3475	+ 13 56	S		4 33·52	−1·83	31·69	S		5 49·50	−1·57	47·93	16·24				
	3485	+ 21 45	S		7 16·28	−1·82	14·46	S		8 32·22	−1·58	30·64	16·18				
				Mean, T_E	10 1 35												

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}004$, $S_N - S_S = -0^s{\cdot}001$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 8	2841	+ 26 35	N	*I. P. E.*	8 22 1·06	+1·71	2·77	N	*I. P. E.*	8 46 53·97	+1·60	55·57	24 52·80				
	2860	+ 36 50	N	*d* c + 0·5 b + 3·4 *a* +10·4	25 4·76	+1·66	6·42	N	*d* c − 0·9 b − 1·8 *a* − 0·9	49 57·58	+1·59	59·17	52·75				
	2871	+ 36 49	N		26 26·12	+1·66	27·78	N		51 19·06	+1·59	20·65	52·87				
	2905	+ 32 56	N	*s* *Q* +1·63	31 27·67	+1·68	29·35	N	*s* *Q* +1·67	56 20·58	+1·60	22·18	52·83	m s 24 52·853	+ 0·019	− 0·003	24 52·869
	2888	+ 15 43	S		28 46·97	+1·75	48·72	S		53 40·02	+1·61	41·63	52·91				
	2922	+ 19 57	S		32 57·33	+1·73	59·06	S		57 50·35	+1·61	51·96	52·90				
	2925	+ 20 0	S		33 26·68	+1·73	28·41	S		58 19·63	+1·61	21·24	52·83				
	2937	+ 21 53	S		35 43·89	+1·72	45·61	S		9 0 6·93	+1·61	38·54	52·93				
Feb. 8	3000	+ 28 42	N	*I. P. E.*	8 44 42·86	−1·56	41·30	N	*I. P. E.*	9 9 35·80	−1·74	34·06	24 52·76				
	3046	+ 30 41	N	*d* c + 0·5 b + 3·4 *a* +10·4	50 8·68	−1·57	7·11	N	*d* c − 0·9 b − 1·8 *a* − 0·9	14 61·60	−1·74	59·86	52·75				
	3056	+ 32 52	N		51 38·03	−1·58	36·45	N		16 30·97	−1·74	29·23	52·78				
	3068	+ 32 43	N	*s* *Q* −1·63	53 30·32	−1·58	28·74	N	*s* *Q* −1·67	18 23·06	−1·74	21·32	52·58	m s 24 52·759	+ 0·019	− 0·002	24 52·776
	2970	+ 12 32	S		39 47·37	−1·50	45·87	S		4 40·46	−1·74	38·72	52·85				
	2977	+ 12 59	S		41 29·87	−1·50	28·37	S		6 22·86	−1·73	21·13	52·76				
	3017	+ 20 25	S		46 30·03	−1·53	28·50	S		11 23·06	−1·73	21·33	52·83				
Feb. 9	2841	+ 26 35	N	*I. P. W.*	8 22 0·33	+1·52	1·85	N	*I. P. W.*	8 46 52·91	+1·52	54·43	24 52·58				
	2860	+ 36 50	N	*d* c − 2·8 b − 1·7 *a* + 6·0	25 3·97	+1·47	5·44	N	*d* c − 1·6 b − 4·1 *a* + 2·8	49 56·55	+1·50	58·05	52·61				
	2871	+ 36 49	N		26 25·47	+1·47	26·94	N		51 17·94	+1·50	19·44	52·50				
	2905	+ 32 56	N	*s* *Q* +1·64	31 27·07	+1·49	28·56	N	*s* *Q* +1·66	56 19·48	+1·50	20·98	52·42	m s 24 52·509	+ 0·018	− 0·003	24 52·524
	2888	+ 15 43	S		28 46·24	+1·55	47·79	S		53 38·77	+1·54	40·31	52·52				
	2922	+ 19 57	S		32 56·67	+1·54	58·21	S		57 49·14	+1·53	50·67	52·46				
	2925	+ 20 0	S		33 25·96	+1·54	27·50	S		58 18·42	+1·53	19·95	52·45				
	2937	+ 21 53	S		35 43·19	+1·53	44·72	S		9 0 35·72	+1·53	37·25	52·53				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E. Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}004$ $S_N - S_S = -0^s{\cdot}001$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 9	3000	+ 28 42	N	*I. P. W.*	8 44 42·21	−1·77	40·44	N	*I. P. W.*	9 9 34·78	−1·80	32·98	24 52·54				
	3046	+ 30 41	N	d c − 2·8	50 7·94	−1·77	6·17	N	d c − 1·6	14 60·45	−1·81	58·64	52·47				
	3056	+ 32 52	N	b − 1·7 a + 6·0	51 37·22	−1·79	35·43	N	b − 4·1 a + 2·8	16 29·86	−1·82	28·04	52·61				
	3068	+ 32 43	N	s Q −1·64	53 29·35	−1·78	27·57	N	s Q −1·66	18 21·90	−1·82	20·08	52·51	m s 24 52·524	+ 0·018	− 0·003	24 52·539
	2970	+ 12 32	S		39 46·66	−1·72	44·94	S		4 39·26	−1·77	37·49	52·55				
	2977	+ 12 59	S		41 29·01	−1·72	27·29	S		6 21·61	−1·77	19·84	52·55				
	3017	+ 20 25	S		46 29·31	−1·74	27·57	S		11 21·86	−1·79	20·07	52·50				
	3031	+ 14 38	S		48 25·74	−1·73	24·01	S		13 18·25	−1·78	16·47	52·46				
Feb. 10	2841	+ 26 35	N	*I. P. E.*	8 21 59·31	+1·48	60·79	N	*I. P. E.*	8 46 51·89	+1·57	53·46	24 52·67				
	2860	+ 36 50	N	d c + 0·7	25 2·90	+1·46	4·36	N	d c − 1·2	49 55·54	+1·55	57·09	52·73				
	2871	+ 36 49	N	b − 6·2 a + 2·8	26 24·32	+1·46	25·78	N	b − 2·7 a + 3·7	51 16·94	+1·55	18·49	52·71				
	2905	+ 32 56	N	s Q +1·63	31 25·90	+1·48	27·38	N	s Q +1·67	56 18·51	+1·56	20·07	52·69	m s 24 52·710	+ 0·015	− 0·003	24 52·722
	2888	+ 15 43	S		28 45·19	+1·52	46·71	S		53 37·79	+1·60	39·39	52·68				
	2922	+ 19 57	S		32 55·55	+1·50	57·05	S		57 48·19	+1·59	49·78	52·73				
	2925	+ 20 0	S		33 24·82	+1·50	26·32	S		58 17·46	+1·59	19·05	52·73				
	2937	+ 21 53	S		35 42·12	+1·50	43·62	S		9 0 34·78	+1·58	36·36	52·74				
Feb. 10	3000	+ 28 42	N	*I. P. E.*	8 44 41·09	−1·78	39·31	N	*I. P. E.*	9 9 33·82	−1·77	32·05	24 52·74				
	3046	+ 30 41	N	d c + 0·7	50 6·82	−1·78	5·04	N	d c − 1·2	14 59·51	−1·78	57·73	52·69				
	3056	+ 32 52	N	b − 6·2 a + 2·8	51 36·20	−1·78	34·42	N	b − 2·7 a + 3·7	16 28·93	−1·78	27·15	52·73				
	3068	+ 32 43	N	s Q −1·63	53 28·28	−1·78	26·50	N	s Q −1·67	18 21·03	−1·78	19·25	52·75	m s 24 52·765	+ 0·015	− 0·003	24 52·777
	2970	+ 12 32	S		39 45·54	−1·74	43·80	S		4 38·35	−1·74	36·61	52·81				
	2977	+ 12 59	S		41 27·95	−1·74	26·21	S		6 20·74	−1·74	19·00	52·79				
	3017	+ 20 25	S		46 28·15	−1·76	26·39	S		11 20·97	−1·75	19·22	52·83				
	3031	+ 14 38	S		48 24·63	−1·74	22·89	S		13 17·41	−1·74	15·67	52·78				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat. 22° 33', Long. 5h 53m 36s*: AND FYZABAD (W) *Lat. 26° 47', Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.004$ $S_N - S_S = -0^s.001$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 11	2860	+ 36 50	N	*I. P. W.*	8 25 2·28	+1·34	3·62	N	*I. P. W.*	8 49 54·76	+1·49	56·25	24 52·63				
	2871	+ 36 49	N	d c − 4·1 b − 4·9 a + 6·4	26 23·78	+1·34	25·12	N	d c − 1·3 b − 4·4 a + 1·2	51 16·14	+1·49	17·63	52·51				
	2905	+ 32 56	N		31 25·33	+1·35	26·68	N		56 17·75	+1·50	19·25	52·57	m s 24 52·517	+ 0·010	− 0·003	24 52·524
	2888	+ 15 43	S	s Q + 1·62	28 44·64	+1·44	46·08	S	s Q + 1·66	53 37·08	+1·54	38·62	52·54				
	2922	+ 19 57	S		32 55·10	+1·41	56·51	S		57 47·38	+1·53	48·91	52·40				
	2925	+ 20 0	S		33 24·33	+1·41	25·74	S		58 16·66	+1·53	18·19	52·45				
	2937	+ 21 53	S		35 41·64	+1·40	43·04	S		9 0 34·04	+1·52	35·56	52·52				
Feb. 11	3000	+ 28 42	N	*I. P. W.*	8 44 40·60	−1·87	38·73	N	*I. P. W.*	9 9 32·97	−1·80	31·17	24 52·44				
	3056	+ 32 52	N	d c − 4·1 b − 4·9 a + 6·4	51 35·65	−1·89	33·76	N	d c − 1·3 b − 4·4 a + 1·2	16 28·12	−1·82	26·30	52·54				
	3068	+ 32 43	N		53 27·74	−1·89	25·85	N		18 20·21	−1·82	18·39	52·54	m s 24 52·473	+ 0·010	− 0·003	24 52·480
	2977	+ 12 59	S	s Q − 1·62	41 27·46	−1·80	25·66	S	s Q − 1·66	6 19·86	−1·78	18·08	52·42				
	3017	+ 20 25	S		46 27·71	−1·83	25·88	S		11 20·16	−1·80	18·36	52·48				
	3031	+ 14 38	S		48 24·19	−1·80	22·39	S		13 16·59	−1·78	14·81	52·42				
Feb. 13	2841	+ 26 35	N	*I. P. E.*	8 21 57·76	+1·54	59·30	N	*I. P. E.*	8 46 50·48	+1·60	52·08	24 52·78				
	2860	+ 36 50	N	d c + 1·5 b − 5·2 a + 8·2	25 1·44	+1·48	2·92	N	d c − 1·6 b − 0·9 a − 1·4	49 54·05	+1·61	55·66	52·74				
	2871	+ 36 49	N		26 22·92	+1·48	24·40	N		51 15·49	+1·61	17·10	52·70				
	2905	+ 32 56	N	s Q + 1·64	31 24·39	+1·50	25·89	N	s Q + 1·66	56 16·98	+1·60	18·58	52·69	m s 24 52·720	+ 0·006	− 0·003	24 52·723
	2888	+ 15 43	S		28 43·70	+1·58	45·28	S		53 36·39	+1·59	37·98	52·70				
	2922	+ 19 57	S		32 54·08	+1·57	55·65	S		57 46·78	+1·60	48·38	52·73				
	2925	+ 20 0	S		33 23·37	+1·57	24·94	S		58 16·03	+1·60	17·63	52·69				
	2937	+ 21 53	S		35 40·65	+1·55	42·20	S		9 0 33·33	+1·60	34·93	52·73				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s: AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.004$ $S_N - S_S = -0^s.001$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 13	3000	+ 28 42	N	*I. P. E.*	8 44 39·70	−1·75	37·95	N	*I. P. E.*	9 9 32·28	−1·72	30·56	24 52·61				
	3046	+ 30 41	N	*d* c + 1·5 b − 5·2 a + 8·2	50 5·44	−1·76	3·68	N	*d* c − 1·6 b − 0·9 a − 1·4	14 58·03	−1·72	56·31	52·63				
	3056	+ 32 52	N		51 34·79	−1·78	33·01	N		16 27·41	−1·72	25·69	52·68				
	3068	+ 32 43	N	*s* Q −1·64	53 26·96	−1·78	25·18	N	*s* Q −1·66	18 19·50	−1·72	17·78	52·60	m s 24 52·667	+ 0·006	− 0·003	24 52·670
	2970	+ 12 32	S		39 44·22	−1·70	42·52	S		4 36·91	−1·73	35·18	52·66				
	2977	+ 12 59	S		41 26·59	−1·70	24·89	S		6 19·29	−1·73	17·56	52·67				
	3017	+ 20 25	S		46 26·73	−1·71	25·02	S		11 19·49	−1·72	17·77	52·75				
	3031	+ 14 38	S		48 23·23	−1·70	21·53	S		13 16·00	−1·73	14·27	52·74				
Feb. 14	2841	+ 26 35	N	*I. P. W.*	8 21 57·67	+1·46	59·13	N	*I. P. W.*	8 46 49·88	+1·75	51·63	24 52·50				
	2860	+ 36 50	N	*d* c − 4·5 b − 3·2 a − 9·3	25 1·16	+1·47	2·63	N	*d* c − 2·0 b + 5·2 a + 5·6	49 53·42	+1·72	55·14	52·51				
	2871	+ 36 49	N		26 22·63	+1·47	24·10	N		51 14·88	+1·72	16·60	52·50				
	2905	+ 32 56	N	*s* Q +1·63	31 24·28	+1·48	25·76	N	*s* Q +1·67	56 16·43	+1·74	18·17	52·41	m s 24 52·479	+ 0·006	− 0·003	24 52·482
	2888	+ 15 43	S		28 43·64	+1·43	45·07	S		53 35·77	+1·77	37·54	52·47				
	2922	+ 19 57	S		32 54·01	+1·43	55·44	S		57 46·13	+1·76	47·89	52·45				
	2925	+ 20 0	S		33 23·18	+1·43	24·61	S		58 15·41	+1·76	17·17	52·56				
	2937	+ 21 53	S		35 40·63	+1·44	42·07	S		9 0 32·74	+1·76	34·50	52·43				
Feb. 14	3000	+ 28 42	N	*I. P. W.*	8 44 39·40	−1·80	37·60	N	*I. P. W.*	9 9 31·76	−1·60	30·16	24 52·56				
	3056	+ 32 52	N	*d* c − 4·5 b − 3·2 a − 9·3	51 34·47	−1·79	32·68	N	*d* c − 2·0 b + 5·2 a + 5·6	16 26·80	−1·60	25·20	52·52				
	3068	+ 32 43	N		53 26·57	−1·79	24·78	N		18 18·91	−1·60	17·31	52·53				
	2970	+ 12 32	S	*s* Q −1·63	39 44·03	−1·84	42·19	S	*s* Q −1·67	4 36·30	−1·57	34·73	52·54	m s 24 52·529	+ 0·006	− 0·003	24 52·532
	2977	+ 12 59	S		41 26·41	−1·84	24·57	S		6 18·65	−1·57	17·08	52·51				
	3017	+ 20 25	S		46 26·58	−1·83	24·75	S		11 18·88	−1·59	17·29	52·54				
	3031	+ 14 38	S		48 23·11	−1·83	21·28	S		13 15·35	−1·57	13·78	52·50				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s : AND FYZABAD (W) *Lat.* 26° 47′, *Long.* 5h 28m 42s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}004$ $S_N - S_S = -0^s{\cdot}001$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 8	3751	+ 26 8	N	*I. P. E.*	10 25 24·36	+1·71	26·07	N	*I. P. E.*	10 50 17·44	+1·60	19·04	24 52·97				
	3757	+ 41 3	N	*d* c + 0·5 b + 3·4 *a* +10·4	28 5·92	+1·64	7·56	N	*d* c − 0·9 b − 1·8 *a* − 0·9	52 58·83	+1·60	60·43	52·87				
	3765	+ 39 50	N		29 28·05	+1·65	29·70	N		54 20·97	+1·60	22·57	52·87	m s 24 52·957		− 0·002	24 52·887
	3784	+ 38 52	N	*s* *Q* +1·63	33 11·91	+1·65	13·56	N	*s* *Q* +1·67	58 4·85	+1·60	6·45	52·89		− 0·068		
	3776	+ 20 48	S		31 15·82	+1·73	17·55	S		56 8·98	+1·61	10·59	53·04				
	3795	+ 2 31	S		35 45·34	+1·79	47·13	S		11 0 38·59	+1·60	40·19	53·06				
	3798	+ 2 35	S		36 6·91	+1·79	8·70	S		1 0·10	+1·60	1·70	53·00				
Feb. 8	3851	+ 32 11	N	*I. P. E.*	10 47 10·62	−1·58	9·04	N	*I. P. E.*	11 12 3·72	−1·74	1·98	24 52·94				
	3856	+ 38 50	N	*d* c + 0·5 b + 3·4 *a* +10·4	47 59·42	−1·61	57·81	N	*d* c − 0·9 b − 1·8 *a* − 0·9	12 52·54	−1·74	50·80	52·99				
	3868	+ 44 7	N		51 38·50	−1·63	36·87	N		16 31·60	−1·74	29·86	52·99	m s 24 52·992		− 0·002	24 52·922
	3905	+ 39 59	N	*s* *Q* −1·63	57 60·21	−1·61	58·60	N	*s* *Q* −1·67	22 53·26	−1·74	51·52	52·92		− 0·068		
	3831	+ 20 46	S		42 46·21	−1·53	44·68	S		7 39·49	−1·73	37·76	53·08				
	3892	+ 9 18	S		55 28·56	−1·48	27·08	S		20 21·85	−1·74	20·11	53·03				
Feb. 10	3751	+ 26 8	N	*I. P. E.*	10 25 32·81	+1·24	34·05	N	*I. P. E.*	10 50 25·35	+1·57	26·92	24 52·87				
	3757	+ 41 3	N	*d* c − 9·3 b − 6·2 *a* + 2·8	28 14·34	+1·14	15·48	N	*d* c − 1·2 b − 2·7 *a* + 3·7	53 6·93	+1·52	8·45	52·97				
	3765	+ 39 50	N		29 36·47	+1·17	37·64	N		54 29·07	+1·54	30·61	52·97				
	3784	+ 38 52	N	*s* *Q* +1·63	33 20·35	+1·17	21·52	N	*s* *Q* +1·67	58 12·91	+1·54	14·45	52·93	m s 24 52·953	− 0·069	− 0·003	24 52·881
	3737	+ 6 28	S		24 0·50	+1·30	1·80	S		48 53·15	+1·61	54·76	52·96				
	3776	+ 20 48	S		31 24·31	+1·26	25·57	S		56 16·97	+1·59	18·56	52·99				
	3795	+ 2 31	S		35 53·84	+1·31	55·15	S		11 0 46·49	+1·61	48·10	52·95				
	3798	+ 2 35	S		36 15·40	+1·31	16·71	S		1 8·08	+1·61	9·69	52·98				

NOTE.—1d = 0s·0225. 'Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat. 22° 33', Long. 5h 53m 36s*; AND FYZABAD (W) *Lat. 26° 47', Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.004$ $S_N - S_S = -0^s.001$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 10	3851	+ 32 11	N	*I. P. E.*	10 47 19·17	−2·05	17·12	N	*I. P. E.*	11 12 11·75	−1·78	9·97	24 52·85				
	3856	+ 38 50	N	d c − 9·3 b − 6·2 a + 2·8	48 7·98	−2·09	5·89	N	d c − 1·2 b − 2·7 a + 3·7	12 60·59	−1·80	58·79	52·90				
	3868	+ 44 7	N		51 47·12	−2·13	44·99	N		16 39·68	−1·82	37·86	52·87				
	3905	+ 39 59	N	s Q −1·63	58 8·81	−2·09	6·72	N	s Q −1·67	22 61·34	−1·80	59·54	52·82	m s 24 52·862	−0·069	−0·003	24 52·790
	3831	+ 20 46	S		42 54·83	−2·00	52·83	S		7 47·45	−1·75	45·70	52 87				
	3842	+ 23 44	S		44 21·49	−2·01	19·48	S		9 14·05	−1·77	12·28	52·80				
	3879	+ 2 3	S		53 24·73	−1·95	22·78	S		18 17·41	−1·73	15·68	52·90				
	3892	+ 9 18	S		55 37·14	−1·97	35·17	S		20 29·79	−1·73	28·06	52·89				
Feb. 11	3751	+ 26 8	N	*I. P. W.*	10 25 36·67	+1·39	38·06	N	*I. P. W.*	10 50 29·30	+1·52	30·82	24 52·76				
	3757	+ 41 3	N	d c − 4·1 b − 4·9 a + 6·4	28 18·14	+1·30	19·44	N	d c − 1·3 b − 4·4 a + 1·2	53 10·67	+1·48	12·15	52·71				
	3765	+ 39 50	N		29 40·27	+1·30	41·57	N		54 32·89	+1·48	34·37	52·80				
	3784	+ 38 52	N	s Q +1·62	33 24·14	+1·31	25·45	N	s Q +1·66	58 16·81	+1·49	18·30	52·85	m s 24 52·764	−0·064	−0·003	24 52·697
	3737	+ 6 28	S		24 4·31	+1·46	5·77	S		48 57·01	+1·55	58·56	52·79				
	3776	+ 20 48	S		31 28·17	+1·40	29·57	S		56 20·75	+1·52	22·27	52·70				
	3795	+ 2 31	S		35 57·63	+1·48	59·11	S		11 0 50·34	+1·55	51·89	52·78				
	3798	+ 2 35	S		36 19·23	+1·48	20·71	S		1 11·88	+1·55	13·43	52·72				
Feb. 11	3851	+ 32 11	N	*I. P. W.*	10 47 22·98	−1·89	21·09	N	*I. P. W.*	11 12 15·60	−1·82	13·78	24 52·69				
	3856	+ 38 50	N	d c − 4·1 b − 4·9 a + 6·4	48 11·72	−1·93	9·79	N	d c − 1·3 b − 4·4 a + 1·2	13 4·44	−1·83	2·61	52·82				
	3868	+ 44 7	N		51 50·75	−1·96	48·79	N		16 43·49	−1·84	41·65	52·86				
	3905	+ 39 59	N	s Q −1·62	58 12·48	−1·94	10·54	N	s Q −1·66	23 5·17	−1·84	3·33	52·79	m s 24 52·770	−0·064	−0·003	24 52·703
	3831	+ 20 46	S		42 58·58	−1·84	56·74	S		7 51·20	−1·80	49·40	52·66				
	3842	+ 23 44	S		44 25·19	−1·84	23·35	S		9 17·96	−1·80	16·16	52·81				
	3879	+ 2 3	S		53 28·41	−1·76	26·65	S		18 21·19	−1·77	19·42	52·77				
	3892	+ 9 18	S		55 40·83	−1·79	39·04	S		20 33·58	−1·78	31·80	52·76				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.004$, $S_N - S_S = -0^s.001$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 13	3751	+ 26 8	N	*I. P. E.*	10 25 43·19	+1·54	44·73	N	*I. P. E.*	10 50 35·93	+1·60	37·53	24 52·80				
	3757	+ 41 3	N	*d* c + 1·5 b − 5·2 a + 8·2	28 24·67	+1·45	26·12	N	*d* c − 1·6 b − 0·9 a − 1·4	53 17·34	+1·59	18·93	52·81				
	3765	+ 39 50	N		29 46·77	+1·46	48·23	N		54 39·52	+1·59	41·11	52·88				
	3784	+ 38 52	N	*s* Q +1·64	33 30·68	+1·47	32·15	N	*s* Q +1·66	58 23·42	+1·59	25·01	52·86	m s 24 52·864	− 0·057	− 0·003	24 52·804
	3737	+ 6 28	S		24 10·83	+1·61	12·44	S		49 3·74	+1·59	5·33	52·89				
	3776	+ 20 48	S		31 34·62	+1·57	36·19	S		56 27·51	+1·60	29·11	52·92				
	3795	+ 2 31	S		36 4·17	+1·62	5·79	S		11 0 57·10	+1·59	58·69	52·90				
	3798	+ 2 35	S		36 25·76	+1·62	27·38	S		1 18·64	+1·59	20·23	52·85				
Feb. 13	3851	+ 32 11	N	*I. P. E.*	10 47 29·54	−1·78	27·76	N	*I. P. E.*	11 12 22·31	−1·72	20·59	24 52·83				
	3856	+ 38 50	N	*d* c + 1·5 b − 5·2 a + 8·2	48 18·38	−1·81	16·57	N	*d* c − 1·6 b − 0·9 a − 1·4	13 11·02	−1·73	9·29	52·72				
	3868	+ 44 7	N		51 57·46	−1·84	55·62	N		16 50·17	−1·73	48·44	52·82				
	3905	+ 39 59	N	*s* Q −1·64	58 19·17	−1·82	17·35	N	*s* Q −1·66	23 11·79	−1·73	10·06	52·71	m s 24 52·814	− 0·057	− 0·003	24 52·754
	3831	+ 20 46	S		43 5·14	−1·71	3·43	S		7 58·05	−1·72	56·33	52·90				
	3842	+ 23 44	S		44 31·87	−1·73	30·14	S		9 24·66	−1·72	22·94	52·80				
	3879	+ 2 3	S		53 35·05	−1·66	33·39	S		18 27·96	−1·73	26·23	52·84				
	3892	+ 9 18	S		55 47·47	−1·68	45·79	S		20 40·41	−1·73	38·68	52·89				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND FYZABAD (W) *Lat. 26° 47′, Long. 5h 28m 42s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.004$ $S_N - S_S = -0^s.001$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 14	3751	+ 26 8	N	*I. P. W.*	10 25 46·59	+1·45	48·04	N	*I. P. W.*	10 50 38·96	+1·75	40·71	24 52·67				
	3757	+ 41 3	N	*d* c − 4·5 b − 3·2 *a* − 9·3	28 28·05	+1·49	29·54	N	*d* c − 2·0 b + 5·2 *a* + 5·6	53 20·40	+1·72	22·12	52·58				
	3765	+ 39 50	N		29 50·22	+1·49	51·71	N		54 42·58	+1·72	44·30	52·59				
	3784	+ 38 52	N	*s* *Q* +1·63	33 34·04	+1·49	35·53	N	*s* *Q* +1·67	58 26·46	+1·73	28·19	52·66	m s 24 52·648	− 0·056	− 0·003	24 52·589
	3737	+ 6 28	S		24 14·41	+1·40	15·81	S		49 6·73	+1·77	8·50	52·69				
	3776	+ 20 48	S		31 38·13	+1·43	39·56	S		56 30·49	+1·75	32·24	52·68				
	3795	+ 2 31	S		36 7·82	+1·39	9·21	S		11 1 0·08	+1·78	1·86	52·65				
	3798	+ 2 35	S		36 29·40	+1·39	30·79	S		1 21·67	+1·78	23·45	52·66				
Feb. 14	3851	+ 32 11	N	*I. P. W.*	10 47 32·86	−1·79	31·07	N	*I. P. W.*	11 12 25·38	−1·59	23·79	24 52·72				
	3856	+ 38 50	N	*d* c − 4·5 b − 3·2 *a* − 9·3	48 21·59	−1·77	19·82	N	*d* c − 2·0 b + 5·2 *a* + 5·6	13 14·19	−1·61	12·58	52·76				
	3868	+ 44 7	N		51 60·56	−1·75	58·81	N		16 53·20	−1·62	51·58	52·77				
	3905	+ 39 59	N	*s* *Q* −1·63	58 22·32	−1·77	20·55	N	*s* *Q* −1·67	23 14·88	−1·62	13·26	52·71	m s 24 52·721	− 0·056	− 0·003	24 52·662
	3831	+ 20 46	S		43 8·62	−1·83	6·79	S		7 61·03	−1·59	59·44	52·65				
	3842	+ 23 44	S		44 35·31	−1·82	33·49	S		9 27·72	−1·58	26·14	52·65				
	3879	+ 2 3	S		53 38·54	−1·87	36·67	S		18 30·98	−1·56	29·42	52·75				
	3892	+ 9 18	S		55 50·96	−1·85	49·11	S		20 43·44	−1·57	41·87	52·76				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *mil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 56s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.008$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 22	3416	+ 32 30	N	*I. P. W.*	9 54 19·75	+1·43	21·18	N	*I. P. W.*	9 54 11·95	+1·50	13·45	−0 7·73				
	3423	+ 22 31	N	d c − 2·7 b − 0·9 a +22·8	56 21·15	+1·54	22·69	N	d c − 1·3 b + 0·8 a +42·2	56 13·20	+1·69	14·89	7·80				
	3439	+ 35 34	N		58 59·24	+1·40	60·64	N		58 51·47	+1·42	52·89	7·75				
	3446	+ 35 49	N	s Q +1·63	10 0 35·56	+1·39	36·95	N	s Q +1·69	10 0 27·78	+1·41	29·19	7·76	m s −0 7·761			
	3456	+ 32 11	N		1 34·13	+1·44	35·57	N		1 26·36	+1·50	27·86	7·71		+ 0·096	− 0·002	− 0 7·667
	3423	+ 22 31	S		9 56 21·26	+1·54	22·80	S		9 56 13·35	+1·69	15·04	7·76				
	3463	+ 6 45	S		10 3 10·49	+1·69	12·18	S		10 3 2·48	+1·95	4·43	7·75				
	3469	+ 16 17	S		4 26·74	+1·61	28·35	S		4 18·79	+1·80	20·59	7·76				
	3483	+ 5 12	S		6 46·50	+1·70	48·20	S		6 38·40	+1·97	40·37	7·83				
				Mean, T_E	10 0 17												
Feb. 22	3511	+ 23 42	N	*I. P. W.*	10 10 55·26	−1·73	53·53	N	*I. P. W.*	10 10 47·56	−1·71	45·85	−0 7·68				
	3548	+ 34 19	N	d c − 2·7 b − 0·9 a +22·8	17 31·94	−1·85	30·09	N	d c − 1·3 b + 0·8 a +42·2	17 24·41	−1·93	22·48	7·61				
	3560	+ 34 23	N		19 19·41	−1·85	17·56	N		19 11·81	−1·93	9·88	7·68				
	3572	+ 37 18	N	s Q −1·63	21 14·09	−1·89	12·20	N	s Q −1·69	21 6·50	−2·00	4·50	7·70	m s −0 7·693			
	3511	+ 23 42	S		10 55·16	−1·73	53·43	S		10 47·45	−1·71	45·74	7·69		+ 0·096	− 0·003	− 0 7·600
	3522	+ 20 4	S		13 28·90	−1·69	27·21	S		13 21·12	−1·65	19·47	7·74				
	3529	+ 7 1	S		14 31·54	−1·57	29·97	S		14 23·69	−1·43	22·26	7·71				
	3538	+ 9 33	S		16 10·68	−1·59	9·09	S		16 2·81	−1·47	1·34	7·75				
	3579	+ 14 56	S		22 39·99	−1·64	38·35	S		22 32·23	−1·56	30·67	7·68				
				Mean, T_E	10 16 18												
Feb. 23	3416	+ 32 30	N	*I. P. E.*	9 54 18·49	+1·55	20·04	N	*I. P. E.*	9 54 7·85	+1·63	9·48	−0 10·56				
	3423	+ 22 31	N	d c + 2·0 b − 2·9 a +10·1	56 20·02	+1·61	21·63	N	d c − 0·9 b − 1·5 a + 2·2	56 9·32	+1·64	10·96	10·67				
	3439	+ 35 34	N		58 58·03	+1·55	59·58	N		58 47·23	+1·63	48·86	10·72				
	3446	+ 35 49	N	s Q +1·63	10 0 34·27	+1·55	35·82	N	s Q +1·70	10 0 23·59	+1·63	25·22	10·60	m s −0 10·636			
	3456	+ 32 11	N		1 32·93	+1·55	34·48	N		1 22·23	+1·63	23·86	10·62		+ 0·097	− 0·002	− 0 10·541
	3423	+ 22 31	S		9 56 19·97	+1·61	21·58	S		9 56 9·35	+1·64	10·99	10·59				
	3463	+ 6 45	S		10 3 9·36	+1·68	11·04	S		10 2 58·78	+1·66	60·44	10·60				
	3469	+ 16 17	S		4 25·63	+1·64	27·27	S		4 14·92	+1·66	16·58	10·69				
	3483	+ 5 12	S		6 45·38	+1·69	47·07	S		6 34·73	+1·67	36·40	10·67				
				Mean, T_E	10 0 16												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}013$ $\delta_N - \delta_S = +0''{\cdot}008$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb.23	3511	+ 23 42	N	*I. P. E.*	10 10 54·08	−1·66	52·42	N	*I. P. E.*	10 10 43·60	−1·76	41·84	−0 10·58				
	3548	+ 34 19	N	d c + 2·0 b − 2·9 a + 10·1	17 30·97	−1·72	29·25	N	d c − 0·9 b − 1·5 a + 2·2	17 20·29	−1·77	18·52	10·73				
	3560	+ 34 23	N		19 18·28	−1·72	16·56	N		19 7·64	−1·77	5·87	10·69				
	3572	+ 37 18	N	s Q −1·63	21 12·92	−1·72	11·20	N	s Q −1·70	21 2·30	−1·79	0·51	10·69	m s −0 10·629	0·097	0·003	−0 10·535
	3511	+ 23 42	S		10 54·05	−1·66	52·39	S		10 43·57	−1·76	41·81	10·58				
	3522	+ 20 4	S		13 27·73	−1·64	26·09	S		13 17·24	−1·76	15·48	10·61		+	−	
	3529	+ 7 1	S		14 30·45	−1·58	28·87	S		14 20·04	−1·74	18·30	10·57				
	3538	+ 9 33	S		16 9·59	−1·59	8·00	S		15 59·15	−1·74	57·41	10·59				
	3579	+ 14 56	S		22 38·88	−1·62	37·26	S		22 28·38	−1·74	26·64	10·62				
				Mean, T_E	10 16 17												
Feb.24	3416	+ 32 30	N	*I. P. W.*	9 54 17·73	+1·32	19·05	N	*I. P. W.*	9 54 3·77	+1·57	5·34	−0 13·71				
	3423	+ 22 31	N	d c − 3·8 b − 5·1 a + 19·1	56 19·12	+1·43	20·55	N	d c − 1·1 b − 0·7 a + 29·6	56 5·14	+1·71	6·85	13·70				
	3439	+ 35 34	N		58 57·23	+1·28	58·51	N		58 43·19	+1·53	44·72	13·79				
	3446	+ 35 49	N	s Q +1·64	10 0 33·57	+1·27	34·84	N	s Q +1·75	10 0 19·56	+1·52	21·08	13·76	m s −0 13·771	0·097	0·002	−0 13·676
	3456	+ 32 11	N		1 32·15	+1·32	33·47	N		1 18·06	+1·58	19·64	13·83				
	3423	+ 22 31	S		9 56 19·19	+1·43	20·62	S		9 56 5·16	+1·71	6·87	13·75		+	−	
	3463	+ 6 45	S		10 3 8·51	+1·56	10·07	S		10 2 54·33	+1·90	56·23	13·84				
	3469	+ 16 17	S		4 24·72	+1·48	26·20	S		4 10·65	+1·78	12·43	13·77				
	3483	+ 5 12	S		6 44·48	+1·57	46·05	S		6 30·34	+1·92	32·26	13·79				
				Mean, T_E	10 0 15												
Feb.24	3548	+ 34 19	N	*I. P. W.*	10 17 30·04	−1·99	28·05	N	*I. P. W.*	10 17 16·14	−1·96	14·18	−0 13·87				
	3560	+ 34 23	N	d c − 3·8 b − 5·1 a + 19·1	19 17·43	−1·99	15·44	N	d c − 1·1 b − 0·7 a + 29·6	19 3·46	−1·96	1·50	13·94				
	3572	+ 37 18	N		21 12·17	−2·03	10·14	N		20 58·16	−2·00	56·16	13·98				
	3522	+ 20 4	S	s Q −1·64	13 26·90	−1·83	25·07	S	s Q −1·75	13 12·92	−1·76	11·16	13·91	m s −0 13·910	0·097	0·003	−0 13·816
	3529	+ 7 1	S		14 29·58	−1·72	27·86	S		14 15·56	−1·60	13·96	13·90		+	−	
	3538	+ 9 33	S		16 8·71	−1·74	6·97	S		15 54·76	−1·64	53·12	13·85				
	3579	+ 14 56	S		22 38·03	−1·79	36·24	S		22 24·02	−1·70	22·32	13·92				
				Mean, T_E	10 17 49												

NOTE.—1^d = $0^s{\cdot}0325$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s; AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.008$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 28	3416	+ 32 30	N	*I. P. E.*	9 54 11·48	+1·95	13·43	N	*I. P. E.*	9 53 42·54	+1·56	44·10	−0 29·33				
	3423	+ 22 31	N	*d* c + 2·8 b + 9·4 a + 0·7	56 12·97	+1·93	14·90	N	*d* c − 1·5 b + 0·9 a + 25·1	55 43·85	+1·68	45·53	29·37				
	3439	+ 35 34	N		58 50·96	+1·96	52·92	N		58 21·99	+1·52	23·51	29·41				
	3446	+ 35 49	N	*s* Q + 1·63	10 0 27·23	+1·96	29·19	N	*s* Q + 1·69	59 58·33	+1·52	59·85	29·34	m s −0 29·329	+0·100	+0·002	−0 29·231
	3456	+ 32 11	N		1 25·89	+1·95	27·84	N		10 0 56·97	+1·57	58·54	29·30				
	3423	+ 22 31	S		9 56 13·02	+1·93	14·95	S		9 55 44·01	+1·68	45·69	29·26				
	3463	+ 6 45	S		10 3 2·49	+1·89	4·38	S		10 2 33·17	+1·84	35·01	29·37				
	3469	+ 16 17	S		4 18·66	+1·92	20·58	S		3 49·58	+1·74	51·32	29·26				
	3483	+ 5 12	S		6 38·46	+1·89	40·35	S		6 9·18	+1·85	11·03	29·32				
				Mean, T_E	10 0 9												
Feb. 28	3511	+ 23 42	N	*I. P. E.*	10 10 47·13	−1·33	45·80	N	*I. P. E.*	10 10 18·01	−1·72	16·29	−0 29·51				
	3548	+ 34 19	N	*d* c + 2·8 b + 9·4 a + 0·7	17 23·86	−1·30	22·56	N	*d* c − 1·5 b + 0·9 a + 25·1	16 54·89	−1·84	53·05	29·51				
	3560	+ 34 23	N		19 11·20	−1·30	9·90	N		18 42·32	−1·84	40·48	29·42				
	3572	+ 37 18	N	*s* Q − 1·63	21 5·83	−1·30	4·53	N	*s* Q − 1·69	20 36·99	−1·88	35·11	29·42	m s −0 29·381	+0·100	+0·003	−0 29·284
	3511	+ 23 42	S		10 47·04	−1·33	45·71	S		10 18·16	−1·72	16·44	29·27				
	3522	+ 20 4	S		13 20·71	−1·34	19·37	S		12 51·78	−1·68	50·10	29·27				
	3529	+ 7 1	S		14 23·48	−1·36	22·12	S		13 54·43	−1·54	52·89	29·23				
	3538	+ 0 33	S		16 2·73	−1·36	1·37	S		15 33·50	−1·56	31·94	29·43				
	3579	+ 14 56	S		22 31·93	−1·34	30·59	S		22 2·84	−1·62	1·22	29·37				
				Mean, T_E	10 16 10												
Mar. 2	3416	+ 32 30	N	*I. P. W.*	9 54 9·51	+1·69	11·20	N	*I. P. W.*	9 53 33·80	+1·52	35·32	−0 35·88				
	3423	+ 22 31	N	*d* c − 2·2 b + 5·9 a + 5·8	56 10·92	+1·72	12·64	N	*d* c − 0·5 b + 2·0 a + 48·7	55 35·04	+1·74	36·78	35·86				
	3439	+ 35 34	N		58 48·92	+1·69	50·61	N		58 13·31	+1·44	14·75	35·86				
	3446	+ 35 49	N	*s* Q + 1·63	10 0 25·28	+1·69	26·97	N	*s* Q + 1·69	59 49·65	+1·44	51·09	35·88	m s −0 35·867	+0·098	+0·002	−0 35·771
	3456	+ 32 11	N		1 23·89	+1·69	25·58	N		10 0 48·18	+1·53	49·71	35·87				
	3423	+ 22 31	S		9 56 11·00	+1·72	12·72	S		9 55 35·16	+1·74	36·90	35·82				
	3463	+ 6 45	S		10 3 0·41	+1·75	2·16	S		10 2 24·20	+2·03	26·23	35·93				
	3469	+ 16 17	S		4 16·50	+1·74	18·24	S		3 40·59	+1·87	42·46	35·78				
	3483	+ 5 12	S		6 36·39	+1·75	38·14	S		6 0·16	+2·06	2·22	35·92				
				Mean, T_E	10 0 7												

NOTE.—1^s = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 59s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}013$ $\delta_N - \delta_S = +0'{\cdot}008$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 2	3511	+ 23 42	N	*I. P. W.*	10 10 45·00	−1·54	43·46	N	*I. P. W.*	10 10 9·33	−1·66	7·67	−0 35·79				
	3548	+ 34 19	N	d c − 2·2 b + 5·9 a + 5·8	17 21·69	−1·56	20·13	N	d c − 0·5 b + 2·0 a + 48·7	16 46·29	−1·91	44·38	35·75				
	3560	+ 34 23	N		19 9·06	−1·56	7·50	N		18 33·66	−1·91	31·75	35·75				
	3572	+ 37 18	N	s Q − 1·63	21 3·68	−1·57	2·11	N	s Q − 1·69	20 28·38	−1·99	26·39	35·72	m s −0 35·757	+ 0·098	− 0·003	− 0 35·662
	3511	+ 23 42	S		10 44·90	−1·54	43·36	S		10 9·37	−1·66	7·71	35·65				
	3522	+ 20 4	S		13 18·65	−1·53	17·12	S		12 42·95	−1·59	41·36	35·76				
	3529	+ 7 1	S		14 21·43	−1·51	19·92	S		13 45·46	−1·35	44·11	35·81				
	3538	+ 9 33	S		15 60·53	−1·52	59·01	S		15 24·67	−1·40	23·27	35·74				
	3579	+ 14 56	S		22 29·81	−1·52	28·29	S		21 53·94	−1·49	52·45	35·84				
				Mean, T_E	10 16 8												
Mar. 3	3548	+ 34 19	N	*I. P. E.*	10 17 20·53	−1·35	19·18	N	*I. P. E.*	10 16 42·21	−1·81	40·40	−0 38·78				
	3560	+ 34 23	N	d c + 2·6 b + 9·1 a + 5·6	19 7·87	−1·35	6·52	N	d c − 1·2 b − 0·1 a + 19·4	18 29·59	−1·81	27·78	38·74				
	3572	+ 37 18	N		21 2·55	−1·35	1·20	N		20 24·26	−1·84	22·42	38·78				
	3522	+ 20 4	S	s Q − 1·63	13 17·40	−1·34	16·06	S	s Q − 1·68	12 39·12	−1·68	37·44	38·62	m s −0 38·703	+ 0·098	− 0·003	− 0 38·608
	3538	+ 9 33	S		15 59·31	−1·34	57·97	S		15 20·91	−1·61	19·30	38·67				
	3579	+ 14 56	S		22 28·57	−1·34	27·23	S		21 50·25	−1·65	48·60	38·63				
				Mean, T_E	10 18 13												

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.008$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb.22	3079	+ 24 55	N	*I. P. W.*	8 55 57·52	+1·51	59·03	N	*I. P. W.*	9 29 34·80	+1·65	36·45	33 37·42				
	3088	+ 28 22	N	*d* c − 2·7 b − 0·9 *a* +22·8	57 15·20	+1·48	16·68	N	*d* c − 1·3 b + 0·8 *a* +42·2	30 52·55	+1·58	54·13	37·45				
	3097	+ 38 55	N		59 9·16	+1·33	10·49	N		32 46·58	+1·34	47·92	37·43				
	3109	+ 30 7	N	*s* *Q* +1·63	9 1 2·34	+1·46	3·80	N	*s* *Q* +1·69	34 39·69	+1·55	41·24	37·44	m s			
	3117	+ 22 31	N		2 41·58	+1·54	43·12	N		36 18·88	+1·69	20·57	37·45	33 37·448			
	3117	+ 22 31	S		2 41·56	+1·54	43·10	S		36 18·85	+1·69	20·54	37·44		+ 0·021	− 0·002	33 37·467
	3123	+ 22 28	S		3 41·11	+1·54	42·65	S		37 18·46	+1·69	20·15	37·50				
	3129	+ 18 31	S		5 26·13	+1·59	27·72	S		39 3·43	+1·76	5·19	37·47				
	3138	+ 21 46	S		6 59·91	+1·55	61·46	S		40 37·18	+1·71	38·89	37·43				
Feb.22	3246	+ 23 29	N	*I. P. W.*	9 25 9·51	−1·73	7·78	N	*I. P. W.*	9 58 46·96	−1·71	45·25	33 37·47				
	3255	+ 28 53	N	*d* c − 2·7 b − 0·9 *a* +22·8	26 34·23	−1·78	32·45	N	*d* c − 1·3 b + 0·8 *a* +42·2	10 0 11·60	−1·81	9·79	37·34				
	3273	+ 31 41	N		29 53·43	−1·82	51·61	N		3 30·81	−1·86	28·95	37·34				
	3285	+ 25 12	N	*s* *Q* −1·63	31 15·05	−1·75	13·30	N	*s* *Q* −1·69	4 52·51	−1·74	50·77	37·47	m s			
	3246	+ 23 29	S		25 9·60	−1·73	7·87	S		9 58 46·98	−1·71	45·27	37·40	33 37·407			
	3299	+ 13 50	S		33 2·78	−1·63	1·15	S		10 6 40·10	−1·54	38·56	37·41		+ 0·021	− 0·003	33 37·425
	3312	+ 10 25	S		34 61·04	−1·60	59·44	S		8 38·32	−1·48	36·84	37·40				
	3318	+ 20 44	S		36 56·30	−1·69	54·61	S		10 33·70	−1·66	32·04	37·43				
Feb.23	3079	+ 24 55	N	*I. P. E.*	8 55 56·42	+1·60	58·02	N	*I. P. E.*	9 29 34·04	+1·64	35·68	33 37·66				
	3088	+ 28 22	N	*d* c + 2·0 b − 2·9 *a* +10·1	57 14·14	+1·58	15·72	N	*d* c − 0·9 b − 1·5 *a* + 2·2	30 51·72	+1·63	53·35	37·63				
	3097	+ 38 55	N		59 8·01	+1·53	9·54	N		32 45·54	+1·61	47·15	37·61				
	3109	+ 30 7	N	*s* *Q* +1·63	9 1 1·24	+1·58	2·82	N	*s* *Q* +1·70	34 38·75	+1·63	40·38	37·56	m s			
	3117	+ 22 31	N		2 40·48	+1·61	42·09	N		36 18·09	+1·64	19·73	37·64	33 37·622			
	3117	+ 22 31	S		2 40·42	+1·61	42·03	S		36 17·99	+1·64	19·63	37·60		+ 0·025	− 0·002	33 37·645
	3123	+ 22 28	S		3 40·06	+1·61	41·67	S		37 17·67	+1·64	19·31	37·64				
	3129	+ 18 31	S		5 25·06	+1·63	26·69	S		39 2·70	+1·64	4·34	37·65				
	3138	+ 21 46	S		6 58·82	+1·61	60·43	S		40 36·40	+1·64	38·04	37·61				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Pers'l. Equations $H_N - H_S = +0^s{\cdot}013$ $S_N - S_S = +0^s{\cdot}008$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb.23	3246	+ 23 29	N	*I. P. E.*	9 25 8·49	−1·65	6·84	N	*I. P. E.*	9 58 46·23	−1·76	44·47	33 37·63				
	3255	+ 28 53	N	*d* c + 2·0 b − 2·9 *a* + 10·1	26 33·07	−1·68	31·39	N	*d* c − 0·9 b − 1·5 *a* + 2·2	10 0 10·81	−1·77	9·03	37·64				
	3273	+ 31 41	N		29 52·21	−1·70	50·51	N		3 29·93	−1·77	28·16	37·65				
	3285	+ 25 12	N	*s* *Q* −1·63	31 14·02	−1·66	12·36	N	*s* *Q* −1·70	4 51·80	−1·76	50·04	37·68	m s 33 37·662	+ 0·025	− 0·003	33 37·684
	3228	+ 8 42	S		22 21·06	−1·58	19·48	S		9 55 58·88	−1·74	57·14	37·66				
	3246	+ 23 29	S		25 8·52	−1·65	6·87	S		58 46·25	−1·76	44·49	37·62				
	3299	+ 13 50	S		33 1·81	−1·61	0·20	S		10 6 39·65	−1·74	37·91	37·71				
	3312	+ 10 25	S		34 60·02	−1·59	58·43	S		8 37·90	−1·74	36·16	37·73				
	3318	+ 20 44	S		36 55·24	−1·64	53·60	S		10 33·00	−1·76	31·24	37·64				
Feb.24	3079	+ 24 55	N	*I. P. W.*	8 55 55·49	+1·40	56·89	N	*I. P. W.*	9 29 32·83	+1·68	34·51	33 37·62				
	3088	+ 28 22	N	*d* c − 3·8 b − 5·1 *a* + 19·1	57 13·19	+1·36	14·55	N	*d* c − 1·1 b − 0·7 *a* + 29·6	30 50·46	+1·63	52·09	37·54				
	3097	+ 38 55	N		59 7·17	+1·23	8·40	N		32 44·44	+1·47	45·91	37·51				
	3109	+ 30 7	N	*s* *Q* +1·64	9 1 0·36	+1·34	1·70	N	*s* *Q* +1·75	34 37·58	+1·61	39·19	37·49	m s 33 37·523	+ 0·029	− 0·002	33 37·550
	3117	+ 22 31	N		2 39·56	+1·43	40·99	N		36 16·81	+1·71	18·52	37·53				
	3138	+ 21 46	N		6 57·90	+1·44	59·34	N		40 35·13	+1·72	36·85	37·51				
	3117	+ 22 31	S		2 39·49	+1·43	40·92	S		36 16·71	+1·71	18·42	37·50				
	3123	+ 22 28	S		3 39·11	+1·43	40·54	S		37 16·42	+1·71	18·13	37·59				
	3129	+ 18 31	S		5 24·15	+1·46	25·61	S		39 1·38	+1·76	3·14	37·53				
	3138	+ 21 46	S		6 57·94	+1·44	59·38	S		40 35·07	+1·72	36·79	37·41				
Feb.24	3246	+ 23 29	N	*I. P. W.*	9 25 7·54	−1·86	5·68	N	*I. P. W.*	9 58 44·92	−1·80	43·12	33 37·44				
	3255	+ 28 53	N	*d* c − 3·8 b − 5·1 *a* + 19·1	26 32·20	−1·92	30·28	N	*d* c − 1·1 b − 0·7 *a* + 29·6	10 0 9·67	−1·88	7·79	37·51				
	3273	+ 31 41	N		29 51·36	−1·95	49·41	N		3 28·73	−1·92	26·81	37·40				
	3285	+ 25 12	N	*s* *Q* −1·64	31 13·08	−1·88	11·20	N	*s* *Q* −1·75	4 50·55	−1·83	48·72	37·52				
	3228	+ 8 42	S		22 20·06	−1·73	18·33	S		9 55 57·48	−1·63	55·85	37·52	m s 33 37·462	+ 0·029	− 0·003	33 37·488
	3246	+ 23 29	S		25 7·59	−1·86	5·73	S		58 45·04	−1·80	43·24	37·51				
	3299	+ 13 50	S		32 60·89	−1·78	59·11	S		10 6 38·21	−1·69	36·52	37·41				
	3312	+ 10 25	S		34 59·14	−1·75	57·39	S		8 36·42	−1·65	34·77	37·38				
	3318	+ 20 44	S		36 54·27	−1·84	52·43	S		10 31·67	−1·77	29·90	37·47				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s:* AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.008$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 28	3079	+ 24 55	N	*I. P. E.*	8 55 49·43	+1·93	51·36	N	*I. P. E.*	9 29 27·37	+1·65	29·02	33 37·66				
	3088	+ 28 22	N	d c + 2·8 b + 9·4 a + 0·7	57 7·14	+1·94	9·08	N	d c − 1·5 b + 0·9 a + 25·1	30 45·09	+1·61	46·70	37·62				
	3097	+ 38 55	N		59 0·92	+1·96	2·88	N		32 39·04	+1·48	40·52	37·64				
	3109	+ 30 7	N	s Q +1·63	9 0 54·24	+1·94	56·18	N	s Q +1·69	34 32·17	+1·59	33·76	37·58				
	3117	+ 22 31	N		2 33·54	+1·93	35·47	N		36 11·39	+1·68	13·07	37·60	m s 33 37·641	+ 0·029	− 0·002	33 37·668
	3138	+ 21 46	N		6 51·90	+1·93	53·83	N		40 29·74	+1·69	31·43	37·60				
	3117	+ 22 31	S		2 33·46	+1·93	35·39	S		36 11·39	+1·68	13·07	37·68				
	3123	+ 22 28	S		3 33·12	+1·93	35·05	S		37 11·02	+1·68	12·70	37·65				
	3129	+ 18 31	S		4 18·10	+1·92	20·02	S		37 56·00	+1·72	57·72	37·70				
	3138	+ 21 46	S		6 51·85	+1·93	53·78	S		40 29·77	+1·69	31·46	37·68				
Feb. 28	3246	+ 23 29	N	*I. P. E.*	9 25 1·45	−1·33	0·12	N	*I. P. E.*	9 58 39·50	−1·71	37·79	33 37·67				
	3255	+ 28 53	N	d c + 2·8 b + 9·4 a + 0·7	26 26·04	−1·32	24·72	N	d c − 1·5 b + 0·9 a + 25·1	10 0 4·02	−1·77	2·25	37·53				
	3273	+ 31 41	N		29 45·12	−1·31	43·81	N		3 23·22	−1·81	21·41	37·60				
	3285	+ 25 12	N	s Q −1·63	31 7·00	−1·33	5·67	N	s Q −1·69	4 44·99	−1·73	43·26	37·59	m s 33 37·631	+ 0·029	− 0·003	33 37·657
	3228	+ 8 42	S		22 14·08	−1·36	12·72	S		9 55 51·99	−1·56	50·43	37·71				
	3246	+ 23 29	S		25 1·49	−1·33	0·16	S		58 39·45	−1·71	37·74	37·58				
	3299	+ 13 50	S		32 54·84	−1·35	53·49	S		10 6 32·74	−1·61	31·13	37·64				
	3312	+ 10 25	S		34 53·06	−1·36	51·70	S		8 30·98	−1·57	29·41	37·71				
	3318	+ 20 44	S		36 48·20	−1·33	46·87	S		10 26·20	−1·68	24·52	37·65				
Mar. 2	3079	+ 24 55	N	*I. P. W.*	8 55 47·32	+1·72	49·04	N	*I. P. W.*	9 29 24·89	+1·69	26·58	33 37·54				
	3097	+ 38 55	N	d c − 2·2 b + 5·9 a + 5·8	58 58·75	+1·68	60·43	N	d c − 0·5 b + 2·0 a + 48·7	32 36·58	+1·36	37·94	37·51				
	3117	+ 22 31	N		9 2 31·35	+1·72	33·07	N		36 8·88	+1·74	10·62	37·55	m s 33 37·541	+ 0·024	− 0·002	33 37·563
	3138	+ 21 46	N	s Q +1·63	6 49·71	+1·72	51·43	N	s Q +1·69	40 27·19	+1·76	28·95	37·52				
	3117	+ 22 31	S		2 31·25	+1·72	32·97	S		36 8·83	+1·74	10·57	37·60				
	3129	+ 18 31	S		5 15·91	+1·73	17·64	S		38 53·38	+1·83	55·21	37·57				
	3138	+ 21 46	S		6 49·70	+1·72	51·42	S		40 27·16	+1·76	28·92	37·50				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.008$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 2	3246	+ 23 29	N	*I. P. W.*	9 24 59·39	−1·54	57·85	N	*I. P. W.*	9 58 36·99	−1·66	35·33	33 37·48				
	3255	+ 28 53	N	*d* c − 2·2	26 23·92	−1·56	22·36	N	*d* c − 0·5	59 61·70	−1·77	59·93	37·57				
	3273	+ 31 41	N	b + 5·9 a + 5·8	29 43·06	−1·56	41·50	N	b + 2·0 a + 48·7	10 3 20·86	−1·84	19·02	37·52				
	3285	+ 25 12	N	*s* Q − 1·63	31 4·88	−1·54	3·34	N	*s* Q − 1·69	4 42·47	−1·69	40·78	37·44				
	3228	+ 8 42	S		22 12·00	−1·52	10·48	S		9 55 49·35	−1·38	47·97	37·49	m s 33 37·467			
	3246	+ 23 29	S		24 59·44	−1·54	57·90	S		58 37·03	−1·66	35·37	37·47		+ 0·024	− 0·003	33 37·488
	3299	+ 13 50	S		32 52·73	−1·52	51·21	S		10 6 30·12	−1·47	28·65	37·44				
	3312	+ 10 25	S		34 51·04	−1·52	49·52	S		8 28·30	−1·41	26·89	37·37				
	3318	+ 20 44	S		36 46·17	−1·54	44·63	S		10 23·65	−1·60	22·05	37·42				
Mar. 3	3255	+ 28 53	N	*I. P. E.*	9 26 22·67	−1·35	21·32	N	*I. P. E.*	9 59 60·83	−1·76	59·07	33 37·75				
	3273	+ 31 41	N	*d* c + 2·6	29 41·75	−1·34	40·41	N	*d* c − 1·2	10 3 20·00	−1·79	18·21	37·80				
	3285	+ 25 12	N	b + 9·1 a + 5·6	31 3·57	−1·35	2·22	N	b − 0·1 a + 19·4	4 41·87	−1·73	40·14	37·92	m s 33 37·838	+ 0·022	− 0·002	33 37·858
	3246	+ 23 29	S	*s* Q − 1·63	24 58·18	−1·35	56·83	S	*s* Q − 1·68	9 58 36·32	−1·71	34·61	37·78				
	3312	+ 10 25	S		34 49·65	−1·34	48·31	S		10 8 27·86	−1·61	26·25	37·94				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}013$ $S_N - S_S = +0^s{\cdot}008$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb.22	3727	+ 28 29	N	*I. P. W.*	10 12 42·60	+1·48	44·08	N	*I. P. W.*	10 46 19·98	+1·58	21·56	33 37·48				
	3735	+ 26 7	N	*d* c − 2·7 b − 0·9 *a* +22·8	14 39·18	+1·50	40·68	N	*d* c − 1·3 b + 0·8 *a* +42·2	48 16·52	+1·63	18·15	37·47				
	3751	+ 26 8	N		16 31·72	+1·50	33·22	N		50 9·12	+1·63	10·75	37·53				
	3765	+ 39 50	N	*s* *Q* +1·63	20 35·46	+1·32	36·78	N	*s* *Q* +1·69	54 12·96	+1·32	14·28	37·50	m s 33 37·490	+ 0·096	− 0·002	33 37·584
	3776	+ 20 48	N		22 23·24	+1·57	24·81	N		56 0·52	+1·72	2·24	37·43				
	3708	+ 11 10	S		9 24·50	+1·65	26·15	S		43 1·78	+1·88	3·66	37·51				
	3720	+ 4 12	S		11 12·27	+1·71	13·98	S		44 49·53	+1·99	51·52	37·54				
	3776	+ 20 48	S		22 23·14	+1·57	24·71	S		56 0·45	+1·72	2·17	37·46				
Feb.22	3851	+ 32 11	N	*I. P. W.*	10 38 17·93	−1·82	16·11	N	*I. P. W.*	11 11 55·59	−1·88	53·71	33 37·60				
	3856	+ 38 50	N	*d* c − 2·7 b − 0·9 *a* +22·8	39 6·82	−1·92	4·90	N	*d* c − 1·3 b + 0·8 *a* +42·2	12 44·47	−2·04	42·43	37·53				
	3868	+ 44 7	N		42 45·98	−2·00	43·98	N		16 23·71	−2·18	21·53	37·55				
	3905	+ 39 59	N	*s* *Q* −1·63	49 7·58	−1·94	5·64	N	*s* *Q* −1·69	22 45·26	−2·07	43·19	37·55	m s 33 37·548	+ 0·096	− 0·003	33 37·641
	3877	+ 11 11	S		44 10·70	−1·61	9·09	S		17 48·13	−1·50	46·63	37·54				
	3886	+ 17 5	S		45 51·61	−1·66	49·95	S		19 29·07	−1·59	27·48	37·53				
	3894$_1$	+ 3 40	S		47 11·21	−1·54	9·67	S		20 48·58	−1·38	47·20	37·53				
	3915	+ 19 3	S		50 43·98	−1·68	42·30	S		24 21·47	−1·62	19·85	37·55				
Feb.23	3727	+ 28 29	N	*I. P. E.*	10 12 38·31	+1·58	39·89	N	*I. P. E.*	10 46 15·90	+1·63	17·53	33 37·64				
	3735	+ 26 7	N	*d* c + 2·0 b − 2·9 *a* +10·1	14 34·90	+1·59	36·49	N	*d* c − 0·9 b − 1·5 *a* + 2·2	48 12·47	+1·64	14·11	37·62				
	3751	+ 26 8	N		16 27·43	+1·59	29·02	N		50 5·07	+1·64	6·71	37·69				
	3765	+ 39 50	N	*s* *Q* +1·63	20 31·08	+1·52	32·60	N	*s* *Q* +1·70	54 8·62	+1·61	10·23	37·63	m s 33 37·671	+ 0·097	− 0·002	33 37·766
	3776	+ 20 48	N		22 18·94	+1·62	20·56	N		55 56·63	+1·64	58·27	37·71				
	3708	+ 11 10	S		9 20·29	+1·66	21·95	S		42 58·03	+1·66	59·69	37·74				
	3720	+ 4 12	S		11 8·07	+1·69	9·76	S		44 45·83	+1·67	47·50	37·74				
	3776	+ 20 48	S		22 18·89	+1·62	20·51	S		55 56·47	+1·64	58·11	37·60				

NOTE.—1^d = 0s·0225. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat. 22° 33′, Long. 5h 53m 36s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}013$ $S_N - S_S = +0^s{\cdot}008$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb.23	3851	+ 32 11	N	*I. P. E.*	10 38 13·57	−1·71	11·86	N	*I. P. E.*	11 11 51·47	−1·77	49·70	33 37·84				
	3856	+ 38 50	N	d c + 2·0 b − 2·9 a +10·1	39 2·42	−1·73	0·69	N	d c − 0·9 b − 1·5 a + 2·2	12 40·30	−1·79	38·51	37·82				
	3868	+ 44 7	N		42 41·59	−1·77	39·82	N		16 19·36	−1·79	17·57	37·75				
	3905	+ 39 59	N	s Q −1·63	49 3·19	−1·74	1·45	N	s Q −1·70	22 40·93	−1·79	39·14	37·69	m s 33 37·753	+ 0·097	− 0·003	33 37·847
	3877	+ 11 11	S		44 6·47	−1·60	4·87	S		17 44·40	−1·74	42·66	37·79				
	3886	+ 17 5	S		45 47·44	−1·63	45·81	S		19 25·21	−1·75	23·46	37·65				
	3894_1	+ 3 40	S		47 6·98	−1·57	5·41	S		20 44·92	−1·73	43·19	37·78				
	3894_2	+ 3 40	S		47 8·03	−1·57	6·46	S		20 45·91	−1·73	44·18	37·72				
	3915	+ 19 3	S		50 39·67	−1·63	38·04	S		24 17·54	−1·76	15·78	37·74				
Feb.24	3735	+ 26 7	N	*I. P. W.*	10 14 30·99	+1·38	32·37	N	*I. P. W.*	10 48 8·33	+1·66	9·99	33 37·62				
	3751	+ 26 8	N	d c − 3·8 b − 5·1 a +19·1	16 23·56	+1·38	24·94	N	d c − 1·1 b − 0·7 a +29·6	50 0·90	+1·66	2·56	37·62				
	3765	+ 39 50	N		20 27·27	+1·22	28·49	N		54 4·63	+1·45	6·08	37·59				
	3776	+ 20 48	N	s Q +1·64	22 15·01	+1·44	16·45	N	s Q +1·75	55 52·29	+1·73	54·02	37·57	m s 33 37·639	+ 0·097	− 0·002	33 37·734
	3708	+ 11 10	S		9 16·33	+1·53	17·86	S		42 53·75	+1·84	55·59	37·73				
	3720	+ 4 12	S		11 4·12	+1·58	5·70	S		44 41·47	+1·94	43·41	37·71				
	3776	+ 20 48	S		22 14·92	+1·44	16·36	S		55 52·26	+1·73	53·99	37·63				
Feb.24	3851	+ 32 11	N	*I. P. W.*	10 38 9·77	−1·96	7·81	N	*I. P. W.*	11 11 47·25	−1·92	45·33	33 37·52				
	3856	+ 38 50	N	d c − 3·8 b − 5·1 a +19·1	38 58·73	−2·04	56·69	N	d c − 1·1 b − 0·7 a +29·6	12 36·15	−2·03	34·12	37·43				
	3868	+ 44 7	N		42 37·92	−2·13	35·79	N		16 15·31	−2·13	13·18	37·39				
	3905	+ 39 59	N	s Q −1·64	48 59·47	−2·06	57·41	N	s Q −1·75	22 36·94	−2·05	34·89	37·48	m s 33 37·449	+ 0·097	− 0·003	33 37·543
	3877	+ 11 11	S		44 2·59	−1·75	0·84	S		17 39·93	−1·66	38·27	37·43				
	3886	+ 17 5	S		45 43·47	−1·81	41·66	S		19 20·84	−1·72	19·12	37·46				
	3894_1	+ 3 40	S		47 3·03	−1·70	1·33	S		20 40·40	−1·56	38·84	37·51				
	3894_2	+ 3 40	S		47 4·05	−1·70	2·35	S		20 41·39	−1·56	39·83	37·48				
	3915	+ 19 3	S		50 35·85	−1·82	34·03	S		24 13·12	−1·75	11·37	37·34				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s: AND JUBBULPORE (W) *Lat* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$, $S_N - S_S = +0^s.008$	$\delta L_N + \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 28	3727	+ 28 29	N	*I. P. E.*	10 12 12·57	+1·94	14·51	N	*I. P. E.*	10 45 50·59	+1·61	52·20	33 37·69				
	3735	+ 26 7	N	^{d} c + 2·8	14 9·05	+1·94	10·99	N	^{d} c − 1·5	47 47·17	+1·64	48·81	37·82				
	3751	+ 26 8	N	b + 9·4 a + 0·7	16 1·62	+1·94	3·56	N	b + 0·9 a + 25·1	49 39·74	+1·64	41·38	37·82				
	3765	+ 39 50	N	^{s} Q + 1·63	20 5·20	+1·96	7·16	N	^{s} Q + 1·69	53 43·51	+1·47	44·98	37·82	m s 33 37·801	+ 0·100	− 0·002	33 37·899	
	3776	+ 20 48	N		21 53·13	+1·93	55·06	N		55 31·20	+1·70	32·90	37·84				
	3696	+ 6 58	S		7 2·25	+1·90	4·15	S		40 40·15	+1·84	41·99	37·84				
	3708	+ 11 10	S		8 54·64	+1·90	56·54	S		42 32·45	+1·80	34·25	37·71				
	3720	+ 4 12	S		10 42·43	+1·89	44·32	S		44 20·26	+1·86	22·12	37·80				
	3776	+ 20 48	S		21 53·08	+1·93	55·01	S		55 31·18	+1·70	32·88	37·87				
Feb 28	3851	+ 32 11	N	*I. P. E.*	10 37 47·74	−1·31	46·43	N	*I. P. E.*	11 11 26·07	−1·81	24·26	33 37·83				
	3856	+ 38 50	N	^{d} c + 2·8	38 36·50	−1·30	35·20	N	^{d} c − 1·5	12 14·95	−1·90	13·05	37·85				
	3868	+ 44 7	N	b + 9·4 a + 0·7	42 15·56	−1·28	14·28	N	b + 0·9 a + 25·1	15 54·09	−1·99	52·10	37·82					
	3905	+ 39 59	N	^{s} Q − 1·63	48 37·21	−1·30	35·91	N	^{s} Q − 1·69	22 15·66	−1·91	13·75	37·84	m s 33 37·814	+ 0·100	− 0·003	33 37·911	
	3877	+ 11 11	S		43 40·79	−1·36	39·43	S		17 18·83	−1·58	17·25	37·82				
	3886	+ 17 5	S		45 21·61	−1·34	20·27	S		18 59·69	−1·64	58·05	37·78				
	3894_1	+ 3 40	S		46 41·32	−1·36	39·96	S		20 19·27	−1·51	17·76	37·80				
	3894_2	+ 3 40	S		46 42·32	−1·36	40·96	S		20 20·28	−1·51	18·77	37·81				
	3915	+ 19 3	S		50 13·92	−1·34	12·58	S		23 52·02	−1·66	50·36	37·78				
Mar. 2	3727	+ 28 29	N	*I. P. W.*	10 12 4·23	+1·70	5·93	N	*I. P. W.*	10 45 41·75	+1·67	43·36	33 37·43				
	3735	+ 26 7	N	^{d} c − 2·2	14 0·81	+1·71	2·52	N	^{d} c − 0·5	47 38·34	+1·67	40·01	37·49				
	3751	+ 26 8	N	b + 5·9 a + 5·8	15 53·43	+1·71	55·14	N	b + 2·0 a + 48·7	49 30·89	+1·67	32·56	37·42					
	3765	+ 39 50	N	^{s} Q + 1·63	19 56·93	+1·69	58·62	N	^{s} Q + 1·69	53 34·81	+1·33	36·14	37·52	m s 33 37·499	+ 0·098	− 0·002	33 37·595	
	3776	+ 20 48	N		21 44·98	+1·72	46·70	N		55 22·42	+1·78	24·20	37·50				
	3696	+ 6 58	S		6 54·00	+1·75	55·75	S		40 31·28	+2·03	33·31	37·56				
	3708	+ 11 10	S		8 46·31	+1·74	48·05	S		42 23·64	+1·95	25·59	37·54				
	3720	+ 4 12	S		10 34·10	+1·75	35·85	S		44 11·36	+2·08	13·44	37·59				
	3776	+ 20 48	S		21 44·90	+1·72	46·62	S		55 22·28	+1·78	24·06	37·44				

NOTE.—1^d = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

CALCUTTA (E) *Lat.* 22° 33′, *Long.* 5h 53m 36s : AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.008$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 2	3851	+ 32 11	N	*I. P. W.*	10 37 39·56	−1·57	37·99	N	*I. P. W.*	11 11 17·48	−1·85	15·63	33 37·64				
	3856	+ 38 50	N	d c − 2·2	38 28·40	−1·58	26·82	N	d c − 0·5	12 6·42	−2·02	4·40	37·58				
	3868	+ 44 7	N	b + 5·9 a + 5·8	42 7·51	−1·60	5·91	N	b + 2·0 a + 48·7	15 45·68	−2·19	43·49	37·58				
	3905	+ 39 59	N	s Q −1·63	48 29·14	−1·57	27·57	N	s Q −1·69	22 7·16	−2·05	5·11	37·54	m s 33 37·587	+ 0·098	− 0·003	33 37·682
	3877	+ 11 11	S		43 33·50	−1·52	30·98	S		17 10·03	−1·43	8·60	37·62				
	3886	+ 17 5	S		45 13·31	−1·53	11·78	S		18 50·96	−1·52	49·44	37·66				
	3894_1	+ 3 40	S		46 33·02	−1·51	31·51	S		20 10·32	−1·29	9·03	37·52				
	3891_2	+ 3 40	S		46 34·04	−1·51	32·53	S		20 11·34	−1·29	10·05	37·52				
	3915	+ 19 3	S		50 5·62	−1·53	4·09	S		23 43·27	−1·56	41·71	37·62				
Mar. 3	3765	+ 39 50	N	*I. P. E.*	10 19 52·52	+1·91	54·43	N	*I. P. E.*	10 53 30·73	+1·48	32·21	33 37·78				
	3776	+ 20 48	N	d c + 2·6	21 40·49	+1·91	42·40	N	d c − 1·2	55 18·45	+1·67	20·12	37·72	m s 33 37·797	+ 0·098	− 0·003	33 37·892
	3696	+ 6 58	S	b + 9·1 a + 5·6	6 49·57	+1·92	51·49	S	b − 0·1 a + 19·4	40 27·65	+1·77	29·42	37·93				
	3776	+ 20 48	S	s Q +1·63	21 40·39	+1·91	42·30	S	s Q +1·68	55 18·39	+1·67	20·06	37·76				
Mar. 3	3851	+ 32 11	N	*I. P. E.*	10 37 35·04	−1·35	33·69	N	*I. P. E.*	11 11 13·43	−1·79	11·64	33 37·95				
	3856	+ 38 50	N	d c + 2·6	38 23·83	−1·35	22·48	N	d c − 1·2	12 2·36	−1·86	0·50	38·02				
	3868	+ 44 7	N	b + 9·1 a + 5·6	42 2·89	−1·35	1·54	N	b − 0·1 a + 19·4	15 41·40	−1·94	39·46	37·92	m s 33 37·964	+ 0·098	− 0·002	33 38·060
	3905	+ 39 59	N	s Q −1·63	48 24·54	−1·34	23·20	N	s Q −1·68	22 3·04	−1·88	1·16	37·96				
	3886	+ 17 5	S		45 8·76	−1·35	7·41	S		18 47·09	−1·66	45·43	38·02				
	3894_1	+ 3 40	S		46 28·44	−1·34	27·10	S		20 6·63	−1·56	5·07	37·97				
	3915	+ 19 3	S		49 61·11	−1·34	59·77	S		23 39·36	−1·68	37·68	37·91				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*; AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.034$ $E_N - E_S = +0^s.037$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.14	3727	+ 28 29	N	*I. P. E.*	10 46 45·01	+1·55	46·56	N	*I. P. E.*	10 46 20·81	+1·71	22·52	−0 24·04				
	3735	+ 26 7	N	d c + 1·6 b + 4·2 a −17·9	48 41·68	+1·53	43·21	N	d c + 0·2 b + 1·1 a + 7·6	48 17·39	+1·72	19·11	24·10	m s −0 24·083	+ 0·010	+ 0·002	−0 24·071
	3708	+ 11 10	S		43 27·28	+1·41	28·69	S		43 2·84	+1·75	4·59	24·10				
	3768	+ 4 15	S	s Q +1·39	54 52·05	+1·37	53·42	S	s Q +1·69	54 27·56	+1·77	29·33	24·09				
				Mean, T_E	10 48 27												
Mar.14	3851	+ 32 12	N	*I. P. E.*	11 12 20·10	−1·20	18·90	N	*I. P. E.*	11 11 56·35	−1·68	54·67	−0 24·23				
	3856	+ 38 50	N	d c + 1·6 b + 4·2 a −17·9	13 8·83	−1·11	7·72	N	d c + 0·2 b + 1·1 a + 7·6	12 45·15	−1·71	43·44	24·28	m s −0 24·235	+ 0·010	+ 0·002	−0 24·223
	3868	+ 44 7	N		16 47·84	−1·04	46·80	N		16 24·23	−1·74	22·49	24·31				
	3842	+ 23 44	S	s Q −1·39	9 22·44	−1·27	21·17	S	s Q −1·69	8 58·68	−1·66	57·02	24·15				
	3877	+ 11 11	S		18 13·27	−1·37	11·90	S		17 49·35	−1·63	47·72	24·18				
	3886	+ 17 6	S		19 54·04	−1·32	52·72	S		19 30·10	−1·64	28·46	24·26				
				Mean, T_E	11 14 58												
Mar.15	3727	+ 28 29	N	*I. P. W.*	10 46 51·00	+1·60	52·60	N	*I. P. W.*	10 46 18·96	+1·64	20·60	−0 32·00				
	3735	+ 26 7	N	d c − 0·3 b + 8·9 a − 6·3	48 47·68	+1·59	49·27	N	d c − 2·5 b + 0·3 a + 5·6	48 15·52	+1·64	17·16	32·11				
	3751	+ 26 8	N		50 40·18	+1·59	41·77	N		50 8·11	+1·64	9·75	32·02				
	3784	+ 38 52	N	s Q +1·38	58 27·67	+1·66	29·33	N	s Q +1·70	57 55·61	+1·60	57·21	32·12	m s −0 32·060	+ 0·010	+ 0·002	−0 32·048
	3708	+ 11 10	S		43 33·20	+1·53	34·73	S		43 1·05	+1·68	2·73	32·00				
	3720	+ 4 12	S		45 21·03	+1·51	22·54	S		44 48·85	+1·69	50·54	32·00				
	3768	+ 4 15	S		54 57·96	+1·51	59·47	S		54 25·67	+1·69	27·36	32·11				
	3776	+ 20 49	S		56 31·79	+1·56	33·35	S		55 59·57	+1·66	61·23	32·12				
				Mean, T_E	10 50 39												

NOTE.—1^d = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl Equations $H_N - H_S = +0^s.34$ $S_N - S_S = +0^s.037$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.15	3851	+ 32 12	N	*I. P. W.*	11 12 26·12	−1·13	24·99	N	*I. P. W.*	11 11 54·60	−1·78	52·82	−0 32·17				
	3856	+ 38 50	N	*d* c − 0·3 b + 8·9 *a* − 6·3	13 14·89	−1·10	13·79	N	*d* c − 2·5 b + 0·3 *a* + 5·6	12 43·44	−1·80	41·64	32·15				
	3868	+ 44 7	N		16 53·93	−1·06	52·87	N		16 22·47	−1·83	20·64	32·23				
	3824	+ 15 3	S	*s* *Q* −1·38	6 5·24	−1·22	4·02	S	*s* *Q* −1·70	5 33·59	−1·73	31·86	32·16	m s −0 32·185	+ 0·010	+ 0·002	−0 32·173
	3831	+ 20 46	S		8 1·80	−1·20	0·60	S		7 30·21	−1·74	28·47	32·13				
	3842	+ 23 44	S		9 28·48	−1·18	27·30	S		8 56·88	−1·75	55·13	32·17				
	3877	+ 11 11	S		18 19·22	−1·23	17·99	S		17 47·49	−1·72	45·77	32·22				
	3886	+ 17 6	S		19 60·02	−1·20	58·82	S		19 28·31	−1·74	26·57	32·25				
				Mean, T_E	11 13 4												
Mar.16	3727	+ 28 29	N	*I. P. E.*	10 46 56·98	+1·46	58·44	N	*I. P. E.*	10 46 17·43	+1·64	19·07	−0 39·37				
	3736	+ 34 39	N	*d* c + 0·7 b + 2·3 *a* − 0·9	49 0·60	+1·46	2·06	N	*d* c + 0·6 b − 1·1 *a* +14·9	48 21·10	+1·60	22·70	39·36				
	3751	+ 26 8	N		50 46·13	+1·46	47·59	N		50 6·59	+1·66	8·25	39·34				
	3765	+ 39 50	N	*s* *Q* +1·38	54 49·75	+1·48	51·23	N	*s* *Q* +1·69	54 10·32	+1·55	11·87	39·36	m s −0 39·359	+ 0·012	+ 0·001	−0 39·346
	3784	+ 38 52	N		58 33·66	+1·47	35·13	N		57 54·12	+1·56	55·68	39·45				
	3708	+ 11 10	S		43 39·08	+1·44	40·52	S		42 59·43	+1·75	61·18	39·34				
	3720	+ 4 12	S		45 26·85	+1·44	28·29	S		44 47·26	+1·79	49·05	39·24				
	3776	+ 20 49	S		56 37·69	+1·46	39·15	S		55 58·06	+1·68	59·74	39·41				
				Mean, T_E	10 50 44												
Mar.16	3851	+ 32 12	N	*I. P. E.*	11 12 31·97	−1·30	30·67	N	*I. P. E.*	11 11 53·00	−1·76	51·24	−0 39·43				
	3856	+ 38 50	N	*d* c + 0·7 b + 2·3 *a* − 0·9	13 20·74	−1·29	19·45	N	*d* c + 0·6 b − 1·1 *a* +14·9	12 41·86	−1·82	40·04	39·41				
	3868	+ 44 7	N		16 59·83	−1·28	58·55	N		16 20·95	−1·87	19·08	39·47				
	3824	+ 15 3	S	*s* *Q* −1·38	6 11·08	−1·31	9·77	S	*s* *Q* −1·69	5 32·06	−1·66	30·40	39·37	m s −0 39·426	+ 0·012	+ 0·002	−0 39·412
	3831	+ 20 46	S		8 7·72	−1·30	6·42	S		7 28·69	−1·70	26·99	39·43				
	3842	+ 23 44	S		9 34·32	−1·30	33·02	S		8 55·24	−1·71	53·53	39·49				
	3877	+ 11 11	S		18 25·07	−1·32	23·75	S		17 45·95	−1·63	44·32	39·43				
	3886	+ 17 6	S		20 5·81	−1·31	4·50	S		19 26·79	−1·67	25·12	39·38				
				Mean, T_E	11 13 9												

NOTE.—1^d = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 25° 10′, Long. 5h 19m 58s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.034$ $S_N - S_S = +0^s.037$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.17	3727	+ 28 29	N	*I. P. W.*	10 47 2·71	+1·38	4·09	N	*I. P. W.*	10 46 15·33	+1·58	16·91	−0 47·18				
	3736	+ 34 39	N	d c + 0·2 b − 0·8 a − 1·1	49 6·30	+1·38	7·68	N	d c − 1·6 b − 1·0 a +23·8	48 19·07	+1·51	20·58	47·10				
	3751	+ 26 8	N		50 51·89	+1·38	53·27	N		50 4·50	+1·61	6·11	47·16				
	3765	+ 39 50	N	s Q +1·39	54 55·47	+1·39	56·86	N	s Q +1·71	54 8·25	+1·43	9·68	47·18	m s −0 47·146	+0·013	+0·001	−0 47·132
	3784	+ 38 52	N		58 39·23	+1·39	40·62	N		57 52·09	+1·44	53·53	47·09				
	3708	+ 11 10	S		43 44·79	+1·36	46·15	S		42 57·22	+1·76	58·98	47·17				
	3720	+ 4 12	S		45 32·59	+1·36	33·95	S		44 44·99	+1·82	46·81	47·14				
	3776	+ 20 49	S		56 43·38	+1·37	44·75	S		55 55·93	+1·67	57·60	47·15				
				Mean, T_E	10 50 50												
Mar.17	3824	+ 15 3	S	*I. P. W.*	11 6 16·83	−1·42	15·41	S	*I. P. W.*	11 5 29·72	−1·69	28·03	−0 47·38				
	3831	+ 20 46	S	d c + 0·2 b − 0·8 a − 1·1	8 13·40	−1·41	11·99	S	d c − 1·6 b − 1·0 a +23·8	7 26·41	−1·75	24·66	47·33				
	3842	+ 23 44	S		9 40·02	−1·41	38·61	S		8 53·16	−1·78	51·38	47·23	m s −0 47·312	+0·013	+0·003	−0 47·296
	3877	+ 11 11	S	s Q −1·39	18 30·72	−1·42	29·30	S	s Q −1·71	17 43·65	−1·66	41·99	47·31				
				Mean, T_E	11 10 40												
Mar.18	3727	+ 28 29	N	*I. P. E.*	10 47 8·18	+1·32	9·50	N	*I. P. E.*	10 46 13·11	+1·69	14·80	−0 54·70				
	3736	+ 34 39	N	d c − 1·3 b − 1·1 a − 2·9	49 11·87	+1·32	13·19	N	d c + 0·4 b + 0·5 a +16·4	48 16·79	+1·64	18·43	54·76				
	3751	+ 26 8	N		50 57·27	+1·32	58·59	N		50 2·32	+1·71	4·03	54·56				
	3765	+ 39 50	N	s Q +1·38	55 0·98	+1·33	2·31	N	s Q +1·71	54 5·96	+1·59	7·55	54·76	m s −0 54·661	+0·011	+0·001	−0 54·649
	3784	+ 38 52	N		58 44·84	+1·33	46·17	N		57 49·81	+1·60	51·41	54·76				
	3708	+ 11 10	S		43 50·24	+1·31	51·55	S		42 55·18	+1·81	56·99	54·56				
	3720	+ 4 12	S		45 38·01	+1·30	39·31	S		44 42·97	+1·85	44·82	54·49				
	3776	+ 20 49	S		56 48·90	+1·31	50·21	S		55 53·76	+1·75	55·51	54·70				
				Mean, T_E	10 50 55												

NOTE.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}034$ $S_N - S_S = +0^s{\cdot}037$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.18	3851	+ 32 12	N	*I. P. E.*	11 12 43·20	−1·43	41·77	N	*I. P. E.*	11 11 48·72	−1·76	46·96	−0 54·81				
	3856	+ 38 50	N	d c − 1·3 b − 1·1 a − 2·9	13 32·01	−1·43	30·58	N	d c + 0·4 b + 0·5 a + 16·4	12 37·60	−1·82	35·78	54·80				
	3868	+ 44 7	N		17 11·12	−1·42	9·70	N		16 16·77	−1·87	14·90	54·80	m s −0 54·746	+ 0·011	+ 0·002	−0 54·733
	3824	+ 15 3	S	s Q −1·38	6 22·28	−1·45	20·83	S	s Q −1·71	5 27·76	−1·64	26·12	54·71				
	3831	+ 20 46	S		8 18·87	−1·45	17·42	S		7 24·42	−1·67	22·75	54·67		+	+	−0 54·733
	3842	+ 23 44	S		9 45·56	−1·44	44·12	S		8 51·06	−1·69	49·37	54·75				
	3877	+ 11 11	S		18 36·21	−1·45	34·76	S		17 41·69	−1·69	40·08	54·68				
				Mean, T_E	11 12 21												
Mar.19	3727	+ 28 29	N	*I. P. W.*	10 47 13·87	+1·66	15·53	N	*I. P. W.*	10 46 11·40	+1·62	13·02	−1 2·51				
	3736	+ 34 39	N	d c + 1·6 b + 8·9 a + 5·7	49 17·53	+1·65	19·18	N	d c − 0·7 b 0·0 a + 23·7	48 15·19	+1·55	16·74	2·44				
	3751	+ 26 8	N		51 3·00	+1·65	4·65	N		50 0·55	+1·65	2·20	2·45				
	3765	+ 39 50	N	s Q +1·39	55 6·64	+1·65	8·29	N	s Q +1·70	54 4·29	+1·48	5·77	2·52	m s −1 2·495	+ 0·011	+ 0·001	−1 2·483
	3784	+ 38 52	N		58 50·52	+1·66	52·18	N		57 48·17	+1·50	49·67	2·51				
	3708	+ 11 10	S		43 55·93	+1·66	57·59	S		42 53·30	+1·79	55·09	2·50		+	+	−1 2·483
	3720	+ 4 12	S		45 43·76	+1·67	45·43	S		44 41·04	+1·85	42·89	2·54				
	3776	+ 20 49	S		56 54·54	+1·65	56·19	S		55 52·00	+1·70	53·70	2·49				
				Mean, T_E	10 51 1												
Mar.19	3851	+ 32 12	N	*I. P. W.*	11 12 48·97	−1·12	47·85	N	*I. P. W.*	11 11 47·04	−1·82	45·22	−1 2·63				
	3856	+ 38 50	N	d c + 1·6 b + 8·9 a + 5·7	13 37·77	−1·12	36·65	N	d c − 0·7 b 0·0 a + 23·7	12 35·93	−1·90	34·03	2·62				
	3868	+ 44 7	N		17 16·88	−1·12	15·76	N		16 15·05	−1·99	13·06	2·70				
	3824	+ 15 3	S	s Q −1·39	6 28·01	−1·12	26·89	S	s Q −1·70	5 25·93	−1·64	24·29	2·60	m s −1 2·639	+ 0·011	+ 0·002	−1 2·626
	3831	+ 20 46	S		8 24·57	−1·13	23·44	S		7 22·60	−1·70	20·90	2·54		+	+	−1 2·626
	3842	+ 23 44	S		9 51·29	−1·12	50·17	S		8 49·29	−1·73	47·56	2·61				
	3877	+ 11 11	S		18 42·04	−1·12	40·92	S		17 39·76	−1·61	38·15	2·77				
				Mean, T_E	11 12 27												

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 29m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.034$ $S_N - S_S = +0^s.037$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.20	3727	+ 28 29	N	*I. P. E.*	10 47 19·62	+1·38	21·00	N	*I. P. E.*	10 46 9·73	+1·63	11·36	− 1 9·64				
	3736	+ 34 39	N	*d* c − 1·9 b + 1·4 *a* + 1·3	49 23·28	+1·38	24·66	N	*d* c + 0·8 b − 0·1 *a* +31·7	48 13·46	+1·54	15·00	9·66				
	3751	+ 26 8	N		51 8·78	+1·38	10·16	N		49 58·84	+1·67	60·51	9·65				
	3765	+ 39 50	N	*s* *Q* +1·39	55 12·43	+1·36	13·79	N	*s* *Q* +1·69	54 2·67	+1·44	4·11	9·68	m s. − 1 9·630	+ 0·012	+ 0·001	− 1 9·617
	3784	+ 38 52	N		58 56·29	+1·37	57·66	N		57 46·51	+1·46	47·97	9·69				
	3708	+ 11 10	S		44 1·65	+1·39	3·04	S		42 51·65	+1·86	53·51	9·53				
	3720	+ 4 12	S		45 49·45	+1·39	50·84	S		44 39·40	+1·94	41·34	9·50				
	3776	+ 20 49	S		57 0·32	+1·37	1·69	S		55 50·26	+1·74	52·00	9·69				
				Mean, T_E	10 51 6												
Mar.20	3851	+ 32 12	N	*I. P. E.*	11 12 54·69	−1·40	53·29	N	*I. P. E.*	11 11 45·37	−1·80	43·57	− 1 9·72				
	3868	+ 44 7	N	*d* c − 1·9 b + 1·4 *a* + 1·3	17 22·57	−1·42	21·15	N	*d* c + 0·8 b − 0·1 *a* +31·7	16 13·44	−2·02	11·42	9·73				
	3824	+ 15 3	S		6 33·66	−1·39	32·27	S		5 24·23	−1·57	22·66	9·61	m s − 1 9·674	+ 0·012	+ 0·002	− 1 9·660
	3831	+ 20 46	S	*s* *Q* −1·39	8 30·33	−1·41	28·92	S	*s* *Q* −1·69	7 20·92	−1·64	19·28	9·64				
	3842	+ 23 44	S		9 56·98	−1·41	55·57	S		8 47·58	−1·68	45·90	9·67				
	3877	+ 11 11	S		18 47·67	−1·39	46·28	S		17 38·12	−1·52	36·60	9·68				
	3886	+ 17 6	S		20 28·48	−1·39	27·09	S		19 19·01	−1·59	17·42	9·67				
				Mean, T_E	11 13 31												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.034$ $S_N - S_S = +0^s.037$	$\delta L_N - \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.14	3371	+ 26 33	N	*I. P. E.*	9 46 27·09	+1·54	28·63	N	*I. P. E.*	9 55 12·00	+1·72	13·72	8 45·09				
	3392	+ 32 56	N	*d* c + 1·6 b + 4·2 *a* −17·9	50 0·11	+1·59	1·70	N	*d* c + 0·2 b + 1·1 *a* + 7·6	58 45·10	+1·70	46·80	45·10	m s 8 45·118	− 0·036	+ 0·001	8 45·083
	3446	+ 35 49	N		10 0 52·17	+1·63	53·80	N		10 9 37·18	+1·68	38·86	45·06				
	3406	+ 13 0	S	*s* *Q* +1·39	9 52 16·25	+1·42	17·67	S	*s* *Q* +1·69	1 1·14	+1·74	2·88	45·21				
	3415	+ 8 36	S		54 22·37	+1·39	23·76	S		3 7·14	+1·75	8·89	45·13				
Mar.14	3490	+ 32 3	N	*I. P. E.*	10 8 46·53	−1·20	45·33	N	*I. P. E.*	10 17 32·00	−1·68	30·32	8 44·99				
	3500	+ 29 54	N	*d* c + 1·6 b + 4·2 *a* −17·9	9 59·01	−1·21	57·80	N	*d* c + 0·2 b + 1·1 *a* + 7·6	18 44·44	−1·67	42·77	44·97				
	3559	+ 36 1	N		19 23·49	−1·15	22·34	N		28 9·09	−1·70	7·39	45·05	m s 8 45·060	− 0·036	+ 0·002	8 45·026
	3483	+ 5 12	S	*s* *Q* −1·39	7 6·44	−1·41	5·03	S	*s* *Q* −1·69	15 51·70	−1·62	50·08	45·05				
	3522	+ 20 4	S		13 45·43	−1·30	44·13	S		22 30·91	−1·65	29·26	45·13				
	3529	+ 7 1	S		14 48·33	−1·40	46·93	S		23 33·72	−1·62	32·10	45·17				
Mar.15	3371	+ 26 33	N	*I. P. W.*	9 46 33·06	+1·59	34·65	N	*I. P. W.*	9 55 17·67	+1·64	19·31	8 44·66				
	3392	+ 32 56	N	*d* c − 0·3 b + 8·9 *a* − 6·3	50 6·12	+1·63	7·75	N	*d* c − 2·5 b + 0·3 *a* + 5·6	58 50·92	+1·61	52·53	44·78				
	3446	+ 35 49	N		10 0 58·25	+1·64	59·89	N		10 9 43·04	+1·61	44·65	44·76				
	3386	+ 5 30	S	*s* *Q* +1·38	9 48 26·26	+1·51	27·77	S	*s* *Q* +1·70	9 57 10·88	+1·69	12·57	44·80	m s 8 44·740	− 0·036	+ 0·002	8 44·706
	3406	+ 13 0	S		52 22·23	+1·54	23·77	S		10 1 6·85	+1·67	8·52	44·75				
	3415	+ 8 36	S		54 28·35	+1·52	29·87	S		3 12·92	+1·68	14·60	44·73				
	3423	+ 22 31	S		56 44·04	+1·58	45·62	S		5 28·69	+1·65	30·34	44·72				
	3434	+ 12 12	S		58 19·01	+1·53	20·54	S		7 3·59	+1·67	5·26	44·72				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Persl. Equations $H_N - H_S = +0^s.034$ $S_N - S_S = +0^s.037$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.15	3490	+ 32 3	N	*I. P. W.*	10 8 52·54	−1·13	51·41	N	*I. P. W.*	10 17 38·01	−1·78	36·23	8 44·82				
	3559	+ 36 1	N	*d* c − 0·3 b + 8·9 *a* − 6·3	19 29·39	−1·12	28·27	N	*d* c − 2·5 b + 0·3 *a* + 5·6	28 14·96	−1·79	13·17	44·90				
	3475	+ 13 56	S		5 50·00	−1·22	48·78	S		14 35·28	−1·73	33·55	44·77	m s 8 44·820	− 0·036	+ 0·002	8 44·786
	3483	+ 5 12	S	*s* *Q* −1·38	7 12·39	−1·25	11·14	S	*s* *Q* −1·70	15 57·58	−1·71	55·87	44·73				
	3511	+ 23 42	S		11 17·70	−1·18	16·52	S		20 3·13	−1·75	1·38	44·86				
	3522	+ 20 4	S		13 51·41	−1·20	50·21	S		22 36·79	−1·74	35·05	44·84				
Mar.16	3371	+ 26 33	N	*I. P. E.*	9 46 38·99	+1·46	40·45	N	*I. P. E.*	9 55 23·75	+1·66	25·41	8 44·96				
	3446	+ 35 49	N	*d* c + 0·7 b + 2·3 *a* − 0·9	10 1 4·08	+1·46	5·54	N	*d* c + 0·6 b − 1·1 *a* + 14·9	10 9 49·10	+1·59	50·69	45·15				
	3386	+ 5 30	S		9 48 32·08	+1·44	33·52	S		9 57 16·77	+1·78	18·55	45·03	m s 8 45·000	− 0·035	+ 0·002	8 44·967
	3406	+ 13 0	S	*s* *Q* +1·38	52 28·14	+1·45	29·59	S	*s* *Q* +1·69	10 1 12·74	+1·74	14·48	44·89				
	3415	+ 8 36	S		54 34·15	+1·44	35·59	S		3 18·79	+1·77	20·56	44·97				
Mar.16	3490	+ 32 3	N	*I. P. E.*	10 8 58·56	−1·30	57·26	N	*I. P. E.*	10 17 43·98	−1·76	42·22	8 44·96				
	3500	+ 29 54	N	*d* c + 0·7 b + 2·3 *a* − 0·9	10 10·78	−1·30	9·48	N	*d* c + 0·6 b − 1·1 *a* + 14·9	18 56·34	−1·74	54·60	45·12				
	3559	+ 36 1	N		19 35·45	−1·30	34·15	N		28 20·91	−1·79	19·12	44·97				
	3475	+ 13 56	S	*s* *Q* −1·38	5 55·87	−1·31	54·56	S	*s* *Q* −1·69	14 41·24	−1·65	39·59	45·03	m s 8 45·004	− 0·035	+ 0·002	8 44·971
	3483	+ 5 12	S		7 18·25	−1·32	16·93	S		16 3·50	−1·60	1·90	44·97				
	3511	+ 23 42	S		11 23·57	−1·30	22·27	S		20 8·98	−1·71	7·27	45·00				
	3522	+ 20 4	S		13 57·28	−1·31	55·97	S		22 42·72	−1·69	41·03	45·06				
	3529	+ 7 1	S		14 60·13	−1·32	58·81	S		23 45·34	−1·61	43·73	44·92				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *mil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s : AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.034$ $S_N - S_S = +0^s.037$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.17	3371	+ 26 33	N	*I. P. W.*	9 46 44·58	+1·38	45·96	N	*I. P. W.*	9 55 29·21	+1·60	30·81	8 44·85				
	3392	+ 32 56	N	*d* c + 0·2 b − 0·8 *a* − 1·1	50 17·72	+1·38	19·10	N	*d* c − 1·6 b − 1·0 *a* +23·8	59 2·47	+1·53	4·00	44·90				
	3439	+ 35 34	N		59 33·50	+1·38	34·88	N		10 8 18·37	+1·50	19·87	44·99				
	3446	+ 35 49	N	*s* *Q* +1·39	10 1 9·79	+1·38	11·17	N	*s* *Q* +1·71	9 54·67	+1·50	56·17	45·00	m s 8 44·892	− 0·034	+ 0·002	
	3386	+ 5 30	S		9 48 37·76	+1·36	39·12	S		9 57 22·19	+1·81	24·00	44·88				8 44·860
	3406	+ 13 0	S		52 33·79	+1·36	35·15	S		10 1 18·22	+1·75	19·97	44·82				
	3415	+ 8 36	S		54 39·90	+1·36	41·26	S		3 24·30	+1·79	26·09	44·83				
	3423	+ 22 31	S		56 55·63	+1·37	57·00	S		5 40·21	+1·66	41·87	44·87				
Mar.17	3490	+ 32 3	N	*I. P. W.*	10 9 4·25	−1·40	2·85	N	*I. P. W.*	10 17 49·53	−1·88	47·65	8 44·80				
	3500	+ 29 54	N	*d* c + 0·2 b − 0·8 *a* − 1·1	10 16·60	−1·40	15·20	N	*d* c − 1·6 b − 1·0 *a* +23·8	19 1·92	−1·85	0·07	44·87				
	3559	+ 36 1	N		19 41·22	−1·40	39·82	N		28 26·49	−1·93	24·56	44·74				
	3475	+ 13 56	S	*s* *Q* −1·39	6 1·59	−1·42	0·17	S	*s* *Q* −1·71	14 46·67	−1·68	44·99	44·82	m s 8 44·791	− 0·034	+ 0·002	
	3483	+ 5 12	S		7 24·01	−1·42	22·59	S		16 8·92	−1·60	7·32	44·73				
	3511	+ 23 42	S		11 29·36	−1·41	27·95	S		20 14·52	−1·78	12·74	44·79				8 44·759
	3522	+ 20 4	S		14 3·07	−1·41	1·66	S		22 48·19	−1·74	46·45	44·79				
	3529	+ 7 1	S		15 5·85	−1·42	4·43	S		23 50·84	−1·62	49·22	44·79				
Mar.18	3371	+ 26 33	N	*I. P. E.*	9 46 50·12	+1·32	51·44	N	*I. P. E.*	9 55 34·86	+1·71	36·57	8 45·13				
	3392	+ 32 56	N	*d* c − 1·3 b − 1·1 *a* − 2·9	50 23·26	+1·33	24·59	N	*d* c + 0·4 b + 0·5 *a* +16·4	59 7·98	+1·66	9·64	45·05				
	3439	+ 35 34	N		59 39·06	+1·32	40·38	N		10 8 23·79	+1·63	25·42	45·04				
	3446	+ 35 49	N	*s* *Q* +1·38	10 1 15·33	+1·32	16·65	N	*s* *Q* +1·71	10 0·16	+1·63	1·79	45·14	m s 8 45·131	− 0·035	+ 0·002	
	3386	+ 5 30	S		9 48 43·20	+1·31	44·51	S		9 57 27·89	+1·84	29·73	45·22				8 45·098
	3406	+ 13 0	S		52 39·25	+1·31	40·56	S		10 1 23·96	+1·80	25·76	45·20				
	3415	+ 8 36	S		54 45·31	+1·31	46·62	S		3 29·98	+1·82	31·80	45·18				
	3423	+ 22 31	S		57 1·12	+1·31	2·43	S		5 45·79	+1·73	47·52	45·09				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long* 5h 28m 42s: AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.034$ $S_N - S_S = +0^s.037$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.18	3490	+ 32 3	N	*I. P. E.*	10 9 9·65	−1·43	8·22	N	*I. P. E.*	10 17 55·05	−1·76	53·29	8 45·07				
	3500	+ 29 54	N	*d* c − 1·3 b − 1·1 a − 2·9	10 22·04	−1·44	20·60	N	*d* c + 0·4 b + 0·5 a + 16·4	19 7·48	−1·74	5·74	45·14				
	3559	+ 36 1	N		19 46·60	−1·44	45·16	N		28 32·13	−1·79	30·34	45·18				
	3475	+ 13 56	S	*s* Q −1·38	6 7·00	−1·44	5·56	S	*s* Q −1·71	14 52·37	−1·63	50·74	45·18	m s 8 45·141	− 0·035	+ 0·002	8 45·108
	3483	+ 5 12	S		7 29·37	−1·45	27·92	S		16 14·67	−1·58	13·09	45·17				
	3511	+ 23 42	S		11 34·79	−1·44	33·35	S		20 20·19	−1·69	18·50	45·15				
	3522	+ 20 4	S		14 8·52	−1·45	7·07	S		22 53·86	−1·67	52·19	45·12				
	3529	+ 7 1	S		15 11·25	−1·45	9·80	S		23 56·51	−1·59	54·92	45·12				
Mar.19	3371	+ 26 33	N	*I. P. W.*	9 46 55·76	+1·65	57·41	N	*I. P. W.*	9 55 40·51	+1·64	42·15	8 44·74				
	3392	+ 32 56	N	*d* c + 1·6 b + 8·9 a + 5·7	50 28·94	+1·65	30·59	N	*d* c − 0·7 b 0·0 a + 23·7	59 13·66	+1·57	15·23	44·64				
	3439	+ 35 34	N		59 44·77	+1·65	46·42	N		10 8 29·63	+1·54	31·17	44·75				
	3446	+ 35 49	N	*s* Q +1·39	10 1 21·10	+1·65	22·75	N	*s* Q +1·70	10 5·95	+1·54	7·49	44·74	m s 8 44·693	− 0·035	+ 0·002	8 44·660
	3386	+ 5 30	S		9 48 48·96	+1·67	50·63	S		9 57 33·44	+1·84	35·28	44·65				
	3406	+ 13 0	S		52 44·99	+1·66	46·65	S		10 1 29·52	+1·78	31·30	44·65				
	3415	+ 8 36	S		54 51·09	+1·66	52·75	S		3 35·57	+1·82	37·39	44·64				
	3423	+ 22 31	S		57 6·82	+1·66	8·48	S		5 51·52	+1·69	53·21	44·73				
Mar.19	3490	+ 32 3	N	*I. P. W.*	10 9 15·43	−1·12	14·31	N	*I. P. W.*	10 17 60·83	−1·82	59·01	8 44·70				
	3500	+ 29 54	N	*d* c + 1·6 b + 8·9 a + 5·7	10 27·78	−1·13	26·65	N	*d* c − 0·7 b 0·0 a + 23·7	19 13·24	−1·79	11·45	44·80				
	3559	+ 36 1	N		19 52·25	−1·14	51·11	N		28 37·80	−1·87	35·93	44·82				
	3475	+ 13 56	S	*s* Q −1·39	6 12·73	−1·12	11·61	S	*s* Q −1·70	14 58·01	−1·63	56·38	44·77	m s 8 44·769	− 0·035	+ 0·002	8 44·736
	3483	+ 5 12	S		7 35·08	−1·11	33·97	S		16 20·26	−1·56	18·70	44·73				
	3511	+ 23 42	S		11 40·48	−1·12	39·36	S		20 25·85	−1·73	24·12	44·76				
	3522	+ 20 4	S		14 14·18	−1·12	13·06	S		22 59·53	−1·69	57·84	44·78				
	3529	+ 7 1	S		15 16·96	−1·12	15·84	S		24 2·20	−1·57	0·63	44·79				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W. *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.034$ $\delta_N - \delta_S = +0^s.037$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.20	3371	+ 26 33	N	*I. P. E.*	9 47 1·58	+1·38	2·96	N	*I. P. E.*	9 55 46·43	+1·66	48·09	8 45·13				
	3392	+ 32 56	N	d c − 1·9 b + 1·4 a + 1·3	50 34·67	+1·38	36·05	N	d c + 0·8 b − 0·1 a +31·7	59 19·58	+1·57	21·15	45·10				
	3439	+ 35 34	N		59 50·48	+1·37	51·85	N		10 8 35·47	+1·52	36·99	45·14				
	3446	+ 35 49	N	s Q +1·39	10 1 26·85	+1·37	28·22	N	s Q +1·69	10 11·83	+1·52	13·35	45·13	m s 8 45·142			
	3386	+ 5 30	S		9 48 54·61	+1·39	56·00	S		9 57 39·28	+1·93	41·21	45·21		− 0·034	+ 0·002	8 45·110
	3406	+ 13 0	S		52 50·68	+1·39	52·07	S		10 1 35·38	+1·84	37·22	45·15				
	3415	+ 8 36	S		54 56·75	+1·39	58·14	S		3 41·44	+1·89	43·33	45·19				
	3423	+ 22 31	S		57 12·51	+1·37	13·88	S		5 57·25	+1·72	58·97	45·09				
Mar.20	3490	+ 32 3	N	*I. P. E.*	10 9 21·16	−1·40	19·76	N	*I. P. E.*	10 18 6·63	−1·80	4·83	8 45·07				
	3500	+ 29 54	N	d c − 1·9 b + 1·4 a + 1·3	10 33·53	−1·40	32·13	N	d c + 0·8 b − 0·1 a +31·7	19 18·98	−1·77	17·21	45·08				
	3559	+ 36 1	N		19 58·09	−1·41	56·68	N		28 43·66	−1·87	41·79	45·11				
	3475	+ 13 56	S	s Q −1·39	6 18·44	−1·39	17·05	S	s Q −1·69	15 3·78	−1·55	2·23	45·18	m s 8 45·135	− 0·034	+ 0·002	8 45·103
	3483	+ 5 12	S		7 40·83	−1·39	39·44	S		16 26·05	−1·45	24·60	45·16				
	3511	+ 23 42	S		11 46·22	−1·41	44·81	S		20 31·60	−1·68	29·92	45·11				
	3522	+ 20 4	S		14 19·90	−1·41	18·49	S		23 5·31	−1·63	3·68	45·19				
	3529	+ 7 1	S		15 22·72	−1·39	21·33	S		24 7·98	−1·47	6·51	45·18				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}034$ $S_N - S_S = +0^s{\cdot}037$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.14	4057	+ 43 42	N	*I. P. E.*	11 47 21·60	+1·72	23·32	N	*I. P. E.*	11 56 6·75	+1·65	8·40	8 45·08				
	4100	+ 27 57	N	*d* c + 1·6	56 0·83	+1·55	2·38	N	*d* c + 0·2	12 4 45·71	+1·71	47·42	45·04				
	4052	+ 7 16	S	b + 4·2 a − 17·9	46 4·24	+1·38	5·62	S	b + 1·1 a + 7·6	11 54 49·00	+1·76	50·76	45·14	m s 8 45·098	+ 0·010	+ 0·002	8 45·110	
	4066	+ 22 7	S	*s* Q + 1·39	49 28·50	+1·49	29·99	S	*s* Q + 1·69	58 13·38	+1·72	15·10	45·11				
	4072	+ 9 23	S		50 26·47	+1·40	27·87	S		59 11·24	+1·75	12·99	45·12				
	4081	+ 14 10	S		52 48·79	+1·43	50·22	S		12 1 33·57	+1·75	35·32	45·10				
Mar.14	4169	+ 26 30	N	*I. P. E.*	12 7 51·54	−1·24	50·30	N	*I. P. E.*	12 16 37·05	−1·66	35·39	8 45·09				
	4178	+ 26 30	N	*d* c + 1·6	9 25·25	−1·24	24·01	N	*d* c + 0·2	18 10·74	−1·66	9·08	45·07				
	4199	+ 26 34	N	b + 4·2 a − 17·9	13 1·39	−1·24	0·15	N	b + 1·1 a + 7·6	21 46·92	−1·66	45·26	45·11	m s 8 45·082	+ 0·010	+ 0·002	8 45·094	
	4125	+ 15 33	S	*s* Q − 1·39	1 17·92	−1·33	16·59	S	*s* Q − 1·69	10 3·32	−1·64	1·68	45·09				
	4228	+ 10 57	S		18 21·90	−1·37	20·53	S		27 7·20	−1·63	5·57	45·04				
	4240	+ 23 17	S		20 15·35	−1·28	14·07	S		28 60·82	−1·66	59·16	45·09				
Mar.15	4057	+ 43 42	N	*I. P. W.*	11 47 20·03	+1·70	21·73	N	*I. P. W.*	11 56 4·96	+1·57	6·53	8 44·80				
	4059	+ 43 45	N	*d* c − 0·3	47 42·57	+1·70	44·27	N	*d* c − 2·5	56 27·54	+1·57	29·11	44·84				
	4100	+ 27 57	N	b + 8·9 a − 6·3	55 59·21	+1·60	60·81	N	b + 0·3 a + 5·6	12 4 44·06	+1·64	45·70	44·89				
	4039	+ 4 8	S	*s* Q + 1·38	43 24·05	+1·51	25·56	S	*s* Q + 1·70	11 52 8·62	+1·69	10·31	44·75	m s 8 44·818	+ 0·010	+ 0·002	8 44·830	
	4052	+ 7 16	S		46 2·56	+1·51	4·07	S		54 47·22	+1·68	48·90	44·83				
	4066	+ 22 7	S		49 26·92	+1·58	28·50	S		58 11·62	+1·65	13·27	44·77				
	4072	+ 9 23	S		50 24·85	+1·52	26·37	S		59 9·49	+1·68	11·17	44·80				
	4081	+ 14 10	S		52 47·20	+1·54	48·74	S		12 1 31·93	+1·67	33·60	44·86				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Peral. Equations $H_N - H_S = +0^s.034$ $\delta_N - \delta_S = +0^s.037$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.15	4169	+ 26 30	N	*I. P. W.*	12 7 49·89	−1·17	48·72	N	*I. P. W.*	12 16 35·40	−1·76	33·64	8 44·92				
	4178	+ 26 30	N	d c − 0·3	9 23·67	−1·17	22·50	N	d c − 2·5	18 9·15	−1·76	7·39	44·89				
	4199	+ 26 34	N	b + 8·9 a − 6·3	12 59·78	−1·17	58·61	N	b + 0·3 a + 5·6	21 45·18	−1·76	43·42	44·81	m s 8 44·849	+ 0·010	+ 0·002		
	4125	+ 15 33	S	s Q −1·38	1 16·28	−1·22	15·06	S	s Q −1·70	9 61·67	−1·73	59·94	44·88				
	4218	+ 10 22	S		15 49·76	−1·23	48·53	S		24 35·00	−1·72	33·28	44·75				8 44·861
	4228	+ 10 57	S		18 20·15	−1·23	18·92	S		27 5·45	−1·72	3·73	44·81				
	4240	+ 23 17	S		20 13·73	−1·18	12·55	S		28 59·18	−1·75	57·43	44·88				
Mar.16	4057	+ 43 42	N	*I. P. E.*	11 47 18·40	+1·48	19·88	N	*I. P. E.*	11 56 3·48	+1·52	5·00	8 45·12				
	4059	+ 43 45	N	d c + 0·7	47 40·93	+1·48	42·41	N	d c + 0·6	56 26·03	+1·52	27·55	45·14				
	4100	+ 27 57	N	b + 2·3 a − 0·9	55 57·54	+1·46	59·00	N	b − 1·1 a +14·9	12 4 42·47	+1·65	44·12	45·13				
	4039	+ 4 8	S	s Q +1·38	43 22·38	+1·44	23·82	S	s Q +1·69	11 52 7·15	+1·79	8·94	45·12	m s 8 45·097	+ 0·012	+ 0·002		
	4052	+ 7 16	S		46 0·84	+1·44	2·28	S		54 45·65	+1·77	47·42	45·14				
	4066	+ 22 7	S		49 25·27	+1·46	26·73	S		58 10·02	+1·68	11·70	44·97				8 45·111
	4072	+ 9 23	S		50 23·11	+1·44	24·55	S		59 7·90	+1·76	9·66	45·11				
	4081	+ 14 10	S		52 45·49	+1·45	46·94	S		12 1 30·28	+1·72	32·00	45·06				
Mar.16	4128	+ 33 43	N	*I. P. E.*	12 1 48·03	−1·30	46·73	N	*I. P. E.*	12 10 33·63	−1·77	31·86	8 45·13				
	4181	+ 26 45	N	d c + 0·7	9 37·12	−1·30	35·82	N	d c + 0·6	18 22·65	−1·72	20·93	45·11				
	4191	+ 27 55	N	b + 2·3 a − 0·9	11 43·85	−1·30	42·55	N	b − 1·1 a +14·9	20 29·30	−1·73	27·57	45·02				
	4205	+ 26 53	N	s Q −1·38	13 58·33	−1·30	57·03	N	s Q −1·69	22 43·81	−1·72	42·09	45·06	m s 8 45·075	+ 0·012	+ 0·002		
	4168	+ 5 57	S		7 46·06	−1·32	44·74	S		16 31·42	−1·60	29·82	45·08				8 45·089
	4218	+ 10 22	S		15 48·03	−1·32	46·71	S		24 33·39	−1·62	31·77	45·06				
	4228	+ 10 57	S		18 18·45	−1·32	17·13	S		27 3·87	−1·63	2·24	45·11				
	4240	+ 23 17	S		20 12·08	−1·30	10·78	S		28 57·52	−1·71	55·81	45·03				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND JUBBULPORE (W) *Lat. 23° 10′, Long. 5h 19m 58s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}034$ $\delta_N - \delta_S = +0{\cdot}037$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.17	4057	+ 43 42	N	*I. P. W.*	11 47 16·48	+1·39	17·87	N	*I. P. W.*	11 56 1·43	+1·37	2·80	8 44·93				
	4059	+ 43 45	N	d c + 0·2 b − 0·8 a − 1·1	47 39·05	+1·39	40·44	N	d c − 1·6 b − 1·0 a + 23·8	56 24·00	+1·37	25·37	44·93				
	4100	+ 27 57	N		55 55·54	+1·38	56·92	N		12 4 40·27	+1·59	41·86	44·94				
	4039	+ 4 8	S	s Q + 1·39	43 20·35	+1·36	21·71	S	s Q + 1·71	11 52 4·83	+1·82	6·65	44·94	m s 8 44·903	+ 0·013	+ 0·002	8 44·918
	4052	+ 7 16	S		45 58·90	+1·36	60·26	S		54 43·28	+1·80	45·08	44·82				
	4066	+ 22 7	S		49 23·32	+1·37	24·69	S		58 7·81	+1·66	9·47	44·78				
	4072	+ 9 23	S		50 21·17	+1·36	22·53	S		59 5·65	+1·78	7·43	44·90				
	4081	+ 14 10	S		52 43·49	+1·36	44·85	S		12 1 28·09	+1·74	29·83	44·98				
Mar.17	4128	+ 33 43	N	*I. P. W.*	12 1 46·12	−1·40	44·72	N	*I. P. W.*	12 10 31·51	−1·90	29·61	8 44·89				
	4181	+ 26 45	N	d c + 0·2 b − 0·8 a − 1·1	9 35·18	−1·40	33·78	N	d c − 1·6 b − 1·0 a + 23·8	18 20·59	−1·82	18·77	44·99				
	4191	+ 27 55	N		11 41·90	−1·40	40·50	N		20 27·22	−1·83	25·39	44·89				
	4205	+ 26 53	N	s Q − 1·39	13 56·34	−1·40	54·94	N	s Q − 1·71	22 41·71	−1·82	39·89	44·95	m s 8 44·915	+ 0·013	+ 0·002	8 44·930
	4168	+ 5 57	S		7 44·03	−1·42	42·61	S		16 29·18	−1·61	27·57	44·96				
	4218	+ 10 22	S		15 46·03	−1·42	44·61	S		24 31·13	−1·65	29·48	44·87				
	4228	+ 10 57	S		18 16·51	−1·42	15·09	S		26 61·55	−1·65	59·90	44·81				
	4240	+ 23 17	S		20 10·08	−1·41	8·67	S		28 55·40	−1·77	53·63	44·96				
Mar.18	4057	+ 43 42	N	*I. P. E.*	11 47 14·24	+1·34	15·58	N	*I. P. E.*	11 55 59·22	+1·55	60·77	8 45·19				
	4059	+ 43 45	N	d c − 1·3 b − 1·1 a − 2·9	47 36·84	+1·34	38·18	N	d c + 0·4 b + 0·5 a + 16·4	56 21·89	+1·55	23·44	45·26				
	4100	+ 27 57	N		55 53·32	+1·32	54·64	N		12 4 38·23	+1·70	39·93	45·29				
	4039	+ 4 8	S	s Q + 1·38	43 18·10	+1·30	19·40	S	s Q + 1·71	11 52 2·77	+1·85	4·62	45·22	m s 8 45·231	+ 0·011	+ 0·002	8 45·244
	4052	+ 7 16	S		45 56·61	+1·31	57·92	S		54 41·41	+1·83	43·24	45·32				
	4066	+ 22 7	S		49 21·00	+1·31	22·31	S		58 5·79	+1·74	7·53	45·22				
	4072	+ 9 23	S		50 18·88	+1·31	20·19	S		59 3·54	+1·82	5·36	45·17				
	4081	+ 14 10	S		52 41·28	+1·32	42·60	S		12 1 25·99	+1·79	27·78	45·18				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s : AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5h 19m 58s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Pers. Equations $H_N - H_S = +0^s.034$ $S_N - S_S = +0^s.037$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.18	4128	+ 33 43	N	*I. P. E.*	12 1 43·89	−1·44	42·45	N	*I. P. E.*	12 10 29·38	−1·77	27·61	8 45·16				
	4181	+ 26 45	N	*d* c − 1·3 b − 1·1 *a* − 2·9	9 32·95	−1·44	31·51	N	*d* c + 0·4 b + 0·5 *a* +16·4	18 18·41	−1·72	16·69	45·18				
	4191	+ 27 55	N		11 39·74	−1·44	38·30	N		20 25·03	−1·72	23·31	45·01				
	4205	+ 26 53	N	*s* *Q* −1·38	13 54·19	−1·44	52·75	N	*s* *Q* −1·71	22 39·49	−1·72	37·77	45·02	m s 8 45·144	+ 0·011	+ 0·002	8 45·157
	4168	+ 5 57	S		7 41·81	−1·45	40·36	S		16 27·11	−1·58	25·53	45·17				
	4218	+ 10 22	S		15 43·74	−1·45	42·29	S		24 29·10	−1·61	27·49	45·20				
	4228	+ 10 57	S		18 14·19	−1·45	12·74	S		26 59·64	−1·61	58·03	45·29				
	4240	+ 23 17	S		20 7·84	−1·44	6·40	S		28 53·21	−1·69	51·52	45·12				
Mar.19	4057	+ 43 42	N	*I. P. W.*	11 47 12·50	+1·70	14·20	N	*I. P. W.*	11 55 57·53	+1·42	58·95	8 44·75				
	4059	+ 43 45	N	*d* c + 1·6 b +10·6 *a* + 5·7	47 35·07	+1·70	36·77	N	*d* c − 0·7 b 0·0 *a* +23·7	56 20·08	+1·42	21·50	44·73				
	4100	+ 27 57	N		55 51·58	+1·70	53·28	N		12 4 36·49	+1·63	38·12	44·84				
	4039	+ 4 8	S	*s* *Q* +1·39	43 16·36	+1·70	18·06	S	*s* *Q* +1·70	11 52 0·95	+1·85	2·80	44·74	m s 8 44·766	+ 0·011	+ 0·002	8 44·779
	4052	+ 7 16	S		45 54·88	+1·70	56·58	S		54 39·46	+1·83	41·29	44·71				
	4066	+ 22 7	S		49 19·25	+1·70	20·95	S		58 3·97	+1·69	5·66	44·71				
	4072	+ 9 23	S		50 17·16	+1·70	18·86	S		59 1·88	+1·81	3·69	44·83				
	4081	+ 14 10	S		52 39·54	+1·70	41·24	S		12 1 24·29	+1·77	26·06	44·82				
Mar.19	4128	+ 33 43	N	*I. P. W.*	12 1 42·19	−1·09	41·10	N	*I. P. W.*	12 10 27·76	−1·84	25·92	8 44·82				
	4181	+ 26 45	N	*d* c + 1·6 b +10·6 *a* + 5·7	9 31·19	−1·08	30·11	N	*d* c − 0·7 b 0·0 *a* +23·7	18 16·84	−1·76	15·08	44·97				
	4191	+ 27 55	N		11 37·97	−1·08	36·89	N		20 23·47	−1·77	21·70	44·81				
	4205	+ 26 53	N	*s* *Q* −1·39	13 52·48	−1·08	51·40	N	*s* *Q* −1·70	22 37·84	−1·76	36·08	44·68	m s 8 44·809	+ 0·011	+ 0·002	8 44·822
	4168	+ 5 57	S		7 40·12	−1·08	39·04	S		16 25·42	−1·56	23·86	44·82				
	4218	+ 10 22	S		15 42·12	−1·08	41·04	S		24 27·40	−1·60	25·80	44·76				
	4228	+ 10 57	S		18 12·51	−1·08	11·43	S		26 57·76	−1·60	56·16	44·73				
	4240	+ 23 17	S		20 6·13	−1·08	5·05	S		28 51·65	−1·72	49·93	44·88				

NOTE.—1d = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5ʰ 28ᵐ 42ˢ; AND JUBBULPORE (W) *Lat.* 23° 10′, *Long.* 5ʰ 19ᵐ 58ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}034$ $S_N - S_S = +0^s{\cdot}037$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Mar.20	4057	+ 43 42	N	*I. P. E.*	11 47 10·71	+1·36	12·07	N	*I. P. E.*	11 55 55·94	+1·36	57·30	8 45·23				
	4059	+ 43 45	N	*d* c − 1·9 b + 1·4 *a* + 1·3	47 33·30	+1·36	34·66	N	*d* c + 0·8 b − 0·1 *a* +31·7	56 18·56	+1·36	19·92	45·26				
	4100	+ 27 57	N		55 49·79	+1·38	51·17	N		12 4 34·73	+1·64	36·37	45·20				
	4039	+ 4 8	S	*s* *Q* +1·39	43 14·55	+1·39	15·94	S	*s* *Q* +1·69	11 51 59·24	+1·94	61·18	45·24	*m s* 8 45·111	+ 0·012	+ 0·002	8 45·125
	4052	+ 7 16	S		45 53·10	+1·39	54·49	S		54 37·81	+1·91	39·72	45·23				
	4066	+ 22 7	S		49 17·47	+1·37	18·84	S		58 2·31	+1·72	4·03	45·19				
	4072	+ 9 23	S		50 15·37	+1·39	16·76	S		59 0·07	+1·88	1·95	45·19				
	4081	+ 14 10	S		52 37·73	+1·39	39·12	S		12 1 22·46	+1·83	24·29	45·17				
Mar.20	4128	+ 33 43	N	*I. P. E.*	12 1 40·33	−1·40	38·93	N	*I. P. E.*	12 10 25·96	−1·83	24·13	8 45·20				
	4181	+ 26 45	N	*d* c − 1·9 b + 1·4 *a* + 1·3	9 29·36	−1·40	27·96	N	*d* c + 0·8 b − 0·1 *a* +31·7	18 14·94	−1·72	13·22	45·26				
	4191	+ 27 55	N		11 36·13	−1·40	34·73	N		20 21·60	−1·74	19·86	45·13				
	4205	+ 26 53	N	*s* *Q* −1·39	13 50·66	−1·40	49·26	N	*s* *Q* −1·69	22 36·10	−1·72	34·38	45·12	*m s* 8 45·215	+ 0·012	+ 0·002	8 45·229
	4168	+ 5 57	S		7 38·25	−1·39	36·86	S		16 23·52	−1·45	22·07	45·21				
	4218	+ 10 22	S		15 40·23	−1·39	38·84	S		24 25·58	−1·51	24·07	45·23				
	4228	+ 10 57	S		18 10·68	−1·39	9·29	S		26 56·11	−1·51	54·60	45·31				
	4240	+ 23 17	S		20 4·33	−1·41	2·92	S		28 49·85	−1·67	48·18	45·26				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}052$ $S_N - S_S = +0^s{\cdot}020$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.28	4057	+ 43 42	N	*I. P. E.*	11 55 50·22	+1·68	51·90	N	*I. P. E.*	11 56 10·71	+1·75	12·46	+0 20·56				
	4059	+ 43 45	N	d c + 1·6 b + 7·5 a − 1·1	56 12·78	+1·68	14·46	N	d c + 0·4 b + 0·2 a −17·0	56 33·33	+1·75	35·08	20·62				
	4100	+ 27 57	N		12 4 29·35	+1·63	30·98	N		12 4 50·00	+1·61	51·61	20·63	m s +0 20·609	0·070	−0·018	+0 20·521
	4039	+ 4 8	S	s Q +1·40	11 51 53·99	+1·59	55·58	S	s Q +1·58	11 52 14·74	+1·44	16·18	20·60				
	4066	+ 22 7	S		57 56·92	+1·62	58·54	S		58 17·59	+1·55	19·14	20·60		−	−	
	4072	+ 9 23	S		58 54·81	+1·59	56·40	S		59 15·57	+1·47	17·04	20·64				
	4100	+ 27 57	S		12 4 29·35	+1·63	30·98	S		12 4 49·98	+1·61	51·59	20·61				
				Mean, T_E	11 58 32												
Mar.28	4142	+ 28 49	N	*I. P. E.*	12 13 20·66	−1·17	19·49	N	*I. P. E.*	12 13 41·66	−1·55	40·11	+0 20·62				
	4147	+ 29 7	N	d c + 1·6 b + 7·5 a − 1·1	13 40·17	−1·17	39·00	N	d c + 0·4 b + 0·2 a −17·0	13 61·24	−1·55	59·69	20·69				
	4169	+ 26 30	N		16 20·14	−1·17	18·97	N		16 41·19	−1·57	39·62	20·65				
	4178	+ 26 30	N	s Q −1·40	17 53·84	−1·17	52·67	N	s Q −1·58	18 14·82	−1·57	13·25	20·58				
	4188	+ 39 40	N		19 47·81	−1·13	46·68	N		20 8·74	−1·45	7·29	20·61	m s +0 20·661	0·070	−0·012	+0 20·579
	4195	+ 28 55	N		20 49·07	−1·17	47·90	N		21 10·13	−1·55	8·58	20·68				
	4205	+ 26 53	N		22 30·24	−1·17	29·07	N		22 51·29	−1·56	49·73	20·66		−	−	
	4127	+ 24 36	S		10 7·98	−1·17	6·81	S		10 29·08	−1·59	27·49	20·68				
	4169	+ 26 30	S		16 20·09	−1·17	18·92	S		16 41·13	−1·57	39·56	20·64				
	4178	+ 26 30	S		17 53·75	−1·17	52·58	S		18 14·91	−1·57	13·34	20·76				
	4205	+ 26 53	S		22 30·11	−1·17	28·94	S		22 51·20	−1·56	49·64	20·70				
				Mean, T_E	12 17 23												
Mar.29	4057	+ 43 42	N	*I. P. W.*	11 55 55·74	+1·39	57·13	N	*I. P. W.*	11 56 16·84	+1·64	18·48	+0 21·35				
	4059	+ 43 45	N	d c − 1·6 b + 1·2 a − 2·4	56 18·33	+1·39	19·72	N	d c − 1·8 b − 1·2 a −20·4	56 39·43	+1·64	41·07	21·35				
	4100	+ 27 57	N		12 4 34·83	+1·37	36·20	N		12 4 56·01	+1·49	57·50	21·30				
	4066	+ 22 7	S	s Q +1·38	11 58 2·44	+1·37	3·81	S	s Q +1·56	11 58 23·78	+1·45	25·23	21·42	m s +0 21·364	0·071	−0·018	+0 21·275
	4072	+ 9 23	S		59 0·31	+1·35	1·66	S		59 21·68	+1·35	23·03	21·37		−	−	
	4081	+ 14 10	S		12 1 22·72	+1·36	24·08	S		12 1 44·10	+1·38	45·48	21·40				
	4100	+ 27 57	S		4 34·84	+1·37	36·21	S		4 56·08	+1·49	57·57	21·36				
				Mean, T_E	11 59 58												

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}052$ $S_N - S_S = +0\ 020$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 29	4142	+ 28 49	N	*I. P. W.*	12 13 26·19	−1·39	24·80	N	*I. P. W.*	12 13 47·73	−1·63	46·10	+0 21·30				
	4147	+ 29 7	N	d c − 1·6	13 45·82	−1·39	44·43	N	d c − 1·8	14 7·28	−1·62	5·66	21·23				
	4178	+ 26 30	N	b + 1·2 a − 2·4	17 59·35	−1·39	57·96	N	b − 1·2 a −20·4	18 20·92	−1·65	19·27	21·31				
	4188	+ 39 40	N	s Q −1·38	19 53·36	−1·38	51·98	N	s Q −1·56	20 14·80	−1·51	13·29	21·31	m s +0 21·311	0·071	0·011	+0 21·229
	4195	+ 28 55	N		20 54·64	−1·39	53·25	N		21 16·19	−1·62	14·57	21·32				
	4205	+ 26 53	N		22 35·76	−1·39	34·37	N		22 57·32	−1·64	55·68	21·31		—	—	
	4169	+ 26 30	S		16 25·60	−1·39	24·21	S		16 47·16	−1·65	45·51	21·30				
	4178	+ 26 30	S		17 59·40	−1·39	58·01	S		18 20·96	−1·65	19·31	21·30				
	4205	+ 26 53	S		22 35·61	−1·39	34·22	S		22 57·28	−1·64	55·64	21·42				
				Mean, T_E	12 18 24												
Mar 30	4057	+ 43 42	N	*I. P. E.*	11 56 1·13	+1·40	2·53	N	*I. P. E.*	11 56 23·02	+1·84	24·86	+0 22·33				
	4059	+ 43 45	N	d c + 0·3	56 23·61	+1·40	25·01	N	d c − 0·9	56 45·61	+1·84	47·45	22·44				
	4052	+ 7 16	S	b − 1·8 a − 5·7	54 43·40	+1·32	44·72	S	b − 1·7 a −39·5	55 5·96	+1·21	7·17	22·45	m s +0 22·427	0·071	0·021	+0 22·335
	4066	+ 22 7	S	s Q +1·39	58 7·83	+1·35	9·18	S	s Q +1·57	58 30·15	+1·43	31·58	22·40		—	—	
	4072	+ 9 23	S		59 5·69	+1·32	7·01	S		59 28·31	+1·23	29·54	22·53				
	4100	+ 27 57	S		12 4 40·22	+1·35	41·57	S		12 5 2·45	+1·53	3·98	22·41				
				Mean, T_E	11 58 10												
Mar. 30	4142	+ 28 49	N	*I. P. E.*	12 13 31·50	−1·42	30·08	N	*I. P. E.*	12 13 54·14	−1·60	52·54	+0 22·46				
	4169	+ 26 30	N	d c + 0·3	16 31·01	−1·43	29·58	N	d c − 0·9	16 53·77	−1·64	52·13	22·55				
	4178	+ 26 30	N	b − 1·8 a − 5·7	18 4·68	−1·43	3·25	N	b − 1·7 a −39·5	18 27·37	−1·64	25·73	22·48				
	4188	+ 39 40	N	s Q −1·39	19 58·67	−1·39	57·28	N	s Q −1·57	20 21·14	−1·40	19·74	22·46				
	4195	+ 28 55	N		20 59·97	−1·42	58·55	N		21 22·63	−1·60	21·03	22·48	m s +0 22·498	0·071	0·013	+0 22·414
	4205	+ 26 53	N		22 41·13	−1·43	39·70	N		23 3·80	−1·64	2·16	22·46		—	—	
	4127	+ 24 36	S		10 18·84	−1·43	17·41	S		10 41·66	−1·67	39·99	22·58				
	4169	+ 26 30	S		16 30·94	−1·43	29·51	S		16 53·60	−1·64	51·96	22·45				
	4178	+ 26 30	S		18 4·66	−1·43	3·23	S		18 27·44	−1·64	25·80	22·57				
	4205	+ 26 53	S		22 40·98	−1·43	39·55	S		23 3·68	−1·64	2·04	22·49				
				Mean, T_E	12 17 56												

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s : AND AGRA (W) *Lat.* 27° 10′, *Long* 5h 12m 14s.

Astronomical Date	Star: B.A.C. Number	Star: Declination	Transits Observed at E (*By Heaviside, with Telescope No. 1*): Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Transits Observed at W (*By Strahan, with Telescope No. 2*): Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Difference of Corrected Times (W − E): By each Star	Difference of Corrected Times (W − E): Mean of Group	Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S$ = + 0·052, $S_N - S_S$ = + 0·020	M_N
1883	·	° ′			h m s	s	s			h m s	s	s	m s				
Mar.31	4057	+ 43 42	N	*I. P. W.*	11 56 6·17	+1·73	7·90	N	*I. P. W.*	11 56 28·61	+2·02	30·63	+0 22·73				
	4039	+ 4 8	S	d c + 0·6 b + 7·6 a − 9·4	52 10·22	+1·48	11·70	S	d c − 0·9 b − 0·2 a −52·4	52 33·47	+1·12	34·59	22·89	m s +0 22·792	0·069		
	4052	+ 7 16	S		54 48·78	+1·49	50·27	S		55 11·76	+1·18	12·94	22·67				
	4066	+ 22 7	S	s Q +1·39	58 13·12	+1·56	14·68	S	s Q +1·60	58 35·97	+1·47	37·44	22·76		−	−	+0 22·696
	4072	+ 9 23	S		59 11·02	+1·51	12·53	S		59 34·11	+1·21	35·32	22·79				
	4081	+ 14 10	S		12 1 33·41	+1·52	34·93	S		12 1 56·53	+1·31	57·84	22·91				
				Mean, T_E	11 57 0												
Mar.31	4142	+ 28 49	N	*I. P. W.*	12 13 36·88	−1·16	35·72	N	*I. P. W.*	12 13 59·95	−1·59	58·36	+0 22·64				
	4147	+ 29 7	N	d c + 0·6 b + 7·6 a − 9·4	13 56·39	−1·16	55·23	N	d c − 0·9 b − 0·2 a −52·4	14 19·61	−1·58	18·03	22·80				
	4169	+ 26 30	N		16 36·31	−1·18	35·13	N		16 59·57	−1·65	57·92	22·79				
	4178	+ 26 30	N	s Q −1·39	18 10·00	−1·18	8·82	N	s Q −1·60	18 33·29	−1·65	31·64	22·82				
	4188	+ 39 40	N		20 3·92	−1·09	2·83	N		20 26·83	−1·31	25·52	22·69				
	4195	+ 28 55	N		21 5·22	−1·16	4·06	N		21 28·42	−1·59	26·83	22·77	m s +0 22·773	0·069		
	4205	+ 26 53	N		22 46·39	−1·18	45·21	N		23 9·66	−1·64	8 02	22·81		−	−	+0 22·692
	4127	+ 24 36	S		10 24·13	−1·20	22·93	S		10 47·45	−1·68	45·77	22 84				
	4169	+ 26 30	S		16 36·23	−1·18	35·05	S		16 59·49	−1·65	57·84	22·79				
	4178	+ 26 30	S		18 9·99	−1·18	8·81	S		18 33·21	−1·65	31·56	22·75				
	4205	+ 26 53	S		22 46·31	−1·18	45·13	S		23 9·57	−1·64	7·93	22·80				
				Mean, T_E	12 17 39												

NOTE.—1d = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}052$ $S_N - S_S = +0{\cdot}020$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 3	4057	+ 43 42	N	*I. P. E.*	11 56 22·27	+1·52	23·79	N	*I. P. E.*	11 56 8·04	+1·53	49·57	+0 25·78				
	4059	+ 43 45	N	d c + 0·7 b + 4·0 a + 0·8	56 44·86	+1·52	46·38	N	d c + 0·3 b − 2·3 a − 8·4	57 10·68	+1·53	12·21	25·83				
	4100	+ 27 57	N		12 5 1·44	+1·51	2·95	N		12 5 27·25	+1·47	28·72	25·77				
	4039	+ 4 8	S	s Q +1·39	11 52 26·03	+1·50	27·53	S	s Q +1·52	11 52 51·98	+1·41	53·39	25·86	m s +0 25·820	−0·073	−0·021	+0 25·726
	4052	+ 7 16	S		55 4·57	+1·51	6·08	S		55 30·54	+1·42	31·96	25·88				
	4066	+ 22 7	S		58 29·02	+1·51	30·53	S		58 54·88	+1·45	56·33	25·80				
	4072	+ 9 23	S		59 26·91	+1·51	28·42	S		59 52·82	+1·42	54·24	25·82				
	4081	+ 14 10	S		12 1 49·28	+1·50	50·78	S		12 2 15·22	+1·44	16·66	25·88				
	4100	+ 27 57	S		5 1·47	+1·51	2·98	S		5 27·27	+1·47	28·74	25·76				
				Mean, T_E	11 58 56												
Apr. 3	4142	+ 28 49	N	*I. P. E.*	12 13 52·78	−1·27	51·51	N	*I. P. E.*	12 14 18·93	−1·56	17·37	+0 25·86				
	4147	+ 29 7	N	d c + 0·7 b + 4·0 a + 0·8	14 12·33	−1·27	11·06	N	d c + 0·3 b − 2·3 a − 8·4	14 38·48	−1·56	36·92	25·86				
	4169	+ 26 30	N		16 52·25	−1·27	50·98	N		17 18·38	−1·57	16·81	25·83				
	4178	+ 26 30	N	s Q −1·39	18 25·84	−1·27	24·57	N	s Q −1·52	18 52·11	−1·57	50·54	25·97				
	4188	+ 39 40	N		20 19·84	−1·27	18·57	N		20 46·02	−1·53	44·49	25·92	m s +0 25·912	−0·073	−0·012	+0 25·827
	4195	+ 28 55	N		21 21·16	−1·27	19·89	N		21 47·38	−1·56	45·82	25·93				
	4205	+ 26 53	N		23 2·32	−1·27	1·05	N		23 28·48	−1·57	26·91	25·86				
	4127	+ 24 36	S		10 40·07	−1·27	38·80	S		11 6·27	−1·58	4·69	25·89				
	4169	+ 26 30	S		16 52·12	−1·27	50·85	S		17 18·38	−1·57	16·81	25·96				
	4178	+ 26 30	S		18 25·88	−1·27	24·61	S		18 52·13	−1·57	50·56	25·95				
	4205	+ 26 53	S		23 2·16	−1·27	0·89	S		23 28·46	−1·57	26·89	26·00				
				Mean, T_E	12 17 55												

NOTE.—1^d = $0^s{\cdot}0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat. 27° 10′, Long. 5h 12m 14s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Pers. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.020$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 4	4057	+ 43 42	N	*I. P. W.*	11 56 27·85	+1·43	29·28	N	*I. P. W.*	11 56 53·96	+1·88	55·84	+0 26·56				
	4059	+ 43 45	N	*d* c − 0·8 b + 2·4 *a* + 0·1	56 50·38	+1·43	51·81	N	*d* c + 0·8 b + 0·5 *a* −29·0	57 16·60	+1·88	18·48	26·67				
	4100	+ 27 57	N		12 5 6·92	+1·42	8·34	N		12 5 33·43	+1·63	35·06	26·72				
	4039	+ 4 8	S	*s* *Q* +1·38	11 52 31·60	+1·41	33·01	S	*s* *Q* +1·59	11 52 58·33	+1·36	59·69	26·68	*s* +0 26·667			
	4052	+ 7 16	S		55 10·15	+1·41	11·56	S		55 36·76	+1·40	38·16	26·60				
	4072	+ 9 23	S		59 32·42	+1·41	33·83	S		59 59·09	+1·42	60·51	26·68				
	4081	+ 14 10	S		12 1 54·79	+1·41	56·20	S		12 2 21·45	+1·47	22·92	26·72				
	4100	+ 27 57	S		5 6·97	+1·42	8·39	S		5 33·45	+1·63	35·08	26·69				
				Mean, T_E	11 59 5												
Apr. 4	4142	+ 28 49	N	*I. P. W.*	12 13 58·30	−1·34	56·96	N	*I. P. W.*	12 14 25·06	−1·54	23·52	+0 26·56				
	4147	+ 29 7	N	*d* c − 0·8 b + 2·4 *a* + 0·1	14 17·87	−1·34	16·53	N	*d* c + 0·8 b + 0·5 *a* −29·0	14 44·66	−1·54	43·12	26·59				
	4169	+ 26 30	N		16 57·81	−1·34	56·47	N		17 24·63	−1·57	23·06	26·59				
	4178	+ 26 30	N	*s* *Q* −1·38	18 31·45	−1·34	30·11	N	*s* *Q* −1·59	18 58·31	−1·57	56·74	26·63				
	4188	+ 39 40	N		20 25·44	−1·33	24·11	N		20 52·12	−1·38	50·74	26·63	*s* +0 26·637			
	4195	+ 28 55	N		21 26·70	−1·34	25·36	N		21 53·57	−1·54	52·03	26·67				
	4205	+ 26 53	N		23 7·89	−1·34	6·55	N		23 34·71	−1·56	33·15	26·60				
	4127	+ 24 36	S		10 45·63	−1·34	44·29	S		11 12·53	−1·59	10·94	26·65				
	4169	+ 26 30	S		16 57·68	−1·34	56·34	S		17 24·60	−1·57	23·03	26·69				
	4178	+ 26 30	S		18 31·47	−1·34	30·13	S		18 58·38	−1·57	56·81	26·68				
	4205	+ 26 53	S		23 7·70	−1·34	6·36	S		23 34·64	−1·56	33·08	26·72				
				Mean, T_E	12 18 1												

Note.—1^d = $0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* $5^h\ 28^m\ 42^s$: AND AGRA (W) *Lat.* 27° 10′, *Long.* $5^h\ 12^m\ 14^s$.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +6^s{\cdot}052$, $S_N - S_S = +0^s{\cdot}020$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Mar 28	3765	+ 39 50	N	*I. P. E.*	10 53 56·59	+1·65	58·24	N	*I. P. E.*	11 10 24·63	+1·71	26·34	16 28·10				
	3784	+ 38 52	N	*d* c + 1·6 b + 6·8 *a* − 1·1	57 40·58	+1·65	42·23	N	*d* c + 0·4 b + 0·2 *a* −17·0	14 8·53	+1·70	10·23	28·00				
	1348†	+ 38 53	N		57 53·32	+1·65	54·97	N		14 21·24	+1·70	22·94	27·97				
	3797	+ 26 10	N	*s* *Q* +1·40	11 0 27·17	+1·61	28·78	N	*s* *Q* +1·58	16 55·17	+1·59	56·76	27·98	*m s* 16 28·008	− 0·060	− 0·014	16 27·934
	3811	+ 36 57	N		2 32·68	+1·65	34·33	N		19 0·63	+1·68	2·31	27·98				
	3776	+ 20 48	S		10 55 44·54	+1·60	46·14	S		12 12·66	+1·54	14·20	28·06				
	3797	+ 26 10	S		11 0 27·14	+1·61	28·75	S		16 55·15	+1·59	56·74	27·99				
	3824	+ 15 2	S		5 15·22	+1·59	16·81	S		21 43·29	+1·51	44·80	27·99				
	3831	+ 20 46	S		7 11·85	+1·60	13·45	S		23 39·91	+1·54	41·45	28·00				
Mar. 28	3851	+ 32 11	N	*I. P. E.*	11 11 38·98	−1·18	37·80	N	*I. P. E.*	11 28 7·34	−1·52	5·82	16 28·02				
	3856	+ 38 50	N	*d* c + 1·6 b + 6·8 *a* − 1·1	12 27·83	−1·15	26·68	N	*d* c + 0·4 b + 0·2 *a* −17·0	28 56·08	−1·46	54·62	27·94				
	3868	+ 44 7	N		16 6·95	−1·14	5·81	N		32 35·17	−1·40	33·77	27·96				
	3905	+ 39 59	N	*s* *Q* −1·40	22 28·66	−1·15	27·51	N	*s* *Q* −1·58	38 56·91	−1·45	55·46	27·95	*m s* 16 27·983	− 0·060	− 0·016	16 27·907
	3877	+ 11 11	S		17 32·04	−1·22	30·82	S		33 60·45	−1·68	58·77	27·95				
	3886	+ 17 5	S		19 12·84	−1·20	11·64	S		35 41·30	−1·64	39·66	28·02				
	3804$_1$	+ 3 40	S		20 32·57	−1·23	31·34	S		36 61·04	−1·72	59·32	27·98				
	3915	+ 19 3	S		24 5·18	−1·20	3·98	S		40 33·65	−1·63	32·02	28·04				
Mar. 29	3765	+ 39 50	N	*I. P. W.*	10 54 2·18	+1·35	3·53	N	*I. P. W.*	11 10 29·95	+1·61	31·56	16 28·03				
	3784	+ 38 52	N	*d* c − 1·6 b − 0·1 *a* − 2·4	57 46·06	+1·34	47·40	N	*d* c − 1·8 b − 1·2 *a* −20·4	14 13·89	+1·60	15·49	28·09				
	1348†	+ 38 53	N		57 58·81	+1·34	60·15	N		14 26·62	+1·60	28·22	28·07				
	3797	+ 26 10	N	*s* *Q* +1·38	11 0 32·68	+1·34	34·02	N	*s* *Q* +1·56	17 0·52	+1·47	1·99	27·97	*m s* 16 28·049	− 0·061	− 0·012	16 27·976
	3811	+ 36 57	N		2 38·17	+1·34	39·51	N		19 5·94	+1·58	7·52	28·01				
	3797	+ 26 10	S		0 32·66	+1·34	34·00	S		17 0·57	+1·47	2·04	28·04				
	3824	+ 15 2	S		5 20·68	+1·33	22·01	S		21 48·74	+1·39	50·13	28·12				
	3831	+ 20 46	S		7 17·34	+1·33	18·67	S		23 45·30	+1·43	46·73	28·06				

NOTE.—1^d = $0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.
* ρ is the retardation of an electric signal between the stations. † Of Greenwich Catalogue, 1864.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s: AND AGRA (W) *Lat.* 27° 10′, *Long.* 5h 12m 14s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Persl Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0.020$	$\delta L_N - \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.29	3851	+ 32 11	N	*I. P. W.*	11 11 44·50	−1·41	43·09	N	*I. P. W.*	11 28 12 69	−1·59	11·10	16 28·01				
	3856	+ 38 50	N	*d* c − 1·6	12 33·28	−1·42	31·86	N	*d* c − 1·8	28 61·39	−1·52	59·87	28·01				
	3868	+ 44 7	N	b − 0·1 a − 2·4	16 12·37	−1·41	10·96	N	b − 1·2 a −20·4	32 40·44	−1·47	38·97	28·01				
	3905	+ 39 59	N	*s* Q −1·38	22 34·10	−1·41	32·69	N	*s* Q −1·56	39 2·19	−1·51	0·68	27·99	*m s* 16 28·012	− 0·061	0·016	16 27·935
	3877	+ 11 11	S		17 37·47	−1·43	36·04	S		34 5·82	−1·76	4·06	28·02				
	3886	+ 17 5	S		19 18·31	−1·43	16·88	S		35 46·64	−1·72	44·92	28·04				
	3894_1	+ 3 40	S		20 38·02	−1·44	36·58	S		37 6·42	−1·80	4·62	28·04				
	3915	+ 19 3	S		24 10·70	−1·43	9·27	S		40 38·95	−1·70	37·25	27·98				
Mar.30	3765	+ 39 50	N	*I. P. E.*	10 54 7·45	+1·41	8·86	N	*I. P. E.*	11 10 35·19	+1·74	36·93	16 28·07				
	3784	+ 38 52	N	*d* c + 0·3	57 51·39	+1·40	52·79	N	*d* c − 0·9	14 19·15	+1·72	20·87	28·08				
	1348†	+ 38 53	N	b − 1·1 a − 5·7	58 4·15	+1·40	5·55	N	b − 1·7 a −39 5	14 31·84	+1·72	33·56	28·01				
	3797	+ 26 10	N	*s* Q +1·39	11 0 37·98	+1·37	39·35	N	*s* Q +1·57	17 5·92	+1·49	7·41	28 06				
	3811	+ 36 57	N		2 43·48	+1·40	44·88	N		19 11·26	+1·68	12·94	28·06	*m s* 16 28·091	− 0·062	0·014	16 28·015
	3776	+ 20 48	S		10 55 55·40	+1·36	56·76	S		12 23·47	+1·40	24·87	28·11				
	3797	+ 26 10	S		11 0 37·96	+1·37	39·33	S		17 5·91	+1·49	7·40	28·07				
	3824	+ 15 2	S		5 26·03	+1·34	27·37	S		21 54·26	+1·32	55·58	28·21				
	3831	+ 20 46	S		7 22·68	+1·36	24·04	S		23 50·79	+1·40	52·19	28·15				
Mar.30	3851	+ 32 11	N	*I. P. E.*	11 11 49·75	−1·40	48·35	N	*I. P. E.*	11 28 18·02	−1·55	16·47	16 28·12				
	3856	+ 38 50	N	*d* c + 0·3	12 38·56	−1·38	37·18	N	*d* c − 0·9	29 6·76	−1·42	5·34	28·16				
	3868	+ 44 7	N	b − 1·1 a − 5·7	16 17·69	−1·36	16·33	N	b − 1·7 a −39·5	32 45·73	−1·29	44·44	28·11				
	...	+ 39 57	N	*s* Q −1·39	22 10·69	−1·37	9·32	N	*s* Q −1·57	38 38·70	−1·39	37·31	27·99				
	3905	+ 39 59	N		22 39·38	−1·37	38·01	N		39 7·44	−1·39	6·05	28·04	*m s* 16 28·084	− 0·062	0·016	16 28·006
	3877	+ 11 11	S		17 42·88	−1·43	41·45	S		34 11·41	−1·88	9·53	28·08				
	3886	+ 17 5	S		19 23·65	−1·43	22·22	S		35 52·09	−1·80	50·29	28·07				
	3894_1	+ 3 40	S		20 43·38	−1·45	41·93	S		37 12·01	−1·99	10·02	28·09				
	3894_2	+ 3 40	S		20 44·42	−1·45	42·97	S		37 13·00	−1·99	11·01	28·04				
	3915	+ 19 3	S		24 16·07	−1·43	14·64	S		40 44·54	−1·76	42·78	28·14				

NOTE.—1^d = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.
* ρ is the retardation of an electric signal between the stations. † Of Greenwich Catalogue, 1864.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

FYZABAD (E) *Lat. 26° 47′, Long. 5h 28m 42s*: AND AGRA (W) *Lat 27° 10′, Long. 5h 12m 11s*.

Astronomical Date	Star: B A.C. Number	Star: Declination	Transits Observed at E (*By Heaviside, with Telescope No. 1*): Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Transits Observed at W (*By Strahan, with Telescope No. 2*): Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Difference of Corrected Times (W − E): By each Star	Mean of Group	Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$, $S_N - S_S = +0.020$	$\delta L_N - \rho$
1883		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Mar.31	3784	+ 38 52	N	*I. P. W.*	10 57 56·69	+1·68	58·37	N	*I. P. W.*	11 14 24·29	+1·87	26·16	16 27·79				
	1348†	+ 38 53	N	*d* c + 0·6 b + 7·6 *a* − 9·4	58 9·38	+1·68	11·06	N	*d* c − 0·9 b − 0·2 *a* −52·4	14 37·11	+1·87	38·98	27·92	*m s* 16 27 812	− 0·062	− 0·013	16 27·737
	3811	+ 36 57	N		11 2 48·81	+1·67	50·48	N		19 16·42	+1·81	18·23	27·75				
	3824	+ 15 2	S	*s* *Q* +1·39	5 31·42	+1·52	32·94	S	*s* *Q* +1·60	21 59·42	+1·32	60·74	27·80				
	3831	+ 20 46	S		7 28·04	+1·56	29·60	S		23 55·96	+1·44	57·40	27·80				
Mar.31	3851	+ 32 11	N	*I. P. W.*	11 11 54·98	−1·15	53·83	N	*I. P. W.*	11 28 23·26	−1·51	21·75	16 27·92				
	3856	+ 38 50	N	*d* c + 0·6 b + 7·6 *a* − 9·4	12 43·86	−1·10	42·76	N	*d* c − 0·9 b − 0·2 *a* −52·4	29 11·89	−1·34	10·55	27·79				
	3868	+ 44 7	N		16 22·86	−1·05	21·81	N		32 50·79	−1·16	49·63	27·82				
	...	+ 39 57	N	*s* *Q* −1·39	22 15·91	−1·09	14·82	N	*s* *Q* −1·60	38 43·85	−1·30	42·55	27·73				
	3905	+ 39 59	N		22 44·61	−1·09	43·52	N		39 12·71	−1·30	11·41	27·89	*m s* 16 27·824	− 0·062	− 0·016	16 27·746
	3877	+ 11 11	S		17 48·21	−1·27	46·94	S		34 16·66	−1·95	14·71	27·77				
	3886	+ 17 5	S		19 29·02	−1·24	27·78	S		35 57·47	−1·84	55·63	27·85				
	3894_1	+ 3 40	S		20 48·80	−1·30	47·50	S		37 17·42	−2·09	15·33	27·83				
	3894_2	+ 3 40	S		20 49·82	−1·30	48·52	S		37 18·42	−2·09	16·33	27·81				
	3915	+ 19 3	S		24 21·36	−1·23	20·13	S		40 49·76	−1·80	47·96	27·83				
Apr. 3	3765	+ 39 50	N	*I. P. E.*	10 54 28·73	+1·51	30·24	N	*I. P. E*	11 10 56·89	+1·51	58·40	16 28·16				
	3784	+ 38 52	N	*d* c + 0·7 b + 4·0 *a* + 0·8	58 12·67	+1·52	14·19	N	*d* c + 0·3 b − 2·3 *a* − 8·4	14 40·80	+1·51	42·31	28·12				
	1348†	+ 38 53	N		58 25·38	+1·52	26·90	N		14 53·53	+1·51	55·04	28·14				
	3797	+ 26 10	N	*s* *Q* +1·39	11 0 59·20	+1·51	60·71	N	*s* *Q* +1·52	17 27·44	+1·47	28·91	28·20	*m s* 16 28·184	− 0·061	− 0·014	16 28·109
	3811	+ 36 57	N		3 4·73	+1·52	6·25	N		19 32·89	+1·51	34·40	28·15				
	3776	+ 20 48	S		10 56 16·61	+1·51	18·12	S		12 44·86	+1·45	46·31	28·19				
	3797	+ 26 10	S		11 0 59·19	+1·51	60·70	S		17 27·47	+1·47	28·94	28·24				
	3824	+ 15 2	S		5 47·27	+1·50	48·77	S		22 15·57	+1·44	17·01	28·24				
	3831	+ 20 46	S		7 43·91	+1·51	45·42	S		24 12·19	+1·45	13·64	28·22				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.
* ρ is the retardation of an electric signal between the stations. † Of Greenwich Catalogue, 1864.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta l_N - \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s: AND AGRA (W) *Lat.* 27° 10′, *Long.* 5h 12m 14s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Pers. Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.020$	$\delta l_N - \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 3	3851	+ 32 11	N	*I. P. E.*	11 12 11·08	−1·26	9·82	N	*I. P. E*	11 28 39·57	−1·55	38·02	16 28·20				
	3856	+ 38 50	N	*d* c + 0·7 b + 4·0 *a* + 0·8	12 59·87	−1·26	58·61	N	*d* c + 0·3 b − 2·3 *a* − 8·4	29 28·42	−1·53	26 89	28·28				
	3868	+ 44 7	N		16 38·95	−1·26	37·69	N		33 7·48	−1·50	5·98	28·29				
	...	+ 39 57	N	*s* *Q* −1·39	22 31·94	−1·27	30·67	N	*s* *Q* −1·52	38 60·40	−1·53	58 87	28·20				
	3905	+ 39 59	N		22 60·70	−1·27	59·43	N		39 29·11	−1·53	27·58	28·15	*m s* 16 28·248	1 0·061	1 0·016	16 28·171
	3877	+ 11 11	S		18 4·05	−1·28	2·77	S		34 32·63	−1·61	31·02	28·25				
	3886	+ 17 5	S		19 44·86	−1·28	43·58	S		36 13·51	−1 60	11·91	28·33				
	3894_1	+ 3 40	S		21 4·57	−1·28	3·29	S		37 33·21	−1·64	31·57	28·28				
	3894_2	+ 3 40	S		21 5·54	−1·28	4·26	S		37 34·17	−1·64	32·53	28 27				
	3915	+ 19 3	S		24 37·29	−1·28	36·01	S		41 5·83	−1·59	4·24	28·23				
Apr. 4	3765	+ 39 50	N	*I. P. W.*	10 54 34·23	+1·40	35·63	N	*I. P. W.*	11 11 1·72	+1·81	3·53	16 27·90				
	3784	+ 38 52	N	*d* c − 0·8 b + 1·3 *a* + 0·1	58 18·17	+1·40	19·57	N	*d* c + 0·8 b + 0·5 *a* −29·0	14 45 60	+1 79	47·39	27·82				
	1348†	+ 38 53	N		58 30·87	+1·40	32·27	N		14 58·44	+1·79	60·23	27·96				
	3797	+ 26 10	N	*s* *Q* +1·38	11 1 4·74	+1·39	6·13	N	*s* *Q* +1·59	17 32·44	+1·61	34·05	27·92	*m s* 16 27·903	1 0·060	1 0·014	16 27·829
	3811	+ 36 57	N		3 10·22	+1·40	11·62	N		19 37·76	+1·76	39·52	27·90				
	3776	+ 20 48	S		10 56 22·14	+1·39	23·53	S		12 49·92	+1·54	51·46	27·93				
	3797	+ 26 10	S		11 1 4·74	+1·39	6·13	S		17 32·46	+1·61	34·07	27·94				
	3824	+ 15 2	S		5 52·82	+1·39	54·21	S		22 20·53	+1·48	22·01	27·80				
	3831	+ 20 46	S		7 49·44	+1·39	50·83	S		24 17·25	+1·54	18·79	27·96				
Apr. 4	3851	+ 32 11	N	*I. P. W.*	11 12 16·55	−1·37	15·18	N	*I. P. W.*	11 28 44·53	−1·49	43·04	16 27·86				
	3856	+ 38 50	N	*d* c − 0·8 b + 1·3 *a* + 0·1	13 5·41	−1·36	4·05	N	*d* c + 0·8 b + 0·5 *a* −29·0	29 33·28	−1·39	31·89	27·84				
	3868	+ 44 7	N		16 44·46	−1·37	43·09	N		33 12·23	−1·29	10·94	27·85				
	...	+ 39 57	N	*s* *Q* −1·38	22 37·38	−1·36	36·02	N	*s* *Q* −1·59	39 5·27	−1·37	3·90	27·88				
	3905	+ 39 59	N		23 6·13	−1·36	4·77	N		39 34·08	−1·37	32·71	27·94	*m s* 16 27·870	1 0·060	1 0·016	16 27·794
	3877	+ 11 11	S		18 9·52	−1·37	8·15	S		34 37·78	−1·74	36·04	27·89				
	3886	+ 17 5	S		19 50·41	−1·37	49·04	S		36 18·58	−1·68	16·90	27·86				
	3894_1	+ 3 40	S		21 10·11	−1·37	8·74	S		37 38·41	−1·82	36·59	27·85				
	3894_2	+ 3 40	S		21 11·12	−1·37	9·75	S		37 39·39	−1·82	37·57	27·82				
	3915	+ 19 3	S		24 42·74	−1·37	41·37	S		41 10·94	−1·66	9·28	27·91				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person

* ρ is the retardation of an electric signal between the stations † Of Greenwich Catalogue, 1861

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* $5^h\ 28^m\ 42^s$: AND AGRA (W) *Lat.* 27° 10′, *Long.* $5^h\ 12^m\ 14^s$.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.052$, $S_N - S_S = +0^s.020$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			*h m s*	*s*	*s*			*h m s*	*s*	*s*	*m s*				
Mar.28	4346	+ 38 57	N	*I. P. E*	12 34 5·72	+1·67	7·39	N	*I. P. E.*	12 50 33·89	+1·70	35·59	16 28·20				
	4360	+ 31 25	N	*d* c + 1·6 b + 7·5 *a* − 1·1	38 13·00	+1·64	14·64	N	*d* c + 0·4 b + 0·2 *a* −17·0	54 41·18	+1·63	42·81	28·17				
	4384	+ 36 26	N		43 48·77	+1·66	50·43	N		13 0 16·80	+1·68	18·48	28·05				
	4390	+ 28 15	N	*s* Q +1·40	45 6·46	+1·63	8·09	N	*s* Q +1·58	1 34·56	+1·61	36·17	28·08	*m s* 16 28·128	0·070	0·012	16 28·046
	4393	+ 28 11	N		45 50·22	+1·63	51·85	N		2 18·29	+1·61	19·90	28·05		−	−	
	4351	+ 18 3	S		36 40·80	+1·62	42·42	S		12 53 9·04	+1·53	10·57	28·15				
	4367	+ 11 36	S		39 53·67	+1·60	55·27	S		56 21·98	+1·48	23·46	28·19				
	4403	+ 17 28	S		47 35·31	+1·61	36·92	S		13 4 3·53	+1·52	5·05	28·13				
Mar.28	4438	+ 41 28	N	*I. P. E.*	12 53 51·64	−1·12	50·52	N	*I. P. E.*	13 10 20·12	−1·43	18·69	16 28·17				
	4479	+ 37 39	N	*d* c + 1·6 b + 7·5 *a* − 1·1	13 2 10·97	−1·13	9·84	N	*d* c + 0·4 b + 0·2 *a* −17·0	18 39·48	−1·47	38·01	28·17				
	4536	+ 37 47	N		13 9·81	−1·13	8·68	N		29 38·20	−1·47	36·73	28·05	*m s* 16 28·145	0·070	0·016	16 28·059
	4444	+ 14 17	S	*s* Q −1·40	12 55 3·78	−1·20	2·58	S	*s* Q −1·58	11 32·43	−1·66	30·77	28·19		−	−	
	4499	+ 14 24	S		13 6 17·92	−1·20	16·72	S		22 46·49	−1·66	44·83	28·11				
	4526	+ 24 58	S		10 50·97	−1·17	49·80	S		27 19·57	−1·59	17·98	28·18				
Mar.29	4479	+ 37 39	N	*I. P. W.*	13 2 17·39	−1·39	16·00	N	*I. P. W.*	13 18 45·61	−1·53	44·08	16 28·08				
	4536	+ 37 47	N	*d* c − 1·6 b + 1·2 *a* − 2·4	13 16·11	−1·39	14·72	N	*d* c − 1·8 b − 1·2 *a* −20·4	29 44·36	−1·53	42·83	28·11	*m s* 16 28·084	0·071	0·019	16 27·994
	4499	+ 14 24	S		6 24·25	−1·40	22·85	S		22 52·60	−1·73	50·87	28·02		−	−	
	4513	+ 24 50	S	*s* Q −1·38	8 61·12	−1·39	59·73	S	*s* Q −1·56	25 29·50	−1·65	27·85	28·12				
	4526	+ 24 58	S		10 57·39	−1·39	56·00	S		27 25·74	−1·65	24·09	28·09				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s : AND AGRA (W) *Lat* 27° 10′, *Long.* 5h 12m 14s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns for Persl Equations $H_N - H_S = +0^s.052$ $S_N - S_S = +0^s.020$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar.30	4345	+ 38 57	N	*I. P. E.*	12 34 17·13	+1·38	18·51	N	*I P E.*	12 50 45·05	+1·72	46·77	16 28·26				
	4346	+ 38 57	N	*d* c + 0·3 b − 1·8 *a* − 5·7	34 18·37	+1·38	19·75	N	*d* c − 0·9 b − 1·7 *a* −39·5	50 46·33	+1·72	48·05	28·30				
	4360	+ 31 25	N		38 25·64	+1·36	27·00	N		54 53·72	+1·59	55·31	28·31				
	4384	+ 36 26	N	*s* *Q* +1·39	44 1·33	+1·38	2·71	N	*s* *Q* +1·57	13 0 29·29	+1·67	30·96	28·25				
	4390	+ 28 15	N		45 19·05	+1·35	20·40	N		1 47·13	+1·53	48·66	28·26	*s*			
	4393	+ 28 11	N		46 2·78	+1·35	4·13	N		2 30·83	+1·53	32·36	28·23	*m* 16 28·287	− 0·071	− 0·013	16 28·203
	4351	+ 18 3	S		36 53·42	+1·34	54·76	S		12 53 21·67	+1·36	23·03	28·27				
	4367	+ 11 36	S		40 6·31	+1·33	7·64	S		56 34·69	+1·27	35·96	28·32				
	4373	− 3 2	S		41 38 07	+1·30	39·37	S		58 6·70	+1·07	7·77	28·40				
	4403	+ 17 28	S		47 47·88	+1·34	49·22	S		13 4 16·14	+1·35	17·49	28·27				
Mar.30	4433	+ 40 46	N	*I. P. E.*	12 52 12·56	−1·39	11·17	N	*I. P. E.*	13 8 40·90	−1·38	39·52	16 28·35				
	4438	+ 41 28	N	*d* c + 0·3 b − 1·8 *a* − 5·7	54 4·27	−1·39	2·88	N	*d* c − 0·9 b − 1·7 *a* −39·5	10 32·51	−1·36	31·15	28 27				
	4536	+ 37 47	N		13 13 22·39	−1·40	20·99	N		29 50·67	−1·44	49·23	28·24	*s*			
	4414	+ 14 17	S	*s* *Q* −1·39	12 55 16·44	−1·45	14·99	S	*s* *Q* −1·57	11 45·09	−1·84	43·25	28·26	*m* 16 28·288	− 0·071	− 0·013	16 28·204
	4499	+ 14 24	S		13 6 30·49	−1·45	29·04	S		22 59·19	−1·83	57·36	28·32				
Mar.31	4345	+ 38 57	N	*I. P. W.*	12 34 23·01	+1·68	24·69	N	*I. P. W.*	12 50 50·86	+1·87	52·73	16 28·04				
	4346	+ 38 57	N	*d* c + 0·6 b + 7·6 *a* − 9·4	34 24·28	+1·68	25·96	N	*d* c − 0·9 b − 0·2 *a* −52·4	50 52·09	+1·87	53·96	28·00				
	4360	+ 31 25	N		38 31·53	+1·63	33·16	N		54 59·56	+1·67	61·23	28·07				
	4384	+ 36 26	N	*s* *Q* +1·39	44 7·21	+1·66	8·87	N	*s* *Q* +1·60	13 0 35·01	+1·80	36·81	27·94				
	4390	+ 28 15	N		45 24·96	+1·61	26·57	N		1 52 87	+1·60	54·47	27·90				
	4393	+ 28 11	N		46 8·72	+1·61	10·33	N		2 36·66	+1·59	38·25	27·92	*m* *s*			
	4351	+ 18 3	S		36 59·39	+1·55	60·94	S		12 53 27·61	+1·38	28·99	28·05	16 27·991	− 0·069	− 0·015	16 27·907
	4367	+ 11 36	S		40 12·35	+1·51	13·86	S		56 40·58	+1·26	41·84	27·98				
	4373	− 3 2	S		41 44·09	+1·44	45·53	S		58 12·51	+0·99	13·50	27·97				
	4393	+ 28 11	S		46 8·61	+1·61	10·22	S		13 2 36·69	+1·59	38·28	28·06				
	4403	+ 17 28	S		47 53·86	+1·54	55·40	S		4 22·00	+1·37	23·37	27·97				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s : AND AGRA (W) *Lat.* 27° 10′, *Long.* 5h 12m 14s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl Equations $H_N - H_S = +0^s.052$ $\delta_N - \delta_S = +0^s.020$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 31	4433	+ 40 46	N	*I. P. W.*	12 52 18·41	−1·08	17·33	N	*I. P. W.*	13 8 46·55	−1·28	45·27	16 27·94				
	4438	+ 41 28	N	*d* c + 0·6 b + 7·6 *a* − 9·4	54 10·08	−1·08	9·00	N	*d* c − 0·9 b − 0·2 *a* −52·4	10 38·22	−1·25	36·97	27·97				
	4479	+ 37 39	N		13 2 29·47	−1·11	28·36	N		18 57·69	−1·37	56·32	27·96	m s 16 28·014	− 0·069	− 0·014	16 27·931
	4536	+ 37 47	N	*s* *Q* − 1·39	13 28·19	−1·11	27·08	N	*s* *Q* −1·60	29 56·51	−1·37	55·14	28·06				
	4444	+ 14 17	S		12 55 22·34	−1·26	21·08	S		11 51·06	−1·89	49·17	28·09				
	4499	+ 14 24	S		13 6 36·44	−1·26	35·18	S		23 5·06	−1·89	3·17	27·99				
	4526	+ 24 58	S		11 9·47	−1·20	8·27	S		27 38·03	−1·67	36·36	28·09				
Apr. 3	4345	+ 38 57	N	*I. P. E.*	12 34 41·72	+1·52	43·24	N	*I. P. E.*	12 51 9·99	+1·51	11·50	16 28·26				
	4346	+ 38 57	N	*d* c + 0·7 b + 4·0 *a* + 0·8	34 42·93	+1·52	44·45	N	*d* c + 0·3 b − 2·3 *a* − 8·4	51 11·24	+1·51	12·75	28·30				
	4360	+ 31 25	N		38 50·23	+1·52	51·75	N		55 18·56	+1·49	20·05	28·30				
	4384	+ 36 26	N	*s* *Q* + 1·39	44 25·93	+1·52	27·45	N	*s* *Q* + 1·52	13 0 54·18	+1·51	55·69	28·24				
	4390	+ 28 15	N		45 43·63	+1·51	45·14	N		2 11·89	+1·47	13·36	28·22	m s 16 28·307	− 0·073	− 0·013	16 28·221
	4393	+ 28 11	N		46 27·38	+1·51	28·89	N		2 55·69	+1·47	57·16	28·27				
	4351	+ 18 3	S		37 17·93	+1·50	19·43	S		12 53 46·41	+1·45	47·86	28·43				
	4367	+ 11 36	S		40 30·84	+1·50	32·34	S		56 59·31	+1·43	60·74	28·40				
	4373	− 3 2	S		42 2·58	+1·50	4·08	S		58 31·01	+1·40	32·41	28·33				
	4403	+ 17 28	S		48 12·47	+1·50	13·97	S		13 4 40·84	+1·45	42·29	28·32				
Apr 3	4133	+ 40 46	N	*I. P. E*	12 52 37·15	−1·26	35·89	N	*I. P. E*	13 9 5·85	−1·52	4·33	16 28·44				
	4438	+ 41 28	N	*d* c + 0·7 b + 4·0 *a* + 0·8	54 28·81	−1·26	27·55	N	*d* c + 0·3 b − 2·3 *a* − 8·4	10 57·50	−1·52	55·98	28·43				
	4479	+ 37 39	N		13 2 48·25	−1·26	46·99	N		19 16·88	−1·53	15·35	28·36				
	4536	+ 37 47	N	*s* *Q* − 1·39	13 46·92	−1·26	45·66	N	*s* *Q* − 1·52	30 15·64	−1·53	14·11	28·45	m s 16 28·449	− 0·073	− 0·014	16 28·362
	4444	+ 14 17	S		12 55 40·95	−1·28	39·67	S		12 9·79	−1·60	8·19	28·52				
	4499	+ 14 24	S		13 6 55·06	−1·28	53·78	S		23 23·82	−1·60	22·22	28·44				
	4526	+ 24 58	S		11 28·12	−1·27	26·85	S		27 56·93	−1·58	55·35	28·50				

NOTE.—1d = 0s·0225. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

FYZABAD (E) *Lat.* 26° 47′, *Long.* 5h 28m 42s: AND AGRA (W) *Lat.* 27° 10′, *Long.* 5h 12m 14s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}052$ $S_N - S_S = +0^s{\cdot}020$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 4	4345	+ 38 57	N	*I. P. W.*	12 34 48·39	+1·44	49·83	N	*I. P. W.*	12 51 16·03	+1·79	17·82	16 27·99				
	4346	+ 38 57	N	*d* c − 0·8 b + 3·0 a + 0·1	34 49·66	+1·44	51·10	N	*d* c + 0·8 b + 0·5 a −29 0	51 17·25	+1·79	19·04	27 94				
	4360	+ 31 25	N		38 56·99	+1·44	58·43	N		55 24·60	+1·68	26·28	27 85				
	4384	+ 36 26	N	*s* Q +1·38	44 32·59	+1·44	34·03	N	*s* Q +1·59	13 1 0·24	+1·75	1·99	27·96				
	4390	+ 28 15	N		45 50·36	+1·44	51·80	N		2 18·07	+1·63	19·70	27·90				
	4393	+ 28 11	N		46 34·13	+1·44	35·57	N		3 1 86	+1·63	3 49	27·02				
	4351	+ 18 3	S		37 24·59	+1·43	26 02	S		12 53 52·56	+1·51	54 07	28·05	m s 16 27·945	− 0·074	− 0·015	16 27·856
	4367	+ 11 36	S		40 37·66	+1·43	39·09	S		57 5·55	+1·44	6·99	27·90				
	4373	− 3 2	S		42 9·38	+1·42	10·80	S		58 37·46	+1·29	38·75	27·95				
	4393	+ 28 11	S		46 33·95	+1·44	35·39	S		13 3 1·78	+1·63	3·41	28·02				
	4403	+ 17 28	S		48 19·20	+1·43	20·63	S		4 47·05	+1·50	48·55	27·92				
Apr. 4	4433	+ 40 46	N	*I. P. W.*	12 52 43·84	−1·31	42·53	N	*I. P. W.*	13 9 11·89	−1·36	10·53	16 28 00				
	4438	+ 41 28	N	*d* c − 0·8 b + 3·0 a + 0·1	54 35·53	−1·31	34·22	N	*d* c + 0·8 b + 0·5 a −29 0	11 3·55	−1·35	2·20	27 98				
	4479	+ 37 39	N		13 2 54·89	−1·32	53·57	N		19 23·05	−1·41	21·64	28 07				
	4536	+ 37 47	N	*s* Q −1·38	13 53·64	−1·32	52·32	N	*s* Q −1·59	30 21·66	−1·41	20·25	27 93	m s 16 27·966	− 0·074	− 0·016	16 27·876
	4414	+ 14 17	S		12 55 47·69	−1·33	46 36	S		12 16·00	−1·71	14 29	27·93				
	4499	+ 14 24	S		13 7 1·77	−1·33	0·44	S		23 30·11	−1·71	28·40	27·96				
	4513	+ 24 50	S		9 38·65	−1·33	37·32	S		26 6·85	−1·59	5·26	27·94				
	4526	+ 24 58	S		11 34·89	−1·33	33·56	S		28 3·07	−1·59	1·48	27·92				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

Arc	Approximate Difference of Longitude	Intervals between Nights of Observations	Rate Corrections for both Clocks Deduced from Transits Observed at both Stations, *viz.*: α, Corrections for the Intervals between Nights of Observations, and β, Hourly Corrections for Nights of Observations, Interpolated by means of the Quantities α.							Correction to Observed Difference of Times of Transit for	
			α at E Station for		α at W Station for		Astronomical Dates of Observations	β for			
			E Clock	W Clock	E Clock	W Clock		E Clock	W Clock	E Clock	W Clock
Jalpaiguri (E), and Fyzabad (W)	$26^m\ 23^s$	1882-83	*s*	*s*	*s*	*s*	1882-83	*s*	*s*	*s*	*s*
		Dec. 2 to 4	+ 1·85	+ 6·22	+ 1·34	+ 5·72	Dec. 2	+ 0·033	+ 0·124	+ 0·015	+ 0·055
		„ 4 „ 5	+ 0·86	+ 2·78	+ 1·16	+ 3·07	„ 4	+ ·039	+ ·123	+ ·017	+ ·054
		„ 5 „ 6	+ 1·52	+ 3·32	+ 1·40	+ 3·16	„ 5	+ ·051	+ ·128	+ ·022	+ ·056
		„ 6 „ 7	+ 1·14	+ 3·06	+ 1·19	+ 3·13	„ 6	+ ·055	+ ·132	+ ·024	+ ·058
		„ 7 „ 8	+ 1·66	+ 3·57	+ 1·61	+ 3·48	„ 7	+ ·058	+ ·138	+ ·026	+ ·061
		„ 8 „ 9	+ 1·18	+ 3·12	+ 1·20	+ 3·24	„ 8	+ ·059	+ ·140	+ ·026	+ ·062
		„ 9 „ 11	+ 3·04	+ 6·95	+ 2·95	+ 6·91	„ 9	+ ·054	+ ·136	+ ·024	+ ·060
		.....	...	...	.	...	„ 11	+ ·062	+ ·144	+ ·027	+ ·063
Jalpaiguri (E), and Calcutta (W)	$1^m\ 30^s$	Dec. 21 to 26	+12·16	+10·06	+12·76	+10·69	Dec. 21	+ 0·104	+ 0·086	+ 0·003	+ 0·002
		„ 26 „ 27	+ 3·25	+ 2·58	+ 2·73	+ 1·95	„ 26	+ ·121	+ ·093	+ ·003	+ ·002
		„ 27 „ 28	+ 2·60	+ 1·98	+ 3·05	+ 2·47	„ 27	+ ·121	+ ·094	+ ·003	+ ·002
		„ 28 „ 29	+ 3·04	+ 2·59	+ 2·63	+ 2·11	„ 28	+ ·118	+ ·094	+ ·003	+ ·002
		„ 29 „ Jan. 2	+12·41	+ 9·34	+12·90	+ 9·89	„ 29	+ ·121	+ ·098	+ ·003	+ ·003
		.....	...	...	...	...	Jan. 2	+ ·132	+ ·100	+ ·003	+ ·002
Chittagong (E), and Jalpaiguri (W)	$12^m\ 25^s$	Jan. 12 to 13	+ 1·17	+ 3·78	+ 1·64	+ 4·18	Jan. 12	+ 0·059	+ 0·166	+ 0·012	+ 0·034
		„ 13 „ 14	+ 1·51	+ 4·16	+ 1·18	+ 3·89	„ 13	+ ·057	+ ·167	+ ·012	+ ·035
		„ 14 „ 15	+ 1·54	+ 4·08	+ 1·84	+ 4·25	„ 14	+ ·063	+ ·171	+ ·013	+ ·035
		„ 15 „ 17	+ 3·40	+ 8·32	+ 3·12	+ 8·09	„ 15	+ ·070	+ ·173	+ ·014	+ ·036
		„ 17 „ 18	+ 1·68	+ 4·02	+ 2·12	+ 4·45	„ 17	+ ·075	+ ·175	+ ·016	+ ·036
		.....	...	...	...	...	„ 18	+ ·079	+ ·176	+ ·016	+ ·036
Chittagong (E), and Calcutta (W)	$13^m\ 55^s$	Jan. 23 to 24	+ 1·996	− 1·314	+ 1·847	− 1·566	Jan. 23	+ 0·080	− 0·060	+ 0·019	− 0·014
		„ 24 „ 25	+ 2·203	− 1·442	+ 2·324	− 1·331	„ 24	+ ·087	− ·059	+ ·020	− ·014
		„ 25 „ 26	+ 2·536	− 1·008	+ 2·084	− 1·388	„ 25	+ ·095	− ·054	+ ·022	− ·013
		„ 26 „ 28	+ 4·633	− 1·808	+ 5·104	− 1·378	„ 26	+ ·098	− ·044	+ ·023	− ·010
		„ 28 „ 29	+ 2·787	+ 0·215	+ 2·403	− 0·191	„ 28	+ ·106	− ·011	+ ·025	− ·003
		„ 29 „ 30	+ 2·823	+ 0·159	+ 3·060	+ 0·392	„ 29	+ ·115	+ ·006	+ ·027	+ ·001
		.....	...	...	...	...	„ 30	+ ·123	+ ·012	+ ·029	+ ·003

Arc	Approximate Difference of Longitude	Intervals between Nights of Observations	Rate Corrections for both Clocks Deduced from Transits Observed at both Stations, *viz.*: α, Corrections for the Intervals between Nights of Observations, and β, Hourly Corrections for Nights of Observations, Interpolated by means of the Quantities α.								
			α at E Station for		α at W Station for		Astronomical Dates of Observations	β for		Correction to Observed Difference of Times of Transit for	
			E Clock	W Clock	E Clock	W Clock		E Clock	W Clock	E Clock	W Clock
		1883	s	s	s	s	1883	s	s	s	s
Calcutta (E), and Fyzabad (W)	$24^m\ 53^s$	Feb. 8 to 9	+ 0·94	...	+ 1·22	− 3·94	Feb. 8	+ 0·045	− 0·164	+ 0·019	− 0·068
		„ 9 „ 10	+ 1·12	...	+ 0·90	− 4·10	„ 9	+ ·044	− ·168	+ ·018	− ·070
		„ 10 „ 11	+ 0·60	− 3·92	+ 0·84	− 3·81	„ 10	+ ·036	− ·166	+ ·015	− ·069
		„ 11 „ 13	+ 0·79	− 6·71	+ 0·60	− 6·76	„ 11	+ ·025	− ·154	+ ·010	− ·064
		„ 13 „ 14	+ 0·27	− 3·34	+ 0·45	− 3·21	„ 13	+ ·015	− ·138	+ ·006	− ·057
		.....	...	...	...	...	„ 14	+ ·015	− ·136	+ ·006	− ·056
Calcutta (E), and Jubbulpore (W)	$33^m\ 38^s$	Feb. 22 to 23	+ 1·01	+ 4·21	+ 0·80	+ 4·03	Feb. 22	+ 0·038	+ 0·172	+ 0·021	+ 0·096
		„ 23 „ 24	+ 1·12	+ 4·08	+ 1·26	+ 4·25	„ 23	+ ·044	+ ·173	+ ·025	+ ·097
		„ 24 „ 28	+ 5·56	*	+ 5·42	*	„ 24	+ ·051	+ ·174	+ ·029	+ ·097
		„ 28 „ Mar. 2	+ 2·33	+ 8·44	+ 2·46	+ 8·69	„ 28	+ ·052	+ ·178	+ ·029	+ ·100
		Mar. 2 „ 3	+ 1·11	+ 4·33	+ 0·75	+ 4·01	Mar. 2	+ ·042	+ ·175	+ ·024	+ ·098
		.....	...	...	...	...	„ 3	+ ·039	+ ·174	+ ·022	+ ·098
Fyzabad (E), and Jubbulpore (W)	$8^m\ 45^s$	Mar. 14 to 15	− 6·07	+ 1·53	− 5·78	+ 1·81	Mar. 14	− 0·247	+ 0·070	− 0·036	+ 0·010
		„ 15 „ 16	− 5·78	+ 1·80	− 5·98	+ 1·54	„ 15	− ·246	+ ·070	− ·036	+ ·010
		„ 16 „ 17	− 5·63	+ 2·05	− 5·46	+ 2·22	„ 16	− ·238	+ ·080	− ·035	+ ·012
		„ 17 „ 18	− 5·41	+ 2·29	− 5·67	+ 2·05	„ 17	− ·231	+ ·090	− ·034	+ ·013
		„ 18 „ 19	− 6·05	+ 1·35	− 5·68	+ 1·71	„ 18	− ·238	+ ·077	− ·035	+ ·011
		„ 19 „ 20	− 5·46	+ 2·14	− 5·86	+ 1·72	„ 19	− ·241	+ ·072	− ·035	+ ·011
		.....	...	...	...	...	„ 20	− ·236	+ ·080	− ·034	+ ·012
Fyzabad (E), and Agra (W)	$16^m\ 28^s$	Mar. 28 to 29	− 5·22	− 6·13	− 5·28	− 6·10	Mar. 28	− 0·219	− 0·255	− 0·060	− 0·070
		„ 29 „ 30	− 5·35	− 6·23	− 5·39	− 6·42	„ 29	− ·221	− ·260	− ·061	− ·071
		„ 30 „ 31	− 5·54	− 6·16	− 5·29	− 5·89	„ 30	− ·225	− ·258	− ·062	− ·071
		„ 31 „ Apr. 3	−15·84	−18·56	−16·22	−18·91	„ 31	− ·225	− ·253	− ·062	− ·069
		Apr. 3 „ 4	− 5·40	− 6·66	− 5·09	− 6·26	Apr. 3	− ·221	− ·265	− ·061	− ·073
		.....	...	...	...	...	„ 4	− ·219	− ·269	− ·060	− ·074

* W Clock was regulated on the 25th February.

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1882–83.

JALPAIGURI (E), AND FYZABAD (W).

Astronomical Date	Instrumental Position at both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1882		h m s	m s	m s	m s	m s	m s
December 2	*I. P. E.*	...	..	...	...	26 22·533	26 22·818
„ „	„	...	...	...	...	...	22·863
„ 4	*I. P. W.*	4 51 29	− 1 52·756	28 15·944	26 23·188	23·047	23·364
„ „	„	5 11 44	52·772	15·980	23·208	23·091	23·339
„ 5	*I. P. E.*	4 51 29	54·849	17·800	22·951	22·797	23·074
„ „	„	5 11 43	54·990	17·824	22·834	22·757	23·027
„ 6	*I. P. W.*	4 51 14	56·592	19·688	23·096	22·832	23·130
„ „	„	5 12 23	56·627	19·717	23·090	22·978	23·243
„ 7	*I. P. E.*	4 50 26	58·624	21·605	22·981	22·797	23·133
„ „	„	5 12 22	58·641	21·640	22·999	22·904	23·107
„ 8	*I. P. W.*	4 50 24	2 0·453	23·501	23·048	22·862	23·256
„ „	„	5 12 21	0·486	23·531	23·045	22·933	23·183
„ 9	*I. P. E.*	4 50 23	2·624	25·519	22·895	22·816	23·076
„ „	„	5 12 19	2·607	25·552	22·945	22·873	23·092
„ 11	*I. P. W.*	4 50 20	6·410	29·380	22·970	22·937	23·125
„ „	„	5 12 16	6·320	29·416	23·096	23·003	23·135
Mean of daily mean values for instrumental position *I. P. E.* at both stations			...		26 22·934	26 22·751	26 23·024
„ „	*I. P. W.*	„	...		23·093	22·960	23·222
General Means			...		26 23·013	26 22·856	26 23·123

	By Clock Comparisons	By Transits at both Stations with the same Clock
Whence	δL_N = m 26 s 23·013	δL_N = m 26 s 22·990
Correction for Relative Personal Equation, $\frac{3(S_N - C_N) + 4(S_N - H_N)}{7}$ ...	= − 0·009	$\frac{(S_N - C_N) + (S_N - H_N)}{2}$ = − 0·013
	ΔL_N = 26 23·004	ΔL_N = 26 22·977
Again	δL_S = 26 22·961	δL_S = 26 22·942
Correction for Relative Personal Equation, $\frac{3(S_S - C_S) + 4(S_S - H_S)}{7}$ ...	= + 0·024	$\frac{(S_S - C_S) + (S_S - H_S)}{2}$ = + 0·022
	ΔL_S = 26 22·985	ΔL_S = 26 22·964
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$	= m 26 s 22·995	ΔL = m 26 s 22·971
	ρ = + 0·114	ρ = + 0·134

NOTE.—Lieut.-Colonel Campbell observed at W on December 2nd, 4th, 5th and 7th. Major Heaviside observed at W on December 6th, 8th, 9th and 11th. Major Strahan observed at E throughout.

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1882-83.

JALPAIGURI (E), AND CALCUTTA (W).

Astronomical Date	Instrumental Position at both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1882-83		*h m s*	*m s*	*m s*	*m s*	*m s*	*m s*
December 21	*I. P. W.*	5 18 33	+ 0 27·683	1 2·937	1 30·620	1 30·542	1 30·561
„ „	„	33 51	27·667	2·936	30·603	30·542	30·638
„ 26	*I. P. E.*	16 55	29·098	0·822	29·920	29·858	29·916
„ „	„	31 21	29·125	0·819	29·944	29·925	30·026
„ 27	*I. P. W.*	17 41	30·357	0·141	30·498	30·528	30·604
„ „	„	33 58	30·429	0·132	30·561	30·469	30·564
„ 28	*I. P. E.*	17 38	30·459	0 59·515	29·974	29·964	30·097
„ „	„	34 46	30·468	59·514	29·982	30·067	30·096
„ 29	*I. P. W.*	17 35	31·419	59·025	30·444	30·483	30·585
„ „	„	33 52	31·419	59·018	30·437	30·437	30·574
January 2	*I. P. E.*	17 23	33·921	56·041	29·962	29·927	29·982
„ „	„	33 40	33·888	56·038	29·926	29·980	30·038
Mean of daily mean values for instrumental position *I. P. W.* at both stations ...					1 30·527	1 30·500	1 30·588
„ „ *I. P. E.* „ ...					29·951	29·954	30·026
General Means ...					1 30·239	1 30·227	1 30·307

		m s	*m s*
Whence	δL_N =	1 30·239	1 30·267
Correction for Relative Personal Equation,	$S_N - H_N$ =	+ 0·017	+ 0·017
	ΔL_N =	1 30·256	1 30·284
Again	δL_S =	1 30·238	1 30·266
Correction for Relative Personal Equation,	$S_S - H_S$ =	+ 0·035	+ 0·035
	ΔL_S =	1 30·273	1 30·301

	m s	*m s*
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	1 30·265	1 30·292
ρ =	+ 0·050	+ 0·039

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1882-83.

CHITTAGONG (E), AND JALPAIGURI (W).

Astronomical Date	Instrumental Position at both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: W Clock $= \delta L_N + \rho$
1883		h m s	m s	m s	m s	m s	m s
January 12	*I. P. E.*	7 27 21	− 0 36·536	13 1·738	12 25·202	12 25·042	12 25·209
„ „	„	51 59	36·676	1·769	25·093	25·040	25·196
„ 13	*I. P. W.*	27 20	39·578	4·260	24·682	24·557	24·712
„ „	„	51 12	39·652	4·309	24·657	24·546	24·877
„ 14	*I. P. E.*	27 6	41·943	6·927	24·984	24·887	25·033
„ „	„	51 11	42·000	6·962	24·962	24·902	25·132
„ 15	*I. P. W.*	27 5	44·720	9·489	24·769	24·573	24·937
„ „	„	51 9	44·768	9·530	24·762	24·601	24·859
„ 17	*I. P. E.*	27 1	49·442	14·429	24·987	24·884	25·126
„ „	„	52 8	49·326	14·467	25·141	24·864	25·168
„ 18	*I. P. W.*	26 59	52·227	16·786	24·559	24·441	24·678
„ „	„	51 4	52·362	16·831	24·469	24·399	24·736
Mean of daily mean values for instrumental position *I. P. E.* at both stations ...					12 25·062	12 24·936	12 25·144
„ „ *I. P. W.* „ ...					24·650	24·520	24·800
General Means ...					12 24·856	12 24·728	12 24·972

		By Clock Comparisons	By Transits at both Stations with the same Clock
		m s	m s
Whence	δL_N =	12 24·856	12 24·850
Correction for Relative Personal Equation,	$H_N - S_N$ =	− 0·017	− 0·017
	ΔL_N =	12 24·839	12 24·833
Again	δL_S =	12 24·836	12 24·830
Correction for Relative Personal Equation,	$H_S - S_S$ =	− 0·035	− 0·035
	ΔL_S =	12 24·801	12 24·795

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	m s
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	12 24·820	12 24·814
ρ =	+ 0·104	+ 0·122

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1882-83.

CHITTAGONG (E), AND CALCUTTA (W).

Astronomical Date	Instrumental Position at both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: W Clock $= \delta L_N + \rho$
1883		h m s	m s	m s	m s	m s	m s
January 23	*I. P. W.*	8 0 26	− 0 4·776	13 59·698	13 54·922	13 54·986	13 54·961
„ „	„	17 34	4·764	59·670	54·906	54·884	54·933
„ 24	*I. P. E.*	2 10	1·114	56·271	55·157	55·030	55·170
„ „	„	19 4	1·080	56·228	55·148	55·085	55·199
„ 25	*I. P. W.*	2 5	+ 2·309	52·650	54·959	54·952	55·082
„ „	„	19 24	2·367	52·615	54·982	54·920	55·053
„ 26	*I. P. E.*	2 5	6·195	49·125	55·320	55·331	55·436
„ „	„	19 37	6·300	49·089	55·389	55·449	55·478
„ 28	*I. P. W.*	1 58	12·300	42·642	54·942	54·907	55·040
„ „	„	19 32	12·335	42·606	54·941	54·936	55·015
„ 29	*I. P. E.*	1 55	15·393	40·026	55·419	55·294	55·449
„ „	„	19 30	15·379	39·993	55·372	55·321	55·437
„ 30	*I. P. W.*	1 52	17·708	37·421	55·129	55·104	55·221
„ „	„	19 27	17·785	37·386	55·171	55·045	55·190
Mean of daily mean values for instrumental position *I. P. W.* at both stations ...					13 54·994	13 54·967	13 55·062
„ „ *I. P. E.* „ ...					55·301	55·252	55·362
General Means ...					13 55·148	13 55·110	13 55·212

	By Clock Comparisons	By Transits at both Stations with the same Clock: E Clock	By Transits at both Stations with the same Clock: W Clock
	m s	m s	m s
Whence	δL_N = 13 55·148	δL_N = 13 55·161	
Correction for Relative Personal Equation,	$H_N - S_N$ = − 0·017	$H_N - S_N$ = − 0·017	
	ΔL_N = 13 55·131	ΔL_N = 13 55·144	
Again	δL_S = 13 55·138	δL_S = 13 55·151	
Correction for Relative Personal Equation,	$H_S - S_S$ = − 0·035	$H_S - S_S$ = − 0·035	
	ΔL_S = 13 55·103	ΔL_S = 13 55·116	
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$	m s = 13 55·117	m s = 13 55·130	
	ρ = + 0·071	ρ = + 0·051	

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1882–83.

CALCUTTA (E), AND FYZABAD (W).

Astronomical Date	Instrumental Position at both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: E Clock $= \delta l_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: W Clock $= \delta L_N + \rho$
1883		*h m s*	*m s*	*m s*	*m s*	*m s*	*m s*
February 8	*I. P. E.*	9 41 32	+0 50·747	24 2·096	24 52·843	24 52·869	24 52·887
„ „	„	10 1 38	50·840	2·021	52·861	52·776	52·922
„ 9	*I. P. W.*	9 38 55	55·632	23 56·919	52·551	52·524	...
„ „	„	...	...	...	...	52·539	...
„ 10	*I. P. E.*	9 37 18	1 0·813	51·992	52·805	52·722	52·881
„ „	„	10 1 11	0·892	51·913	52 805	52·777	52·790
„ 11	*I. P. W.*	9 41 30	5·134	47·448	52·582	52·524	52·697
„ „	„	10 1 36	5·179	47·381	52·560	52·480	52·703
„ 13	*I. P. E.*	9 41 29	12·692	40·018	52·710	52·723	52·804
„ „	„	10 1 35	12·805	39·967	52·772	52·670	52·754
„ 14	*I. P. W.*	9 41 28	16·183	36·391	52·574	52·482	52 589
„ „	„	10 1 35	16·200	36·342	52·542	52·532	52·662
Mean of daily mean values for instrumental position *I. P. E.* at both stations ...					24 52·799	24 52·756	24 52·840
„ „ *I. P. W.* „ ...					52·560	52·514	52·663
General Means ...					24 52·680	24 52·635	24 52·751

		m s	*m s*
Whence	δL_N =	24 52·680	24 52·693
Correction for Relative Personal Equation,	$H_N - S_N$ =	− 0·017	− 0·017
	ΔL_N =	24 52·663	24 52·676
Again	δL_S =	24 52·685	24 52·698
Correction for Relative Personal Equation,	$H_S - S_S$ =	− 0·035	− 0·035
	ΔL_S =	24 52·650	24 52·663

	m s	*m s*
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	24 52·656	24 52·670
ρ =	+ 0·075	+ 0·057

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1882–83.

CALCUTTA (E), AND JUBBULPORE (W).

Astronomical Date	Instrumental Position at both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: W Clock $= \delta L_N + \rho$
1883		h m s	m s	m s	m s	m s	m s
February 22	*I. P. W.*	10 0 17	− 0 7·667	33 45·095	33 37·428	33 37·467	33 37·584
„ „	„	16 18	7·600	45·135	37·535	37·425	37·641
„ 23	*I. P. E.*	0 16	10·541	48·282	37·741	37·645	37·766
„ „	„	16 17	10·535	48·319	37·784	37·684	37·847
„ 24	*I. P. W.*	0 15	13·676	51·285	37·609	37·550	37·734
„ „	„	17 49	13·816	51·328	37·512	37·488	37·543
„ 28	*I. P. E.*	0 9	29·231	34 7·025	37·794	37·668	37·899
„ „	„	16 10	29·284	7·064	37·780	37·657	37·911
March 2	*I. P. W.*	0 7	35·771	13·295	37·524	37·563	37·595
„ „	„	16 8	35·662	13·326	37·664	37·488	37·682
„ 3	*I. P. E.*	...	...	...	...	...	37·892
„ „	„	18 13	38·608	16·492	37·884	37·858	38·060
Mean of daily mean values for instrumental position *I. P. W.* at both stations				...	33 37·545	33 37·497	33 37·630
„ „ *I. P. E.* „				...	37·811	37·728	37·896
General Means				...	33 37·678	33 37·613	33 37·763

		E Clock	W Clock
		m s	m s
Whence	δL_N =	33 37·678	33 37·688
Correction for Relative Personal Equation,	$H_N - S_N$ =	− 0·017	− 0·017
	ΔL_N =	33 37·661	33 37·671
Again	δL_S =	33 37·683	33 37·693
Correction for Relative Personal Equation,	$H_S - S_S$ =	− 0·035	− 0·035
	ΔL_S =	33 37·648	33 37·658

	E Clock	W Clock
	m s	m s
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	33 37·655	33 37·665
ρ =	+ 0·091	+ 0·075

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1882-83.

FYZABAD (E), AND JUBBULPORE (W).

Astronomical Date	Instrumental Position at both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1883		h m s	m s	m s	m s	m s	m s
March 14	*I. P. E.*	10 48 27	− 0 24·071	9 9·172	8 45·101	8 45·083	8 45·110
„ „	„	11 14 58	24·223	9·320	45·097	45·026	45·094
„ 15	*I. P. W.*	10 50 39	32·048	16·846	44·798	44·706	44·830
„ „	„	11 13 4	32·173	16·958	44·785	44·786	44·861
„ 16	*I. P. E.*	10 50 44	39·346	24·352	45·006	44·967	45·111
„ „	„	11 13 9	39·412	24·464	45·052	44·971	45·089
„ 17	*I. P. W.*	10 50 50	47·132	32·075	44·943	44·860	44·918
„ „	„	11 10 40	47·296	32·172	44·876	44·759	44·930
„ 18	*I. P. E.*	10 50 55	54·649	39·780	45·131	45·098	45·244
„ „	„	11 12 21	54·733	39·890	45·157	45·108	45·157
„ 19	*I. P. W.*	10 51 1	1 2·483	47·252	44·769	44·660	44·779
„ „	„	11 12 27	2·626	47·362	44·736	44·736	44·822
„ 20	*I. P. E.*	10 51 6	9·617	54·757	45·140	45·110	45·125
„ „	„	11 13 31	9·660	54·871	45·211	45·103	45·229
Mean of daily mean values for instrumental position *I. P. E.* at both stations ...					8 45·112	8 45·058	8 45·145
„ „ *I. P. W.* „ ...					44·818	44·751	44·857
General Means ...					8 44·965	8 44·905	8 45·001

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	m s
Whence	δL_N = 8 44·965	δL_N = 8 44·953
Correction for Relative Personal Equation,	$H_N - S_N$ = − 0·017	$H_N - S_N$ = − 0·017
	ΔL_N = 8 44·948	ΔL_N = 8 44·936
Again	δL_S = 8 44·962	δL_S = 8 44·950
Correction for Relative Personal Equation,	$H_S - S_S$ = − 0·035	$H_S - S_S$ = − 0·035
	ΔL_S = 8 44·927	ΔL_S = 8 44·915
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$	m s = 8 44·938	m s = 8 44·925
	ρ = + 0·048	ρ = + 0·047

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1882-83.

FYZABAD (E), AND AGRA (W).

Astronomical Date	Instrumental Position at both Stations	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with: W Clock $= \delta L_N + \rho$
1883		h m s	m s	m s	m s	m s	m s
March 28	*I. P. E.*	11 58 32	+ 0 20·521	16 7·479	16 28·000	16 27·934	16 28·046
„ „	„	12 17 23	20·579	7·467	28·046	27·907	28·059
„ 29	*I. P. W.*	11 59 58	21·275	6·714	27·989	27·976	...
„ „	„	12 18 24	21·229	6·692	27·921	27·935	27·994
„ 30	*I. P. E.*	11 58 10	22·335	5·740	28·075	28·015	28·203
„ „	„	12 17 56	22·414	5·738	28·152	28·006	28·204
„ 31	*I. P. W.*	11 57 0	22·696	5·174	27·870	27·737	27·907
„ „	„	12 17 39	22·692	5·159	27·851	27·746	27·931
April 3	*I. P. E.*	11 58 56	25·726	2·483	28·209	28·109	28·221
„ „	„	12 17 55	25·827	2·453	28·280	28·171	28·362
„ 4	*I. P. W.*	11 59 5	26·573	1·325	27·898	27·829	27·856
„ „	„	12 18 1	26·551	1·301	27·852	27·794	27·876
Mean of daily mean values for instrumental position *I. P. E.* at both stations ...					16 28·127	16 28·024	16 28·183
„ „ *I. P. W.* „ ...					27·897	27·836	27·926
General Means ...					16 28·012	16 27·930	16 28·054

	By Clock Comparisons	By Transits at both Stations with the same Clock
	m s	m s
Whence	δL_N = 16 28·012	δL_N = 16 27·992
Correction for Relative Personal Equation,	$H_N - S_N$ = + 0·007	$H_N - S_N$ = + 0·007
	ΔL_N = 16 28·019	ΔL_N = 16 27·999
Again	δL_S = 16 28·044	δL_S = 16 28·024
Correction for Relative Personal Equation,	$H_S - S_S$ = − 0·058	$H_S - S_S$ = − 0·058
	ΔL_S = 16 27·986	ΔL_S = 16 27·966
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$	m s = 16 28·003	m s = 16 27·983
	ρ = + 0·038	ρ = + 0·062

ELECTRO-TELEGRAPHIC LONGITUDES

1883-84.

INDIAN ARCS

ABSTRACT OF THE OBSERVATIONS

AND

REDUCTION OF THE RESULTS.

NOTE.

The Explanation of Table I, given on pages 2 and 176, applies equally to the Observations of 1883-84, in which the same telescopes were used with the same micrometers and the same wire systems.

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1883			*d*	*d*	*d*	*d*	*d*	*d*	1883			*d*	*d*	*d*	*d*	*d*	*d*
Nov. 27	AKYAB (Telescope No. 1)	*I. P. E.*	97·2	100·0	− 2·8	− 3·7	97·9	− 0·7	Nov. 27	CALCUTTA (Telescope No. 2)	*I. P. E.*	17·8	20·0	+ 2·2	+ 1·4	16·7	− 1·1
			101·1	100·0	+ 1·1	+ 0·2*	99·0	+ 2·1*				17·7	20·0	+ 2·3	+ 1·5	14·6	− 3·1
			98·8	100·0	− 1·2	− 2·1	97·7	+ 1·1									
Dec. 8		*I. P. W.*	100·2	100·0	− 0·2	− 1·1	97·4	− 2·8	Dec. 8		*I. P. E.*	16·9	20·0	+ 3·1	+ 2·3	21·3	+ 4·4
			99·3	100·0	+ 0·7	− 0·2	99·1	− 0·2				17·3	20·0	+ 2·7	+ 1·9	22·4	+ 5·1
							98·0	− 1·3									
„ 9		*I. P. W.*	98·7	100·0	+ 1·3	+ 0·4	95·6	− 3·1	„ 9		*I. P. W.*	13·0	20·0	− 7·0	− 7·8	10·6	+ 2·4
			98·8	100·0	+ 1·2	+ 0·3	95·3	− 3·5				13·6	20·0	− 6·4	− 7·2	11·1	+ 2·5
							96·7	− 2·1									
„ 10		*I. P. E.*	97·0	100·0	− 3·0	− 3·9	99·7	− 2·7	„ 10		*I. P. W.*	15·1	15·0	+ 0·1	− 0·7	8·3	+ 6·8*
			95·8	100·0	− 4·2	− 5·1	99·6	− 3·8*				13·7	15·0	− 1·3	− 2·1	14·5	− 0·8
							100·0	− 4·2									
„ 11		*I. P. E.*	95·6	100·0	− 4·4	− 5·3	95·5	+ 0·1	„ 11		*I. P. E.*	17·1	15·0	− 2·1	− 2·9	22·6	+ 5·5
			97·3	100·0	− 2·7	− 3·6	96·9	+ 0·4				15·0	15·0	0·0	− 0·8	22·9	+ 7·9
							96·9	+ 0·4									
„ 12		*I. P. W.*	94·9	100·0	+ 5·1	+ 4·2	99·8	+ 4·9	„ 12		*I. P. E.*	15·4	15·0	− 0·4	− 1·2	13·2	− 2·2
			95·6	100·0	+ 4·4	+ 3·5						15·3	15·0	− 0·3	− 1·1	11·2	− 4·1
			96·8	100·0	+ 3·2	+ 2·3	98·6	+ 1·8									
„ 13		*I. P. W.*	96·3	100·0	+ 3·7	+ 2·8	98·8	+ 2·5	„ 13		*I. P. W.*	14·3	15·0	− 0·7	− 1·5	15·8	− 1·5
			96·4	100·0	+ 3·6	+ 2·7	98·9	+ 2·5				13·6	15·0	− 1·4	− 2·2	15·7	− 2·1
„ 14		*I. P. E.*	97·0	95·0	+ 2·0	+ 1·1	94·6	+ 2·4	„ 14		*I. P. W.*	14·6	15·0	− 0·4	− 1·2	17·5	− 2·9
			94·7	95·0	− 0·3	− 1·2	95·3	− 0·6				18·5	15·0	+ 3·5	+ 2·7	17·3	+ 1·2
Dec. 26	AKYAB (Telescope No. 1)	*I. P. E.*	96·9	95·0	+ 1·9	+ 1·0	97·6	− 0·7	Dec. 26	CHITTAGONG (Telescope No. 2)	*I. P. E.*	27·3	30·0	+ 2·7	+ 1·8	27·8	+ 0·5
			96·1	95·0	+ 1·1	+ 0·2	98·9	− 2·8				25·1	30·0	+ 4·9	+ 4·0	26·6	+ 1·5
„ 27		*I. P. W.*	98·7	100·0	+ 1·3	+ 0·4	95·2	− 3·5	„ 27		*I. P. E.*	27·0	30·0	+ 3·0	+ 2·1	25·7	− 1·3
			95·7	100·0	+ 4·3	+ 3·4	93·4	− 2·3				25·9	30·0	+ 4·1	+ 3·2	25·6	− 0·3
„ 28		*I. P. W.*	97·0	95·0	− 2·0	− 2·9	95·0	− 2·0	„ 28		*I. P. W.*	23·7	25·0	− 1·3	− 2·2	24·9	− 1·2
			95·9	95·0	− 0·9	− 1·8	95·1	− 0·8				24·7	25·0	− 0·3	− 1·2	24·1	+ 0·6
„ 29		*I. P. E.*	96·7	95·0	+ 1·7	+ 0·8	96·8	− 0·1	„ 29		*I. P. W.*	24·8	25·0	− 0·2	− 1·1	24·0	+ 0·8
			97·4	95·0	+ 2·4	+ 1·5	97·6	− 0·2				24·3	25·0	− 0·7	− 1·6	24·3	0·0
„ 30		*I. P. E.*	96·6	95·0	+ 1·6	+ 0·7	96·9	− 0·3	„ 30		*I. P. E.*	26·7	25·0	− 1·7	− 2·6	27·0	+ 0·3
			96·6	95·0	+ 1·6	+ 0·7	98·2	− 1·6				24·4	25·0	+ 0·6	− 0·3	27·4	+ 3·0
1884									1884								
Jan. 2		*I. P. W.*	95·0	95·0	0·0	− 0·9	92·9	− 2·1	Jan. 2		*I. P. E.*	25·5	25·0	− 0·5	− 1·4	24·9	− 0·6
			96·5	95·0	− 1·5	− 2·4	94·4	− 2·1				26·0	25·0	− 1·0	− 1·9	23·9	− 2·1
„ 3		*I. P. W.*	95·8	95·0	− 0·8	− 1·7	95·6	− 0·2	„ 3		*I. P. W.*	25·1	25·0	+ 0·1	− 0·8	26·4	− 1·3
			95·2	95·0	− 0·2	− 1·1	95·8	+ 0·6				24·9	25·0	− 0·1	− 1·0	25·9	− 1·0
„ 4		*I. P. E.*	98·8	95·0	+ 3·8	+ 2·9	98·7	+ 0·1	„ 4		*I. P. W.*	24·7	25·0	− 0·3	− 1·2	26·3	− 1·6
			99·8	95·0	+ 4·8	+ 3·9	99·5	+ 0·3				25·6	25·0	+ 0·6	− 0·3	25·4	+ 0·2

* Half weight is assigned to this value.

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1884			*d*	*d*	*d*	*d*	*d*	*d*	1884			*d*	*d*	*d*	*d*	*d*	*d*
Jan. 21	PROME (Telescope No. 1)	*I. P. W.*	98·1	100·0	+ 1·9	+ 1·0	94·2	− 3·9	Jan. 21	CHITTAGONG (Telescope No. 2)	*I. P. W.*	25·9	25·0	+ 0·9	0·0	25·8	+ 0·1
							93·7	− 4·4				24·7	25·0	− 0·3	− 1·2	23·6	+ 1·1
		I. P. E.					102·2	− 5·0									
			97·2	100·0	− 2·8	− 3·7	104·1	− 6·9									
„ 22		*I. P. E.*	96·3	95·0	+ 1·3	+ 0·4	99·9	− 3·6	„ 22		*I. P. E.*	27·4	25·0	− 2·4	− 3·3	31·9	+ 4·5
												25·6	25·0	− 0·6	− 1·5	31·7	+ 6·1
		I. P. W.					94·1	− 6·2									
			100·3	95·0	− 5·3	− 6·2	94·6	− 5·7									
„ 23		*I. P. W.*	101·9	100·0	− 1·9	− 2·8	95·8	− 6·1	„ 23		*I. P. W.*	26·6	25·0	+ 1·6	+ 0·7	24·4	+ 2·2
												26·5	25·0	+ 1·5	+ 0·6	23·2	+ 3·3
		I. P. E.	103·2	100·0	+ 3·2	+ 2·3	104·4	− 1·2									
			100·4	100·0	+ 0·4	− 0·5	106·1	− 5·7									
„ 24		*I. P. E.*	101·0	100·0	+ 1·0	+ 0·1	97·1	+ 3·9	„ 24		*I. P. E.*	26·0	25·0	− 1·0	− 1·9	34·1	+ 8·1
							94·8	+ 6·2				26·3	25·0	− 1·3	− 2·2	33·3	+ 7·0
		I. P. W.	102·4	100·0	− 2·4	− 3·3	107·4	+ 5·0									
			100·9	100·0	− 0·9	− 1·8	104·2	+ 3·3									
„ 25		*I. P. W.*	103·0	100·0	− 3·0	− 3·9	106·1	+ 3·1	„ 25		*I. P. W.*	26·9	25·0	+ 1·9	+ 1·0	23·3	+ 3·6
							106·1	+ 3·1				26·6	25·0	+ 1·6	+ 0·7	23·5	+ 3·1
		I. P. E.	102·4	100·0	+ 2·4	+ 1·5	98·0	+ 4·4									
			103·3	100·0	+ 3·3	+ 2·4	97·6	+ 5·7									
„ 26		*I. P. E.*	98·4	100·0	− 1·6	− 2·5	94·5	+ 3·9	„ 26		*I. P. E.*	25·7	25·0	− 0·7	− 1·6	25·6	− 0·1
			98·8	100·0	− 1·2	− 2·1	96·7	+ 2·1				25·5	25·0	− 0·5	− 1·4	24·9	− 0·6
		I. P. W.	99·0	100·0	+ 1·0	+ 0·1	99·9	+ 0·9									
			101·1	100·0	− 1·1	− 2·0	100·5	− 0·6									
„ 29		*I. P. W.*	102·6	100·0	− 2·6	− 3·5	97·1	− 5·5	„ 29		*I. P. W.*	25·0	25·0	0·0	− 0·9	32·0	− 7·0
			100·6	100·0	− 0·6	− 1·5	97·0	− 3·6				25·3	25·0	+ 0·3	− 0·6	28·0	− 2·7
		I. P. E.	100·2	100·0	+ 0·2	− 0·7	109·0	− 8·8									
			100·9	100·0	+ 0·9	0·0	109·7	− 8·8									
„ 30		*I. P. E.*	100·1	100·0	+ 0·1	− 0·8	96·4	+ 3·7	„ 30		*I. P. E.*	25·3	25·0	− 0·3	− 1·2	26·7	+ 1·4
			99·5	100·0	− 0·5	− 1·4	98·8	+ 0·7				25·2	25·0	− 0·2	− 1·1	26·3	+ 1·1
		I. P. W.	100·9	100·0	− 0·9	− 1·8	105·9	+ 5·0									
			99·8	100·0	+ 0·2	− 0·7	105·9	+ 6·1									
Feb. 8	PROME (Telescope No. 1)	*I. P. E.*	100·4	100·0	+ 0·4	− 0·5	99·9	+ 0·5	Feb. 8	AKYAB (Telescope No. 2)	*I. P. E.*	21·6	22·0	+ 0·4	− 0·5	22·3	+ 0·7
			101·8	100·0	+ 1·8	+ 0·9	101·9	− 0·1				21·5	22·0	+ 0·5	− 0·4	20·9	− 0·6
		I. P. W.	101·4	100·0	− 1·4	− 2·3	100·3	− 1·1									
			102·9	100·0	− 2·9	− 3·8	99·9	− 3·0									
„ 9		*I. P. W.*	101·8	100·0	− 1·8	− 2·7	100·8	− 1·0	„ 9		*I. P. W.*	20.3	22·0	− 1·7	− 2·6	23·3	− 3·0
			102·1	100·0	− 2·1	− 3·0	100·5	− 1·6				19·7	22·0	− 2·3	− 3·2	23·2	− 3·5
		I. P. E.	99·3	100·0	− 0·7	− 1·6	104·1	− 4·8									
			99·7	100·0	− 0·3	− 1·2	105·7	− 6·0									

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_l	c	M	b				C_0	C_s	c_l	c	M	b
1884			*d*	*d*	*d*	*d*	*d*	*d*	1884			*d*	*d*	*d*	*d*	*d*	*d*
Feb. 12	PROME (Telescope No. 1)	*I. P. E.*	101·8	100·0	+ 1·8	+ 0·9	95·6	+ 6·2	Feb. 12	AKYAB (Telescope No. 2)	*I. P. E.*	21·8	22·0	+ 0·2	− 0·7	20·3	− 1·5
			101·1	100·0	+ 1·1	+ 0·2	96·6	+ 4·5				22·4	22·0	− 0·4	− 1·3	19·7	− 2·7
		I. P. W.	99·7	100·0	+ 0·3	− 0·6	105·3	+ 5·6									
			99·3	100·0	+ 0·7	− 0·2	105·6	+ 6·3									
„ 13		*I. P. W.*	99·9	100·0	+ 0·1	− 0·8	94·4	− 5·5	„ 13		*I. P. W.*	19·9	22·0	− 2·1	− 3·0	25·5	− 5·6
			100·9	100·0	− 0·9	− 1·8	94·8	− 6·1				21·2	22·0	− 0·8	− 1·7	26·4	− 5·2
		I. P. E.	100·6	100·0	+ 0·6	− 0·3	111·9	−11·3									
			101·8	100·0	+ 1·8	+ 0·9	112·6	−10·8									
Mar. 8	MOULMEIN (Telescope No. 2)	*I. P. E.*	39·9	40·0	+ 0·1	− 0·8	41·1	+ 1·2	Mar. 8	PROME (Telescope No. 1)	*I. P. W.*					99·0	− 0·8
												99·8	100·0	+ 0·2	− 0·7	98·8	− 1·0
„ 9		*I. P. W.*	44·1	45·0	− 0·9	− 1·8	46·3	− 2·2	„ 9		*I. P. W.*	102·2	100·0	− 2·2	− 3·1	99·1	− 3·1
			42·2	45·0	− 2·8	− 3·7	47·2	− 5·0				101·1	100·0	− 1·1	− 2·0	97·9	− 3·2
„ 10		*I. P. W.*	43·2	45·0	− 1·8	− 2·7	45·6	− 2·4	„ 10		*I. P. E.*	97·8	100·0	− 2·2	− 3·1	99·6	− 1·8
												99·4	100·0	− 0·6	− 1·5	100·4	− 1·0
		I. P. E.	40·1	45·0	+ 4·9	+ 4·0	39·2	− 0·9				99·0	100·0	− 1·0	− 1·9	101·5	− 2·5
„ 11		*I. P. E.*	40·2	40·0	− 0·2	− 1·1	40·3	+ 0·1	„ 11		*I. P. W.*	101·5	100·0	− 1·5	− 2·4	98·5	− 3·0
			40·4	40·0	− 0·4	− 1·3	38·3	− 2·1				101·2	100·0	− 1·2	− 2·1	98·4	− 2·8
												101·3	100·0	− 1·3	− 2·2	98·4	− 2·9
		I. P. W.	42·6	40·0	+ 2·6	+ 1·7	45·5	− 2·9									
			43·1	40·0	+ 3·1	+ 2·2	45·5	− 2·4									
„ 12		*I. P. W.*	43·7	40·0	+ 3·7	+ 2·8	45·0	− 1·3	„ 12		*I. P. E.*	101·3	100·0	+ 1·3	+ 0·4	97·3	+ 4·0
			43·9	40·0	+ 3·9	+ 3·0	45·8	− 1·9				101·1	100·0	+ 1·1	+ 0·2		
												101·0	100·0	+ 1·0	+ 0·1	98·8	+ 2·2
		I. P. E.	40·6	40·0	− 0·6	− 1·5	40·0	− 0·6				102·0	100·0	+ 2·0	+ 1·1	99·3	+ 2·7
			40·2	40·0	− 0·2	− 1·1	39·9	− 0·3									
„ 13		*I. P. E.*	39·3	40·0	+ 0·7	− 0·2	42·6	+ 3·3	„ 13		*I. P. W.*	102·5	100·0	− 2·5	− 3·4	106·2	+ 3·7*
			40·8	40·0	− 0·8	− 1·7	40·8	0·0				101·0	100·0	− 1·0	− 1·9	107·9	+ 6·9*
												101·8	100·0	− 1·8	− 2·7	108·9	+ 7·1*
		I. P. W.	46·3	40·0	+ 6·3	+ 5·4	42·8	+ 3·5									
			44·4	40·0	+ 4·4	+ 3·5	42·3	+ 2·1									
„ 14		*I. P. W.*	42·4	40·0	+ 2·4	+ 1·5	42·3	+ 0·1	„ 14		*I. P. E.*	100·4	100·0	+ 0·4	− 0·5	97·1	+ 3·3
			44·1	40·0	+ 4·1	+ 3·2	43·0	+ 1·1				99·1	100·0	− 0·9	− 1·8	96·9	+ 2·2
												99·9	100·0	− 0·1	− 1·0	98·2	+ 1·7
		I. P. E.	44·6	40·0	− 4·6	− 5·5	42·9	− 1·7									
			42·5	40·0	− 2·5	− 3·4	42·4	− 0·1									
„ 15		*I. P. E.*	40·5	40·0	− 0·5	− 1·4	43·9	+ 3·4	„ 15		*I. P. W.*	101·1	100·0	− 1·1	− 2·0	98·5	− 2·6
			42·0	40·0	− 2·0	− 2·9	43·2	+ 1·2				102·2	100·0	− 2·2	− 3·1	97·5	− 4·7
												100·9	100·0	− 0·9	− 1·8	97·1	− 3·8
		I. P. W.	44·3	40·0	+ 4·3	+ 3·4	42·1	+ 2·2									
			41·2	40·0	+ 1·2	+ 0·3	42·7	− 1·5									

* For all Stars up to No. 3693 the mean value of 1st and 2nd has been used, and the mean of 2nd and 3rd for subsequent Stars.

TABLE I. ABSTRACT OF DETERMINATIONS OF COLLIMATION AND LEVEL CORRECTION-CONSTANTS.

Astronl. Date	Station	Instrumental Position	Collimation				Level		Astronl. Date	Station	Instrumental Position	Collimation				Level	
			C_0	C_s	c_1	c	M	b				C_0	C_s	c_1	c	M	b
1884			*d*	*d*	*d*	*d*	*d*	*d*	1884			*d*	*d*	*d*	*d*	*d*	*d*
Mar. 26	MOULMEIN (Telescope No. 2)	*I. P. E.*	41·7	42·0	+ 0·3	− 0·6	40·2	− 1·5	Mar. 26	AKYAB (Telescope No. 1)	*I. P. E.*	90·1	90·0	+ 0·1	− 0·8	88·3	+ 1·8
			40·9	42·0	+ 1·1	+ 0·2	39·2	− 1·7				90·5	90·0	+ 0·5	− 0·4	89·0	+ 1·5
																88·8	+ 1·7
		I. P. W.	42·4	42·0	+ 0·4	− 0·5	44·7	− 2·3									
			42·2	42·0	+ 0·2	− 0·7	46·3	− 4·1									
„ 27		*I. P. W.*	44·6	42·0*	+ 2·6	+ 1·7	43·2	+ 1·4	„ 27		*I. P. W.*	89·1	90·0	+ 0·9	0·0	86·0	− 3·1
			43·8	42·0	+ 1·8	+ 0·9	45·0	− 1·2				89·2	90·0	+ 0·8	− 0·1	86·7	− 2·5
												89·5	90·0	+ 0·5	− 0·4	86·4	− 3·1
		I. P. E.	41·1	42·0	+ 0·9	0·0	41·4	+ 0·3									
			39·8	42·0	+ 2·2	+ 1·3	40·0	+ 0·2									
„ 28		*I. P. E.*	40·6	42·0	+ 1·4	+ 0·5	42·3	+ 1·7	„ 28		*I. P. E.*	89·2	90·0	− 0·8	− 1·7	91·1	− 1·9
			40·9	42·0	+ 1·1	+ 0·2	41·7	+ 0·8								90·3	− 1·1
												89·1	90·0	− 0·9	− 1·8	91·1	− 2·0
		I. P. W.	42·5	42·0	+ 0·5	− 0·4	43·7	− 1·2									
			44·1	42·0	+ 2·1	+ 1·2	43·9	+ 0·2									
„ 29		*I. P. W.*	44·1	42·0	+ 2·1	+ 1·2	43·0	+ 1·1	„ 29		*I. P. W.*	88·7	90·0	+ 1·3	+ 0·4	89·7	+ 1·0
			44·2	42·0	+ 2·2	+ 1·3	43·9	+ 0·3								90·1	+ 1·4
												87·9	90·0	+ 2·1	+ 1·2	88·6	+ 0·7
		I. P. E	40·2	42·0	+ 1·8	+ 0·9	40·6	+ 0·4									
			39·9	42·0	+ 2·1	+ 1·2	40·7	+ 0·8									
„ 30		*I. P. E*	42·8	42·0	− 0·8	− 1·7	42·1	− 0·7	„ 30		*I. P. E.*	89·7	90·0	− 0·3	− 1·2	91·1	− 1·4
			40·9	42·0	+ 1·1	+ 0·2	41·8	+ 0·9				91·7	90·0	+ 1·7	+ 0·8	91·8	− 0·1
		I. P. W.	43·1	42·0	+ 1·1	+ 0·2	42·0	+ 1·1									
			43·0	42·0	+ 1·0	+ 0·1	42·6	+ 0·4									
„ 31		*I. P. W.*	42·7	42·0	+ 0·7	− 0·2	42·7	0·0	„ 31		*I. P. W.*	88·8	90·0	+ 1·2	+ 0·3	89·3	+ 0·5
			43·0	42·0	+ 1·0	+ 0·1	42·7	+ 0·3				89·3	90·0	+ 0·7	− 0·2	89·1	− 0·2
		I. P. E.	41·0	42·0	+ 1·0	+ 0·1	41·2	+ 0·2									
			40·2	42·0	+ 1·8	+ 0·9	41·2	+ 1·0									
Apr. 1		*I. P. E.*	41·0	42·0	+ 1·0	+ 0·1	42·0	+ 1·0	Apr. 1		*I. P. E.*	89·4	90·0	− 0·6	− 1·5	90·3	− 0·9
			39·7	42·0	+ 2·3	+ 1·4	40·5	+ 0·8				89·4	90·0	− 0·6	− 1·5	91·9	− 2·5
		I. P. W.	43·5	42·0	+ 1·5	+ 0·6	42·4	+ 1·1									
			41·2	42·0	− 0·8	− 1·7	42·0	− 0·8									

* Except for Star No. 2209 for which $C_s = 72^d \cdot 0$.

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1883							h m s	s	s	s	s	s	h m s	m s	d	d
AKYAB AND CALCUTTA	AKYAB (Latitude 20° 8′)			E	289 Gr. 72	U	3	−0·2115	3 5 10·00	−0·54	+0·06	+1·83		11·35	3 5 19·22	+ 0 7·87	− 2·3	
				„	326 „	U	3	−0·3171	3 28 58·67	−0·80	+0·08	−1·83		56·12	3 29 1·82	+ 0 5·70	+ 4·6	−2·2
		Nov. 27	*I. P. E.*	„	μ Geminorum	U	15	−0·0011	6 15 52·38	−0·06	+0·01	−1·83	−0·03	50·47	6 15 58·11	+ 0 7·64	− 9·0	
				„	α Argûs	U	12	+0·0354	6 21 19·26	−0·09	+0·01	−1·83	−0·03	17·32	6 21 24·63	+ 0 7·31		
				E	376 Gr. 72	U	3	−0·1783	4 1 35·37	−0·14	−0·13	+1·82		36·92	4 1 40·87	+ 0 3·95	+ 3·1	
				„	383 „	U	4	−0·1191	4 6 59·68	−0·10	−0·09	+1·82		61·31	4 7 5·01	+ 0 3·70	+ 4·6	
		Dec. 8	*I. P. W.*	„	1556 „	L	5	+0·1625	4 57 34·76	+0·12	+0·05	+1·82	−0·01	36·74	4 57 41·73	+ 0 4·99		+4·5
				W	δ Ursæ Minoris	L	2	+0·3648	5 51 20·20	+0·27	+0·15	+1·82		22·44	6 9 21·29	+17 58·85		
				„	51 Cephei	U	3	−0·4273	6 28 21·60	−0·33	−0·25	−1·82	−0·02	19·18	6 46 13·54	+17 54·36	+ 5·7	
				E	376 Gr. 72	U	3	−0·1783	4 1 36·53	+0·08	−0·26	+1·82		38·17	4 1 40·85	+ 0 2·68	+ 8·9	
				„	383 „	U	5	−0·1191	4 7 0·66	+0·05	−0·20	+1·82		2·33	4 7 5·00	+ 0 2·67	+10·8	
		„ 9	*I. P. W.*	„	1556 „	L	5	+0·1625	4 57 34·18	−0·07	+0·10	+1·82	−0·01	36·02	4 57 41·72	+ 0 5·70		+9·0
				W	δ Ursæ Minoris	L	2	+0·3648	5 51 20·35	−0·15	+0·32	+1·82		22·34	6 9 21·15	+17 58·81		
				„	51 Cephei	U	3	−0·4273	6 28 22·80	+0·19	−0·52	−1·82	−0·02	20·63	6 46 13·77	+17 53·14	+ 7·2	
				E	376 Gr. 72	U	4	−0·1783	4 1 35·48	−0·90	−0·31	+1·81		36·08	4 1 40·84	+ 0 4·76	− 2·1	
				„	383 „	U	4	−0·1191	4 7 0·28	−0·62	−0·24	+1·81		1·23	4 7 5·00	+ 0 3·77	+ 1·0	
		„ 10	*I. P. E*	„	1556 „	L	4	+0·1625	4 57 35·00	+0·75	+0·12	+1·81	−0·01	37·67	4 57 41·71	+ 0 4·04		−1·0
				W	δ Ursæ Minoris	L	2	+0·3648	5 51 23·15	+1·71	+0·38	+1·81		27·05	6 9 21·01	+17 53·96	− 1·8	
				„	51 Cephei	U	3	−0·4273	6 28 23·17	−2·09	−0·63	−1·81	−0·02	18·62	6 46 14·00	+17 55·38		
				E	376 Gr. 72	U	4	−0·1783	4 1 35·90	−0·90	+0·03	+1·84		36·87	4 1 40·82	+ 0 3·95	− 4·8	
				„	383 „	U	4	−0·1191	4 7 0·58	−0·62	+0·02	+1·84		1·82	4 7 4·99	+ 0 3·17	− 3·0	
		„ 11	*I. P. E.*	„	1556 „	L	3	+0·1625	4 57 36·80	+0·75	−0·01	+1·84	−0·01	39·37	4 57 41·69	+ 0 2·32		−4·6
				W	δ Ursæ Minoris	L	3	+0·3648	5 51 24·93	+1·71	−0·03	+1·84		28·45	6 9 20 87	+17 52·42	− 6·1	
				„	51 Cephei	U	2	−0·4273	6 28 20·85	−2·09	+0·05	−1·84		16·97	6 46 14·26	+17 57·29		
				E	376 Gr. 72	U	5	−0·1783	4 1 33·70	+0·66	+0·30	+1·85		36·51	4 1 40·80	+ 0 4·29	− 2·9	
				„	383 „	U	5	−0·1191	4 6 59·06	+0·45	+0·23	+1·85		61·59	4 7 4·99	+ 0 3·40	− 0·3	
		„ 12	*I. P. W.*	„	1556 „	L	4	+0·1625	4 57 37·20	−0·55	−0·12	+1·85	−0·01	38·37	4 57 41·68	+ 0 3·31		−1·6
				W	δ Ursæ Minoris	L	3	+0·3648	5 51 25·47	−1·26	−0·37	+1·85		25·69	6 9 20·72	+17 55·03	− 1·6	
				„	51 Cephei	U	3	−0·4273	6 28 17·93	+1·53	+0·61	−1·85	+0·01	18·23	6 46 14·54	+17 56·31		
				E	376 Gr. 72	U	4	−0·1783	4 1 34·80	+0·56	+0·22	+1·83		37·41	4 1 40·78	+ 0 3·37	− 3·1	
				„	383 „	U	5	−0·1191	4 6 59·82	+0·38	+0·17	+1·83		62·20	4 7 4·98	+ 0 2·78	− 1·6	
		„ 13	*I. P. W.*	„	1556 „	L	5	+0·1625	4 57 38·08	−0·47	−0·09	+1·83	−0·01	39·34	4 57 41·67	+ 0 2·33		−1·6
				W	δ Ursæ Minoris	L	3	+0·3648	5 51 25·47	−1·07	−0·27	+1·83		25·96	6 9 20·54	+17 54·58	− 0·2	
				„	51 Cephei	U	3	−0·4273	6 28 20·17	+1·30	+0·45	−1·83	+0·01	20·10	6 46 14·83	+17 54·73		

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Level	Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1883							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
AKYAB AND CALCUTTA	AKYAB (Latitude 20° 8′)			E	376 Gr. 72	U	3	−0·1783	4 1 34·63	0·00	+0·08	+1·85		36·56	4 1 40·77	+ 0 4·21	− 4·5	
				„	383 „	U	5	−0·1191	4 7 0·04	0·00	+0·06	+1·85		1·95	4 7 4·98	+ 0 3·03	− 1·2	
		Dec. 14	*I. P. E.*	„	1556 „	L	5	+0·1625	4 57 37·16	0·00	−0·03	+1·85	−0·01	38·97	4 57 41·66	+ 0 2·69		−1·8
				W	δ Ursæ Minoris	L	3	+0·3648	5 51 22·23	0·00	−0·10	+1·85		23·98	6 9 20·37	+17 56·39		
				„	51 Cephei	U	3	−0·4273	6 28 20·67	0·00	+0·16	−1·85	+0·01	18·99	6 46 15·14	+17 56·15	+ 0·3	
		1883		E	289 Gr. 72	U	4	−0·2071	3 23 13·78	+0·35	−0·23	+1·43		15·33	3 5 19·22	−17 56·11	−28·4	
				„	326 „	U	2	−0·3109	3 46 59·20	+0·52	−0·32	−1·43	−0·01	57·96	3 29 1·82	−17 56·14	−21·8	
		Nov. 27	*I. P. E.*	„	1402 „	L	2	+0·1374	3 53 55·00	−0·21	+0·07	−1·43	−0·01	53·42	3 35 47·51	−18 5·91		−28·9
				W	514 „	U	2	−0·2353	5 25 7·15	+0·40	−0·26	+1·43		8·72	5 25 13·47	+ 0 4·75	−36·4	
				„	δ Ursæ Minoris	L	2	+0·3599	6 9 39·10	−0·57	+0·26	+1·43	−0·02	40·20	6 9 23·27*	− 0 16·93		
				W	1402 Gr. 72	L	5	+0·1374	3 36 12·42	−0·30	−0·16	+1·53		13·49	3 35 47·74	− 0 25·75	−92·3	
				„	383 „	U	9	−0·1161	4 7 5·22	+0·29	+0·35	+1·53	−0·02	7·37	4 7 5·01	− 0 2·36	−91·9	
		Dec. 8	*I. P. E.*	„	1556 „	L	8	+0·1609	4 58 8·59	−0·35	−0·20	+1·53	−0·03	9·54	4 57 41·73	− 0 27·81		−92·1
				„	δ Ursæ Minoris	L	3	+0·3599	6 10 5·43	−0·80	−0·60	+1·53		5·56	6 9 21·29	− 0 44·27	−92·1	
				„	51 Cephei	U	3	−0·4194	6 45 42·57	+0·97	+0·95	+1·53	−0·02	46·00	6 46 13·54	+ 0 27·54		
				W	1402 Gr. 72	L	5	+0·1374	3 36 10·04	+1·06	−0·08	+1·53		12·55	3 35 47·78	− 0 24·77	−80·0	
				„	383 „	U	8	−0·1161	4 7 8·83	−1·03	+0·18	+1·53	−0·02	9·49	4 7 5·00	− 0 4·49	−82·7	
		„ 9	*I. P. W.*	„	1556 „	L	8	+0·1609	4 58 6·49	+1·25	−0·11	+1·53	−0·03	9·13	4 57 41·72	− 0 27·41		−82·3
				„	δ Ursæ Minoris	L	2	+0·3599	6 10 1·80	+2·86	−0·31	+1·53		5·88	6 9 21·15	− 0 44·73	−84·2	
				„	51 Cephei	U	3	−0·4194	6 45 54·33	−3·48	+0·50	+1·53	−0·02	52·86	6 46 13·77	+ 0 20·91		
				W	1402 Gr. 72	L	6	+0·1374	3 36 12·35	+0·20	−0·06	+1·48		13·97	3 35 47·83	− 0 26·14	−77·5	
				„	383 „	U	8	−0·1161	4 7 10·11	−0·19	+0·12	+1·48	−0·02	11·50	4 7 5·00	− 0 6·50	−75·7	
		„ 10	*I. P. W.*	„	1556 „	L	5	+0·1609	4 58 7·58	+0·23	−0·07	+1·48	−0·03	9·19	4 57 41·71	− 0 27·48		−75·9
				„	δ Ursæ Minoris	L	2	+0·3599	6 10 0·15	+0·53	−0·21	+1·48		1·95	6 9 21·01	− 0 40·94	−74·6	
				„	51 Cephei	U	3	−0·4194	6 45 55·67	−0·65	+0·34	+1·48	−0·02	56·82	6 46 14·00	+ 0 17·18		
				W	1402 Gr. 72	L	5	+0·1374	3 36 14·50	+0·27	−0·22	+1·47		16·02	3 35 47·87	− 0 28·15	−93·6	
				„	383 „	U	6	−0·1161	4 7 7·72	−0·26	+0·49	+1·47		9·42	4 7 4·99	− 0 4·43	−95·2	
		„ 11	*I. P. E.*	„	1556 „	L	8	+0·1609	4 58 10·98	+0·32	−0·28	+1·47		12·49	4 57 41·69	− 0 30·80		−94·1
				„	δ Ursæ Minoris	L	2	+0·3599	6 10 7·20	+0·72	−0·84	+1·47		8·55	6 9 20·87	− 0 47·68	−93·5	
				„	51 Cephei	U	3	−0·4194	6 45 47·17	−0·88	+1·33	+1·47		49·09	6 46 14·26	+ 0 25·17		
				W	383 Gr. 72	U	6	−0·1161	4 7 8·30	−0·16	−0·23	+1·48		9·39	4 7 4·99	− 0 4·40	−95·2	
				„	1556 „	L	8	+0·1609	4 58 10·63	+0·20	+0·14	+1·48	+0·01	12·46	4 57 41·68	− 0 30·78		−95·4
		„ 12	*I. P. E.*	„	δ Ursæ Minoris	L	2	+0·3599	6 10 6·75	+0·46	+0·40	+1·48		9·09	6 9 20·72	− 0 48·37	−95·5	
				„	51 Cephei	U	3	−0·4194	6 45 48·20	−0·56	−0·64	+1·48	+0·01	48·49	6 46 14·54	+ 0 26·05		

* Deduced from the Greenwich Nine-Year Catalogue for 1872.

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for Collimation	Corrections for Level	Corrections for Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
AKYAB AND CALCUTTA	CALCUTTA (Latitude 22° 33′)	1883							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
				W	383 Gr. 72	U	8	−0·1161	4 7 6·86	−0·26	−0·13	+1·48		7·95	4 7 4·98	−0 2·97		
				,,	1556 ,,	L	8	+0·1609	4 58 12·16	+0·32	+0·08	+1·48	+0·01	14·05	4 57 41·67	−0 32·38	−106·2	
		Dec. 13	*I. P. W.*	,,	δ Ursæ Minoris	L	2	+0·3599	6 10 11·75	+0·72	+0·23	+1·48		14·18	6 9 20·54	−0 53·64		−107·0
				,,	51 Cephei	U	3	−0·4194	6 45 43·37	−0·88	−0·36	+1·48	+0·01	43·62	6 46 14 83	+0 31·21	−108·9	
				W	383 Gr. 72	U	6	−0·1161	4 7 5·83	+0·11	−0·07	+1·48		7·35	4 7 4·98	−0 2·37		
				,,	1556 ,,	L	5	+0·1609	4 58 12·24	−0·13	+0·04	+1·48	+0·01	13·64	4 57 41 66	−0 31·98	−106·9	
		,, 14	*I. P. W.*	,,	δ Ursæ Minoris	L	2	+0·3599	6 10 11·90	−0·30	+0·11	+1·48		13·19	6 9 20·37	−0 52 82		−107·1
				,,	51 Cephei	U	3	−0·4194	6 45 42·63	+0·37	−0·18	+1·48	+0·01	44·31	6 46 15 14	+0 30·83	−107·3	
AKYAB AND CHITTAGONG	AKYAB (Latitude 20° 8′)	1883																
				E	1556 Gr. 72	L	5	+0·1625	4 57 31·32	−0·10	+0·06	+1·86		33·14	4 57 41·86	+0 8·72		
				,,	477 ,,	U	3	−0·1019	5 3 24·47	+0·07	−0·11	+1·86		26·29	5 3 36·11	+0 9·82	− 4·2	
		Dec. 26	*I. P. E.*	W	51 Cephei	U	3	−0·4276	6 42 5·60	+0·28	−0·33	+1·86		7·41	6 46 17·47	+4 10·06		−4·4
				,,	λ Ursæ Minoris	L	2	+1·1683	7 34 49·90	−0·74	+0 73	+1·86	−0·33	51·42	7 38 54·22	+4 2·80	− 4·5	
				E	1556 Gr. 72	L	4	+0·1625	4 57 30·85	−0·32	+0·10	+1·88		32·51	4 57 41·90	+0 9·39		
				,,	477 ,,	U	6	−0·1019	5 3 23·97	+0 23	−0·18	+1·88		25 90	5 3 36·10	+0 10·20	− 3·1	
		,, 27	*I. P. W.*	W	51 Cephei	U	3	−0·4276	6 42 15·90	+0·88	−0·52	+1·88		18·14	6 46 17·64	+3 59·50		−2·6
				,,	λ Ursæ Minoris	L	2	+1·1683	7 34 57·00	−2·35	+1·17	+1·88	−0·33	57·37	7 38 53·56	+3 56·19	− 2·1	
				E	1556 Gr. 72	L	5	+0·1625	4 57 29·10	+0·38	+0·05	+1·87		31·40	4 57 41·95	+0 10·55		
				,,	477 ,,	U	5	−0·1019	5 3 23·98	−0·27	−0·09	+1·87		25·49	5 3 36·09	+0 10·60	− 0·2	
		,, 28	*I. P. W.*	W	51 Cephei	U	3	−0·4276	6 42 29·13	−1·07	−0·25	+1·87		29·68	6 46 17·82	+3 48·14		+0·9
				,,	λ Ursæ Minoris	L	3	+1·1683	7 34 56·70	+2·84	+0·57	+1·87	−0·33	61·65	7 38 52·86	+3 51·21	+ 1·9	
				E	1556 Gr. 72	L	5	+0·1625	4 57 28·06	−0·18	+0·01	+1·89		29·78	4 57 41·99	+0 12·21		
				,,	477 ,,	U	5	−0·1019	5 3 23·30	+0·13	−0·01	+1·89		25·31	5 3 36·07	+0 10·76	+ 5·5	
		,, 29	*I. P. E.*	W	51 Cephei	U	3	−0·4276	6 42 35·60	+0·51	−0·04	+1·89		37·96	6 46 18·00	+3 40·04		+3·3
				,,	λ Ursæ Minoris	L	2	+1·1683	7 35 10·25	−1·36	+0·08	+1·89	−0·33	10·53	7 38 52·17	+3 41·64	+ 1·0	
				E	α Aurigæ	U	15	−0·0140	5 7 55·13	+0·02	−0·03	+1·89		57·01	5 8 9·95	+0 12·94		
				,,	α Columbæ	U	15	+0·0221	5 35 17·97	+0·02	−0·02	−1·89	+0·01	16·09	5 35 28·89	+0 12·80	− 3·9	
		,, 30	*I. P. E.*	,,	α Argûs	U	15	+0·0354	6 21 14·17	+0·03	−0·01	−1·89	+0·04	12·34	6 21 25·06	+0 12·72	− 4·5	−5·0
				W	51 Cephei	U	3	−0·4276	6 42 41·13	+0·32	−0·18	+1·89		43·16	6 46 18·17	+3 32·23*	− 6·5	
				E	1556 Gr. 72	L	6	+0·1625	4 57 26·78	+0·28	+0·07	+1·89		29·02	4 57 42·20	+0 13·18		
		1884		,,	477 ,,	U	5	−0·1019	5 3 19·46	−0·20	−0·13	+1·89		21·02	5 3 36·01	+0 14·99	− 6·8	
		Jan. 2	*I. P. W.*	W	51 Cephei	U	3	−0·4276	6 43 10·17	−0·79	−0·38	+1·89		10·89	6 46 17·75	+3 6·86		−5·9
				,,	λ Ursæ Minoris	L	2	+1·1683	7 35 48·50	+2·10	+0·85	+1·89	−0·33	53·01	7 38 47·75	+2 54·74	− 5·0†	

* True clock correction deduced from 29th December and 2nd January.

† The Telescope was accidentally shifted 3·6 divisions to the west between 7h 20m and 7h 30m; this has been allowed for in deducing the value of a_1.

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1884							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
AKYAB AND CHITTAGONG	AKYAB (Latitude 20° 8′)			E	1556 Gr. 72	L	5	+0·1625	4 57 26·40	+0·23	−0·01	+1·90		28·52	4 57 42·26	+ 0 13·74		
																	− 6·5	
		Jan. 3	*I. P. W.*	„	477 „	U	5	−0·1019	5 3 18·78	−0·17	+0·01	+1·90		20·52	5 3 35·99	+ 0 15·47		
				W	51 Cephei	U	3	−0·4276	6 43 20·30	−0·65	+0·04	+1·90		21·59	6 46 17·80	+ 2 56·21		−6·4
																	− 6·3	
				„	λ Ursæ Minoris	L	2	+1·1683	7 35 58·00	+1·73	−0·08	+1·90	−0·33	61·22	7 38 47·33	+ 2 46·11		
				E	1556 Gr. 72	L	5	+0·1625	4 57 24·86	−0·56	−0·01	+1·90		26·19	4 57 42·32	+ 0 16·13		
																	+ 3·1	
		„ 4	*I. P. E.*	„	477 „	U	5	−0·1019	5 3 18·34	+0·40	+0·01	+1·90		20·65	5 3 35·97	+ 0 15·32		+1·7
				W	51 Cephei	U	3	−0·4276	6 43 30·70	+1·58	+0·04	+1·90		34·22	6 46 17·82	+ 2 43·60		
																	+ 0·3	
				„	λ Ursæ Minoris	L	2	+1·1683	7 36 5·65	−4·20	−0·08	+1·90	−0·33	2·94	7 38 46·99	+ 2 44·05		
		1883																
				E	1556 Gr. 72	L	5	+0·1610	5 1 56·54	−0·48	−0·04	+1·49		57·51	4 57 41·86	− 4 15·65		
																	−64·9	
				„	177 „	U	6	−0·0995	5 7 32·95	+0·35	+0·07	+1·49		34·86	5 3 36·11	− 3 58·75		
		Dec. 26	*I. P. E.*	W	δ Ursæ Minoris	L	2	+0·3600	6 9 51·50	−1·10	−0·12	−1·49		48·79	6 9 19·35	− 0 29·44		−66·0
																	−65·2	
				„	51 Cephei	U	4	−0·4203	6 45 53·20	+1·35	+0·20	+1·49	−0·23	56·01	6 46 17·47	+ 0 21·46		
																	−67·9	
				„	λ Ursæ Minoris	L	2	+1·1519	7 40 25·65	−3·58	−0·45	−1·49	−0·56	19·57	7 38 54·22	− 1 25·35		
				E	1556 Gr. 72	L	5	+0·1610	5 1 46·18	−0·45	+0·03	+1·49		47·25	4 57 41·90	− 4 5·35		
																	− 6·9	
				„	477 „	U	6	−0·0995	5 7 37·88	+0·32	−0·05	+1·49		39·64	5 3 36·10	− 4 3·54		
		„ 27	*I. P. E.*	W	δ Ursæ Minoris	L	2	+0·3600	6 9 39·70	−1·03	+0·10	−1·49		37·28	6 9 19·28	− 0 18·00		−10·6
																	−10·2	
				„	51 Cephei	U	4	−0·4203	6 46 25·30	+1·25	−0·16	+1·49	−0·23	27·65	6 46 17·64	− 0 10·01		
																	−14·8	
				„	λ Ursæ Minoris	L	1	+1·1519	7 39 31·90	−3·34	+0·36	−1·49	−0·56	26·87	7 38 53·56	− 0 33·31		
				E	1556 Gr. 72	L	5	+0·1610	5 1 45·28	+0·28	+0·01	+1·46		47·03	4 57 41·95	− 4 5·08		
																	− 9·4	
				„	477 „	U	4	−0·0995	5 7 37·48	−0·20	−0·02	+1·46		38·72	5 3 36·09	− 4 2·63		
		„ 28	*I. P. W.*	W	δ Ursæ Minoris	L	2	+0·3600	6 9 47·85	+0·65	+0·04	−1·46		47·08	6 9 19·21	− 0 27·87		−13·0
																	−13·6	
				„	51 Cephei	U	5	−0·4203	6 46 34·66	−0·79	−0·06	+1·46	−0·23	35·04	6 46 17·82	− 0 17·22		
																	−16·0	
				„	λ Ursæ Minoris	L	2	+1·1519	7 39 35·10	+2·10	+0·13	−1·46	−0·56	35·31	7 38 52·86	− 0 42·45		
				E	1556 Gr. 72	L	5	+0·1610	5 1 44·96	+0·23	−0·02	+1·46		46·63	4 57 41·99	− 4 4·64		
																	−13·2	
				„	477 „	U	6	−0·0995	5 7 35·95	−0·17	+0·03	+1·46		37·27	5 3 36·07	− 4 1·20		
		„ 29	*I. P. W.*	W	δ Ursæ Minoris	L	2	+0·3600	6 9 56·85	+0·53	−0·05	−1·46		55·87	6 9 19·15	− 0 36·72		−11·5
																	−11·4	
				„	51 Cephei	U	5	−0·4203	6 46 45·18	−0·65	+0·08	+1·46	−0·23	45·84	6 46 18·00	− 0 27·84		
																	−10·0	
				„	λ Ursæ Minoris	L	2	+1·1519	7 39 36·25	+1·73	−0·18	−1·46	−0·56	35·78	7 38 52·17	− 0 43·61		
				E	1556 Gr. 72	L	3	+0·1610	5 1 43·53	+0·25	−0·07	+1·47		45·18	4 57 42·04	− 4 3·14		
																	− 8·7	
				„	477 „	U	6	−0·0995	5 7 35·53	−0·18	+0·11	+1·47		36·93	5 3 36·06	− 4 0·87		
		„ 30	*I. P. E.*	W	δ Ursæ Minoris	L	2	+0·3600	6 10 5·00	+0·57	−0·21	−1·47		3·89	6 9 19·10	− 0 44·79		− 9·7
																	−10·8	
				„	51 Cephei	U	5	−0·4203	6 46 53·64	−0·70	+0·34	+1·47	−0·23	54·52	6 46 18·17	− 0 36·35		
																	− 9·7	
				„	λ Ursæ Minoris	L	1	+1·1519	7 39 44·10	+1·85	−0·76	−1·47	−0·56	43·16	7 38 51·49	− 0 51·67		

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1884							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
AKYAB AND CHITTAGONG	CHITTAGONG (Latitude 22° 20′)			E	1556 Gr. 72	L	5	+0·1610	5 1 43·28	+0·28	+0·06	+1·49		45·11	4 57 42·20	−4 2·91		
																	−15·9	
				„	477 „	U	6	−0·0995	5 7 33·57	−0·20	−0·09	+1·49		34·77	5 3 36·01	−3 58·76		
		Jan. 2	*I. P. E.*	W	δ Ursæ Minoris	L	2	+0·3600	6 10 35·65	+0·65	+0·17	−1·49		34·98	6 9 18·38	−1 16 60		−17·3
																	−17·8	
				„	51 Cephei	U	5	−0·4203	6 47 20·24	−0·79	−0·28	+1·49	−0·23	20·43	6 46 17·75	−1 2·68		
				„	λ Ursæ Minoris	L	1	+1·1519	7 40 18·40	+2·10	+0·63	−1·49	−0·56	19·08	7 38 47·75	−1 31·33	−18·2	
				E	1556 Gr. 72	L	5	+0·1610	5 1 41·94	+0·15	+0·05	+1·47		43·61	4 57 42·26	−4 1·35		
																	−15·1	
				„	477 „	U	6	−0·0995	5 7 32·12	−0·11	−0·08	+1·47		33·40	5 3 35·99	−3 57·41		
		„ 3	*I. P. W.*	W	δ Ursæ Minoris	L	2	+0·3600	6 10 44·60	+0·34	+0·15	−1·47		43·62	6 9 18·40	−1 25·22		−18·2
																	−17·8	
				„	51 Cephei	U	5	−0·4203	6 47 28·48	−0·42	−0·24	+1·47	−0·23	29·06	6 46 17·80	−1 11·26		
				„	λ Ursæ Minoris	L	2	+1·1519	7 40 32·95	+1·11	+0·54	−1·47	−0·56	32·57	7 38 47·33	−1 45·24	−21·6	
				E	1556 Gr. 72	L	3	+0·1610	5 1 42·23	+0·13	+0·03	+1·49		43·88	4 57 42·32	−4 1·56		
																	−21·2	
				„	477 „	U	6	−0·0995	5 7 30·68	−0·10	−0·05	+1·49		32·02	5 3 35·97	−3 56·05		
		„ 4	*I. P. W.*	W	δ Ursæ Minoris	L	2	+0·3600	6 10 57·40	+0·30	+0·09	−1·49		56·30	6 9 18·45	−1 37·85		−22·6
																	−23·5	
				„	51 Cephei	U	5	−0·4203	6 47 36·58	−0·37	−0·14	+1·49	−0·23	37·33	6 46 17·82	−1 19·51		
				„	λ Ursæ Minoris	L	2	+1·1519	7 40 43·70	+0·99	+0·31	−1·49	−0·56	42·95	7 38 46·99	−1 55·96	−23·2	
PROME AND CHITTAGONG	PROME (Latitude 18° 49′)		*I. P. W.*	W	51 Cephei	U	4	−0·4320	*(6 32 33·90) 6 45 42·73	+0·46	−0·70	+1·46		43·95	6 46 17·54	+0 20·87†	−29·4	−29·4
		Jan. 21	*I. P. E.*	„	815 Gr. 72	U	3	−0·2608	*(8 7 35·77) 8 20 44·41	−1·05	−0·66	+1·46		44·16	8 21 13·72	+0 29·56		
			I. P. E.	E	ε Argûs	U	10	+0·0424	9 13 40·19	−0·16	−0·05	+1·46	+0·09	41·53	9 14 2·56	+0 21·03	−28·1	−28·1
			I. P. E.	W	51 Cephei	U	3	−0·4320	*(6 32 29·30) 6 45 36·94	+0·19	−0·62	+1·48		37·99	6 46 17·45	+0 39·46		
			I. P. E.	E	λ Ursæ Minoris	L	2	+1·1748	7 39 2·25	−0·49	+1·36	+1·48	+0·09	4·69	7 38 43·61	−0 21·08	−37·7	−37·7
		„ 22	*I. P. W.*	W	815 Gr. 72	U	3	−0·2608	*(8 7 36·80) 8 20 44·33	−1·76	−0·68	+1·48		43·37	8 21 13·76	+0 30·39		
			I. P. W.	E	ε Argûs	U	10	+0·0424	9 13 37·69	−0·27	−0·06	+1·48	+0·09	38·93	9 14 2·57	+0 23·64	−22·3	−22·3
			I. P. W.	E	51 Cephei	U	3	−0·4320	6 45 59·77	−1·30	−1·04	+1·38		58·81	6 46 17·38	+0 18·57		
			I. P. W.	„	λ Ursæ Minoris	L	2	+1·1748	7 37 59·50	+3·45	+2·30	+1·38	+0·09	66·72	7 38 43·59	+0 36·87	+11·4	+11·4
		„ 23	*I. P. E.*	W	815 Gr. 72	U	3	−0·2608	*(8 7 38·00) 8 20 44·61	+0·26	−0·39	+1·38		45·86	8 21 13·81	+0 27·95		
			I. P. E.	E	ε Argûs	U	10	+0·0424	9 13 34·69	+0·04	−0·03	+1·38	+0·09	36·17	9 14 2·58	+0 26·41	− 5·1	− 5·1
			I. P. E.	E	51 Cephei	U	3	−0·4320	6 45 40·87	+0·05	+0·87	+1·39		43·18	6 46 17·32	+0 34·14		
			I. P. E.	„	λ Ursæ Minoris	L	2	+1·1748	7 38 33·00	−0·12	−1·92	+1·39	+0·09	32·44	7 38 43·55	+0 11·11	−14·3	−14·3
		„ 24	*I. P. W.*	W	815 Gr. 72	U	3	−0·2608	*(8 7 33·67) 8 20 39·18	−0·71	+0·47	+1·39		40·33	8 21 13·86	+0 33·53		
			I. P. W.	E	ε Argûs	U	10	+0·0424	9 13 33·00	−0·11	+0·04	+1·39	+0·09	34·41	9 14 2·59	+0 28·18	−17·6	−17·6
			I. P. W.	E	51 Cephei	U	3	−0·4320	6 45 38·87	−1·81	+0·53	+1·39		38·98	6 46 17·25	+0 38·27		
			I. P. W.	„	λ Ursæ Minoris	L	2	+1·1748	7 38 39·40	−4·81	−1·17	+1·39	+0·09	44·52	7 38 43·51	−0 1·01	−24·4	−24·4
		„ 25	*I. P. E.*	W	815 Gr. 72	U	4	−0·2608	*(8 7 29·78) 8 20 34·06	+0·54	+0·56	+1·39		36·55	8 21 13·91	+0 37·36		
			I. P. E.	E	ε Argûs	U	10	+0·0424	9 13 30·89	+0·08	+0·05	+1·39	+0·09	32·50	9 14 2·60	+0 30·10	−23·9	−23·9

* The Observed Time of Transit in brackets is that by W Clock, and the corresponding time by E Clock, as deduced from clock comparisons, is given below it.
† True clock correction deduced from 22nd January.

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1884							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
PROME AND CHITTAGONG	PROME (Latitude 18° 49′)		*I. P. E.*	E	51 Cephei	U	3	−0·4320	6 45 31·30	−1·07	+0·51	+1·70		32·44	6 46 17·17	+ 0 44·73		
			I. P. E.	„	λ Ursæ Minoris	L	2	+1·1748	7 38 40·60 *(8 7 33·10)	+2·84	−1·13	+1·70	+0·09	44·10	7 38 43·46	− 0 0·64	−28·2	−28·2
		Jan. 26	*I. P. W.*	W	815 Gr. 72	U	3	−0·2608	8 20 35·86	−0·26	+0·02	+1·70		37·32	8 21 13·94	+ 0 36·62		
			I. P. W.	E	ι Argûs	U	10	+0·0424	9 13 28·28	−0·04	0·00	+1·70	+0·09	30·03	9 14 2·61	+ 0 32·58	−13·3	−13·3
			I. P. W.	E	51 Cephei	U	2	−0·4320	6 45 29·35	−1·16	−0·79	+1·61		29·01	6 46 16·81	+ 0 47·80		
			I. P. W.	„	λ Ursæ Minoris	L	2	+1·1748	7 38 19·10 *(8 7 28·73)	+3·08	+1·73	+1·61	+0·09	25·61	7 38 43·64	+ 0 18·03	−18·5	−18·5
		„ 29	*I. P. E.*	W	815 Gr. 72	U	3	−0·2608	8 20 25·42	−0·11	−0·99	+1·61		25·93	8 21 14·00	+ 0 48·07		
			I. P. E.	E	ι Argûs	U	9	+0·0424	9 13 20·59	−0·02	−0·08	+1·61	+0·09	22·19	9 14 2·64	+ 0 40·45	−25·1	−25·1
			I. P. E.	E	51 Cephei	U	3	−0·4320	6 45 36·13	−0·51	+0·38	+1·62		37·62	6 46 16·63	+ 0 39·01		
			I. P. E.	„	λ Ursæ Minoris	L	2	+1·1748	7 37 49·90 *(8 7 32·03)	+1·36	−0·83	+1·62	+0·09	52·14	7 38 43·85	+ 0 51·71	+ 7·9	+ 7·9
		„ 30	*I. P. W.*	W	815 Gr. 72	U	4	−0·2608	8 20 27·52	−0·37	+0·63	+1·62		29·40	8 21 14·02	+ 0 44·62		
			I. P. W.	E	ι Argûs	U	10	+0·0424	9 13 17·32	−0·06	+0·05	+1·62	+0·09	19·02	9 14 2·65	+ 0 43·63	− 3·3	− 3·3
	CHITTAGONG (Latitude 22° 20′)			W	δ Ursæ Minoris	L	3	+0·3599	6 9 20·73	+0·23	−0·07	+1·58		22·47	6 9 19·75†	− 0 2·72		
		Jan. 21	*I. P. W.*	„	51 Cephei	U	3	−0·4207	6 46 10·43	−0·28	+0·12	+1·58	+0·03	11·88	6 46 18·00†	+ 0 6·12	−11·3	−12·4
				„	1902 Gr. 72	L	2	+0·9871	8 11 48·95	+0·63	−0·23	+1·58	+0·09	51·02	8 11 38·22	− 0 12·80	−13·4	
				W	δ Ursæ Minoris	L	3	+0·3599	6 9 32·70	+0·91	−0·65	+1·59		34·55	6 9 20·04	− 0 14·51		
				„	51 Cephei	U	3	−0·4207	6 45 55·20	−1·12	+1·04	+1·59	+0·03	56·74	6 46 17·45	+ 0 20·71	−45·1	
		„ 22	*I. P. E.*	„	1902 Gr. 72	L	2	+0·9871	8 12 20·00	+2·54	−2·02	+1·59		22·11	8 11 38·07	− 0 44·04		−46·3
				„	815 „	U	3	−0·2534	8 20 57·37	−0·68	+0·68	+1·59	+0·01	58·97	8 21 13·76	+ 0 14·79	−47·4	
				W	δ Ursæ Minoris	L	3	+0·3599	6 9 33·23	−0·27	−0·35	+1·59		34·20	6 9 20·17	− 0 14·03		
				„	51 Cephei	U	3	−0·4207	6 45 51·83	+0·33	+0·55	+1·59	+0·03	54·33	6 46 17·38	+ 0 23·05	−47·5	
		„ 23	*I. P. W.*	„	1902 Gr. 72	L	2	+0·9871	8 12 21·45	−0·74	−1·07	+1·59		21·23	8 11 37·92	− 0 43·31		−48·1
				„	815 „	U	3	−0·2534	8 20 54·70	+0·20	+0·36	+1·59	+0·01	56·86	8 21 13·81	+ 0 16·95	−48·6	
				W	δ Ursæ Minoris	L	3	+0·3599	6 9 31·17	+0·80	−0·94	+1·61		32·64	6 9 20·30	− 0 12·34		
				„	51 Cephei	U	3	−0·4207	6 45 51·87	−0·98	+1·50	+1·61	+0·03	54·03	6 46 17·32	+ 0 23·29	−45·6	
		„ 24	*I. P. E.*	„	1902 Gr. 72	L	1	+0·9871	8 12 19·50	+2·22	−2·90	+1·61		20·43	8 11 37·77	− 0 42·66		−47·3
				„	815 „	U	4	−0·2534	8 20 53·75	−0·60	+0·98	+1·61	+0·01	55·75	8 21 13·86	+ 0 18·11	−49·0	
				W	δ Ursæ Minoris	L	3	+0·3599	6 9 34·03	−0·34	−0·42	+1·58		34·85	6 9 20·44	− 0 14·41		
				„	51 Cephei	U	3	−0·4207	6 45 47·40	+0·42	+0·67	+1·58	+0·03	50·10	6 46 17·25	+ 0 27·15	−53·2	
		„ 25	*I. P. W.*	„	1902 Gr. 72	L	2	+0·9871	8 12 27·05	−0·95	−1·30	+1·58		26·38	8 11 37·60	− 0 48·78		−54·5
				„	815 „	U	4	−0·2534	8 20 51·30	+0·26	+0·44	+1·58	+0·01	53·59	8 21 13·91	+ 0 20·32	−55·7	

* The Observed Time of Transit in brackets is that by W Clock, and the corresponding time by E Clock, as deduced from clock comparisons, is given below it.
† Deduced from the Greenwich Nine-Year Catalogue for 1872.

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for Collimation	Corrections for Level	Corrections for Pen Equation Q	Corrections for Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1884							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
PROME AND CHITTAGONG	CHITTAGONG (Latitude 22° 20′)			W	δ Ursæ Minoris	L	3	+0·3599	6 9 13·93	+0·57	+0·05	+1·60		16·15	6 9 20·58	+ 0 4·43		
																	− 3·9	
		Jan. 26	*I. P. E.*	„	51 Cephei	U	3	−0·4207	6 46 8·87	−0·70	−0·08	+1·60	+0·03	9·72	6 46 17·17	+ 0 7·45		
				„	1902 Gr. 72	L	2	+0·9871	8 11 32·55	+1·59	+0·15	+1·60		35·89	8 11 37·54	+ 0 1·65		− 4·8
				„	815 „	U	3	−0·2534	8 21 4·03	−0·43	−0·05	+1·60	+0·01	5·16	8 21 13·94	+ 0 8·78	− 5·7	
				W	δ Ursæ Minoris	L	3	+0·3599	6 9 15·40	+0·30	+0·61	+1·58		17·89	6 9 21·09	+ 0 3·20		
																	−15·6	
		„ 29	*I. P. W.*	„	51 Cephei	U	3	−0·4207	6 46 1·17	−0·37	−0·97	+1·58	+0·03	1·44	6 46 16·81	+ 0 15·37		−16·1
				„	1902 Gr. 72	L	2	+0·9871	8 11 39·45	+0·85	+1·87	+1·58		43·75	8 11 37·36	− 0 6·39		
				„	815 „	U	4	−0·2534	8 20 59·05	−0·23	−0·63	+1·58	+0·01	59·78	8 21 14·00	+ 0 14·22	−16·6	
				W	δ Ursæ Minoris	L	3	+0·3599	6 9 13·20	+0·46	−0·16	+1·58		15·08	6 9 21·20†	+ 0 6·12		
																	− 9·5	
		„ 30	*I. P. E.*	„	51 Cephei	U	3	−0·4207	6 46 1·93	−0·56	+0·26	+1·58	+0·03	3·24	6 46 16·77†	+ 0 13·53		− 9·3
				„	1902 Gr. 72	L	3	+0·9871	8 11 34·07	+1·27	−0·50	+1·58	+0·09	36·51	8 11 37·30	+ 0 0·79	− 9·0	
PROME AND AKYAB	PROME (Latitude 18° 49′)		*I. P. E.*	E	λ Ursæ Minoris	L	2	+1·1730	7 39 29·90	−0·25	−0·08	+1·57		31·14	7 38 48·74†	− 0 42·40		
			I. P. E.	„	815 Gr. 72	U	4	−0·2609	8 22 6·98	+0·06	+0·02	+1·59	+0·08	8·73	8 21 13·88	− 0 54·85	+ 8·7	+ 8·7
		Feb. 8	*I. P. W.*	„	908* „	U	2	−0·1412	9 21 29·40	−0·48	−0·15	+1·59		30·36	9 20 35·29	− 0 55·07		
			I. P. W.	W	981 „	U	3	−0·1699	10 7 41·30	−0·57	−0·17	−1·59		38·97	10 16 58·33	+ 9 19·36		
			I. P. W.	„	2109 „	L	3	+0·2795	10 12 48·73	+0·87	+0·15	−1·59	+0·02	48·18	10 22 12·75	+ 9 24·57	+11·6	+11·6
			I. P. W.	E	λ Ursæ Minoris	L	3	+1·1730	7 39 28·80	+3·57	+0·49	+1·50		34·36	7 38 49·13†	− 0 45·23		
			I. P. W.	„	815 Gr. 72	U	3	−0·2609	8 22 2·70	−0·82	−0·15	+1·50	+0·08	3·31	8 21 13·82	− 0 49·49	+ 3·0	+ 3·0
		„ 9	*I. P. E.*	„	908* „	U	3	−0·1412	9 21 28·47	−0·22	−0·39	+1·50		29·36	9 20 35·30	− 0 54·06		
			I. P. E.	W	981 „	U	4	−0·1699	10 7 36·08	−0·26	−0·44	−1·50		33·88	10 16 58·38	+ 9 24·50		
			I. P. E.	„	2109 „	L	3	+0·2795	10 12 39·33	+0·40	+0·39	−1·50	+0·02	38·64	10 22 12·67	+ 9 34·03	+21·2	+21·2
			I. P. E.	E	λ Ursæ Minoris	L	3	+1·1730	7 39 15·43	−0·62	−2·03	+1·50		14·28	7 38 50·32†	− 0 23·96		
			I. P. E.	„	815 Gr. 72	U	4	−0·2609	8 21 60·28	+0·14	+0·61	−1·50	+0·08	59·61	8 21 13·65	− 0 45·96	+15·3	+15·3
		„ 12	*I. P. W.*	„	908* „	U	5	−0·1412	9 21 21·12	−0·06	+0·43	+1·50		22·99	9 20 35·33	− 0 47·66	*	
			I. P. W.	W	981 „	U	4	−0·1699	10 7 15·40	−0·08	+0·49	−1·50		14·31	10 16 58·55	+ 9 44·24		
			I. P. W.	„	2109 „	L	3	+0·2795	10 12 17·77	+0·12	−0·43	−1·50	+0·03	15·99	10 22 12·44	+ 9 56·45	+27·2	+27·2
			I. P. W.	E	λ Ursæ Minoris	L	3	+1·1730	7 39 36·30	+1·60	+2·18	+1·50		41·58	7 38 50·71†	− 0 50·87		
			I. P. W.	„	815 Gr. 72	U	3	−0·2609	8 21 49·70	−0·37	−0·65	+1·50	+0·08	50·26	8 21 13·59	− 0 36·67	− 9·9	− 9·9
		„ 18	*I. P. E.*	„	908* „	U	4	−0·1412	9 21 13·93	+0·05	−0·79	+1·50		14·69	9 20 35·34	− 0 39·35		
			I. P. E.	W	981 „	U	4	−0·1699	10 7 2·63	+0·06	−0·90	−1·50		0·29	10 16 58·61	+ 9 58·32		
			I. P. E.	„	2109 „	L	3	+0·2795	10 12 15·83	−0·09	+0·79	−1·50	+0·03	15·06	10 22 12·36	+ 9 57·30	− 2·3	− 2·3

* Not used.

† Deduced from the Greenwich Nine-Year Catalogue for 1872.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1884							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
PROME AND AKYAB	AKYAB (Latitude 20° 8′)	Feb. 8	*I. P. E.*	W	λ Ursæ Minoris	L	2	+1·1640	7 38 59·50	+0·49	−0·04	+1·56		61·51	7 38 48·74*	− 0 12·77	−16·5	−16·3
					815 Gr. 72	U	5	−0·2583	8 21 1·58	−0·11	+0·01	+1·56	+0·19	3·23	8 21 13·88	+ 0 10·65		
					981 „	U	7	−0·1679	10 16 52·63	−0·08	+0·01	−1·56		51·00	10 16 58·33	+ 0 7·33	−16·1	
					2109 „	L	4	+0·2778	10 22 14·03	+0·12	−0·01	−1·56	+0·02	12·60	10 22 12·75	+ 0 0·15		
		„ 9	*I. P. W.*	W	λ Ursæ Minoris	L	2	+1·1640	7 38 50·75	+3·57	+1·33	+1·60		57·25	7 38 49·13*	− 0 8·12	−18·2	−16·1
					815 Gr. 72	U	4	−0·2583	8 20 55·53	−0·82	−0·39	+1·60	+0·19	56·11	8 21 13·82	+ 0 17·71		
					981 „	U	6	−0·1679	10 16 46·78	−0·55	−0·28	−1·60		44·35	10 16 58·38	+ 0 14·03	−14·0	
					2109 „	L	4	+0·2778	10 22 5·35	+0·84	+0·26	−1·60	+0·02	4·87	10 22 12·67	+ 0 7·80		
		„ 12	*I. P. E.*	W	λ Ursæ Minoris	L	2	+1·1640	7 38 36·85	+1·23	+0·85	+1·60		40·53	7 38 50·32*	+ 0 9·79	−20·7	−19·9
					815 Gr. 72	U	4	−0·2583	8 20 33·08	−0·28	−0·25	+1·60	+0·24	34·39	8 21 13·65	+ 0 39·26		
					981 „	U	8	−0·1679	10 16 24·39	−0·19	−0·18	−1·60		22·42	10 16 58·55	+ 0 36·13	−19·0	
					2109 „	L	4	+0·2778	10 21 45·88	+0·29	+0·16	−1·60	+0·03	44·76	10 22 12·44	+ 0 27·68		
		„ 13	*I. P. W.*	W	λ Ursæ Minoris	L	2	+1·1640	7 38 28·30	+2·96	+2·18	+1·59		35·03	7 38 50·71*	+ 0 15·68	−22·4	−19·9
					815 Gr. 72	U	4	−0·2583	8 20 25·60	−0·68	−0·64	+1·59	+0·24	26·11	8 21 13·59	+ 0 47·48		
					981 „	U	8	−0·1679	10 16 16·93	−0·45	−0·46	−1·59		14·43	10 16 58·61	+ 0 44·18	−17·4	
					2109 „	L	4	+0·2778	10 21 36·38	+0·69	+0·42	−1·59	+0·03	35·93	10 22 12·36	+ 0 36·43		
MOULMEIN AND PROME	MOULMEIN (Latitude 16° 30′)	Mar. 8	*I. P. E*	E	981 Gr. 72	U	6	−0·1731	10 16 48·00	−0·15	+0·09	+1·58		49·52	10 16 58·72	+ 0 9·20	− 5·6	− 5·6
					2109 „	L	3	+0·2820	10 22 3·87	+0·23	−0·07	+1·58	+0·04	5·65	10 22 12·32	+ 0 6·67		
		„ 9	*I. P. W.*	E	981 Gr. 72	U	6	−0·1731	10 16 32·33	−0·53	−0·27	+1·56		33·09	10 16 58·67	+ 0 25·58	−36·0	−36·0
					2109 „	L	4	+0·2820	10 22 0·55	+0·81	+0·22	+1·56	+0·04	3·18	10 22 12·39	+ 0 9·21		
			I. P. W.	E	981 Gr. 72	U	5	−0·1731	10 16 21·06	−0·51	−0·18	+1·55		21·92	10 16 58·62	+ 0 36·70	−38·6	−38·6
			I. P. W.	„	2109 „	L	4	+0·2820	10 21 50·80	+0·78	+0·14	+1·55	+0·04	53·31	10 22 12·46	+ 0 19·15		
		„ 10	*I. P. E*	W	1191 „	U	2	−0·2004	12 38 54·70	+0·87	−0·07	−1·55		53·95	12 48 15·61	+ 9 21·66	−41·2	−41·5
			I. P. E.	„	1192 „	U	2	−0·2003	12 39 2·15	+0·87	−0·07	−1·55		1·40	12 48 23·36	+ 9 21·96	−41·8	
			I. P. E.	„	86 „	L	3	+0·2892	12 43 60·10	−1·18	+0·06	−1·55	+0·01	57·44	12 52 58·94	+ 9 1·50		
			I. P. E.	E	981 Gr. 72	U	6	−0·1731	10 16 9·53	−0·23	−0·07	+1·56		10·79	10 16 58·57	+ 0 47·78	−37·7	−37·7
			I. P. E.	„	2109 „	L	4	+0·2820	10 21 39·90	+0·35	+0·06	+1·56	+0·04	41·91	10 22 12·53	+ 0 30·62		
		„ 11	*I. P. W*	W	1191 „	U	4	−0·2004	12 38 52·05	+0·43	−0·22	−1·56		50·70	12 48 15·68	+ 9 24·98	−42·1	−42·2
			I. P. W.	„	1192 „	U	4	−0·2003	12 38 59·75	+0·43	−0·22	−1·56		58·40	12 48 23·43	+ 9 25·03	−42·2	
			I. P. W.	„	86 „	L	3	+0·2892	12 43 56·47	−0·59	+0·17	−1·56	+0·01	54·50	12 52 58·85	+ 9 4·35		

* Deduced from the Greenwich Nine-Year Catalogue for 1872.

TABLE II. DEDUCTION OF DEVIATION CORRECTION, a, FROM STAR OBSERVATIONS.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Level	Pen Equation Q	Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1884							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
MOULMEIN AND PROME	MOULMEIN (Latitude 16° 30′)		*I. P. W.*	E	981 Gr. 72	U	5	−0·1731	10 15 55·68	+0·55	−0·12	+1·59		57·70	10 16 58 52	+ 1 0 82		
			I. P. W.	„	2109 „	L	3	+0·2820	10 21 31·20	−0·84	+0·10	+1·59	+0·04	32·09	10 22 12·59	+ 0 40·59	−44·6	−44·6
		Mar. 12	*I. P. E.*	W	1191 „	U	4	−0·2004	12 38 51·10	−0·28	−0·04	−1·59		49·19	12 48 15·75	+ 9 26 56	−41·9	
			I. P. E.	„	1192 „	U	4	−0·2003	12 38 58·75	−0·28	−0·04	−1·59		56·84	12 48 23·50	+ 9 26·66	−42·1	−42·0
			I. P. E.	„	86 „	L	4	+0·2892	12 43 53·85	+0·38	+0·03	−1·59	+0·01	52·68	12 52 58·75	+ 9 6·07		
			I. P. E.	E	981 Gr. 72	U	5	−0·1731	10 15 44·90	−0·19	+0·13	+1·61		46·45	10 16 58 47	+ 1 12·02		
			I. P. E.	„	2109 „	L	4	+0·2820	10 21 17·50	+0·29	−0·10	+1·61	+0·04	19·34	10 22 12·69	+ 0 53·35	−41·0	−41·5
		„ 13	*I. P. W.*	W	1191 „	U	4	−0·2004	12 38 45·38	+0·98	+0·23	−1·61		44·98	12 48 15·83	+ 9 30·85	−54·3	
			I. P. W.	„	1192 „	U	4	−0·2003	12 38 52·63	+0·98	+0·23	−1·61		52·23	12 48 23·58	+ 9 31·35	−55·3	−54·8
			I. P. W.	„	86 „	L	4	+0·2892	12 43 57·48	−1·33	−0·17	−1·61	+0·01	54·38	12 52 58·66	+ 9 4·28		
			I. P. W.	E	981 Gr. 72	U	5	−0·1731	10 15 28·46	+0·45	+0·04	+1·61		30·56	10 16 58·41	+ 1 27·85		
			I. P. W.	„	2109 „	L	4	+0·2820	10 21 10·58	−0·60	−0·04	+1·61	+0·04	11·50	10 22 12·79	+ 1 1·29	−58·4	−58·4
		„ 14	*I. P. E.*	W	1191 „	U	1	−0·2004	12 38 44·80	−0·98	−0·07	−1·61		42·14	12 48 15·90	+ 9 33·76	−63·3	
			I. P. E.	„	1192 „	U	1	−0·2003	12 38 52·10	−0·98	−0·07	−1·61		49·44	12 48 23·65	+ 9 34·21	−64·2	−63·8
			I. P. E.	„	86 „	L	3	+0·2892	12 43 56·03	+1·33	+0·06	−1·61	+0·01	55·82	12 52 58·58	+ 9 2·76		
			I. P. E.	E	981 Gr. 72	U	5	−0·1731	10 15 16·98	−0·41	+0·17	+1·60		18·34	10 16 58·35	+ 1 40·01		
			I. P. E.	„	2109 „	L	4	+0·2820	10 20 57·15	+0·63	−0·14	+1·60	+0·04	59·28	10 22 12·89	+ 1 13·61	−58·0	−58·0
		„ 15	*I. P. W.*	W	1191 „	U	4	−0·2004	12 38 41·08	−0·04	+0·03	−1·60		39·47	12 48 15·97	+ 9 36·50	−63·0	
			I. P. W.	„	1192 „	U	4	−0·2003	12 38 48·68	−0·04	+0·03	−1·60		47·07	12 48 23·72	+ 9 36·65	−63·4	−63·2
			I. P. W.	„	86 „	L	4	+0·2892	12 43 54·40	+0·06	−0·02	−1·60	+0·01	52·85	12 52 58·49	+ 9 5·64		
	PROME (Latitude 18° 49′)	Mar. 8	*I. P. W.*	E	981 Gr. 72	U	4	−0·1699	10 26 30·60	−0·15	−0·07	+1·67		32·07	10 16 58·72	− 9 33·35		
				„	2109 „	L	3	+0·2793	10 31 36·17	+0·20	+0·06	+1·67	+0·04	38·14	10 22 12·32	− 9 25·82	+16·8	+16·8
		„ 9	*I. P. W.*	E	981 Gr. 72	U	5	−0·1699	10 26 20·76	−0·47	−0·25	+1·68		21·72	10 16 58·67	− 9 23·05		
				„	2109 „	L	3	+0·2793	10 31 24·50	+0·72	+0·22	+1·68	+0·04	27·16	10 22 12·39	− 9 14·77	+18·4	+18·4
				E	981 Gr. 72	U	4	−0·1699	10 26 10·43	−0·41	−0·15	+1·68		11·55	10 16 58·62	− 9 12·93		
				„	2109 „	L	5	+0·2793	10 31 10·96	+0·62	+0·13	+1·68	+0·04	13·44	10 22 12·46	− 9 0·98	+26·6	
		„ 10	*I. P. E.*	W	1191 „	U	3	−0·1969	12 48 46·67	−0·48	−0·16	−1·68		44·35	12 48 15·61	− 0 28·74	+20·3	+23·4
				„	1192 „	U	3	−0·1967	12 48 54·37	−0·48	−0·16	−1·68		52·05	12 48 23·36	− 0 28·69	+20·2	
				„	86 „	L	4	+0·2864	12 53 18·78	+0·65	+0·13	−1·68	+0·01	17·89	12 52 58·94	− 0 18·95		
				E	981 Gr. 72	U	4	−0·1699	10 25 59·90	−0·41	−0·24	+1·67		60·92	10 16 58·57	− 9 2·35		
				„	2109 „	L	3	+0·2793	10 30 59·53	+0·63	+0·21	+1·67	+0·04	62·08	10 22 12·53	− 8 49·55	+28·5	
		„ 11	*I. P. W.*	W	1191 „	U	3	−0·1969	12 48 45·83	−0·48	−0·26	−1·67		43·42	12 48 15 68	− 0 27·74	+27·8	+28·4
				„	1192 „	U	3	−0·1967	12 48 54·03	−0·48	−0·26	−1·67		51·62	12 48 23·43	− 0 28·19	+28·7	
				„	86 „	L	3	+0·2864	12 53 13·97	+0·65	+0·21	−1·67	+0·01	13·17	12 52 58·85	− 0 14·32		

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1884							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
MOULMEIN AND PROME	PROME (Latitude 18° 49′)			E	981 Gr. 72	U	4	−0·1699	10 25 46·28	+ 0·08	+0·25	+1·68		48·29	10 16 58·52	− 8 49·77		
				„	2109 „	L	3	+0·2793	10 30 49·83	− 0·12	−0·21	+1·68	+0·04	51·22	10 22 12·59	− 8 38·63	+24·8	
		Mar. 12	*I. P. E.*	W	1191 „	U	3	−0·1969	12 48 41·00	+ 0·09	+0·27	−1·68		39·68	12 48 15·75	− 0 23·93	+15·8	+20·5
				„	1192 „	U	3	−0·1967	12 48 49·10	+ 0·09	+0·27	−1·68		47·78	12 48 23·50	− 0 24·28	+16·6	
				„	86 „	L	4	+0·2864	12 53 17·03	− 0·12	−0·22	−1·68	+0·01	15·02	12 52 58·75	− 0 16·27		
				E	981 Gr. 72	U	4	−0·1699	10 25 35·00	− 0·51	+0·43	+1·68		36·60	10 16 58·47	− 8 38·13		
				„	2109 „	L	3	+0·2793	10 30 37·90	+ 0·78	−0·38	+1·68	+0·04	40·02	10 22 12·69	− 8 27·33	+24·0	
		„ 13	*I. P. W.*	W	1191 „	U	3	−0·1969	12 48 40·60	− 0·59	+0·64	−1·68		38·97	12 48 15·83	− 0 23·14	+21·1	+22·5
				„	1192 „	U	3	−0·1967	12 48 48·30	− 0·59	+0·64	−1·68		46·67	12 48 23·58	− 0 23·09	+21·0	
				„	86 „	L	4	+0·2864	12 53 13·00	+ 0·80	−0·52	−1·68	+0·01	11·61	12 52 58·66	− 0 12·95		
				E	981 Gr. 72	U	4	−0·1699	10 25 22·03	− 0·21	+0·20	+1·69		23·71	10 16 58·41	− 8 25·30		
				„	2109 „	L	3	+0·2793	10 30 25·33	+ 0·32	−0·17	+1·69	+0·04	27·21	10 22 12·79	− 8 14·42	+24·2	
		„ 14	*I. P. E.*	W	1191 „	U	3	−0·1969	12 48 39·07	− 0·24	+0·22	−1·69		37·36	12 48 15·90	− 0 21·46	+22·6	+23·3
				„	1192 „	U	3	−0·1967	12 48 46·63	− 0·24	+0·22	−1·69		44·92	12 48 23·65	− 0 21·27	+22·3	
				„	86 „	L	3	+0·2864	12 53 10·63	+ 0·33	−0·18	−1·69	+0·01	9·10	12 52 58·58	− 0 10·52		
				E	981 Gr. 72	U	3	−0·1699	10 25 10·43	− 0·43	−0·30	+1·69		11·39	10 16 58·35	− 8 13·04		
				„	2109 „	L	3	+0·2793	10 30 11·87	+ 0·66	+0·26	+1·69	+0·04	14·52	10 22 12·89	− 8 1·63	+25·4	
		„ 15	*I. P. W.*	W	1191 „	U	3	−0·1969	12 48 37·77	− 0·50	−0·34	−1·69		35·24	12 48 15·97	− 0 19·27	+20·2	+22·5
				„	1192 „	U	3	−0·1967	12 48 44·97	− 0·50	−0·34	−1·69		42·44	12 48 23·72	− 0 18·72	+19·1	
				„	86 „	L	4	+0·2864	12 53 8·73	+ 0·68	+0·27	−1·69	+0·01	8·00	12 52 58·49	− 0 9·51		
MOULMEIN AND AKYAB	MOULMEIN (Latitude 16° 30′)		*I. P. E.*	E	2209 Gr. 72	L	4	+0·3769	11 27 40·58	+ 0·08	+0·14	+1·61		42·41	11 27 38·36	− 0 4·05		
			I. P. E.	„	1109 „	U	3	−0·3209	11 59 12·27	− 0·07	−0·19	−1·61	−0·05	10·35	11 59 6·58	− 0 3·77	− 0·4	
			I. P. E.	W	1191 „	U	4	−0·2005	*(12 29 22·33) 12 48 22·53	− 0·04	−0·13	−1·61	−0·12	20·63	12 48 16·44	− 0 4·19	+ 0·2	− 0·2
		Mar. 26	*I. P. E.*	„	1192 „	U	4	−0·2003	*(12 29 29·90) 12 48 30·10	− 0·04	−0·13	−1·61	−0·12	28·20	12 48 24·19	− 0 4·01	− 0·1	
			I. P. W.	E	α Ursæ Minoris	L	3	+0·9514	13 15 51·33	+ 0·59	+0·83	+1·61		54·36	13 15 49·31†	− 0 5·05		
			I. P. W.	„	1270 Gr. 72	U	5	−0·1781	13 45 49·72	− 0·12	−0·24	+1·61	−0·04	50·93	13 45 46·87	− 0 4·06	− 0·9	− 0·9
			I. P. W.	E	2209 Gr. 72	L	3	+0·3769	11 27 35·20	+10·95	−0·01	+1·60		47·74	11 27 38·48	− 0 9·26		
			I. P. W.	„	1109 „	U	2	−0·3209	11 59 10·85	+ 0·44	+0·01	−1·60	−0·05	9·65	11 59 6·52	− 0 3·13	− 8·8	
			I. P. W.	W	1191 „	U	4	−0·2005	12 29 20·20	+ 0·28	+0·01	−1·60		18·89	12 48 16·45	+18 57·56	− 6·5	− 7·6
		„ 27	*I. P. W.*	„	1192 „	U	4	−0·2003	12 29 28·08	+ 0·28	+0·01	−1·60		26·77	12 48 24·20	+18 57·43	− 6·3	
			I. P. W.	„	86 „	L	4	+0·2891	12 34 5·58	− 0·38	−0·01	−1·60		3·59	12 52 57·95	+18 54·36		
			I. P. E.	E	α Ursæ Minoris	L	1	+0·9514	13 16 5·90	− 0·69	−0·08	+1·60		6·73	13 15 49·22†	− 0 17·51		
			I. P. E.	„	1270 Gr. 72	U	2	−0·1781	13 45 49·30	+ 0·14	+0·02	+1·60	−0·04	51·02	13 45 46·92	− 0 4·10	−11·9	−11·9

* The Observed Time of Transit in brackets is that by W Clock, and the corresponding time by E Clock, as deduced from clock comparisons, is given below it.
† Deduced from the Greenwich Nine-Year Catalogue for 1872.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for				Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
										Collimation	Level	Pen Equation Q	Approximate Clock Rate					
		1884							h m s	s	s	s	s	s	h m s	m s	d	d
MOULMEIN AND AKYAB	MOULMEIN (Latitude 16° 30′)		*I. P. E.*	E	2209 Gr. 72	L	4	+0·3769	11 27 50·78	−0·15	−0·11	+1·60		52·12	11 27 38·60	− 0 13·52		
			I. P. E.	„	1109 „	U	3	−0·3209	11 59 10·97	+0·14	+0·15	−1·60	−0·05	9·61	11 59 6·47	− 0 3·14	−14·9	
			I. P. E.	W	1191 „	U	2	−0·2005	12 29 17·40	+0·09	+0·11	−1·60		16·00	12 48 16·46	+19 0·46	−16·1	−15·5
		Mar. 28	*I. P. E.*	„	1192 „	U	2	−0·2003	12 29 25·15	+0·09	+0·11	−1·60		23·75	12 48 24·21	+19 0·46	−16·1	
			I. P. E.	„	86 „	L	4	+0·2891	12 34 7·18	−0·12	−0·08	−1·60		5·38	12 52 57·94	+18 52·56		
			I. P. W.	E	α Ursæ Minoris	L	2	+0·9514	13 16 8·10	−0·39	+0·13	+1·60		9·44	13 15 49·14†	− 0 20·30		
			I. P. W.	„	1270 Gr. 72	U	2	−0·1781	13 45 54·00	+0·08	−0·04	+1·60	−0·04	55·60	13 45 46·98	− 0 8·62	−10·3	−10·3
			I. P. W.	E	2209 Gr. 72	L	4	+0·3769	11 27 54·35	−0·50	−0·06	+1·60		55·39	11 27 38·72	− 0 16·67		
			I. P. W.	„	1109 „	U	3	−0·3209	11 59 13·27	+0·44	+0·08	−1·60	−0·05	12·14	11 59 6·41	− 0 5·73	−15·7	
			I. P. W.	W	1191 „	U	4	−0·2005	12 29 16·88	+0·28	+0·06	−1·60		15·62	12 48 16·47	+19 0·85	−14·0	−14·8
		„ 29	*I. P. W.*	„	1192 „	U	4	−0·2003	12 29 24·70	+0·28	+0·06	−1·60		23·44	12 48 24·22	+19 0·78	−13·9	
			I. P. W.	„	86 „	L	3	+0·2891	12 34 5·97	−0·38	−0·04	−1·60		3·95	12 52 57·94	+18 53·99		
			I. P. E.	E	α Ursæ Minoris	L	2	+0·9514	13 16 18·95	−1·08	−0·15	+1·60		19·32	13 15 49·05†	− 0 30·27		
			I. P. E.	„	1270 Gr. 72	U	4	−0·1781	13 45 53·80	+0·21	+0·05	+1·60	−0·04	55·62	13 45 47·04	− 0 8·58	−19·2	−19·2
			I. P. E.	E	2209 Gr. 72	L	3	+0·3769	11 27 58·23	+0·31	−0·01	+1·60		60·13	11 27 38·83	− 0 21·30		
			I. P. E.	„	1109 „	U	3	−0·3209	11 59 14·43	−0·27	+0·01	−1·60	−0·05	12·52	11 59 6·36	− 0 6·16	−21·7	
			I. P. E.	W	1191 „	U	3	−0·2005	12 29 15·70	−0·17	+0·01	−1·60		13·94	12 48 16·48	+19 2·54	−17·4	−19·5
		„ 30	*I. P. E.*	„	1192 „	U	3	−0·2003	12 29 23·50	−0·17	+0·01	−1·60		21·74	12 48 24·23	+19 2·49	−17·3	
			I. P. E.	„	86 „	L	2	+0·2891	12 34 5·25	+0·24	−0·01	−1·60		3·88	12 52 57·92	+18 54·04		
			I. P. W.	E	α Ursæ Minoris	L	2	+0·9514	13 16 18·90	−0·20	−0·21	+1·60		20·09	13 15 48·96†	− 0 31·13		
			I. P. W.	„	1270 Gr. 72	U	5	−0·1781	13 44 56·38	+0·04	+0·06	+1·60	−0·04	58·04	13 45 47·10	− 0 10·94	−17·9	−17·9
			I. P. W.	E	2209 Gr. 72	L	3	+0·3769	11 27 59·40	+0·04	−0·02	+1·60		61·02	11 27 38·97	− 0 22·05		
			I. P. W.	„	1109 „	U	3	−0·3209	11 59 15·80	−0·03	+0·02	−1·60	−0·05	14·14	11 59 6·28	− 0 7·86	−20·3	
			I. P. W.	W	1191 „	U	4	−0·2005	12 29 14·43	−0·02	+0·02	−1·60		12·83	12 48 16·48	+19 3·65	−12·5	−16·9
		„ 31	*I. P. W.*	„	1192 „	U	4	−0·2003	12 29 21·30	−0·02	+0·02	−1·60		19·70	12 48 24·23	+19 4·53	−14·3	
			I. P. W.	„	86 „	L	3	+0·2891	12 35 2·00	+0·03	−0·01	−1·60		0·42	12 52 57·93	+18 57·51		
			I. P. E.	E	α Ursæ Minoris	L	3	+0·9514	13 16 23·47	−0·49	−0·15	+1·60		24·43	13 15 48·88†	− 0 35·55		
			I. P. E.	„	1270 Gr. 72	U	5	−0·1781	13 45 57·86	+0·10	+0·05	+1·60	−0·04	59·57	13 45 47·14	− 0 12·43	−20·5	−20·5
			I. P. E.	E	2209 Gr. 72	L	4	+0·3769	11 28 2·75	−0·31	−0·08	+1·60		3·96	11 27 39·11	− 0 24·85		
			I. P. E.	„	1109 „	U	3	−0·3209	11 59 17·00	+0·27	+0·11	−1·60	−0·05	15·73	11 59 6·20	− 0 9·53	−22·0	
			I. P. E.	W	1191 „	U	3	−0·2005	12 29 13·23	+0·17	+0·07	−1·60		11·87	12 48 16·48	+19 4·61	−22·1	−22·0
		Apr. 1	*I. P. E.*	„	1192 „	U	3	−0·2003	12 29 21·03	+0·17	+0·07	−1·60		19·67	12 48 24·23	+19 4·56	−22·0	
			I. P. E.	„	86 „	L	3	+0·2891	12 34 6·07	−0·24	−0·06	−1·60		4·17	12 52 57·94	+18 53·77		
			I. P. W.	E	α Ursæ Minoris	L	3	+0·9514	13 16 24·43	+0·59	−0·05	+1·60		26·57	13 15 48·79†	− 0 37·78		
			I. P. W.	„	1270 Gr. 72	U	5	−0·1781	13 44 59·76	−0·12	+0·02	+1·60	−0·04	61·22	13 45 47·19	− 0 14·03	−21·0	−21·0

† Deduced from the Greenwich Nine-Year Catalogue for 1872.

Arc	Station	Astronomical Date	Instrumental Position	Clock in use	Star	Culmination	No. of Wires Observed	Deviation Constant A	Observed Time of Transit	Corrections for: Collimation	Corrections for: Level	Corrections for: Pen Equation Q	Corrections for: Approximate Clock Rate	Seconds of Corrected Time of Transit	Right Ascension (Increased by 12 hours for Lower Culmination)	Apparent Clock Corrections	Deduced Value of Deviation Correction a_1	Arithmetic Mean a
		1884							*h m s*	*s*	*s*	*s*	*s*	*s*	*h m s*	*m s*	*d*	*d*
MOULMEIN AND AKYAB	AKYAB (Latitude 20° 8′)			E	2209 Gr. 72	L	3	+0·3706	*(11 46 36·17) 11 27 36·27	+0·23	−0·19	+1·77		38·08	11 27 38·36	+ 0 0·28		
				W	1191 „	U	4	−0·1948	12 48 17·15	−0·13	+0·16	−1·77	+0·05	15·46	12 48 16·44	+ 0 0·98	− 1·2	
		Mar. 26	*I. P. E.*															−1·2
				„	1192 „	U	4	−0·1947	12 48 24·83	−0·13	+0·16	−1·77	+0·05	23·14	12 48 24·19	+ 0 1·05		
				„	86 „	L	3	+0·2845	12 52 59·17	+0·18	−0·14	−1·77	+0·05	57·49	12 52 57·96	+ 0 0·47	− 1·2	
				W	2209 Gr. 72	L	3	+0·3706	11 27 39·40	+0·08	+0·32	−1·75		38·05	11 27 38·48	+ 0 0·43		
				„	1109 „	U	3	−0·3127	11 59 6·77	−0·07	−0·40	−1·75	+0·02	4·57	11 59 6·52	+ 0 1·95	− 2·2	
		„ 27	*I. P. W.*															−2·4
				E	α Ursæ Minoris	L	2	+0·9331	13 34 50·75	+0·20	+0·92	+1·75		53·62	13 15 49·22†	−19 4·40		
				„	1270 Gr. 72	U	4	−0·1729	14 4 47·03	−0·04	−0·25	+1·75	−0·04	48·45	13 45 46·92	−19 1·53	− 2·6	
				W	2209 Gr. 72	L	4	+0·3706	11 27 35·55	+0·70	+0·19	+1·76		38·20	11 27 38·60	+ 0 0·40		
				„	1109 „	U	4	−0·3127	11 59 0·83	−0·62	−0·24	+1·76	+0·02	1·75	11 59 6·47	+ 0 4·72	− 6·3	
		„ 28	*I. P. E.*															−6·3
				E	α Ursæ Minoris	L	2	+0·9331	13 34 55·20	+1·77	+0·54	+1·76		59·27	13 15 49·14†	−19 10·13		
				„	1270 Gr. 72	U	5	−0·1729	14 4 48·96	−0·35	−0·15	+1·76	−0·04	50·18	13 45 46·98	−19 3·20	− 6·3	
				W	2209 Gr. 72	L	3	+0·3706	11 27 33·60	−0·31	−0·11	+1·76		34·94	11 27 38·72	+ 0 3·78		
				„	1109 „	U	3	−0·3127	11 59 2·57	+0·27	+0·14	+1·76	+0·02	4·76	11 59 6·41	+ 0 1·65	+ 3·1	
		„ 29	*I. P. W.*															+3·3
				E	α Ursæ Minoris	L	2	+0·9331	13 34 52·15	−0·79	−0·32	+1·76		52·80	13 15 49·05†	−19 3·75		
				„	1270 Gr. 72	U	4	−0·1729	14 4 52·73	+0·16	+0·09	+1·76	−0·04	54·70	13 45 47·04	−19 7·66	+ 3·5	
				W	2209 Gr. 72	L	4	+0·3706	11 27 34·43	+0·08	+0·08	+1·76		36·35	11 27 38·83	+ 0 2·48		
				„	1109 „	U	3	−0·3127	11 58 59·33	−0·07	−0·10	+1·76	+0·02	60·94	11 59 6·36	+ 0 5·42	− 4·3	
		„ 30	*I. P. E.*															−4·4
				E	α Ursæ Minoris	L	2	+0·9331	13 35 0·55	+0·20	+0·22	+1·76		2·73	13 15 48·96†	−19 13·77		
				„	1270 Gr. 72	U	4	−0·1729	14 4 54·33	−0·04	−0·06	+1·76	−0·04	55·95	13 45 47·10	−19 8·85	− 4·4	
				W	2209 Gr. 72	L	4	+0·3706	11 27 32·80	−0·04	−0·01	+1·76		34·51	11 27 38·97	+ 0 4·46		
				„	1109 „	U	3	−0·3127	11 59 0·53	+0·03	+0·01	+1·76	+0·02	2·35	11 59 6·28	+ 0 3·93	+ 0·8	
		„ 31	*I. P. W.*															+0·6
				E	α Ursæ Minoris	L	2	+0·9331	13 34 57·95	−0·10	−0·03	+1·76		59·58	13 15 48·88†	−19 10·70		
				„	1270 Gr. 72	U	4	−0·1729	14 4 56·50	+0·02	+0·01	+1·76	−0·04	58·25	13 45 47·14	−19 11·11	+ 0·4	
				W	2209 Gr. 72	L	3	+0·3706	11 27 27·90	+0·58	+0·19	+1·76		30·43	11 27 39·11	+ 0 8·68		
				„	1109 „	U	3	−0·3127	11 59 0·77	−0·51	−0·24	+1·76	+0·02	1·80	11 59 6·20	+ 0 4·40	+ 6·3	
		Apr. 1	*I. P. E.*															+6·6
				E	α Ursæ Minoris	L	2	+0·9331	13 34 51·65	+1·48	+0·54	+1·76		55·43	13 15 48·79†	−19 6·64		
				„	1270 Gr. 72	U	4	−0·1729	14 5 0·08	−0·29	−0·15	+1·76	−0·04	1·36	13 45 47·19	−19 14·17	+ 6·8	

* The Observed Time of Transit in brackets is that by W Clock, and the corresponding time by E Clock, as deduced from clock comparisons, is given below it.
† Deduced from the Greenwich Nine-Year Catalogue for 1872.

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q-$	$Q+$	$Q-$	$Q+$	$Q+$	$Q-$
1883 November 27	s	s	s	s	s	s	s	s
	0·84	0·70	0·00	0·66	0·89	0·78	0·69	0·01
	·82	·70	·01	·68	·90	·74	·69	·00
	·89	·71	·00	·64	·90	·75	·68	...
	·88	·79	·02	·67	·90	·78	·76	·03
	·89	·72	·00	·61	·90	·71	·69	·01
	·89	·73	·01	·65	·90	·80	·69	·00
	·88	·70	·00	·66	·90	·72	·68	·01
	·89	·71	·01	·68	·89	·72	·66	·00
	·87	·70	·00	·64	·90	·72	·69	·01
	·84	·72	·01	·69	·86	·74	·69	·00
	·85	·71	·00	·63	·89	·73	·62	·02
	·88	·73	·01	·68	·86	·73	·68	·00
	·85	·73	·00	·63	·85	·72	·61	·01
	·85	·75	·02	·68	·88	·72	·68	·00
	·89	·72	·00	·63	·88	·71	·61	·02
	·89	·78	·02	·67	·87	·71	·68	·01
	·88	·71	·00	·68	·89	·76	·60	·04
	·89	·74	·02	·69	·89	·72	·62	·01
	·88	·70	·00	·64	·89	·72	·68	·02
	·88	·72	·01	·69	·90	·72	·69	·04
Corresponding Mean Observed Times by E Clock	h m s 4 6 49	h m s 4 9 44	h m s 4 10 57 s +0·007	h m s 4 16 48 s +0·660	h m s 5 9 47	h m s 5 12 44	h m s 5 11 10 s +0·670	h m s 5 13 48 s +0·013
Corresponding Mean Observed Times by W Clock	h m s 3 48 48 s +0·872	h m s 3 51 46 s +0·724	h m s 3 53 0	h m s 3 58 48	h m s 4 51 46 s +0·887	h m s 4 54 46 s +0·735	h m s 4 53 10	h m s 4 55 51
Difference	m s 18 0·128	m s 17 57·276	m s 17 57·007	m s 18 0·660	m s 18 0·113	m s 17 57·265	m s 18 0·670	m s 17 57·013

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 December 8	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·80	0·81	0·60	1·00	0·78	0·86	0·59	0·90
	·78	·80	·61	0·99	·82	·84	·59	·90
	·80	·80	·60	·99	·80	·90	·59	·91
	·76	·81	·61	·99	·81	·90	·60	·90
	·81	·82	·61	1·00	·80	·90	·56	·92
	·76	·82	·60	1·00	·80	·90	·60	·90
	·80	·82	·61	0·99	·80	·89	·58	·92
	·79	·88	·61	1·00	·82	·90	·60	·90
	·80	·82	·63	1·00	·80	·90	·59	·91
	·78	·84	·60	1·00	·82	·88	·60	·92
	·80	·88	·61	1·00	·80	·89	·58	·94
	·76	·86	·60	1·00	·81	·89	·59	·91
	·79	·84	·62	1·00	·80	·90	·59	·94
	·74	·81	·60	1·00	·86	·90	·60	·90
	·78	·90	·60	1·00	·80	·90	·59	·92
	·74	·82	·60	0·99	·81	·90	·60	·93
	·79	·81	·60	1·00	·80	·90	·59	·92
	·76	·81	·60	1·00	·82	·90	·60	·92
	·80	·82	·61	0·99	·80	·88	·58	·91
	·77	·80	·60	1·00	·81	·86	·60	·91
Corresponding Mean Observed Times by E Clock	*h m s* 5 1 41	*h m s* 5 5 11	*h m s* 5 5 48 *s* +0·606	*h m s* 5 6 37 *s* +0·997	*h m s* 5 54 10	*h m s* 5 56 45	*h m s* 5 55 41 *s* +0·591	*h m s* 5 58 36 *s* +0·914
Corresponding Mean Observed Times by W Clock	*h m s* 4 43 47 *s* +0·781	*h m s* 4 47 20 *s* +0·829	*h m s* 4 47 55	*h m s* 4 48 48	*h m s* 5 36 16 *s* +0·808	*h m s* 5 38 54 *s* +0·890	*h m s* 5 37 48	*h m s* 5 40 47
Difference	*m s* 17 53·219	*m s* 17 50·171	*m s* 17 53·606	*m s* 17 49·997	*m s* 17 53·192	*m s* 17 50·110	*m s* 17 53·591	*m s* 17 49·914

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883	s	s	s	s	s	s	s	s
December 9	0·63	0·70	0·76	0·10	0·69	0·70	0·70	0·10
	·61	·71	·72	·10	·70	·72	·70	·08
	·62	·70	·73	·11	·70	·71	·71	·10
	·61	·70	·72	·10	·70	·78	·70	·09
	·64	·68	·74	·10	·70	·73	·71	·09
	·61	·70	·71	·09	·70	·78	·70	·08
	·66	·70	·78	·10	·68	·71	·74	·09
	·61	·72	·76	·10	·67	·77	·71	·08
	·61	·69	·80	·11	·66	·71	·72	·10
	·60	·70	·78	·10	·69	·73	·71	·07
	·62	·70	·80	·10	·68	·71	·72	·10
	·60	·70	·73	·09	·70	·78	·71	·06
	·61	·68	·80	·10	·68	·72	·74	·09
	·60	·70	·78	·10	·70	·77	·70	·08
	·63	·69	·79	·10	·68	·73	·73	·09
	·60	·71	·72	·10	·68	·79	·71	·08
	·63	·70	·78	·09	·67	·74	·75	·08
	·60	·72	·72	·10	·69	·78	·72	·08
	·62	·70	·79	·10	·68	·72	·77	·09
	·61	·70	·74	·10	·69	·78	·72	·08
Corresponding Mean Observed Times by E Clock	h m s 5 1 41	h m s 5 4 42	h m s 5 3 39 s +0·758	h m s 5 6 10 s +0·100	h m s 5 56 40	h m s 5 59 10	h m s 5 57 41 s +0·719	h m s 6 0 10 s +0·086
Corresponding Mean Observed Times by W Clock	h m s 4 43 48 s +0·616	h m s 4 46 52 s +0·700	h m s 4 45 47	h m s 4 48 21	h m s 5 38 47 s +0·687	h m s 5 41 20 s +0·743	h m s 5 39 49	h m s 5 42 21
Difference	m s 17 52·384	m s 17 49·300	m s 17 52·758	m s 17 49·100	m s 17 52·313	m s 17 49·257	m s 17 52·719	m s 17 49·086

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 December 10	s	s	s	s	s	s	s	s
	0·20	0·18	0·21	0·60	0·28	0·18	0·20	0·54
	·20	·20	·24	·59	·22	·19	·20	·60
	·21	·16	·20	·60	·24	·17	·20	·55
	·20	·20	·22	·59	·22	·18	·20	·60
	·20	·20	·20	·60	·22	·19	·20	·53
	·22	·18	·24	·58	·20	·20	·19	·58
	·21	·14	·20	·60	·20	·20	·20	·55
	·23	·18	·21	·60	·20	·19	·20	·60
	·20	·18	·21	·60	·21	·20	·21	·52
	·20	·19	·21	·59	·20	·19	·19	·58
	·20	·18	·20	·60	·20	·19	·20	·52
	·21	·18	·21	·58	·21	·20	·20	·58
	·20	·12	·20	·60	·21	·19	·21	·55
	·22	·16	·20	·58	·20	·20	·20	·57
	·20	·12	·19	·59	·21	·20	·20	·56
	·21	·18	·20	·57	·20	·20	·20	·59
	·20	·12	·20	·60	·19	·20	·20	·55
	·21	·14	·20	·59	·22	·20	·20	·60
	·20	·12	·20	·61	·28	·19	·20	·58
	·20	·12	·22	·59	·22	·18	·20	·58
Corresponding Mean Observed Times by E Clock	h m s 5 1 18	h m s 5 4 34	h m s 5 3 10 s +0·208	h m s 5 5 37 s +0·593	h m s 5 54 23	h m s 5 57 10	h m s 5 55 27 s +0·200	h m s 5 58 10 s +0·567
Corresponding Mean Observed Times by W Clock	h m s 4 43 26 s +0·206	h m s 4 46 45 s +0·163	h m s 4 45 18	h m s 4 47 49	h m s 5 36 31 s +0·217	h m s 5 39 21 s +0·192	h m s 5 37 35	h m s 5 40 22
Difference	m s 17 51·794	m s 17 48·837	m s 17 52·208	m s 17 48·593	m s 17 51·783	m s 17 48·808	m s 17 52·200	m s 17 48·567

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 December 11	s	s	s	s	s	s	s	s
	0·19	0·17	0·22	0·60	0·18	0·10	0·26	0·59
	·20	·16	·28	·60	·20	·12	·29	·61
	·20	·15	·25	·58	·16	·10	·24	·60
	·20	·12	·30	·60	·19	·10	·30	·61
	·16	·14	·25	·60	·19	·10	·27	·60
	·18	·12	·28	·61	·20	·12	·29	·60
	·16	·12	·28	·60	·20	·11	·28	·60
	·20	·10	·30	·60	·20	·12	·30	·61
	·20	·12	·29	·60	·18	·12	·25	·60
	·20	·13	·30	·60	·19	·12	·30	·60
	·20	·12	·25	·58	·19	·10	·24	·58
	·20	·12	·28	·60	·20	·12	·30	·60
	·19	·13	·27	·60	·20	·10	·23	·60
	·20	·11	·28	·60	·20	·14	·29	·60
	·20	·12	·22	·60	·18	·12	·22	·60
	·20	·10	·28	·60	·20	·12	·29	·61
	·15	·10	·26	·60	·19	·10	·21	·60
	·16	·10	·29	·61	·20	·10	·29	·61
	·13	·11	·28	·60	·19	·09	·26	·60
	·15	·12	·29	·61	·20	·13	·28	·61
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 0 58	5 4 21	5 3 24	5 6 10	5 54 10	5 58 10	5 56 10	5 59 10
			s	s			s	s
			+0·273	+0·600			+0·270	+0·602
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	4 43 6	4 46 32	4 45 32	4 48 22	5 36 18	5 40 21	5 38 18	5 41 22
	s	s			s	s		
	+0·184	+0·123			+0·192	+0·113		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	17 51·816	17 48·877	17 52·273	17 48·600	17 51·808	17 48·888	17 52·270	17 48·602

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 December 12	s	s	s	s	s	s	s	s
	0·76	0·70	0·69	1·02	0·71	0·70	0·70	0·01
	·81	·80	·70	1·00	·76	·72	·70	·00
	·80	·75	·66	1·01	·74	·70	·70	·02
	·80	·79	·70	1·00	·78	·78	·69	·00
	·79	·78	·68	1·01	·74	·72	·70	·02
	·80	·80	·70	0·99	·80	·77	·70	·00
	·79	·72	·68	1·01	·80	·71	·70	·01
	·82	·78	·70	1·00	·78	·74	·70	·00
	·79	·71	·66	1·01	·78	·71	·70	·03
	·85	·78	·70	0·99	·79	·77	·70	·00
	·80	·75	·65	1·01	·78	·71	·72	·02
	·81	·79	·70	0·99	·80	·80	·71	·00
	·81	·79	·67	1·01	·77	·70	·72	·01
	·80	·79	·70	0·99	·80	·79	·70	·00
	·79	·78	·68	1·00	·78	·72	·71	·01
	·80	·80	·70	0·98	·80	·78	·70	·00
	·79	·78	·67	1·01	·78	·71	·71	·01
	·80	·80	·70	1·00	·80	·80	·70	·00
	·78	·72	·69	1·01	·77	·72	·70	·02
	·80	·77	·70	1·00	·78	·75	·70	·00
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 2 26	5 5 10	5 4 10	5 7 9	5 55 10	5 57 32	5 56 39	5 59 10
			s	s			s	s
			+0·687	+1·002			+0·703	+0·008
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	4 44 33	4 47 20	4 46 18	4 49 21	5 37 17	5 39 42	5 38 47	5 41 21
	s	s			s	s		
	+0·800	+0·769			+0·777	+0·740		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	17 52·200	17 49·231	17 52·687	17 49·002	17 52·223	17 49·260	17 52·703	17 49·008

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
December 13	0·32	0·30	0·18	0·50	0·31	0·30	0·14	0·50
	·31	·29	·12	·48	·39	·30	·11	·49
	·32	·29	·19	·50	·31	·30	·15	·51
	·32	·30	·13	·46	·40	·30	·11	·50
	·30	·29	·18	·49	·32	·33	·16	·50
	·31	·30	·12	·44	·36	·30	·10	·50
	·31	·30	·17	·50	·33	·28	·16	·50
	·30	·30	·12	·48	·30	·27	·11	·49
	·31	·30	·16	·50	·39	·38	·14	·50
	·37	·31	·13	·46	·32	·25	·10	·50
	·30	·30	·17	·49	·30	·30	·10	·50
	·30	·30	·13	·47	·30	·23	·09	·48
	·35	·30	·18	·49	...	·30	·15	·49
	·34	·30	·11	·47	...	·26	·12	·44
	·30	·29	·17	·49	·35	·30	·20	·47
	·36	·31	·11	·48	·31	·25	·18	·49
	·34	·30	·15	·48	·31	·30	·17	·50
	·39	·30	·12	·48	...	·28	·11	·48
	·30	·30	·15	·50	...	·28	·18	·49
	·33	·30	·13	·49	·41	·28	·18	·49
Corresponding Mean Observed Times by E Clock	*h m s* 5 2 10	*h m s* 5 5 10	*h m s* 5 4 10	*h m s* 5 7 10	*h m s* 5 54 24	*h m s* 5 57 31	*h m s* 5 56 10	*h m s* 5 59 10
			s +0·146	*s* +0·483			*s* +0·138	*s* +0·486
Corresponding Mean Observed Times by W Clock	*h m s* 4 44 17	*h m s* 4 47 20	*h m s* 4 46 17	*h m s* 4 49 21	*h m s* 5 36 31	*h m s* 5 39 41	*h m s* 5 38 17	*h m s* 5 41 21
	s +0·324	*s* +0·299			*s* +0·338	*s* +0·290		
Difference	*m s* 17 52·676	*m s* 17 49·701	*m s* 17 53·146	*m s* 17 49·483	*m s* 17 52·662	*m s* 17 49·710	*m s* 17 53·138	*m s* 17 49·486

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 December 14	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·10	0·03	0·40	0·70	0·10	0·08	0·40	0·70
	·08	·02	·40	·69	·10	·10	·40	·68
	·10	·03	·40	·70	·10	·12	·40	·70
	·09	·01	·38	·70	·10	·12	·40	·70
	·08	·06	·40	·70	·12	·10	·41	·70
	·09	·06	·40	·70	·08	·10	·40	·70
	·10	·02	·40	·71	·16	·01	·41	·70
	·14	·10	·39	·70	·10	·00	·40	·68
	·08	·05	·40	·70	·10	·01	·40	·70
	·06	·12	·40	·70	·03	·01	·40	·69
	·10	·10	·40	·70	·10	·02	·40	·70
	·07	·07	·40	·70	·10	·02	·39	·65
	·09	·04	·40	·70	·10	·02	·40	·69
	·02	·08	·40	·70	·12	·02	·40	·68
	·08	·10	·40	·72	·14	·02	·40	·69
	·08	·09	·40	·70	·08	·02	·40	·69
	·10	·11	·40	·70	·11	·00	·40	·70
	·08	·10	·40	·69	·03	·02	·40	·70
	·09	·03	·40	·70	...	·03	·40	·70
	·02	·12	·40	·70	·13	·01	·40	·69
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 1 41	5 5 10	5 3 40	5 6 36	5 54 31	5 58 10	5 56 46	5 59 10
			s	s			s	s
			+0·399	+0·701			+0·401	+0·692
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	4 43 48	4 47 20	4 45 47	4 48 47	5 36 38	5 40 20	5 38 53	5 41 21
	s	s			s	s		
	+0·083	+0·067			+0·100	+0·042		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	17 52·917	17 49·933	17 53·399	17 49·701	17 52·900	17 49·958	17 53·401	17 49·692

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 December 26	s	s	s	s	s	s	s	s
	0·40	0·40	0·01	0·28	0·79	0·77	0·70	0·96
	·40	·40	·02	·29	·72	·79	·71	·98
	·42	·40	·02	·29	·78	·80	·71	·96
	·41	·41	·01	·28	·72	·80	·70	·98
	·40	·40	·02	·27	·78	·78	·72	·95
	·41	·40	·01	·28	·73	·79	·71	·96
	·41	·40	·03	·28	·77	·79	·71	·98
	·41	·40	·01	·28	·80	·77	·71	·98
	·41	·41	·02	·28	·79	·74	·71	·97
	·40	·41	·01	·29	·78	·74	·71	·99
	·43	·42	·02	·28	·78	·73	·72	·98
	·41	·43	·01	·28	·78	·72	·70	·97
	·41	·42	·01	·28	·78	·72	·70	·98
	·42	·41	·00	·29	·78	·73	·70	·97
	·41	·40	·01	·28	·79	·73	·70	·96
	·40	·40	·00	·27	·77	·74	·71	·97
	·41	·40	·00	·26	·79	·74	·70	·96
	·40	·41	·00	·26	·78	·75	·70	·98
	·41	·42	·00	·27	·79	·75	·70	·99
	·41	·43	·00	·25	·78	·76	·70	·99
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 36 22	5 39 10	5 38 11	5 41 10	6 21 30	6 24 43	6 23 10	6 25 42
			s	s			s	s
			+0·011	+0·277			+0·706	+0·973
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 32 22	5 35 13	5 34 11	5 37 14	6 17 30	6 20 46	6 19 11	6 21 47
	s	s			s	s		
	+0·409	+0·409			+0·774	+0·757		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	3 59·591	3 56·591	4 0·011	3 56·277	3 59·226	3 56·243	3 59·706	3 55·973

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, *Q*							
	At W		At E		At W		At E	
	Q −	*Q* +	*Q* +	*Q* −	*Q* −	*Q* +	*Q* +	*Q* −
1883 December 27	*s*	*s*	*s*	*s*	*s*	*s*	*s*	*s*
	0·90	0·81	0·60	0·85	0·14	0·18	0·30	0·52
	·84	·83	·60	·84	·13	·19	·30	·51
	·88	·83	·60	·83	·15	·19	·30	·52
	·88	·87	·60	·84	·14	·19	·29	·51
	·90	·88	·60	·83	·13	·20	·30	·51
	·89	·89	·60	·82	·13	·19	·30	·51
	·88	·89	·60	·82	·13	·18	·29	·51
	·89	·86	·60	·83	·14	·18	·29	·52
	·88	·83	·60	·83	·13	·17	·29	·51
	·90	·84	·60	·82	·14	·18	·29	·50
	·90	·83	·60	·82	·14	·18	·29	·50
	·90	·88	·60	·81	·15	·19	·28	·50
	·89	·85	·59	·83	·14	·18	·29	·51
	·89	·89	·58	·81	·14	·19	·28	·50
	·89	·87	·59	·82	·15	·12	·30	·51
	·90	·86	·60	·81	·18	·19	·29	·50
	·89	·87	·60	·81	·15	·19	·30	·50
	·89	·86	·60	·81	·18	·19	·29	·50
	·89	·88	·60	·84	·15	·18	·30	·51
	·88	·90	·60	·82	·16	·17	·29	·50
Corresponding Mean Observed Times by E Clock	*h m s* 5 36 13	*h m s* 5 39 11	*h m s* 5 38 10 *s* +0·598	*h m s* 5 41 10 *s* +0·825	*h m s* 6 21 11	*h m s* 6 24 33	*h m s* 6 23 10 *s* +0·293	*h m s* 6 26 10 *s* +0·508
Corresponding Mean Observed Times by W Clock	*h m s* 5 32 22 *s* +0·888	*h m s* 5 35 23 *s* +0·861	*h m s* 5 34 20	*h m s* 5 37 24	*h m s* 6 17 21 *s* +0·145	*h m s* 6 20 46 *s* +0·182	*h m s* 6 19 20	*h m s* 6 22 24
Difference	*m s* 3 50·112	*m s* 3 47·139	*m s* 3 50·598	*m s* 3 46·825	*m s* 3 49·855	*m s* 3 46·818	*m s* 3 50·293	*m s* 3 46·508

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 December 28	s	s	s	s	s	s	s	s
	0·56	0·50	0·91	0·19	0·90	0·80	0·60	0·80
	·54	·50	·91	·17	·90	·88	·60	·80
	·55	·50	·90	·16	·90	·85	·60	·80
	·54	·50	·90	·18	·90	·83	·60	·80
	·52	·50	·91	·18	·90	·85	·60	·81
	·53	·50	·90	·19	·90	·82	·60	·81
	·52	·49	·91	·16	·89	·82	·59	·82
	·55	·50	·91	·18	·89	·81	·59	·81
	·53	·50	·92	·17	·89	·82	·60	·81
	·53	·50	·90	·18	·90	·80	·60	·81
	·55	·50	·91	·17	·90	·80	·60	·80
	·55	·50	·92	·18	·89	·81	·59	·81
	·54	·50	·92	·15	·89	·81	·60	·80
	·55	·50	·91	·16	·88	·81	·59	·80
	·55	·52	·93	·17	·88	·81	·60	·81
	·54	·50	·93	·16	·89	·82	·60	·80
	·54	·50	·93	·15	·88	·82	·60	·80
	·53	·50	·91	·15	·88	·82	·59	·80
	·59	·50	·91	·15	·89	·81	·60	·81
	·57	·50	·90	·16	·89	·81	·60	·81
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 36 10	5 39 48	5 38 20	5 40 47	6 21 23	6 24 10	6 23 10	6 26 10
			s	s			s	s
			+0·912	+0·168			+0·598	+0·806
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 32 29	5 36 10	5 34 40	5 37 10	6 17 42	6 20 32	6 19 30	6 22 34
	s	s			s	s		
	+0·544	+0·501			+0·892	+0·820		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	3 40·456	3 37·499	3 40·912	3 37·168	3 40·108	3 37·180	3 40·598	3 36·806

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883 December 29	s	s	s	s	s	s	s	s
	0·30	0·29	0·20	0·40	0·61	0·52	0·90	0·10
	·30	·27	·20	·40	·61	·52	·89	·08
	·30	·22	·19	·40	·61	·52	·89	·10
	·30	·22	·20	·41	·61	·52	·88	·10
	·31	·26	·20	·40	·61	·52	·89	·09
	·31	·22	·20	·42	·62	·52	·89	·10
	·31	·22	·20	·40	·62	·52	·87	·10
	·30	·22	·21	·41	·62	·53	·87	·10
	·30	·23	·20	·40	·61	·56	·88	·09
	·30	·28	·20	·40	·61	·56	·87	·10
	·30	·27	·20	·40	·60	·58	·88	·10
	·30	·25	·21	·40	·62	·59	·86	·10
	·30	·22	·20	·40	·60	·59	·86	·09
	·30	·21	·20	·40	·65	·58	·88	·08
	·30	·22	·19	·41	·63	·58	·89	·08
	·30	·22	·20	·41	·62	·58	·86	·09
	·30	·22	·20	·40	·62	·58	·89	·09
	·29	·23	·20	·40	·62	·58	·89	·08
	·30	·20	·20	·40	·60	·52	·87	·08
	·31	·20	·20	·40	·60	·56	·88	·08
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 37 10	5 40 10	5 39 10	5 41 37	6 21 10	6 23 38	6 22 40	6 25 37
			s	s			s	s
			+0·200	+0·403			+0·875	+0·092
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 33 39	5 36 42	5 35 39	5 38 10	6 17 39	6 20 10	6 19 10	6 22 10
	s	s			s	s		
	+0·302	+0·234			+0·615	+0·552		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	3 30·698	3 27·766	3 31·200	3 27·403	3 30·385	3 27·448	3 30·875	3 27·092

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1883	s	s	s	s	s	s	s	s
December 30	0·94	0·89	0·51	0·75	0·22	0·20	0·22	0·42
	·93	·90	·52	·74	·21	·20	·23	·41
	·92	·89	·52	·74	·21	·20	·25	·40
	·92	·89	·51	·72	·21	·20	·22	·42
	·92	·89	·52	·74	·22	·20	·20	·40
	·93	·90	·53	·74	·22	·20	·20	·41
	·92	·90	·51	·71	·23	·20	·20	·41
	·93	·90	·54	·75	·25	·20	·20	·41
	·96	·90	·55	·73	·25	·20	·20	·41
	·97	·89	·55	·75	·23	·21	·20	·42
	·94	·89	·53	·72	·23	·21	·20	·41
	·96	·89	·54	·76	·22	·22	·20	·41
	·96	·89	·54	·75	·23	·21	·20	·41
	·95	·90	·54	·73	·23	·21	·20	·41
	·95	·90	·53	·71	·23	·20	·20	·42
	·95	·90	·55	·71	·23	·20	·20	·41
	·95	·90	·55	·71	·23	·20	·20	·41
	·95	·90	·52	·74	·23	·20	·20	·42
	·95	·90	·55	·75	·23	·20	·20	·40
	·95	·90	·57	·74	·24	·20	·21	·41
Corresponding Mean Observed Times by E Clock	h m s 5 37 32	h m s 5 40 29	h m s 5 39 10 s +0·534	h m s 5 41 46 s +0·735	h m s 6 23 31	h m s 6 26 43	h m s 6 25 10 s +0·207	h m s 6 27 48 s +0·411
Corresponding Mean Observed Times by W Clock	h m s 5 34 10 s +0·943	h m s 5 37 10 s +0·896	h m s 5 35 49	h m s 5 38 29	h m s 6 20 10 s +0·228	h m s 6 23 25 s +0·203	h m s 6 21 49	h m s 6 24 31
Difference	m s 3 21·057	m s 3 18·104	m s 3 21·534	m s 3 17·735	m s 3 20·772	m s 3 17·797	m s 3 21·207	m s 3 17·411

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1884	s	s	s	s	s	s	s	s
January 2	0·13	0·12	0·31	0·50	0·43	0·44	0·99	0·20
	·12	·13	·30	·50	·43	·48	1·00	·20
	·13	·11	·30	·50	·46	·48	1·00	·20
	·12	·11	·31	·50	·45	·49	0·99	·20
	·13	·12	·31	·51	·44	·49	1·00	·20
	·12	·12	·30	·51	·45	·48	1·00	·20
	·13	·13	·30	·51	·45	·43	1·00	·20
	·13	·12	·30	·51	·46	·45	0·99	·20
	·12	·11	·30	·51	·46	·44	·99	·20
	·13	·12	·30	·51	·45	·48	1·00	·20
	·13	·12	·30	·52	·48	·48	1·00	·20
	·12	·12	·30	·51	·49	·48	1·00	·20
	·12	·12	·30	·51	·49	·48	1·00	·20
	·12	·12	·30	·51	·49	·46	1·00	·21
	·13	·12	·31	·53	·50	·48	1·00	·20
	·13	·11	·30	·52	·50	·48	1·00	·20
	·16	·11	·30	·52	·50	·46	1·00	·20
	·14	·10	·30	·51	·48	·48	1·00	·20
	·13	·10	·30	·52	·47	·49	1·00	·20
	·13	·11	·32	·51	·47	·49	1·00	·20
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 36 11	5 39 10	5 38 10	5 40 33	6 21 11	6 24 10	6 22 36	6 25 34
			s	s			s	s
			+0·303	+0·511			+0·998	+0·200
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 33 20	5 36 22	5 35 19	5 37 46	6 18 20	6 21 22	6 19 46	6 22 47
	s	s			s	s		
	+0·129	+0·116			+0·468	+0·472		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	2 50·871	2 47·884	2 51·303	2 47·511	2 50·532	2 47·528	2 50·998	2 47·200

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1884	s	s	s	s	s	s	s	s
January 3	0·19	0·13	0·32	0·50	0·49	0·42	0·00	0·20
	·18	·11	·33	·51	·50	·42	·01	·20
	·18	·15	·31	·50	·50	·43	·00	·20
	·17	·15	·32	·50	·49	·44	·02	·20
	·15	·18	·32	·50	·49	·42	·01	·20
	·15	·11	·31	·50	·49	·44	·00	·20
	·14	·11	·32	·50	·49	·43	·00	·19
	·18	·10	·32	·50	·50	·43	·00	·20
	·15	·12	·35	·50	·48	·46	·01	·19
	·13	·11	·36	·50	·49	·44	·02	·19
	·12	·13	·32	·50	·48	·42	·01	·19
	·16	·13	·35	·50	·49	·45	·00	·19
	·12	·13	·33	·50	·48	·43	·00	·19
	·16	·12	·34	·50	·48	·45	·01	·19
	·15	·12	·31	·50	·47	·44	·01	·19
	·17	·12	·33	·51	·49	·45	·01	·20
	·16	·13	·32	·50	·48	·44	·00	·19
	·16	·12	·31	·50	·49	·45	·00	·18
	·18	·13	·32	·50	·48	·48	·01	·19
	·18	·11	·35	·51	·49	·48	·00	·20
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 36 10	5 39 10	5 37 28	5 40 24	6 21 10	6 23 48	6 22 28	6 25 47
			s	s			s	s
			+0·327	+0·502			+0·006	+0·194
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 33 29	5 36 32	5 34 47	5 37 47	6 18 29	6 21 10	6 19 47	6 23 10
	s	s			s	s		
	+0·159	+0·126			+0·488	+0·441		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	2 40·841	2 37·874	2 41·327	2 37·502	2 40·512	2 37·559	2 41·006	2 37·194

TABLE III. DIRECT COMPARISON OF CLOCKS.

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Station at which Comparison was made, and Sign of Pen Equation, Q							
	At W		At E		At W		At E	
	$Q-$	$Q+$	$Q+$	$Q-$	$Q-$	$Q+$	$Q+$	$Q-$
1884	s	s	s	s	s	s	s	s
January 4	1·00	1·00	0·50	0·67	0·32	0·31	0·18	0·30
	1·00	1·00	·50	·69	·32	·32	·12	·30
	1·00	1·00	·50	·68	·32	·32	·12	·30
	1·00	1·00	·49	·68	·32	·30	·12	·30
	1·00	1·00	·49	·69	·32	·31	·11	·30
	0·99	1·00	·50	·68	·32	·30	·10	·31
	1·00	1·00	·50	·67	·32	·30	·10	·30
	1·00	1·00	·49	·69	·31	·31	·17	·30
	1·00	1·00	·48	·68	·32	·30	·11	·30
	1·00	1·00	·50	·67	·32	·32	·10	·30
	1·00	1·00	·50	·65	·32	·33	·10	·30
	1·00	1·00	·50	·67	·32	·33	·11	·31
	1·00	1·00	·50	·66	·32	·34	·11	·30
	1·00	1·00	·50	·67	·32	·34	·11	·31
	1·00	0·99	·48	·65	·33	·32	·11	·31
	1·00	1·00	·49	·66	·32	·31	·11	·30
	1·00	1·00	·50	·64	·32	·31	·10	·30
	1·00	1·00	·50	·65	·32	·31	·10	·31
	1·00	0·99	·48	·65	·32	·32	...	·31
	1·00	1·00	·47	·63	·32	·33	...	·30
Corresponding Mean Observed Times by E Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 36 10	5 39 11	5 37 41	5 40 37	6 21 17	6 23 38	6 23 1	6 25 10
			s	s			s	s
			+0·494	+0·667			+0·116	+0·303
Corresponding Mean Observed Times by W Clock	h m s	h m s	h m s	h m s	h m s	h m s	h m s	h m s
	5 33 38	5 36 42	5 35 10	5 38 10	6 18 46	6 21 10	6 20 30	6 22 43
	s	s			s	s		
	+1·000	+0·999			+0·320	+0·317		
Difference	m s	m s	m s	m s	m s	m s	m s	m s
	2 31·000	2 28·001	2 31·494	2 27·667	2 30·680	2 27·683	2 31·116	2 27·303

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
November 27	4 6 49	18 0·128	E			18 0·128	α	at W, Q = 1·426	+	D = 17 58·767
	9 44	17 57·276	E			17 57·276	γ		s 0·066	
	10 57	57·007	W			57·007	δ	at E, Q = 1·827		T_E = 4 23 15
	16 49	18 0·660	W	s −0·003 at $4^h\,41^m$		18 0·660	β			
	4 11 5	17 58·768								
,,	5 9 47	18 0·113	E			18 0·113	α	at W, Q = 1·424		D = 17 58·767
	11 11	0·670	W			0·670	β		0·076	
	12 44	17 57·265	E			17 57·265	γ	at E, Q = 1·829		T_E = 4 41 41
	13 48	57·013	W			57·013	δ			
	5 11 53	17 58·765								
December 8	5 1 41	17 53·219	E			17 53·216	α	at W, Q = 1·523		D = 17 51·738
	5 11	50·171	E			50·171	γ		0·055	
	5 49	53·606	W			53·607	β	at E, Q = 1·805		T_E = 5 15 51
	6 38	49·997	W	s −0·054 at $5^h\,31^m$		49·998	δ			
	5 4 50	17 51·748								
,,	5 54 10	17 53·192	E			17 53·190	α	at W, Q = 1·540		D = 17 51·726
	55 42	53·591	W			53·590	β		0·052	
	56 45	50·110	E			50·110	γ	at E, Q = 1·837		T_E = 5 29 31
	58 37	49·914	W			49·916	δ			
	5 56 19	17 51·702								
December 9	5 1 41	17 52·384	E			17 52·382	α	at W, Q = 1·541		D = 17 50·877
	3 40	52·758	W			52·758	β		0·045	
	4 42	49·300	E			49·300	γ	at E, Q = 1·828		T_E = 5 15 51
	6 10	49·100	W	s −0·046 at $5^h\,31^m$		49·102	δ			
	5 4 3	17 50·886								
,,	5 56 40	17 52·313	E			17 52·312	α	at W, Q = 1·527		D = 17 50·866
	57 42	52·719	W			52·718	β		0·059	
	59 10	49·257	E			49·258	γ	at E, Q = 1·816		T_E = 5 29 31
	6 0 10	49·086	W			49·087	δ			
	5 58 26	17 50·844								

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $= \frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
December 10	5 1 18	17 51·794	E			17 51·793	α	at W, Q = 1·478	+	D = 17 50·354
	3 10	52·208	W			52·208	β		s 0·043	
	4 34	48·837	E			48·837	γ	at E, Q = 1·807		T_E = 5 15 52
	5 38	48·593	W	s −0·021 at $5^h 30^m$		48·594	δ			
	5 3 40	17 50·358								
"	5 54 23	17 51·783	E			17 51·782	α	at W, Q = 1·487		D = 17 50·349
	55 27	52·200	W			52·200	β		0·045	
	57 10	48·808	E			48·808	γ	at E, Q = 1·816		T_E = 5 29 31
	58 11	48·567	W			48·568	δ			
	5 56 18	17 50·340								
December 11	5 0 58	17 51·816	E			17 51·816	α	at W, Q = 1·470		D = 17 50·392
	3 24	52·273	W			52·273	β		0·045	
	4 21	48·877	E			48·877	γ	at E, Q = 1·837		T_E = 5 15 52
	6 11	48·600	W	s 0·000 at $5^h 30^m$		48·600	δ			
	5 3 44	17 50·392								
"	5 54 10	17 51·808	E			17 51·808	α	at W, Q = 1·460		D = 17 50·392
	56 10	52·270	W			52·270	β		0·044	
	58 10	48·888	E			48·888	γ	at E, Q = 1·834		T_E = 5 29 32
	59 11	48·602	W			48·602	δ			
	5 56 55	17 50·392								
December 12	5 2 26	17 52·200	E			17 52·201	α	at W, Q = 1·485		D = 17 50·784
	4 11	52·687	W			52·687	β		0·064	
	5 10	49·231	E			49·231	γ	at E, Q = 1·843		T_E = 5 15 52
	7 10	49·002	W	s +0·022 at $5^h 31^m$		49·001	δ			
	5 4 44	17 50·780								
"	5 55 10	17 52·223	E			17 52·224	α	at W, Q = 1·482		D = 17 50·789
	56 40	52·703	W			52·703	β		0·057	
	57 32	49·260	E			49·260	γ	at E, Q = 1·848		T_E = 5 29 32
	59 10	49·008	W			49·007	δ			
	5 57 8	17 50·799								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Akyab (E) *and Calcutta* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	*h m s*	*m s*				*m s*				
December 13	5 2 10	17 52·676	E			17 52·676	α	at W, Q = 1·488	+ 0·063	D = 17 51·251
	4 10	53·146	W			53·146	β			
	5 10	49·701	E			49·701	γ	at E, Q = 1·832		T_E = 5 15 53
	7 10	49·483	W			49·483	δ			
	5 4 40	17 51·252		s −0·003 at $5^h\ 31^m$						
,,	5 54 24	17 52·662	E			17 52·662	α	at W, Q = 1·476		D = 17 51·250
	56 10	53·138	W			53·138	β		0·063	
	57 31	49·710	E			49·710	γ	at E, Q = 1·826		T_E = 5 29 32
	59 10	49·486	W			49·486	δ			
	5 56 49	17 51·249								
December 14	5 1 41	17 52·917	E			17 52·917	α	at W, Q = 1·492		D = 17 51·488
	3 40	53·399	W			53·399	β		0·063	
	5 10	49·933	E			49·933	γ	at E, Q = 1·849		T_E = 5 15 53
	6 37	49·701	W			49·701	δ			
	5 4 17	17 51·488		s 0·000 at $5^h\ 31^m$						
,,	5 54 31	17 52·900	E			17 52·900	α	at W, Q = 1·471		D = 17 51·488
	56 46	53·401	W			53·401	β		0·059	
	58 10	49·958	E			49·958	γ	at E, Q = 1·855		T_E = 5 29 32
	59 11	49·692	W			49·692	δ			
	5 57 10	17 51·488								

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation $= \frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
December 26	5 36 22	3 59·591	E			3 59·574	α	at W, Q = 1·490	+ 0·034	D = 3 58·026
	38 11	4 0·011	W			4 0·007	β			
	39 10	3 56·591	E			3 56·594	γ	at E, Q = 1·856		T_E = 5 51 16
	41 10	56·277	W	s −0·441 at 6h 1m		56·295	δ			
	5 38 43	3 58·118								
,,	6 21 30	3 59·226	E			3 59·209	α	at W, Q = 1·480		D = 3 57·914
	23 11	59·706	W			59·702	β		0·058	
	24 43	56·243	E			56·250	γ	at E, Q = 1·858		T_E = 6 6 32
	25 43	55·973	W			55·987	δ			
	6 23 47	3 57·787								
December 27	5 36 13	3 50·112	E			3 50·095	α	at W, Q = 1·477		D = 3 48·586
	38 11	50·598	W			50·595	β		0·050	
	39 11	47·139	E			47·142	γ	at E, Q = 1·877		T_E = 5 51 15
	41 11	46·825	W	s −0·399 at 6h 1m		46·842	δ			
	5 38 42	3 48·669								
,,	6 21 11	3 49·855	E			3 49·838	α	at W, Q = 1·508		D = 3 48·484
	23 10	50·293	W			50·289	β		0·038	
	24 33	46·818	E			46·823	γ	at E, Q = 1·883		T_E = 6 6 32
	26 11	46·508	W			46·524	δ			
	6 23 46	3 48·369								
December 28	5 36 10	3 40·456	E			3 40·436	α	at W, Q = 1·465		D = 3 38·916
	38 21	40·912	W			40·909	β		0·037	
	39 48	37·499	E			37·507	γ	at E, Q = 1·863		T_E = 5 51 14
	40 47	37·168	W	s −0·449 at 6h 1m		37·183	δ			
	5 38 47	3 39·009								
,,	6 21 23	3 40·108	E			3 40·090	α	at W, Q = 1·454		D = 3 38·793
	23 11	40·598	W			40·594	β		0·036	
	24 10	37·180	E			37·183	γ	at E, Q = 1·885		T_E = 6 7 39
	26 11	36·806	W			36·824	δ			
	6 23 44	3 38·673								

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$ at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1883	h m s	m s				m s				
December 29	5 37 10	3 30·698	E			3 30·681	α	at W, Q = 1·455	+ 0·041	D = 3 29·182
	39 10	31·200	W			31·197	β			
	40 10	27·766	E			27·771	γ	at E, Q = 1·890		T_E = 5 51 13
	41 37	27·403	W	s −0·435 at 6h 1m		27·418	δ			
	5 39 32	3 29·267								
„	6 21 10	3 30·385	E			3 30·370	α	at W, Q = 1·460	0·040	D = 3 29·072
	22 41	30·875	W			30·871	β			
	23 38	27·448	E			27·451	γ	at E, Q = 1·881		T_E = 6 6 30
	25 37	27·092	W			27·109	δ			
	6 23 17	3 28·950								
December 30	5 37 32	3 21·057	E			3 21·042	α	at W, Q = 1·467	0·032	D = 3 19·531
	39 11	21·534	W			21·530	β			
	40 29	18·104	E			18·109	γ	at E, Q = 1·891		T_E = 5 51 13
	41 47	17·735	W	s −0·405 at 6h 3m		17·749	δ			
	5 39 45	3 19·608								
„	6 23 31	3 20·772	E			3 20·757	α	at W, Q = 1·477	0·017	D = 3 19·435
	25 10	21·207	W			21·203	β			
	26 43	17·797	E			17·803	γ	at E, Q = 1·890		T_E = 6 5 21
	27 48	17·411	W			17·424	δ			
	6 25 48	3 19·297								
1884										
January 2	5 36 11	2 50·871	E			2 50·854	α	at W, Q = 1·483	0·021	D = 2 49·300
	38 10	51·303	W			51·300	β			
	39 10	47·884	E			47·889	γ	at E, Q = 1·887		T_E = 5 51 11
	40 34	47·511	W			47·526	δ			
	5 38 31	2 49·392		s −0·437 at 6h 1m						
„	6 21 11	2 50·532	E			2 50·516	α	at W, Q = 1·491	0·040	D = 2 49·188
	22 37	50·998	W			50·992	β			
	24 10	47·528	E			47·534	γ	at E, Q = 1·888		T_E = 6 6 28
	25 34	47·200	W			47·216	δ			
	6 23 23	2 49·065								

TABLE IV. REDUCTION OF DIRECT COMPARISONS OF CLOCKS.

Arc Akyab (E) *and Chittagong* (W).

Astronomical Date	Observed Hour at E, Mean = t_E	Observed Clock Difference d and Mean	Signals transmitted, from	Relative Hourly Clock Rate Correction at given Epochs by E Clock: Deduced R	Interpolated R_1	Reduction of d to t_E by Relative Rate Correction R: Reduced Clock Difference d_1		Pen Equation, Q, at E, $Q = \frac{-\beta+\delta}{2}$; at W, $Q = \frac{\alpha-\gamma}{2}$	Retardation = $\frac{\beta+\delta}{4}$ minus $\frac{\alpha+\gamma}{4}$	Deduced Clock Differences D at Epochs by E Clock T_E
1884	h m s	m s				m s				
January 3	5 36 10	2 40·841	E			2 40·826	α	at W, Q = 1·473	+	D = 2 39·295
	37 28	41·327	W			41·321	β		0·033	
	39 10	37·874	E			37·880	γ	at E, Q = 1·902		T_E = 5 51 10
	40 25	37·502	W	s −0·424 at 6h 1m		37·517	δ			
	5 38 18	2 39·386								
,,	6 21 10	2 40·512	E			2 40·497	α	at W, Q = 1·467		D = 2 39·187
	22 28	41·006	W			41·000	β		0·038	
	23 48	37·559	E			37·563	γ	at E, Q = 1·894		T_E = 6 6 27
	25 47	37·194	W			37·212	δ			
	6 23 18	2 39·068								
January 4	5 36 10	2 31·000	E			2 30·983	α	at W, Q = 1·488		D = 2 29·443
	37 41	31·494	W			31·488	β		0·046	
	39 11	28·001	E			28·007	γ	at E, Q = 1·902		T_E = 5 51 9
	40 38	27·667	W	s −0·462 at 6h 1m		27·684	δ			
	5 38 25	2 29·541								
,,	6 21 17	2 30·680	E			2 30·665	α	at W, Q = 1·490		D = 2 29·326
	23 1	31·116	W			31·114	β		0·020	
	23 38	27·683	E			27·636	γ	at E, Q = 1·898		T_E = 6 6 26
	25 10	27·303	W			27·318	δ			
	6 23 17	2 29·196								

TABLE V. ABSTRACT OF OBSERVED VALUES OF PERSONAL EQUATION

Between Majors Strahan and Heaviside.

By Stars of North Aspect

Observed with Telescope No. 1. At Calcutta						Observed with Telescope No 2. At Calcutta					
November 8, 1883			November 9, 1883			November 13, 1883			November 14, 1883		
Star	Declination	Equation S − H	Star	Declination	Equation S − H	Star	Declination	Equation S − H	Star	Declination	Equation S − H
	°	s		°	s		°	s		°	s
334	+ 35	− 0·06	250	+ 23	− 0·06	7568	+ 28	− 0·05	7505	+ 38	− 0·24
365	+ 24	+ ·08	267	+ 28	+ ·05	7607	+ 30	− ·01	7568	+ 28	+ ·16
404	+ 45	+ ·13	310	+ 32	+ ·04	7623	+ 28	+ ·02	7607	+ 30	+ ·04
441	+ 46	− ·02	334	+ 35	− ·02	7693	+ 28	− ·06	7623	+ 28	− ·12
510	+ 42	·00	358	+ 29	− ·03	7721	+ 33	+ ·02	7693	+ 28	+ ·07
544	+ 37	+ ·18	358	+ 29	− ·10	7743	+ 42	− ·10	7721	+ 33	+ ·11
593	+ 23	+ ·07	395	+ 27	+ ·02	7798	+ 28	− ·10	7743	+ 42	− ·13
614	+ 54	+ ·07	404	+ 45	− ·01	7843	+ 32	+ ·05	7798	+ 28	+ ·01
647	+ 25	+ ·05	441	+ 46	+ ·04	7858	+ 39	− ·10	7813	+ 32	+ ·04
662	+ 39	+ ·01	510	+ 42	+ ·02	7880	+ 39	− ·05	7858	+ 39	+ ·03
662	+ 39	+ ·01	7474	+ 23	+ ·02				7880	+ 39	− ·11
7474	+ 23	− ·03	7505	+ 38	+ ·01				7931	+ 39	− ·09
7505	+ 38	+ ·24	7568	+ 28	+ ·06.						
7568	+ 28	+ ·09	7607	+ 30	+ ·06						
7607	+ 30	− ·08	7623	+ 28	− ·05						
7627	+ 25	+ ·04	7693	+ 28	+ ·01						
7693	+ 28	+ ·06	7743	+ 42	+ ·07						
7757	+ 28	·00	7777	+ 37	+ ·02						
7798	+ 28	− ·01	7798	+ 28	+ ·04						
7843	+ 32	− ·07	7843	+ 32	− ·01						
7914	+ 29	+ ·03									
7945	+ 23	− ·04									
Mean ($S_N - H_N$)		+ 0·034			+ 0·009			− 0·038			− 0·019
		± 0·011			± 0·007			± 0·012			± 0·023

South Aspect

288	+ 7	− 0·01	233	− 11	+ 0·04	7520	+ 19	+ 0·01	7490	− 21	+ 0·08
386	+ 3	+ ·01	242	− 2	+ ·10	7547	+ 5	+ ·03	7520	+ 19	+ ·03
459	+ 11	+ ·02	274	+ 6	+ ·06	7590	+ 17	+ ·09	7547	+ 5	− ·08
477	+ 17	− ·05	288	+ 7	− ·08	7659	+ 6	+ ·10	7590	+ 17	− ·13
533	+ 20	·00	386	− 3	+ ·10	7672	− 3	+ ·19	7639	− 18	+ ·05
561	+ 10	+ ·07	419	− 9	+ ·04	7781	− 14	+ ·03	7659	+ 6	·00
577	+ 20	− ·01	431	+ 19	+ ·04	7814	+ 1	+ ·06	7672	− 3	+ ·04
687	+ 4	+ ·09	459	+ 11	+ ·15	7827	+ 4	·00	7762	− 6	+ ·06
707	+ 19	+ ·01	477	+ 17	− ·02	7893	+ 19	+ ·03	7781	− 14	− ·09
7433	− 4	+ ·19	533	+ 20	− ·02	7937	+ 19	+ ·10	7814	+ 1	− ·01
7520	+ 19	− ·01	7433	− 4	+ ·01				7827	+ 4	+ ·08
7547	+ 5	− ·03	7490	− 21	− ·07				7893	+ 19	+ ·03
7590	+ 17	+ ·02	7520	+ 19	+ ·06						
7664	+ 13	− ·01	7547	+ 5	+ ·02						
7733	+ 20	− ·07	7590	+ 17	+ ·03						
7823	+ 4	+ ·05	7639	− 18	+ ·04						
7868	− 1	+ ·09	7659	+ 6	− ·07						
7893	+ 19	− ·06	7672	− 3	− ·06						
			7762	− 6	+ ·01						
			7814	+ 1	+ ·04						
			7827	+ 4	·00						
Mean ($S_S - H_S$)		+ 0·037			+ 0·020			+ 0·064			+ 0·005
		± 0·010			± 0·009			± 0·012			± 0·014

TABLE V. ABSTRACT OF OBSERVED VALUES OF PERSONAL EQUATION

Between Majors Strahan and Heaviside.

OBSERVED WITH TELESCOPE No. 1.

BY STARS OF	At CALCUTTA					
	April 26, 1884			April 28, 1884		
	Star	Declination	Equation S − H	Star	Declination	Equation S − H
		°	s		°	s
NORTH ASPECT	4694	+ 31	− 0·02	3144	+ 35	0·00
	4699	+ 44	+ ·01	3194	+ 26	− ·11
	4747	+ 36	− ·02	3238	+ 34	+ ·02
	4758	+ 39	+ ·15	3246	+ 23	− ·12
	4783	+ 39	− ·04	3255	+ 29	− ·09
	4808	+ 31	·00	3327	+ 24	·00
	4816	+ 37	− ·05	3341	+ 47	− ·08
	4830	+ 50	− ·04	3358	+ 55	+ ·08
	4841	+ 44	− ·11	3399	+ 42	− ·01
	4864	+ 27	− ·05	3416	+ 33	+ ·04
	4897	+ 38	− ·05	3439	+ 36	·00
	4937	+ 50	+ ·06	3446	+ 36	− ·02
	4943	+ 40	− ·12			
	4969	+ 27	− ·03			
	4981	+ 25	− ·02			
	5000	+ 34	− ·01			
	5113	+ 48	+ ·05			
	Mean ($S_N - H_N$)		− 0·017			− 0·024
			± 0·010			± 0·012
SOUTH ASPECT	4716	− 10	+ 0·04	3132	+ 15	+ 0·02
	4721	+ 14	− ·10	3160	− 6	·00
	4729	+ 20	+ ·08	3171	+ 18	+ ·09
	4737	+ 16	+ ·07	3209	+ 17	− ·01
	4766	+ 9	+ ·02	3227	+ 10	− ·02
	4798	+ 1	+ ·04	3270	+ 13	+ ·03
	4873	+ 17	− ·01	3278	+ 17	+ ·05
	4886	+ 3	+ ·08	3299	+ 14	+ ·01
	4905	+ 20	+ ·09	3312	+ 10	+ ·06
	4926	+ 15	− ·05	3318	+ 21	+ ·07
	4951	+ 3	+ ·05	3380	+ 7	+ ·08
	5024	+ 5	+ ·08	3423	+ 23	− ·01
	5047	+ 2	+ ·04	3463	+ 7	+ ·02
	5059	+ 1	+ ·04			
	5073	− 1	+ ·05			
	5085	+ 16	+ ·03			
	5095	+ 2	+ ·02			
	Mean ($S_S - H_S$)		+ 0·034			+ 0·030
			± 0·008			± 0·007

NOTE.—On the 26th April the Bohnenberger eye-piece of Telescope No. 1 was used; on the 28th the eye-piece of Telescope No. 2 was employed.

Between Majors Strahan and Heaviside.

Season	By Stars of North Aspect					By Stars of South Aspect				
	Astronomical Date	Telescope in use	Mean Value of Equation $S_N - H_N$	Combination Weight	General Mean $S_N - H_N$	Astronomical Date	Telescope in use	Mean Value of Equation $S_S - H_S$	Combination Weight	General Mean $S_S - H_S$
	1883		s		s	1883		s		s
	November 8	No. 1	+ 0·034	83		November 8	No. 1	+ 0·017	100	
	„ 9	„ 1	+ ·009	204	+ 0·004	„ 9	„ 1	+ ·020	123	+ 0·026
	„ 13	„ 2	− ·038	69		„ 13	„ 2	+ ·064	69	
1883-84	„ 14	„ 2	− ·019	19		„ 14	„ 2	+ ·005	51	
	1884					1884				
	April 26	No. 1	− 0·017	100	− 0·020	April 26	No. 1	+ 0·034	156	+ 0·032
	„ 28	„ 1	− ·024	69		„ 28	„ 1	+ ·030	204	

NOTE.—On the 26th April the Bohnenberger Eye-piece of Telescope No. 1 was used; on the 28th the Eye-piece of Telescope No. 2 was employed.

Final Values of the Equation adopted.

The values applied throughout the computations for season 1883-84, are

$$S_N - H_N = -0^s\cdot008, \quad \text{and } S_S - H_S = +0^s\cdot029.$$

The general symbol S − H signifies a quantity which must be added to times observed by Major Heaviside, before they are compared with those observed by Major Strahan.

TABLE VII. ABSTRACT OF OBSERVED VALUES OF THE ABSOLUTE (N – S) EQUATIONS

Of Majors Strahan and Heaviside, Season 1883-84.

Arc Akyab-Calcutta						Arc Akyab-Chittagong						Arc Prome-Chittagong					
Heaviside at Akyab			Strahan at Calcutta			Heaviside at Akyab			Strahan at Chittagong			Heaviside at Prome			Strahan at Chittagong		
Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed
	s			s			s			s			s			s	
1045	+0·08	N	1069	+0·04	S	1651	+0·07	N	1714	−0·09	N	2271	0·00	S	2313	−0·17	N
1135	− ·02	S	1107	+ ·14	N		+ ·12	,,		+ ·01	,,		− ·05	,,		− ·07	,,
1311	+ ·01	,,	1367	+ ·04	,,		+ ·08	,,		− ·13	,,		+ ·02	,,		− ·02	,,
	− ·08	,,	1371	·00	,,		+ ·03	,,		− ·03	,,		− ·02	,,		− ·14	,,
	·00	,,		− ·05	,,		+ ·02	,,		+ ·01	,,		+ ·02	,,		+ ·01	,,
	+ ·06	,,		− ·01	,,		+ ·05	,,		− ·03	,,		− ·08	,,		− ·07	,,
	− ·04	,,		− ·10	,,		+ ·05	,,		− ·01	,,		− ·05	,,		− ·10	,,
	+ ·07	,,		− ·01	,,	1734	+ ·03	S		− ·09	,,	2519	+ ·12	N		− ·10	,,
	+ ·02	,,		− ·08	,,		− ·09	,,	1742	+ ·04	S		+ ·05	,,	2657	− ·01	S
1637	− ·01	N		− ·02	,,		·00	,,		+ ·05	,,		+ ·05	,,		+ ·03	,,
	+ ·05	,,	1449	+ ·13	S		+ ·02	,,		+ ·03	,,		+ ·10	,,		+ ·03	,,
	·00	,,		− ·09	N		+ ·01	,,		+ ·03	,,		+ ·06	,,		+ ·02	,,
	− ·02	,,		− ·10	,,		+ ·05	,,		+ ·04	,,		+ ·06	,,		+ ·09	,,
	+ ·01	,,		− ·01	,,		+ ·02	,,		+ ·05	,,		+ ·06	,,		+ ·14	,,
	+ ·07	,,		− ·11	,,		·00	,,		− ·02	,,		+ ·12	,,		+ ·10	,,
	+ ·09	,,		− ·05	,,	1880	+ ·08	N		+ ·04	,,	2605	− ·04	S		− ·02	,,
1733	− ·02	S		+ ·06	,,		+ ·06	,,	1925	+ ·04	,,		− ·03	,,	3117	+ ·06	,,
	− ·04	,,		+ ·04	,,		+ ·06	,,		+ ·07	,,		− ·04	,,		·00	,,
	− ·04	,,	1637	+ ·01	S		+ ·16	,,		+ ·08	,,		− ·06	,,		+ ·04	,,
	− ·02	,,		− ·03	,,		+ ·02	,,		·00	,,		+ ·01	,,		− ·01	,,
	− ·03	,,		+ ·12	,,		+ ·03	,,		+ ·07	,,		− ·07	,,		+ ·09	,,
	− ·03	,,		+ ·10	,,		+ ·12	,,		+ ·03	,,		+ ·01	,,		+ ·09	,,
	·00	,,		− ·01	,,		+ ·08	,,		+ ·03	,,	2649	+ ·06	,,		+ ·05	,,
1820	·00	,,		− ·02	,,	1934	− ·01	S		+ ·06	,,		− ·01	,,		+ ·07	,,
1986	− ·02	N		+ ·08	,,		+ ·03	,,	1971	+ ·01	N		+ ·08	N	3123	− ·02	N
	+ ·03	,,	1742	+ ·12	,,		+ ·02	,,		− ·10	,,		+ ·07	,,		− ·06	,,
	+ ·06	,,		+ ·07	,,		+ ·08	,,		− ·12	,,		+ ·10	,,		− ·10	,,
	+ ·03	,,		+ ·08	,,		+ ·04	,,		− ·08	,,		+ ·07	,,		− ·06	,,
	+ ·04	,,		+ ·08	,,		− ·03	,,		− ·02	,,		+ ·08	,,		·00	,,
	+ ·10	,,		+ ·15	,,		− ·07	,,		− ·15	,,		+ ·06	,,		·00	,,
2038	+ ·02	S		+ ·03	,,		+ ·01	,,		− ·12	,,	2853	+ ·03	,,		− ·06	,,
	− ·04	,,		+ ·23	,,	1986	− ·04	N	2029	+ ·09	S		+ ·07	,,		− ·02	,,
	− ·04	,,	1837	+ ·06	,,		+ ·08	,,		+ ·07	,,		+ ·04	,,	Mean	−0·007	
	+ ·04	,,	1975	− ·01	N		+ ·07	,,		+ ·12	,,		+ ·08	,,		±0·009	
	− ·07	,,		− ·05	,,		+ ·06	,,		+ ·04	,,		+ ·05	,,			
	− ·02	,,		− ·03	,,		+ ·11	,,		+ ·10	,,		+ ·07	,,			
	+ ·03	,,		− ·05	,,		·00	,,		+ ·07	,,		+ ·07	,,			
2080	+ ·03	N		+ ·05	,,		+ ·03	,,		+ ·06	,,		+ ·03	,,			
	+ ·01	,,		− ·05	,,		+ ·08	,,		·00	,,	2899	− ·05	S			
	+ ·04	,,	2002	+ ·06	S	2173	− ·04	S	2238	− ·06	N		− ·02	,,			
	+ ·01	,,		+ ·06	,,		− ·03	,,		− ·13	,,		− ·02	,,			
	+ ·09	,,		+ ·15	,,		− ·02	,,		− ·07	,,		− ·03	,,			
	+ ·01	,,		+ ·15	,,		− ·04	,,		− ·05	,,		− ·03	,,			
	+ ·11	,,		+ ·16	,,		+ ·01	,,		− ·13	,,		− ·06	,,			
				+ ·08	,,		− ·03	,,		− ·09	,,		− ·04	,,			
Mean	+0·013			+ ·06	,,					− ·11	,,		− ·09	,,			
	±0·005		2047	+ ·14	,,	Mean	+0·031			− ·03	,,	3171	+ ·04	N			
				+ ·12	,,		±0·005		2313	− ·10	,,						
				+ ·13	,,					− ·05	,,	Mean	+0·019				
				+ ·05	,,					− ·03	,,		±0·006				
				·00	,,					− ·12	,,						
				− ·03	,,					·00	,,						
			2038	+ ·10	,,					− ·05	,,						
				+ ·17	,,					− ·03	,,						
				+ ·12	,,					− ·12	,,						
			Mean	+0·041					Mean	−0·017							
				±0·007						±0·007							

Note.—The symbol, N – S, signifies a quantity which must be added to the times observed for Stars of South Aspect, before they can be compared with those for Stars of North Aspect, by the same observer.

TABLE VII. ABSTRACT OF OBSERVED VALUES OF THE ABSOLUTE (N – S) EQUATIONS

Of Majors Strahan and Heaviside, Season 1883-84.

Arc Prome-Akyab						Arc Moulmein-Prome						Arc Moulmein-Akyab					
Heaviside at Prome			Strahan at Akyab			Strahan at Moulmein			Heaviside at Prome			Strahan at Moulmein			Heaviside at Akyab		
Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed	Star	Equation N – S	Aspect first observed
	s			s			s			s			s			s	
2659	+0·03	N	2632	−0·05	N	3693	+0·11	S	3522	+0·06	N	4031	−0·05	N	3990	−0·02	S
	+ ·08	,,		− ·11	,,		+ ·05	,,		− ·04	,,		− ·06	,,		·00	,,
	+ ·03	,,		− ·08	,,		+ ·05	,,		− ·01	,,		− ·03	,,		+ ·04	,,
	+ ·03	,,		+ ·07	,,		+ ·04	,,		+ ·03	,,		− ·05	,,		+ ·02	,,
2759	+ ·03	S	2899	+ ·05	S		+ ·03	,,		+ ·05	,,		− ·07	,,		− ·02	,,
	·00	,,		+ ·03	,,		+ ·03	,,		+ ·04	,,	4615	+ ·11	S	4066	+ ·02	,,
	+ ·02	,,		+ ·08	,,		+ ·09	,,	3643	+ ·17	,,		+ ·11	,,		+ ·01	,,
	− ·05	,,	2937	− ·12	N		+ ·08	,,	3776	+ ·04	,,		+ ·13	,,		− ·03	,,
2853	+ ·04	,,		− ·12	,,	3824	+ ·02	N		+ ·03	,,		+ ·05	,,		+ ·05	,,
	+ ·03	,,		− ·04	,,		− ·02	,,		+ ·01	,,		+ ·03	,,	4260	+ ·08	N
	− ·04	,,		− ·11	,,		− ·04	,,		+ ·07	,,	4847	− ·06	N		+ ·10	,,
	− ·08	,,	2953	− ·02	S		− ·03	,,		+ ·02	,,		− ·04	,,		+ ·01	,,
2953	+ ·07	N		+ ·02	,,		− ·02	,,		+ ·08	,,		+ ·03	,,		+ ·18	,,
	+ ·07	,,		+ ·03	,,		− ·02	,,	3838	− ·01	S		− ·07	,,		+ ·09	,,
	+ ·08	,,		+ ·12	,,		− ·06	,,		− ·02	,,		− ·14	,,		+ ·07	,,
	+ ·10	,,	3343	− ·09	N		− ·02	,,		+ ·02	,,		− ·12	,,	4328	·00	,,
3278	− ·05	S		− ·08	,,	3838	+ ·07	S		− ·02	,,	4926	+ ·05	S		+ ·11	,,
	− ·03	,,		− ·04	,,		+ ·13	,,		+ ·07	,,		− ·04	,,		+ ·03	,,
	+ ·01	,,		− ·01	,,		+ ·08	,,		− ·07	,,		+ ·07	,,		+ ·15	,,
3453	+ ·05	N	3522	+ ·05	,,		+ ·01	,,		·00	,,		+ ·05	,,		+ ·09	,,
	− ·01	,,		− ·02	S		+ ·17	,,		+ ·01	,,		+ ·02	,,		+ ·11	,,
	+ ·10	,,		+ ·03	,,		+ ·12	,,	3869	− ·06	,,	Mean	−0·004			+ ·03	,,
	− ·02	,,		− ·02	,,		+ ·11	,,		− ·02	,,		±0·011		4664	+ ·07	,,
Mean	+0·021		Mean	−0·019			+ ·10	,,		− ·02	,,					+ ·05	,,
	±0·007			±0·010		4031	− ·03	N		+ ·03	,,					− ·08	,,
							− ·05	,,		+ ·05	,,					+ ·06	,,
							− ·07	,,		+ ·02	,,					+ ·01	,,
							− ·08	,,		·00	,,				Mean	+0·046	
							− ·05	,,	4031	− ·03	,,					±0·008	
							− ·06	,,		+ ·05	,,						
						Mean	+0·025			− ·02	,,						
							±0·009			− ·02	,,						
										+ ·05	,,						
										·00	,,						
									4110	+ ·06	N						
										+ ·03	,,						
										+ ·10	,,						
										+ ·06	,,						
										+ ·05	,,						
									Mean	+0·022							
										±0·005							

Note.—The symbol, N – S, signifies a quantity which must be added to the times observed for Stars of South Aspect, before they can be compared with those for Stars of North Aspect, by the same observer.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 86s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0.041$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Nov.27	1367	+ 22 33	N	*I. P. E.*	4 19 14·46	+1·78	16·24	N	*I. P. E.*	4 19 25·62	+1·42	27·04	+0 10·80	m s	0·080	+ 0·019	+0 10·869
	1376	+ 18 55	S	d c − 2·3 b + 0·6 a − 2·2	21 42·95	+1·79	44·74	S	d c + 1·5 b − 2·1 a −28·9	21 54·17	+1·38	55·55	10·81	+0 10·770			
	1417	+ 19 38	S	s Q +1·83	28 47·05	+1·79	48·84	S	s Q +1·43	28 58·15	+1·39	59·54	10·70		+	+	+
				Mean, T_E	4 23 15												
Nov.27	1449	+ 22 44	N	*I. P. E.*	4 35 13·04	−1·88	11·16	N	*I. P. E.*	4 35 23·41	−1·44	21·97	+0 10·81				
	1520	+ 32 59	N	d c − 2·3 b + 0·6 a − 2·2	49 22·66	−1·86	20·80	N	d c + 1·5 b − 2·1 a −28·9	49 32·84	−1·31	31·53	10·73	m s +0 10·810			
	1460	+ 10 56	S		37 55·92	−1·88	54·04	S		38 6·46	−1·58	4·88	10·84		+ 0·080	+ 0·014	+0 10·904
	1491	+ 8 42	S	s Q −1·83	44 13·26	−1·88	11·38	S	s Q −1·43	44 23·85	−1·61	22·24	10·86				
				Mean, T_E	4 41 41												
Dec. 8	1637	+ 21 58	N	*I. P. W.*	5 12 13·93	+1·77	15·70	N	*I. P. E.*	5 12 31·73	+1·68	33·41	+0 17·71				
	1649	+ 29 27	N	d c − 0·7 b − 1·4 a + 4·5	13 45·55	+1·74	47·29	N	d c + 2·1 b + 4·8 a −92·1	14 3·11	+1·99	5·10	17·81				
	1658	+ 28 49	N		15 57·67	+1·74	59·41	N		16 15·19	+1·96	17·15	17·74	m s +0 17·796	0·014	+ 0·012	+0 17·794
	1681	+ 28 30	N	s Q +1·82	18 53·22	+1·74	54·96	N	s Q +1·53	19 10·63	+1·95	12·58	17·62				
	1637	+ 21 58	S		12 13·94	+1·77	15·71	S		12 31·72	+1·68	33·40	17·69		−	+	
	1671	+ 17 16	S		17 34·70	+1·78	36·48	S		17 52·67	+1·49	54·16	17·68				
	1692	+ 17 51	S		20 19·48	+1·77	21·25	S		20 37·43	+1·51	38·94	17·69				
				Mean, T_E	5 15 51												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s:* AND **CALCUTTA** (W) *Lat. 22° 33′, Long. 5h 53m 36s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.041$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 8	1742	+ 23 57	N	*I. P. W.*	5 28 21·15	−1·88	19·27	N	*I. P. E.*	5 28 38·40	−1·30	37·10	+0 17·83				
	1778	+ 25 50	N	*d* c − 0·7 b − 1·4 *a* + 4·5	32 32·06	−1·88	30·18	N	*d* c + 2·1 b + 4·8 *a* −92·1	32 49·14	−1·22	47·92	17·74	m s +0 17·788	0·014	+ 0·019	+0 17·793
	1722	+ 5 51	S		24 33·50	−1·84	31·66	S		24 51·38	−1·98	49·40	17·74				
	1733	+ 20 23	S	*s* Q −1·82	26 44·16	−1·87	42·29	S	*s* Q −1·53	27 1·56	−1·44	0·12	17·83		−	+	
	1764	+ 16 58	S		30 18·78	−1·86	16·92	S		30 36·31	−1·58	34·73	17·81				
	1792	+ 16 28	S		34 34·45	−1·86	32·59	S		34 51·97	−1·60	50·37	17·78				
				Mean, T_E	5 29 31												
Dec. 9	1637	+ 21 58	N	*I. P. W.*	5 12 14·17	+1·75	15·92	N	*I. P. W.*	5 12 32·81	+1·39	34·20	+0 18·28				
	1649	+ 29 27	N	*d* c + 0·4 b − 2·9 *a* + 9·0	13 45·90	+1·72	47·62	N	*d* c − 7·5 b + 2·5 *a* −82·3	14 4·35	+1·65	6·00	18·38	m s +0 18·313	0·013	+ 0·012	+0 18·312
	1658	+ 28 49	N		15 58·03	+1·72	59·75	N		16 16·34	+1·62	17·96	18·21				
	1681	+ 28 30	N	*s* Q +1·82	18 53·46	+1·73	55·19	N	*s* Q +1·53	19 11·89	+1·61	13·50	18·31		−	+	
	1637	+ 21 58	S		12 14·12	+1·75	15·87	S		12 32·84	+1·39	34·23	18·36				
	1671	+ 17 16	S		17 34·87	+1·77	36·64	S		17 53·79	+1·23	55·02	18·38				
	1692	+ 17 51	S		20 19·71	+1·77	21·48	S		20 38·50	+1·25	39·75	18·27				
				Mean, T_E	5 15 51												
Dec. 9	1742	+ 23 57	N	*I. P. W.*	5 28 21·49	−1·90	19·59	N	*I. P. W.*	5 28 39·48	−1·61	37·87	+0 18·28				
	1778	+ 25 50	N	*d* c + 0·4 b − 2·9 *a* + 9·0	32 32·35	−1·90	30·45	N	*d* c − 7·5 b + 2·5 *a* −82·3	32 50·23	−1·54	48·69	18·24	m s +0 18·258	0·013	+ 0·019	+0 18·264
	1722	+ 5 51	S		24 33·79	−1·82	31·97	S		24 52·41	−2·18	50·23	18·26				
	1733	+ 20 23	S	*s* Q −1·82	26 44·49	−1·88	42·61	S	*s* Q −1·53	27 2·55	−1·72	0·83	18·22		−	+	
	1764	+ 16 58	S		30 19·13	−1·87	17·26	S		30 37·39	−1·83	35·56	18·30				
	1792	+ 16 28	S		34 34·75	−1·87	32·88	S		34 52·98	−1·85	51·13	18·25				
				Mean, T_E	5 29 31												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perpl. Equations $H_N - H_S = +0^s.013$, $S_N - S_S = +0^s.041$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.10	1637	+ 21 58	N	*I. P. E.*	5 12 14·62	+1·61	16·23	N	*I. P. W.*	5 12 33·71	+1·47	35·18	+0 18·95				
	1649	+ 29 27	N	d c − 4·5 b − 3·5 a − 1·0	13 46·38	+1·60	47·98	N	d c − 1·4 b + 1·7 a −75·9	14 5·08	+1·72	6·80	18·82				
	1658	+ 28 49	N		15 58·45	+1·60	60·05	N		16 17·13	+1·69	18·82	18·77	m s +0 18·821	0·007	+0·012	+0 18·826
	1681	+ 28 30	N	s Q +1·81	18 53·89	+1·60	55·49	N	s Q +1·48	19 12·54	+1·68	14·22	18·73				
	1637	+ 21 58	S		12 14·62	+1·61	16·23	S		12 33·59	+1·47	35·06	18·83		−	+	
	1671	+ 17 16	S		17 35·43	+1·62	37·05	S		17 54·49	+1·32	55·81	18·76				
	1692	+ 17 51	S		20 20·20	+1·62	21·82	S		20 39·37	+1·34	40·71	18·89				
				Mean, T_E	5 15 52												
Dec.10	1742	+ 23 57	N	*I. P. E.*	5 28 21·81	−2·01	19·80	N	*I. P. W.*	5 28 40·19	−1·42	38·77	+0 18·97				
	1778	+ 25 50	N	d c − 4·5 b − 3·5 a − 1·0	32 32·75	−2·01	30·74	N	d c − 1·4 b + 1·7 a −75·9	32 50·99	−1·36	49·63	18·89				
	1722	+ 5 51	S		24 34·22	−2·00	32·22	S		24 53·06	−1·96	51·10	18·88	m s +0 18·885	0·007	+0·019	+0 18·897
	1733	+ 20 23	S	s Q −1·81	26 44·90	−2·00	42·90	S	s Q −1·48	27 3·26	−1·54	1·72	18·82		−	+	
	1764	+ 16 58	S		30 19·47	−1·99	17·48	S		30 38·00	−1·64	36·36	18·88				
	1792	+ 16 28	S		34 35·12	−1·99	33·13	S		34 53·66	−1·66	52·00	18·87				
				Mean, T_E	5 29 31												
Dec.11	1637	+ 21 58	N	*I. P. E.*	5 12 14·78	+1·74	16·52	N	*I. P. E.*	5 12 34·11	+1·56	35·67	+0 19·15				
	1649	+ 29 27	N	d c − 4·5 b + 0·3 a − 4·6	13 46·47	+1·75	48·22	N	d c − 1·9 b + 6·7 a −94·1	14 5·53	+1·88	7·41	19·19				
	1658	+ 28 49	N		15 58·52	+1·75	60·27	N		16 17·69	+1·85	19·54	19·27	m s +0 19·149	0·001	+0·012	+0 19·160
	1681	+ 28 30	N	s Q +1·84	18 54·01	+1·75	55·76	N	s Q +1·47	19 12·97	+1·84	14·81	19·05				
	1637	+ 21 58	S		12 14·80	+1·74	16·54	S		12 34·01	+1·56	35·57	19·03		−	+	
	1671	+ 17 16	S		17 35·54	+1·73	37·27	S		17 55·07	+1·38	56·45	19·18				
	1692	+ 17 51	S		20 20·34	+1·74	22·08	S		20 39·85	+1·40	41·25	19·17				
				Mean, T_E	5 15 52												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perpl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.041$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 11	1742	+ 23 57	N	*I. P. E.*	5 28 22·08	−1·93	20·15	N	*I. P. E.*	5 28 40·69	−1·30	39·39	+0 19·24				
	1778	+ 25 50	N	*d* c − 4·5 b + 0·3 a − 4·6	32 33·01	−1·93	31·08	N	*d* c − 1·9 b + 6·7 a −94·1	32 51·46	−1·21	50·25	19·17	m s +0 19·202	−0·001	+0·019	+0 19·220
	1722	+ 5 51	S		24 34·47	−1·96	32·51	S		24 53·73	−1·98	51·75	19·24				
	1733	+ 20 23	S	*s* Q −1·84	26 45·12	−1·94	43·18	S	*s* Q −1·47	27 3·80	−1·44	2·36	19·18				
	1764	+ 16 58	S		30 19·78	−1·94	17·84	S		30 38·61	−1·57	37·04	19·20				
	1792	+ 16 28	S		34 35·39	−1·94	33·45	S		34 54·22	−1·59	52·63	19·18				
				Mean, T_E	5 29 32												
Dec. 12	1637	+ 21 58	N	*I. P. W.*	5 12 15·01	+2·01	17·02	N	*I. P. E.*	5 12 34·25	+1·35	35·60	+0 18·58				
	1649	+ 29 27	N	*d* c + 3·3 b + 3·4 a − 1·6	13 46·73	+2·04	48·77	N	*d* c − 1·2 b − 3·2 a −95·4	14 5·66	+1·67	7·33	18·56				
	1658	+ 28 49	N		15 58·81	+2·03	60·84	N		16 17·79	+1·64	19·43	18·59	m s +0 18·570	−0·002	+0·012	+0 18·584
	1681	+ 28 30	N	*s* Q +1·85	18 54·20	+2·03	56·23	N	*s* Q +1·48	19 13·16	+1·63	14·79	18·56				
	1637	+ 21 58	S		12 15·00	+2·01	17·01	S		12 34·26	+1·35	35·61	18·60				
	1671	+ 17 16	S		17 35·84	+2·01	37·85	S		17 55·24	+1·17	56·41	18·56				
	1692	+ 17 51	S		20 20·66	+2·01	22·67	S		20 40·03	+1·18	41·21	18·54				
				Mean, T_E	5 15 52												
Dec. 12	1742	+ 23 57	N	*I. P. W.*	5 28 22·31	−1·69	20·62	N	*I. P. E.*	5 28 40·96	−1·53	39·43	+0 18·81				
	1778	+ 25 50	N	*d* c + 3·3 b + 3·4 a − 1·6	32 33·16	−1·69	31·47	N	*d* c − 1·2 b − 3·2 a −95·4	32 51·65	−1·45	50·20	18·73	m s +0 18·730	−0·002	+0·019	+0 18·751
	1722	+ 5 51	S		24 34·70	−1·72	32·98	S		24 53·94	−2·20	51·74	18·76				
	1733	+ 20 23	S	*s* Q −1·85	26 45·36	−1·69	43·67	S	*s* Q −1·48	27 4·01	−1·68	2·33	18·66				
	1764	+ 16 58	S		30 20·00	−1·69	18·31	S		30 38·77	−1·80	36·97	18·66				
	1792	+ 16 28	S		34 35·63	−1·69	33·94	S		34 54·52	−1·82	52·70	18·76				
				Mean, T_E	5 29 32												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*; AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronmical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.041$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.13	1637	+ 21 58	N	*I. P. W.*	5 12 15·28	+1·96	17·24	N	*I. P. W.*	5 12 33·71	+1·37	35·08	+0 17·84				
	1649	+ 29 27	N	*d* c + 2·8 b + 2·5 *a* − 1·6	13 46·92	+1·97	48·89	N	*d* c − 1·9 b − 1·8 *a* − 107·6	14 5·06	+1·71	6·77	17·88				
	1658	+ 28 49	N		15 59·00	+1·97	60·97	N		16 17·22	+1·68	18·90	17·93	m s +0 17·894	0·002	0·012	17·908
	1681	+ 28 30	N	*s* *Q* +1·83	18 54·48	+1·97	56·45	N	*s* *Q* +1·48	19 12·71	+1·67	14·38	17·93				
	1637	+ 21 58	S		12 15·21	+1·96	17·17	S		12 33·73	+1·37	35·10	17·93		+	+	+ 0 17·908
	1671	+ 17 16	S		17 35·98	+1·96	37·94	S		17 54·67	+1·16	55·83	17·89				
	1692	+ 17 51	S		20 20·85	+1·96	22·81	S		20 39·49	+1·18	40·67	17·86				
				Mean, T_E	5 15 53												
Dec.13	1742	+ 23 57	N	*I. P. W.*	5 28 22·61	−1·70	20·91	N	*I. P. W.*	5 28 40·31	−1·51	38·80	+0 17·89				
	1778	+ 25 50	N	*d* c + 2·8 b + 2·5 *a* − 1·6	32 33·43	−1·70	31·73	N	*d* c − 1·9 b − 1·8 *a* − 107·6	32 51·13	−1·41	49·72	17·99				
	1722	+ 5 51	S		24 34·97	−1·73	33·24	S		24 53·45	−2·26	51·19	17·95	m s +0 17·877	0·002	0·019	17·898
	1733	+ 20 23	S	*s* *Q* −1·83	26 45·64	−1·70	43·94	S	*s* *Q* −1·48	27 3·29	−1·67	1·62	17·68		+	+	+ 0 17·898
	1764	+ 16 58	S		30 20·21	−1·70	18·51	S		30 38·19	−1·81	36·38	17·87				
	1792	+ 16 28	S		34 35·89	−1·70	34·19	S		34 53·90	−1·83	52·07	17·88				
				Mean, T_E	5 29 32												

NOTE.—$1^s = 0^d.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}013$ $S_N - S_S = +0^s{\cdot}041$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.14	1637	+ 21 58	N	*I. P. E.*	5 12 15·36	+1·87	17·23	N	*I. P. W.*	5 12 33·67	+1·46	35·13	+0 17·90				
	1649	+ 29 27	N	d c 0·0 b + 0·9 a − 1·8	13 47·00	+1·88	48·88	N	d c + 0·8 b − 0·9 a − 107·1	14 4·90	+1·81	6·71	17·83				
	1658	+ 28 49	N		15 59·06	+1·88	60·94	N		16 17·02	+1·78	18·80	17·86	m s +0 17·880	0·001	0·012	+0 17·893
	1681	+ 28 30	N	s Q +1·85	18 54·51	+1·88	56·39	N	s Q +1·48	19 12·46	+1·77	14·23	17·84				
	1637	+ 21 58	S		12 15·27	+1·87	17·14	S		12 33·59	+1·46	35·05	17·91		+	+	
	1671	+ 17 16	S		17 36·05	+1·87	37·92	S		17 54·60	+1·24	55·84	17·92				
	1692	+ 17 51	S		20 20·85	+1·87	22·72	S		20 39·35	+1·27	40·62	17·90				
				Mean, T_E	5 15 53												
Dec.14	1742	+ 23 57	N	*I. P. E.*	5 28 22·57	−1·83	20·74	N	*I. P. W.*	5 28 40·29	−1·42	38·87	+0 18·13				
	1778	+ 25 50	N	d c 0·0 b + 0·9 a − 1·8	32 33·46	−1·83	31·63	N	d c + 0·8 b − 0·9 a − 107·1	32 50·81	−1·32	49·49	17·86				
	1722	+ 5 51	S		24 34·88	−1·84	33·04	S		24 53·31	−2·18	51·13	18·09	m s +0 18·012	0·001	0·019	+0 18·032
	1733	+ 20 23	S	s Q −1·85	26 45·61	−1·83	43·78	S	s Q −1·48	27 3·34	−1·58	1·76	17·98		+	+	
	1764	+ 16 58	S		30 20·23	−1·83	18·40	S		30 38·19	−1·73	36·46	18·06				
	1792	+ 16 28	S		34 35·88	−1·83	34·05	S		34 53·75	−1·75	52·00	17·95				
				Mean, T_E	5 29 32												

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Persl. Equations $H_N - H_S = +0^s{\cdot}013$, $S_N - S_S = +0^s{\cdot}041$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Nov.27	1017	+ 33 48	N	*I. P. E.*	3 11 21·26	+1·80	23·06	N	*I. P. E.*	3 29 30·90	+1·56	32·46	18 9·40				
	1069	+ 22 24	N	*d* c − 2·3 b + 0·6 a − 2·2	21 32·08	+1·78	33·86	N	*d* c + 1·5 b − 2·1 a −28·9	39 41·99	+1·42	43·41	9·55	m s			
	1045	+ 20 19	S		15 56·99	+1·78	58·77	S		34 6·86	+1·39	8·25	9·48	18 9·505	− 0·045	+ 0·014	
	1057	+ 8 37	S	*s* Q +1·83	18 26·38	+1·78	28·16	S	*s* Q +1·43	36 36·50	+1·25	37·75	9·59				
Nov.27	1107	+ 22 49	N	*I. P. E.*	3 30 4·82	−1·88	2·94	N	*I. P. E.*	3 48 14·02	−1·44	12·58	18 9·64				
	1123	+ 37 12	N	*d* c − 2·3 b + 0·6 a − 2·2	33 31·30	−1·85	29·45	N	*d* c + 1·5 b − 2·1 a −28·9	51 40·10	−1·24	38·86	9·41	m s			
	1166	+ 23 45	N		40 31·40	−1·88	29·52	N		58 40·49	−1·43	39·06	9·54	18 9·518	− 0·045	+ 0·011	
	1135	+ 19 20	S	*s* Q −1·83	35 33·55	−1·87	31·68	S	*s* Q −1·43	53 42·65	−1·48	41·17	9·49				
	1202	+ 6 11	S		45 44·99	−1·88	43·11	S		4 3 54·25	−1·63	52·62	9·51				
Dec. 8	1322	+ 34 17	N	*I. P. W.*	4 12 48·58	+1·73	50·31	N	*I. P. E.*	4 30 57·46	+2·23	59·69	18 9·38				
	1364	+ 31 10	N	*d* c − 0·7 b − 1·4 a + 4·5	18 39·00	+1·74	40·74	N	*d* c + 2·1 b + 4·8 a −92·1	36 48·15	+2·08	50·23	9·49	m s			
	1371	+ 22 44	N		20 16·81	+1·77	18·58	N		38 26·16	+1·71	27·87	9·29	18 9·403	− 0·003	+ 0·014	
	1311	+ 20 17	S	*s* Q +1·82	10 23·27	+1·77	25·04	S	*s* Q +1·53	28 32·81	+1·62	34·43	9·39				
	1335	+ 13 35	S		14 16·58	+1·78	18·36	S		32 26·38	+1·36	27·74	9·38				
	1346	+ 17 16	S		16 10·07	+1·78	11·85	S		34 19·85	+1·49	21·34	9·49				
Dec. 8	1414	+ 41 1	N	*I. P. W.*	4 28 38·94	−1·93	37·01	N	*I. P. E.*	4 46 46·91	−0·46	46·45	18 9·44				
	1449	+ 22 44	N	*d* c − 0·7 b − 1·4 a + 4·5	35 16·16	−1·87	14·29	N	*d* c + 2·1 b + 4·8 a −92·1	53 24·96	−1·35	23·61	9·32	m s			
	1475	+ 32 23	N		41 48·33	−1·91	46·42	N		59 56·72	−0·92	55·80	9·38	18 9·380	− 0·003	+ 0·014	
	1402	+ 15 36	S	*s* Q −1·82	25 13·25	−1·86	11·39	S	*s* Q −1·53	43 22·42	−1·64	20·78	9·39				
	1434	+ 12 16	S		31 39·35	−1·86	37·49	S		49 48·64	−1·75	46·89	9·40				
	1460	+ 10 56	S		37 59·08	−1·85	57·23	S		56 8·37	−1·79	6·58	9·35				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$, $S_N - S_S = +0^s.041$	$\delta L_N - \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 9	1322	+ 34 17	N	*I. P. W.*	4 12 48·94	+1·69	50·63	N	*I. P. W.*	4 30 57·76	+1·85	59·61	18 8·98				
	1364	+ 31 10	N	d c + 0·4 b − 2·9 a + 9·0	18 39·33	+1·71	41·04	N	d c − 7·5 b + 2·5 a −82·3	36 48·40	+1·73	50·13	9·09				
	1371	+ 22 44	N		20 17·01	+1·75	18·76	N		38 26·43	+1·42	27·85	9·09	s 18 9·010			
	1311	+ 20 17	S	s Q +1·82	10 23·68	+1·76	25·44	S	s Q +1·53	28 33·01	+1·34	34·35	8·91	m	− 0·004	+ 0·014	18 9·020
	1335	+ 13 35	S		14 16·89	+1·78	18·67	S		32 26·57	+1·12	27·69	9·02				
	1346	+ 17 16	S		16 10·40	+1·77	12·17	S		34 19·91	+1·23	21·14	8·97				
Dec. 9	1414	+ 41 1	N	*I. P. W.*	4 28 39·22	−1·99	37·23	N	*I. P. W.*	4 46 47·21	−0·92	46·29	18 9·06				
	1449	+ 22 44	N	d c + 0·4 b − 2·9 a + 9·0	35 16·36	−1·89	14·47	N	d c − 7·5 b + 2·5 a −82·3	53 25·18	−1·64	23·54	9·07				
	1475	+ 32 23	N		41 48·49	−1·94	46·55	N		59 57·01	−1·28	55·73	9·18	s 18 9·135			
	1402	+ 15 36	S	s Q −1·82	25 13·40	−1·86	11·54	S	s Q −1·53	43 22·61	−1·88	20·73	9·19	m	− 0·004	+ 0·014	18 9·145
	1434	+ 12 16	S		31 39·60	−1·85	37·75	S		49 48·88	−1·98	46·90	9·15				
	1460	+ 10 56	S		37 59·24	−1·85	57·39	S		56 8·57	−2·02	6·55	9·16				
Dec.10	1322	+ 34 17	N	*I. P. E.*	4 12 49·23	+1·61	50·84	N	*I. P. W.*	4 30 58·00	+1·91	59·91	18 9·07				
	1364	+ 31 10	N	d c − 4·5 b − 3·5 a − 1·0	18 39·68	+1·61	41·29	N	d c − 1·4 b + 1·7 a −75·9	36 48·61	+1·78	50·39	9·10				
	1371	+ 22 44	N		20 17·45	+1·61	19·06	N		38 26·71	+1·50	28·21	9·15	s 18 9·135			
	1311	+ 20 17	S	s Q +1·81	10 23·94	+1·62	25·56	S	s Q +1·48	28 33·34	+1·42	34·76	9·21	m	− 0·004	+ 0·014	18 9·145
	1335	+ 13 35	S		14 17·25	+1·63	18·88	S		32 26·85	+1·22	28·07	9·19				
	1346	+ 17 16	S		16 10·80	+1·62	12·42	S		34 20·19	+1·32	21·51	9·09				
Dec.10	1414	+ 41 1	N	*I. P. E.*	4 28 39·65	−2·04	37·61	N	*I. P. W.*	4 46 47·38	−0·76	46·62	18 9·01				
	1449	+ 22 44	N	d c − 4·5 b − 3·5 a − 1·0	35 16·85	−2·01	14·84	N	d c − 1·4 b + 1·7 a −75·9	53 25·43	−1·46	23·97	9·13				
	1475	+ 32 23	N		41 48·97	−2·01	46·96	N		59 57·22	−1·13	56·09	9·13	s 18 9·083			
	1402	+ 15 36	S	s Q −1·81	25 13·97	−1·99	11·98	S	s Q −1·48	43 22·78	−1·69	21·09	9·11	m	− 0·004	+ 0·014	18 9·093
	1434	+ 12 16	S		31 40·13	−1·99	38·14	S		49 49·03	−1·78	47·25	9·11				
	1460	+ 10 56	S		37 59·82	−1·99	57·83	S		56 8·66	−1·82	6·84	9·01				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.041$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.11	1322	+ 34 17	N	*I. P. E.*	4 12 49·49	+1·76	51·25	N	*I. P. E.*	4 30 58·54	+2·12	60·66	18 9·41				
	1364	+ 31 10	N	d c − 4·5	18 39·92	+1·75	41·67	N	d c − 1·9	36 49·11	+1·97	51·08	9·41				
	1371	+ 22 44	N	b + 0·3 a − 4·6	20 17·68	+1·75	19·43	N	b + 6·7 a −94·1	38 27·23	+1·59	28·82	9·39	m s			
	1311	+ 20 17	S	s Q +1·84	10 24·13	+1·74	25·87	S	s Q +1·47	28 33·87	+1·50	35·37	9·50	18 9·438	− 0·004	+ 0·014	18 9·448
	1335	+ 13 35	S		14 17·51	+1·74	19·25	S		32 27·44	+1·24	28·68	9·43				
	1346	+ 17 16	S		16 11·04	+1·73	12·77	S		34 20·88	+1·38	22·26	9·49				
Dec.11	1414	+ 41 1	N	*I. P. E.*	4 28 39·77	−1·92	37·85	N	*I. P. E.*	4 46 47·80	−0·46	47·34	18 9·49				
	1449	+ 22 44	N	d c − 4·5	35 17·06	−1·93	15·13	N	d c − 1·9	53 25·87	−1·35	24·52	9·39				
	1475	+ 32 23	N	b + 0·3 a − 4·6	41 49·08	−1·92	47·16	N	b + 6·7 a −94·1	59 57·61	−0·91	56·70	9·54	m s			
	1402	+ 15 36	S	s Q −1·84	25 14·13	−1·94	12·19	S	s Q −1·47	43 23·37	−1·62	21·75	9·56	18 9·505	− 0·004	+ 0·014	18 9·515
	1434	+ 12 16	S		31 40·25	−1·94	38·31	S		49 49·60	−1·75	47·85	9·54				
	1460	+ 10 56	S		37 60·01	−1·95	58·06	S		56 9·36	−1·79	7·57	9·51				
Dec.12	1322	+ 34 17	N	*I. P. W.*	4 12 49·52	+2·04	51·56	N	*I. P. E.*	4 30 59·10	+1·88	60·98	18 9·42				
	1364	+ 31 10	N	d c + 3·3	18 40·04	+2·04	42·08	N	d c − 1·2	36 49·65	+1·75	51·40	9·32				
	1371	+ 22 44	N	b + 3·4 a − 1·6	20 17·86	+2·01	19·87	N	b − 3·2 a −95·4	38 27·82	+1·38	29·20	9·33	m s			
	1311	+ 20 17	S	s Q +1·85	10 24·33	+2·01	26·34	S	s Q +1·48	28 34·39	+1·28	35·67	9·33	18 9·387	− 0·004	+ 0·014	18 9·397
	1335	+ 13 35	S		14 17·64	+2·01	19·65	S		32 28·05	+1·04	29·09	9·44				
	1346	+ 17 16	S		16 11·14	+2·01	13·15	S		34 21·46	+1·17	22·63	9·48				
Dec.12	1414	+ 41 1	N	*I. P. W.*	4 28 40·00	−1·64	38·36	N	*I. P. E.*	4 46 48·51	−0·71	47·80	18 9·44				
	1449	+ 22 44	N	d c + 3·3	35 17·28	−1·69	15·59	N	d c − 1·2	53 26·62	−1·58	25·04	9·45				
	1475	+ 32 23	N	b + 3·4 a − 1·6	41 49·29	−1·66	47·63	N	b − 3·2 a −95·4	59 58·14	−1·15	56·99	9·36	m s			
	1402	+ 15 36	S	s Q −1·85	25 14·37	−1·69	12·68	S	s Q −1·48	43 24·08	−1·86	22·22	9·54	18 9·443	− 0·004	+ 0·014	18 9·452
	1434	+ 12 16	S		31 40·55	−1·70	38·85	S		49 50·28	−1·97	48·31	9·46				
	1460	+ 10 56	S		37 60·21	−1·70	58·51	S		56 9·93	−2·02	7·91	9·40				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.041$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.13	1322	+ 34 17	N	*I. P. W.*	4 12 49·96	+1·99	51·95	N	*I. P. W.*	4 30 58·96	+1·97	60·93	18 8·98				
	1364	+ 31 10	N	d c + 2·8	18 40·33	+1·97	42·30	N	d c − 1·9	36 49·49	+1·81	51·30	9·00				
	1371	+ 22 44	N	b + 2·5 a − 1·6	20 18·13	+1·96	20·09	N	b − 1·8 a − 107·6	38 27·65	+1·40	29·05	8·96	m s 18 8·978			
	1311	+ 20 17	S	s Q +1·83	10 24·62	+1·96	26·58	S	s Q + 1·48	28 34·32	+1·29	35·61	9·03		− 0·003	+ 0·014	18 8·989
	1335	+ 13 35	S		14 18·01	+1·95	19·96	S		32 27·94	+1·01	28·95	8·99				
	1346	+ 17 16	S		16 11·52	+1·96	13·48	S		34 21·23	+1·16	22·39	8·91				
Dec.13	1414	+ 41 1	N	*I. P. W.*	4 28 40·23	−1·66	38·57	N	*I. P. W.*	4 46 48·24	−0·58	47·66	18 9·09				
	1449	+ 22 44	N	d c + 2·8	35 17·51	−1·70	15·81	N	d c − 1·9	53 26·43	−1·56	24·87	9·06				
	1475	+ 32 23	N	b + 2·5 a − 1·6	41 49·59	−1·68	47·91	N	b − 1·8 a − 107·6	59 58·10	−1·09	57·01	9·10	m s 18 9·123	− 0·003	+ 0·014	18 9·134
	1402	+ 15 36	S	s Q −1·83	25 14·58	−1·70	12·88	S	s Q − 1·48	43 23·94	−1·87	22·07	9·19				
	1434	+ 12 16	S		31 40·74	−1·72	39·02	S		49 50·19	−2·00	48·19	9·17				
	1460	+ 10 56	S		37 60·42	−1·72	58·70	S		56 9·88	−2·05	7·83	9·13				
Dec.14	1322	+ 34 17	N	*I. P. E.*	4 12 49·90	+1·88	51·78	N	*I. P. W.*	4 30 59·01	+2·07	61·08	18 9·30				
	1364	+ 31 10	N	d c 0·0	18 40·32	+1·88	42·20	N	d c + 0·8	36 49·60	+1·91	51·51	9·31				
	1371	+ 22 44	N	b + 0·9 a − 1·8	20 18·17	+1·87	20·04	N	b − 0·9 a − 107·1	38 27·79	+1·49	29·28	9·24	m s 18 9·303	− 0·002	+ 0·014	
	1311	+ 20 17	S	s Q +1·85	10 24·63	+1·87	26·50	S	s Q + 1·48	28 34·44	+1·38	35·82	9·32				
	1335	+ 13 35	S		14 17·89	+1·87	19·76	S		32 28·02	+1·09	29·11	9·35				18 9·315
	1346	+ 17 16	S		16 11·44	+1·87	13·31	S		34 21·37	+1·24	22·61	9·30				
Dec.14	1414	+ 41 1	N	*I. P. E.*	4 28 40·36	−1·80	38·56	N	*I. P. W.*	4 46 48·37	−0·48	47·89	18 9·33				
	1449	+ 22 44	N	d c 0·0	37 17·56	−1·83	15·73	N	d c + 0·8	53 26·55	−1·47	25·08	9·35				
	1475	+ 32 23	N	b + 0·9 a − 1·8	41 49·61	−1·82	47·79	N	b − 0·9 a − 107·1	59 58·17	−0·99	57·18	9·39	m s 18 9·390	− 0·002	+ 0·014	
	1402	+ 15 36	S	s Q −1·85	24 14·61	−1·83	12·78	S	s Q − 1·48	43 23·99	−1·79	22·20	9·42				18 9·402
	1434	+ 12 16	S		31 40·82	−1·84	38·98	S		49 50·31	−1·92	48·39	9·41				
	1460	+ 10 56	S		37 60·46	−1·84	58·62	S		56 10·03	−1·97	8·06	9·44				

NOTE.—$1^d = 0^s.9225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0.041$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Nov.27	1681	+ 28 30	N	*I. P. E.*	5 0 51·26	+1·80	53·06	N	*I. P. E.*	5 19 0·96	+1·50	2·46	18 9·40				
	1768	+ 30 25	N	d c − 2·3 b + 0·6 a − 2·2	13 4·82	+1·80 †	6·62	N	d c + 1·5 b − 2·1 a −28·9	31 14·69	+1·52	16·21	9·59	m s 18 9·548			
	1738	+ 20 23	S		8 38·66	+1·77	40·43	S		26 48·69	+1·39	50·08	9·65		+ 0·080	+ 0·014	
	1749	+ 9 51	S	s Q +1·83	10 38·40	+1·78	40·18	S	s Q +1·43	28 48·47	+1·26	49·73	9·55				18 9·642*
Nov.27	1837	+ 24 31	N	*I. P. E.*	5 23 51·00	−1·88	49·12	N	*I. P. E.*	5 41 60·15	−1·41	58·74	18 9·62				
	1896	+ 25 56	N	d c − 2·3 b + 0·6 a − 2·2	32 44·99	−1·87	43·12	N	d c + 1·5 b − 2·1 a −28·9	50 54·02	−1·40	52·62	9·50	m s 18 9·572			
	1820	+ 20 14	S		21 60·37	−1·88	58·49	S		40 9·61	−1·47	8·14	9·65		+ 0·080	+ 0·014	
	1852	+ 14 16	S	s Q −1·83	25 50·03	−1·88	48·15	S	s Q −1·43	43 59·22	−1·55	57·67	9·52				18 9·666
Dec. 8	1975	+ 23 1	N	*I. P. W.*	5 45 31·44	+1·76	33·20	N	*I. P. E.*	6 3 40·95	+1·72	42·67	18 9·47				
	2002	+ 22 32	N	d c − 0·7 b − 1·4 a + 4·5	49 56·22	+1·77	57·99	N	d c + 2·1 b + 4·8 a −92·1	8 5·77	+1·70	7·47	9·48	m s 18 9·470			
	2021	+ 35 15	N		53 12·11	+1·73	13·84	N		11 21·08	+2·27	23·35	9·51		− 0·014	+ 0·006	
	2047	+ 22 34	N	s Q +1·82	58 0·22	+1·77	1·99	S	s Q +1·53	16 9·77	+1·70	11·47	9·48				18 9·462
	1986	+ 19 49	S		47 12·79	+1·77	14·56	S		5 22·38	+1·59	23·97	9·41				
Dec. 8	2139	+ 38 32	N	*I. P. W.*	6 10 42·03	−1·92	40·11	N	*I. P. E.*	6 28 50·17	−0·61	49·56	18 9·45				
	2155	+ 39 29	N	d c − 0·7 b − 1·4 a + 4·5	12 44·95	−1·92	43·03	N	d c + 2·1 b + 4·8 a −92·1	30 53·07	−0·56	52·51	9·48	m s 18 9·495			
	2080	+ 20 51	S		2 59·05	−1·87	57·18	S		21 8·09	−1·42	6·67	9·49		− 0·014	+ 0·014	
	2111	+ 15 59	S	s Q −1·82	7 4·26	−1·86	2·40	S	s Q −1·53	25 13·58	−1·62	11·96	9·56				18 9·495

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

† Includes (N − S) Equation + $0^s.01$.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perss. Equations $H_N - H_S = +0^s.013$ $S_N - S_S = +0^s.041$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 9	2002	+ 22 32	N	*I. P. W.*	5 49 57·33	+1·75	59·08	N	*I. P. W.*	6 8 6·87	+1·41	8·28	18 9·20				
	2021	+ 35 15	N	d c + 0·4 b − 2·9 a + 9·0	53 13·26	+1·69	14·95	N	d c − 7·5 b + 2·5 a −82·3	11 22·16	+1·88	24·04	9·09	m s 18 9·158	− 0·013	+ 0·007	18 9·152
	2047	+ 22 34	N		58 1·38	+1·75†	3·13	N		16 11·01	+1·41	12·42	9·29				
	1986	+ 19 49	S	s Q +1·82	47 13·92	+1·75	15·67	S	s Q +1·53	5 23·40	+1·32	24·72	9·05				
Dec. 9	2139	+ 38 32	N	*I. P. W.*	6 10 43·09	−1·97	41·12	N	*I. P. W.*	6 28 51·31	−1·03	50·28	18 9·16				
	2155	+ 39 29	N	d c + 0·4 b − 2·9 a + 9·0	12 46·02	−1·98	44·04	N	d c − 7·5 b + 2·5 a −82·3	30 54·18	−0·98	53·20	9·16	m s 18 9·167	− 0·013	+ 0·019	18 9·173
	2080	+ 20 51	S		2 60·17	−1·88	58·29	S		21 9·13	−1·71	7·42	9·13				
	2099	− 0 30	S	s Q −1·82	4 60·18	−1·80	58·38	S	s Q −1·53	23 9·94	−2·37	7·57	9·19				
	2111	+ 15 59	S		7 5·36	−1·86	3·50	S		25 14·52	−1·86	12·66	9·16				
	2123	+ 4 56	S		8 17·98	−1·82	16·16	S		26 27·57	−2·21	25·36	9·20				
Dec.10	1975	+ 23 1	N	*I. P. E.*	5 45 33·47	+1·61	35·08	N	*I. P. W.*	6 3 42·89	+1·51	44·40	18 9·32				
	2002	+ 22 32	N	d c − 4·5 b − 3·5 a − 1·0	49 58·20	+1·61	59·81	N	d c − 1·4 b + 1·7 a −75·9	8 7·69	+1·49	9·18	9·37	m s 18 9·364	− 0·007	+ 0·006	18 9·363
	2021	+ 35 15	N		53 14·06	+1·60	15·66	N		11 23·08	+1·95	25·03	9·37				
	2047	+ 22 34	N	s Q +1·81	58 2·18	+1·61	3·79	N	s Q +1·48	16 11·73	+1·49	13·22	9·43				
	1986	+ 19 49	S		47 14·74	+1·62	16·36	S		5 24·28	+1·41	25·69	9·33				
Dec.10	2139	+ 38 32	N	*I. P. E.*	6 10 43·99	−2·03	41·96	N	*I. P. W.*	6 28 52·08	−0·87	51·21	18 9·25				
	2155	+ 39 29	N	d c − 4·5 b − 3·5 a − 1·0	12 46·93	−2·03	44·90	N	d c − 1·4 b + 1·7 a −75·9	30 54·91	−0·82	54·09	9·19	m s 18 9·248	− 0·007	+ 0·017	18 9·258
	2080	+ 20 51	S		2 61·04	−2·00	59·04	S		21 9·83	−1·52	8·31	9·27				
	2111	+ 15 59	S	s Q −1·81	7 6·32	−1·99	4·33	S	s Q −1·48	25 15·26	−1·67	13·59	9·26				
	2123	+ 4 56	S		8 19·04	−2·00	17·04	S		26 28·30	−1·99	26·31	9·27				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *sil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

† Includes (N − S) Equation + $0^s.01$.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 6h 58m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}013$ $S_N - S_S = +0^s{\cdot}041$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.11	1975	+ 23 1	N	*I. P. E.*	5 45 33·60	+1·75	35·35	N	*I. P. E.*	6 3 43·50	+1·60	45·10	18 9·75				
	2002	+ 22 32	N	d c − 4·5 b + 0·3 a − 4·6	49 58·41	+1·74	60·15	N	d c − 1·9 b + 6·7 a −94·1	8 8·20	+1·58	9·78	9·63				
	2021	+ 35 15	N		53 14·18	+1·75	15·93	N		11 23·58	+2·16	25·74	9·81	m s 18 9·705		+ 0·009	18 9·713
	2047	+ 22 34	N	s Q +1·84	58 2·32	+1·75	4·07	N	s Q +1·47	16 12·20	+1·58	13·78	9·71		− 0·001		
	1986	+ 19 49	S		47 14·97	+1·74	16·71	S		5 24·87	+1·48	26·35	9·64				
	2038	+ 21 11	S		56 31·42	+1·74	33·16	S		14 41·32	+1·53	42·85	9·69				
Dec.11	2139	+ 38 32	N	*I. P. E.*	6 10 44·09	−1·92	42·17	N	*I. P. E.*	6 28 52·45	−0·60	51·85	18 9·68				
	2155	+ 39 29	N	d c − 4·5 b + 0·3 a − 4·6	12 46·97	−1·92	45·05	N	d c − 1·9 b + 6·7 a −94·1	30 55·33	−0·54	54·79	9·74				
	2080	+ 20 51	S		2 61·15	−1·94	59·21	S		21 10·35	−1·43	8·92	9·71	m s 18 9·695		+ 0·019	18 9·713
	2099	− 0 30	S	s Q −1·84	4 61·40	−1·97	59·43	S	s Q −1·47	23 11·26	−2·20	9·06	9·63		− 0·001		
	2111	+ 15 59	S		7 6·49	−1·94	4·55	S		25 15·84	−1·60	14·24	9·69				
	2123	+ 4 56	S		8 19·19	−1·96	17·23	S		26 28·96	−2·01	26·95	9·72				
Dec.12	1975	+ 23 1	N	*I. P. W.*	5 45 33·41	+2·01	35·42	N	*I. P. E.*	6 3 43·54	+1·39	44·93	18 9·51				
	2002	+ 22 32	N	d c + 3·3 b + 3·4 a − 1·6	49 58·18	+2·01	60·19	N	d c − 1·2 b − 3·2 a −95·4	8 8·38	+1·37	9·75	9·56				
	2021	+ 35 15	N		53 13·98	+2·04	16·02	N		11 23·52	+1·93	25·45	9·43	m s 18 9·482		+ 0·009	18 9·493
	2047	+ 22 34	N	s Q +1·85	58 2·16	+2·01	4·17	N	s Q +1·48	16 12·27	+1·37	13·64	9·47		+ 0·002		
	1986	+ 19 49	S		47 14·71	+2·01	16·72	S		5 24·97	+1·27	26·24	9·52				
	2038	+ 21 11	S		56 31·33	+2·01	33·34	S		14 41·42	+1·32	42·74	9·40				
Dec.12	2139	+ 38 32	N	*I. P. W.*	6 10 43·90	−1·66	42·24	N	*I. P. E.*	6 28 52·58	−0·85	51·73	18 9·49				
	2155	+ 39 29	N	d c + 3·3 b + 3·4 a − 1·6	12 46·75	−1·64	45·11	N	d c − 1·2 b − 3·2 a −95·4	30 55·47	−0·79	54·68	9·57				
	2080	+ 20 51	S		2 61·05	−1·69	59·36	S		21 10·53	−1·66	8·87	9·51	m s 18 9·523		+ 0·019	18 9·544
	2099	− 0 30	S	s Q −1·85	4 61·25	−1·72	59·53	S	s Q −1·48	23 11·42	−2·42	9·00	9·47		+ 0·002		
	2111	+ 15 59	S		7 6·37	−1·69	4·68	S		25 16·04	−1·84	14·20	9·52				
	2123	+ 4 56	S		8 18·99	−1·72	17·27	S		26 29·08	−2·23	26·85	9·58				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CALCUTTA (W) *Lat. 22° 33′, Long. 5h 53m 36s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s{\cdot}013$ $S_N - S_S = +0^s{\cdot}041$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.13	1975	+ 23 1	N	*I. P. W.*	5 45 33·24	+1·96	35·20	N	*I. P. W.*	6 3 42·97	+1·41	44·38	18 9·18				
	2002	+ 22 32	N	*d* c + 2·8	49 58·05	+1·96	60·01	N	*d* c − 1·9	8 7·80	+1·39	9·19	9·18				
	2021	+ 35 15	N	b + 2·5 a − 1·6	53 13·81	+1·99	15·80	N	b − 1·8 a −107·6	11 23·00	+2·03	25·03	9·23	m s 18 9·185	+ 0·002	+ 0·009	18 9·196
	2047	+ 22 34	N	*s* Q +1·83	58 1·94	+1·96	3·90	N	*s* Q + 1·48	16 11·78	+1·39	13·17	9·27				
	1986	+ 19 49	S		47 14·61	+1·96	16·57	S		5 24·34	+1·27	25·61	9·04				
	2038	+ 21 11	S		56 31·08	+1·96	33·04	S		14 40·91	+1·34	42·25	9·21				
Dec.13	2139	+ 38 32	N	*I. P. W.*	6 10 43·68	−1·67	42·01	N	*I. P. W.*	6 28 51·87	−0·73	51·14	18 9·13				
	2155	+ 39 29	N	*d* c + 2·8	12 46·58	−1·66	44·92	N	*d* c − 1·9	30 54·71	−0·68	54·03	9·11				
	2080	+ 20 51	S	b + 2·5 a − 1·6	2 60·83	−1·70	59·13	S	b − 1·8 a −107·6	21 9·93	−1·65	8·28	9·15	m s 18 9·163	+ 0·002	+ 0·019	18 9·184
	2099	− 0 30	S	*s* Q −1·83	4 61·00	−1·73	59·27	S	*s* Q − 1·48	23 10·97	−2·51	8·46	9·19				
	2111	+ 15 59	S		7 6·04	−1·70	4·34	S		25 15·39	−1·85	13·54	9·20				
	2123	+ 4 56	S		8 18·80	−1·73	17·07	S		26 28·56	−2·29	26·27	9·20				
Dec.14	1975	+ 23 1	N	*I. P. E.*	5 45 33·00	+1·87	34·87	N	*I. P. W.*	6 3 42·81	+1·50	44·31	18 9·44				
	2002	+ 22 32	N	*d* c 0·0	49 57·73	+1·87	59·60	N	*d* c + 0·8	8 7·71	+1·48	9·19	9·59				
	2021	+ 35 15	N	b + 0·9 a − 1·8	53 13·50	+1·88	15·38	N	b − 0·9 a −107·1	11 22·75	+2·12	24·87	9·49	m s 18 9·497	+ 0·001	+ 0·009	18 9·507
	2047	+ 22 34	N	*s* Q +1·85	58 1·74	+1·87	3·61	N	*s* Q + 1·48	16 11·56	+1·48	13·04	9·43				
	1986	+ 19 49	S		47 14·19	+1·87	16·06	S		5 24·29	+1·36	25·65	9·59				
	2038	+ 21 11	S		56 30·81	+1·87	32·68	S		14 40·69	+1·43	42·12	9·44				
Dec.14	2139	+ 38 32	N	*I. P. E.*	6 10 43·55	−1·81	41·74	N	*I. P. W.*	6 28 51·68	−0·63	51·05	18 9·31				
	2155	+ 39 29	N	*d* c 0·0	12 46·44	−1·81	44·63	N	*d* c + 0·8	30 54·56	−0·58	53·98	9·35				
	2080	+ 20 51	S	b + 0·9 a − 1·8	2 60·62	−1·83	58·79	S	b − 0·9 a −107·1	21 9·79	−1·55	8·24	9·45	m s 18 9·420	+ 0·001	+ 0·019	18 9·440
	2099	− 0 30	S	*s* Q −1·85	4 60·78	−1·84	58·94	S	*s* Q − 1·48	23 10·86	−2·42	8·44	9·50				
	2111	+ 15 59	S		7 5·87	−1·83	4·04	S		25 15·26	−1·77	13·49	9·45				
	2123	+ 4 56	S		8 18·62	−1·84	16·78	S		26 28·45	−2·21	26·24	9·46				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.031$, $S_N - S_S = -0^s.017$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.26	1863	+ 27 35	N	*I. P. E.*	5 45 52·53	+1·84	54·37	N	*I. P. E.*	5 46 9·00	+1·74	10·74	+0 16·37				
	1896	+ 25 56	N	d c + 0·6 b − 1·8 a − 4·4	50 38·03	+1·85	39·88	N	d c + 2·9 b + 1·0 a −66·0	50 54·68	+1·70	56·38	16·50				
	1925	+ 22 24	N		54 31·55	+1·83	33·38	N		54 48·33	+1·58	49·91	16·53	m s +0 16·510			
	1880	+ 19 43	S	s Q +1·86	47 54·76	+1·83	56·59	S	s Q +1·49	48 11·60	+1·51	13·11	16·52		−	−	+0 16·461
	1907	+ 12 48	S		52 11·71	+1·82	13·53	S		52 28·71	+1·33	30·04	16·51				
	1934	+ 19 41	S		56 25·44	+1·83	27·27	S		56 42·39	+1·51	43·90	16·63				
				Mean, T_E	5 51 16												
Dec.26	1971	+ 23 8	N	*I. P. E.*	6 2 35·23	−1·88	33·35	N	*I. P. E.*	6 2 51·30	−1·38	49·92	+0 16·57				
	2029	+ 23 19	N	d c + 0·6 b − 1·8 a − 4·4	12 13·33	−1·88	11·45	N	d c + 2·9 b + 1·0 a −66·0	12 29·52	−1·37	28·15	16·70				
	1958	+ 14 47	S		0 50·62	−1·90	48·72	S		1 7·01	−1·60	5·41	16·69	m s +0 16·632			
	1986	+ 19 49	S	s Q −1·86	5 2·98	−1·89	1·09	S	s Q −1·49	5 19·11	−1·47	17·64	16·55		−	−	+0 16·575
	2004	+ 19 12	S		7 55·23	−1·89	53·34	S		8 11·42	−1·49	9·93	16·59				
	2022	+ 9 59	S		10 36·60	−1·91	34·69	S		10 53·10	−1·72	51·38	16·69				
				Mean, T_E	6 6 32												
Dec.27	1863	+ 27 35	N	*I. P. W.*	5 45 51·78	+1·87	53·65	N	*I. P. E.*	5 46 17·85	+1·56	19·41	+0 25·76				
	1896	+ 25 56	N	d c + 1·9 b − 2·9 a − 2·6	50 37·34	+1·87	39·21	N	d c + 2·7 b − 0·8 a −10·6	51 3·47	+1·56	5·03	25·82				
	1925	+ 22 24	N		54 30·87	+1·86	32·73	N		54 57·06	+1·54	58·60	25·87	m s +0 25·823			
	1880	+ 19 43	S	s Q +1·88	47 54·10	+1·86	55·96	S	s Q +1·49	48 20·21	+1·52	21·73	25·77		−	−	+0 25·773
	1907	+ 12 48	S		52 10·97	+1·84	12·81	S		52 37·17	+1·49	38·66	25·85				
	1934	+ 19 41	S		56 24·77	+1·86	26·63	S		56 50·98	+1·52	52·50	25·87				
				Mean, T_E	5 51 15												
Dec.27	1971	+ 23 8	N	*I. P. W.*	6 2 34·63	−1·90	32·73	N	*I. P. E.*	6 2 59·95	−1·44	58·51	+0 25·78				
	2029	+ 23 19	N	d c + 1·9 b − 2·9 a − 2·6	12 12·78	−1·90	10·88	N	d c + 2·7 b − 0·8 a −10·6	12 38·28	−1·44	36·84	25·96				
	1958	+ 14 47	S		0 50·06	−1·92	48·14	S		1 15·52	−1·48	14·04	25·90	m s +0 25·895			
	1986	+ 19 49	S	s Q −1·88	5 2·33	−1·90	0·43	S	s Q −1·49	5 27·77	−1·46	26·31	25·88		−	−	+0 25·837
	2004	+ 19 12	S		7 54·61	−1·90	52·71	S		8 20·06	−1·46	18·60	25·89				
	2022	+ 9 59	S		10 36·02	−1·92	34·10	S		11 1·56	−1·50	0·06	25·96				
				Mean, T_E	6 6 32												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.031$, $S_N - S_S = -0.017$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.28	1863	+ 27 35	N	*I. P. W.*	5 45 51·21	+1·77	52·98	N	*I. P. W.*	5 46 26·69	+1·44	28·13	+0 35·15				
	1896	+ 25 56	N	d c − 2·3 b − 1·4 a + 0·9	50 36·75	+1·78	38·53	N	d c − 1·7 b − 0·3 a −13·0	51 12·25	+1·43	13·68	35·15	m s +0 35·180	− 0·026	− 0·024	+0 35·130
	1925	+ 22 24	N		54 30·31	+1·78	32·09	N		55 5·90	+1·41	7·31	35·22				
	1880	+ 19 43	S	s Q +1·87	47 53·51	+1·79	55·30	S	s Q +1·46	48 29·09	+1·40	30·49	35·19				
	1907	+ 12 48	S		52 10·40	+1·79	12·19	S		52 46·00	+1·36	47·36	35·17				
	1934	+ 19 41	S		56 24·22	+1·79	26·01	S		56 59·81	+1·40	61·21	35·20				
				Mean, T_E	5 51 14												
Dec.28	1971	+ 23 8	N	*I. P. W.*	6 2 33·97	−1·96	32·01	N	*I. P. W.*	6 3 8·77	−1·51	7·26	+0 35·25				
	2029	+ 23 19	N	d c − 2·3 b − 1·4 a + 0·9	12 12·16	−1·96	10·20	N	d c − 1·7 b − 0·3 a −13·0	12 47·07	−1·50	45·57	35·37	m s +0 35·296	− 0·026	− 0·029	+0 35·241
	1986	+ 19 49	S		4 61·66	−1·96	59·70	S		5 36·58	−1·52	35·06	35·36				
	2004	+ 19 12	S	s Q −1·87	7 53·99	−1·95	52·04	S	s Q −1·46	8 28·84	−1·53	27·31	35·27				
	2022	+ 9 59	S		10 35·45	−1·95	33·50	S		11 10·30	−1·57	8·73	35·23				
				Mean, T_E	6 7 39												
Dec.29	1863	+ 27 35	N	*I. P. E.*	5 45 50·30	+1·90	52·20	N	*I. P. W.*	5 46 35·58	+1·46	37·04	+0 44·84				
	1896	+ 25 56	N	d c + 1·1 b − 0·2 a + 3·3	50 35·87	+1·91	37·78	N	d c − 1·4 b + 0·4 a −11·5	51 21·20	+1·45	22·65	44·87	m s +0 44·917	− 0·026	− 0·024	+0 44·867
	1925	+ 22 24	N		54 29·43	+1·92	31·35	N		55 14·76	+1·44	16·20	44·85				
	1880	+ 19 43	S	s Q +1·89	47 52·54	+1·92	54·46	S	s Q +1·46	48 38·02	+1·43	39·45	44·99				
	1907	+ 12 48	S		52 9·39	+1·93	11·32	S		52 54·92	+1·40	56·32	45·00				
	1934	+ 19 41	S		56 23·29	+1·92	25·21	S		57 8·73	+1·43	10·16	44·95				
				Mean, T_E	5 51 13												
Dec.29	1971	+ 23 8	N	*I. P. E.*	6 2 33·17	−1·86	31·31	N	*I. P. W.*	6 3 17·73	−1·48	16·25	+0 44·94				
	2029	+ 23 19	N	d c + 1·1 b − 0·2 a + 3·3	12 11·33	−1·86	9·47	N	d c − 1·4 b + 0·4 a −11·5	12 55·95	−1·48	54·47	45·00	m s +0 45·027	− 0·026	− 0·032	+0 44·969
	1958	+ 14 47	S		0 48·55	−1·85	46·70	S		1 33·24	−1·52	31·72	45·02				
	1986	+ 19 49	S	s Q −1·89	4 60·78	−1·86	58·92	S	s Q −1·46	5 45·47	−1·49	43·98	45·06				
	2004	+ 19 12	S		7 53·06	−1·86	51·20	S		8 37·74	−1·49	36·25	45·05				
	2022	+ 9 59	S		10 34·48	−1·85	32·63	S		11 19·26	−1·54	17·72	45·09				
				Mean, T_E	6 6 30												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 81s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.031$ $S_N - S_S = -0^s.017$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.30	1863	+ 27 35	N	*I. P. E.*	5 45 49·59	+1·90	51·49	N	*I. P. E.*	5 46 44·79	+1·49	46·28	+0 54·79				
	1896	+ 25 56	N	d c + 0·7 b − 1·0 a − 5·0	50 35·20	+1·90	37·10	N	d c − 1·5 b + 1·7 a − 9·7	51 30·41	+1·49	31·90	54·80	m s +0 54·810	−0·027	−0·024	+0 54·789
	1925	+ 22 24	N		54 28·70	+1·90	30·60	N		55 24·00	+1·47	25·47	54·87				
	1880	+ 19 43	S	s Q +1·89	47 51·95	+1·89	53·84	S	s Q +1·47	48 37·19	+1·46	38·65	54·81				
	1907	+ 12 48	S		52 8·80	+1·87	10·67	S		53 4·10	+1·44	5·54	54·87				
	1934	+ 19 41	S		56 22·61	+1·89	24·50	S		57 17·94	+1·46	19·40	54·90				
				Mean, T_E	5 51 13												
Dec.30	1971	+ 23 8	N	*I. P. E.*	6 2 32·46	−1·88	30·58	N	*I. P. E.*	6 3 26·92	−1·47	25·45	+0 54·87				
	1958	+ 14 47	S	d c + 0·7 b − 1·0 a − 5·0	0 47·85	−1·90	45·95	S	d c − 1·5 b + 1·7 a − 9·7	1 42·42	−1·49	40·93	54·98	m s +0 55·014	−0·027	−0·038	+0 54·949
	1986	+ 19 49	S		4 60·04	−1·89	58·15	S		5 54·67	−1·48	53·19	55·04				
	2004	+ 19 12	S	s Q −1·89	7 52·31	−1·89	50·42	S	s Q −1·47	8 46·96	−1·48	45·48	55·06				
	2022	+ 9 59	S		10 33·82	−1·91	31·91	S		11 28·54	−1·51	27·03	55·12				
				Mean, T_E	6 5 21												
1884																	
Jan. 2	1863	+ 27 35	N	*I. P. W.*	5 45 47·70	+1·82	49·52	N	*I. P. E.*	5 47 13·07	+1·45	14·52	+1 25·00				
	1896	+ 25 56	N	d c − 1·7 b − 2·1 a − 5·9	50 33·34	+1·82	35·16	N	d c − 1·7 b − 1·4 a −17·3	51 58·73	+1·44	60·17	25·01	m s +1 25·025	−0·027	−0·024	+1 24·974
	1925	+ 22 24	N		54 26·88	+1·81	28·69	N		55 52·31	+1·42	53·73	25·04				
	1880	+ 19 43	S	s Q +1·89	47 50·13	+1·80	51·93	S	s Q +1·49	49 15·51	+1·40	16·91	24·98				
	1907	+ 12 48	S		52 6·95	+1·78	8·73	S		53 32·47	+1·35	33·82	25·09				
	1934	+ 19 41	S		56 20·85	+1·80	22·65	S		57 46·28	+1·40	47·68	25·03				
				Mean, T_E	5 51 11												
Jan. 2	1971	+ 23 8	N	*I. P. W.*	6 2 30·62	−1·97	28·65	N	*I. P. E.*	6 3 55·39	−1·55	53·74	+1 25·09				
	2029	+ 23 19	N	d c − 1·7 b − 2·1 a − 5·9	12 8·79	−1·97	6·82	N	d c − 1·7 b − 1·4 a −17·3	13 33·50	−1·55	31·95	25·13	m s +1 25·145	−0·027	−0·032	+1 25·086
	1958	+ 14 47	S		0 46·06	−1·99	44·07	S		2 10·82	−1·61	9·21	25·14				
	1986	+ 19 49	S	s Q −1·89	4 58·30	−1·98	56·32	S	s Q −1·49	6 23·06	−1·58	21·48	25·16				
	2004	+ 19 12	S		7 50·54	−1·98	48·56	S		9 15·30	−1·58	13·72	25·16				
	2022	+ 9 59	S		10 32·01	−2·00	30·01	S		11 56·84	−1·64	55·20	25·19				
				Mean, T_E	6 6 28												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE VIII. OBSERVATIONS OF TRANSITS WITH LOCAL CLOCKS, AND DEDUCTION OF THE CORRECTED DIFFERENCE OF OBSERVED TIMES, M_N.

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.031$, $S_N - S_S = -0^s.017$	M_N
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 3	1863	+ 27 35	N	*I. P. W.*	5 45 46·87	+1·89	48·76	N	*I. P. W.*	5 47 21·89	+1·46	23·35	+1 34·59				
	1896	+ 25 56	N	d c − 1·4 b + 0·2 a − 6·4	50 32·55	+1·88	34·43	N	d c − 0·9 b − 1·2 a −18·2	52 7·52	+1·45	8·97	34·54	m s +1 34·627	− 0·027	− 0·024	+1 34·576
	1925	+ 22 24	N		54 26·05	+1·88	27·93	N		56 1·14	+1·42	2·56	34·63				
	1880	+ 19 43	S	s Q +1·90	47 49·23	+1·87	51·10	S	s Q +1·47	49 24·37	+1·40	25·77	34·67				
	1907	+ 12 48	S		52 6·15	+1·85	8·00	S		53 41·35	+1·35	42·70	34·70				
	1934	+ 19 41	S		56 20·00	+1·87	21·87	S		57 55·10	+1·40	56·50	34·63				
				Mean, T_E	5 51 10												
Jan. 3	1971	+ 23 8	N	*I. P. W.*	6 2 29·82	−1·92	27·90	N	*I. P. W.*	6 4 4·07	−1·51	2·56	+1 34·66				
	2029	+ 23 19	N	d c − 1·4 b + 0·2 a − 6·4	12 7·92	−1·92	6·00	N	d c − 0·9 b − 1·2 a −18·2	13 42·43	−1·51	40·92	34·92	m s +1 34·807	− 0·027	− 0·032	+1 34·748
	1958	+ 14 47	S		0 45·29	−1·94	43·35	S		2 19·66	−1·58	18·08	34·73				
	1986	+ 19 49	S	s Q −1·90	4 57·53	−1·93	55·60	S	s Q −1·47	6 31·93	−1·54	30·39	34·79				
	2004	+ 19 12	S		7 49·84	−1·93	47·91	S		9 24·27	−1·54	22·73	34·82				
	2022	+ 9 59	S		10 31·23	−1·96	29·27	S		12 5·80	−1·61	4·19	34·92				
				Mean, T_E	6 6 27												
Jan. 4	1863	+ 27 35	N	*I. P. E.*	5 45 45·89	+1·99	47·88	N	*I. P. W.*	5 47 30·93	+1·50	32·43	+1 44·55				
	1896	+ 25 56	N	d c + 3·4 b + 0·2 a + 1·7	50 31·45	+1·99	33·44	N	d c − 0·8 b − 0·7 a −22·6	52 16·59	+1·49	18·08	44·64	m s +1 44·640	− 0·027	− 0·024	+1 44·589
	1925	+ 22 24	N		54 25·01	+1·98	26·99	N		56 10·19	+1·45	11·64	44·65				
	1880	+ 19 43	S	s Q +1·90	47 48·20	+1·98	50·18	S	s Q +1·49	49 33·37	+1·43	34·80	44·62				
	1907	+ 12 48	S		52 5·06	+1·99	7·05	S		53 50·36	+1·36	51·72	44·67				
	1934	+ 19 41	S		56 18·92	+1·98	20·90	S		58 4·18	+1·43	5·61	44·71				
				Mean, T_E	5 51 9												
Jan. 4	1971	+ 23 8	N	*I. P. E.*	6 2 28·80	−1·82	26·98	N	*I. P. W.*	6 4 13·14	−1·52	11·62	+1 44·64				
	2029	+ 23 19	N	d c + 3·4 b + 0·2 a + 1·7	12 6·97	−1·82	5·15	N	d c − 0·8 b − 0·7 a −22·6	13 51·38	−1·52	49·86	44·71	m s +1 44·708	− 0·027	− 0·032	+1 44·649
	1958	+ 14 47	S		0 44·23	−1·82	42·41	S		2 28·69	−1·60	27·09	44·68				
	1986	+ 19 49	S	s Q −1·90	4 56·48	−1·82	54·66	S	s Q −1·49	6 40·95	−1·55	39·40	44·74				
	2004	+ 19 12	S		7 48·75	−1·82	46·93	S		9 33·29	−1·56	31·73	44·80				
	2022	+ 9 59	S		10 30·24	−1·81	28·43	S		12 14·75	−1·64	13·11	44·68				
				Mean, T_E	6 6 26												

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.031$, $S_N - S_S = -0^s.017$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.26	1614	+ 32 33	N	*I. P. E.*	5 7 41·52	+1·86	43·38	N	*I. P. E.*	5 11 55·90	+1·92	57·82	4 14·44				
	1636	+ 33 50	N	*d* c + 0·6 b − 1·8 a − 4·4	12 12·62	+1·86	14·48	N	*d* c + 2·9 b + 1·0 a −66·0	16 26·98	+1·96	28·94	14·46				
	1658	+ 28 49	N		15 52·44	+1·85	54·29	N		20 6·90	+1·78	8·68	14·39	s 4 14·458			
	1601	+ 15 54	S	*s* Q +1·86	4 51·84	+1·82	53·66	S	*s* Q +1·49	9 6·75	+1·41	8·16	14·50		+ 0·002	− 0·024	4 14·436
	1624	+ 11 13	S		9 27·50	+1·81	29·31	S		13 42·52	+1·29	43·81	14·50				
	1651	+ 19 42	S		13 55·62	+1·83	57·45	S		18 10·40	+1·51	11·91	14·46				
Dec.26	1709	+ 29 5	N	*I. P. E.*	5 22 12·57	−1·87	10·70	N	*I. P. E.*	5 26 26·28	−1·19	25·09	4 14·39				
	1714	+ 22 22	N	*d* c + 0·6 b − 1·8 a − 4·4	23 37·24	−1·89	35·35	N	*d* c + 2·9 b + 1·0 a −66·0	27 51·04	−1·40	49·64	14·29				
	1742	+ 23 57	N		28 16·01	−1·88	14·13	N		32 29·90	−1·35	28·55	14·42	s 4 14·390			
	1692	+ 17 51	S	*s* Q −1·86	20 17·93	−1·89	16·04	S	*s* Q −1·49	24 31·99	−1·53	30·46	14·42		+ 0·002	− 0·024	4 14·368
	1726	+ 18 30	S		25 18·66	−1·89	16·77	S		29 32·64	−1·51	31·13	14·36				
	1734	+ 18 27	S		26 37·56	−1·89	35·67	S		30 51·64	−1·51	50·13	14·46				
Dec.27	1614	+ 32 33	N	*I. P. W.*	5 7 40·95	+1·87	42·82	N	*I. P. E.*	5 11 55·44	+1·59	57·03	4 14·21				
	1636	+ 33 50	N	*d* c + 1·9 b − 2·9 a − 2·6	12 11·99	+1·87	13·86	N	*d* c + 2·7 b − 0·8 a −10·6	16 26·55	+1·60	28·15	14·29				
	1601	+ 15 54	S		4 51·23	+1·85	53·08	S		9 5·90	+1·50	7·40	14·32	s 4 14·280			
	1624	+ 11 13	S	*s* Q +1·88	9 26·90	+1·84	28·74	S	*s* Q +1·49	13 41·48	+1·48	42·96	14·22		+ 0·002	− 0·029	4 14·253
	1651	+ 19 42	S		13 54·90	+1·86	56·76	S		18 9·60	+1·52	11·12	14·36				
Dec.27	1709	+ 29 5	N	*I. P. W.*	5 22 11·87	−1·89	9·98	N	*I. P. E.*	5 26 25·69	−1·41	24·28	4 14·30				
	1714	+ 22 22	N	*d* c + 1·9 b − 2·9 a − 2·6	23 36·50	−1·90	34·60	N	*d* c + 2·7 b − 0·8 a −10·6	27 50·34	−1·44	48·90	14·30				
	1742	+ 23 57	N		28 15·37	−1·90	13·47	N		32 29·22	−1·43	27·79	14·32	s 4 14·313			
	1692	+ 17 51	S	*s* Q −1·88	20 17·21	−1·91	15·30	S	*s* Q −1·49	24 31·16	−1·47	29·69	14·39		+ 0·002	− 0·024	4 14·291
	1726	+ 18 30	S		25 17·94	−1·91	16·03	S		29 31·83	−1·47	30·36	14·33				
	1734	+ 18 27	S		26 37·03	−1·91	35·12	S		30 50·83	−1·47	49·36	14·24				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s:* AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.031$ $S_N - S_S = -0^s.017$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.28	1614	+ 32 33	N	*I. P. W.*	5 7 40·27	+1·76	42·03	N	*I. P. W.*	5 11 54·60	+1·46	56·06	4 14·03				
	1636	+ 33 50	N	d c − 2·3 b − 1·4 a + 0·9	12 11·39	+1·76	13·15	N	d c − 1·7 b − 0·3 a −13·0	16 25·67	+1·47	27·14	13·99	m s 4 14·032	+ 0·002	− 0·024	4 14·010
	1658	+ 28 49	N		15 51·17	+1·77	52·94	N		20 5·47	+1·45	6·92	13·98				
	1601	+ 15 54	S	s Q +1·87	4 50·59	+1·79	52·38	S	s Q +1·46	9 5·09	+1·38	6·47	14·09				
	1624	+ 11 13	S		9 26·20	+1·79	27·99	S		13 40·67	+1·35	42·02	14·03				
	1651	+ 19 42	S		13 54·29	+1·79	56·08	S		18 8·75	+1·40	10·15	14·07				
Dec.28	1709	+ 29 5	N	*I. P. W.*	5 22 11·34	−1·97	9·37	N	*I. P. W.*	5 26 24·78	−1·47	23·31	4 13·94				
	1714	+ 22 22	N	d c − 2·3 b − 1·4 a + 0·9	23 36·00	−1·96	34·04	N	d c − 1·7 b − 0·3 a −13·0	27 49·42	−1·51	47·91	13·87	m s 4 13·992	+ 0·002	− 0·024	4 13·970
	1742	+ 23 57	N		28 14·70	−1·96	12·74	N		32 28·33	−1·50	26·83	14·09				
	1692	+ 17 51	S	s Q −1·87	20 16·72	−1·95	14·77	S	s Q −1·46	24 30·26	−1·53	28·73	13·96				
	1726	+ 18 30	S		25 17·34	−1·95	15·39	S		29 30·94	−1·53	29·41	14·02				
	1734	+ 18 27	S		26 36·34	−1·95	34·39	S		30 49·99	−1·53	48·46	14·07				
Dec.29	1614	+ 32 33	N	*I. P. E.*	5 7 39·43	+1·89	41·32	N	*I. P. W.*	5 11 53·77	+1·49	55·26	4 13·94				
	1636	+ 33 50	N	d c + 1·1 b − 0·2 a + 3·3	12 10·52	+1·89	12·41	N	d c − 1·4 b + 0·4 a −11·5	16 24·84	+1·49	26·33	13·92	m s 4 13·950	+ 0·002	− 0·024	4 13·928
	1658	+ 28 49	N		15 50·30	+1·90	52·20	N		20 4·69	+1·46	6·15	13·95				
	1601	+ 15 54	S	s Q +1·89	4 49·74	+1·93	51·67	S	s Q +1·46	9 4·22	+1·41	5·63	13·96				
	1624	+ 11 13	S		9 25·31	+1·93	27·24	S		13 39·88	+1·39	41·27	14·03				
	1651	+ 19 42	S		13 53·54	+1·92	55·46	S		18 7·93	+1·43	9·36	13·90				
Dec.29	1709	+ 29 5	N	*I. P. E.*	5 22 10·44	−1·88	8·56	N	*I. P. W.*	5 26 23·97	−1·45	22·52	4 13·96				
	1714	+ 22 22	N	d c + 1·1 b − 0·2 a + 3·3	23 35·05	−1·86	33·19	N	d c − 1·4 b + 0·4 a −11·5	27 48·60	−1·48	47·12	13·93	m s 4 14·005	+ 0·002	− 0·024	4 13·983
	1742	+ 23 57	N		28 13·89	−1·87	12·02	N		32 27·51	−1·47	26·04	14·02				
	1692	+ 17 51	S	s Q −1·89	20 15·83	−1·86	13·97	S	s Q −1·46	24 29·44	−1·50	27·94	13·97				
	1726	+ 18 30	S		25 16·41	−1·86	14·55	S		29 30·11	−1·50	28·61	14·06				
	1734	+ 18 27	S		26 35·44	−1·86	33·58	S		30 49·17	−1·50	47·67	14·09				

NOTE.—$1^d = 0^s.9225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perpl. Equations $H_N - H_S = +0^s.031$ $S_N - S_S = -0^s.017$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 30	1636	+ 33 50	N	*I. P. E.*	5 12 9·78	+1·91	11·69	N	*I. P. E.*	5 16 24·46	+1·53	25·99	4 14·30				
	1658	+ 28 49	N	d c + 0·7 b − 1·0 a − 5·0	15 49·53	+1·90	51·43	N	d c − 1·5 b + 1·7 a − 9·7	20 4·30	+1·50	5·80	14·37	s m 14·357	+ 0·002	− 0·016	
	1651	+ 19 42	S	s Q + 1·89	13 52·74	+1·89	54·63	S	s Q + 1·47	18 7·57	+1·46	9·03	14·40	4			4 14·343
Dec. 30	1709	+ 29 5	N	*I. P. E.*	5 22 9·75	−1·88	7·87	N	*I. P. E.*	5 26 23·56	−1·44	22·12	4 14·25				
	1714	+ 22 22	N	d c + 0·7 b − 1·0 a − 5·0	23 34·31	−1·88	32·43	N	d c − 1·5 b + 1·7 a − 9·7	27 48·23	−1·47	46·76	14·33	s m 14·338	+ 0·002	− 0·024	
	1742	+ 23 57	N	s Q − 1·89	28 13·16	−1·88	11·28	N	s Q − 1·47	32 27·10	−1·46	25·64	14·36	4			4 14·316
	1692	+ 17 51	S		20 15·05	−1·90	13·15	S		24 29·01	−1·49	27·52	14·37				
	1726	+ 18 30	S		25 15·69	−1·89	13·80	S		29 29·66	−1·49	28·17	14·37				
	1734	+ 18 27	S		26 34·74	−1·89	32·85	S		30 48·69	−1·49	47·20	14·35				
1884																	
Jan. 2	1614	+ 32 33	N	*I. P. W.*	5 7 36·73	+1·82	38·55	N	*I. P. E.*	5 11 51·38	+1·48	52·86	4 14·31				
	1636	+ 33 50	N	d c − 1·7 b − 2·1 a − 5·9	12 7·87	+1·82	9·69	N	d c − 1·7 b − 1·4 a − 17·3	16 22·44	+1·49	23·93	14·24	s m 14·270	+ 0·002	− 0·024	
	1658	+ 28 49	N		15 47·64	+1·82	49·46	N		20 2·26	+1·46	3·72	14·26	4			4 14·248
	1601	+ 15 54	S	s Q + 1·89	4 47·16	+1·79	48·95	S	s Q + 1·49	9 1·84	+1·38	3·22	14·27				
	1624	+ 11 13	S		9 22·81	+1·78	24·59	S		13 37·53	+1·34	38·87	14·28				
	1651	+ 19 42	S		13 50·92	+1·80	52·72	S		18 5·58	+1·40	6·98	14·26				
Jan. 2	1709	+ 29 5	N	*I. P. W.*	5 22 7·81	−1·96	5·85	N	*I. P. E.*	5 26 21·64	−1·52	20·12	4 14·27				
	1714	+ 22 22	N	d c − 1·7 b − 2·1 a − 5·9	23 32·48	−1·97	30·51	N	d c − 1·7 b − 1·4 a − 17·3	27 46·32	−1·56	44·76	14·25	s m 14·302	+ 0·002	− 0·024	
	1742	+ 23 57	N		28 11·30	−1·97	9·33	N		32 25·20	−1·55	23·65	14·32	4			4 14·280
	1692	+ 17 51	S	s Q − 1·89	20 13·23	−1·99	11·24	S	s Q − 1·49	24 27·15	−1·59	25·56	14·32				
	1726	+ 18 30	S		25 13·90	−1·98	11·92	S		29 27·80	−1·59	26·21	14·29				
	1734	+ 18 27	S		26 32·87	−1·98	30·89	S		30 46·84	−1·59	45·25	14·36				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Persl. Equations $H_N - H_S = +0^s.031$ $S_N - S_S = -0.017$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 3	1614	+ 32 33	N	*I. P. W.*	5 7 35·93	+1·91	37·84	N	*I. P. W.*	5 11 50·19	+1·51	51·70	4 13·86				
	1636	+ 33 50	N	*d* c − 1·4 b + 0·2 a − 6·4	12 7·01	+1·91	8·92	N	*d* c − 0·9 b − 1·2 a −18·2	16 21·23	+1·52	22·75	13·83				
	1658	+ 28 49	N		15 46·80	+1·89	48·69	N		20 1·13	+1·47	2·60	13·91	m s 4 13·885	+ 0·002	− 0·024	4 13·863
	1601	+ 15 54	S	*s* Q +1·90	4 46·29	+1·86	48·15	S	*s* Q +1·47	9 0·69	+1·37	2·06	13·91				
	1624	+ 11 13	S		9 21·97	+1·85	23·82	S		13 36·35	+1·34	37·69	13·87				
	1651	+ 19 42	S		13 50·01	+1·87	51·88	S		18 4·41	+1·40	5·81	13·93				
Jan. 3	1709	+ 29 5	N	*I. P. W.*	5 22 7·02	−1·90	5·12	N	*I. P. W.*	5 26 20·46	−1·46	19·00	4 13·88				
	1714	+ 22 22	N	*d* c − 1·4 b + 0·2 a − 6·4	23 31·73	−1·92	29·81	N	*d* c − 0·9 b − 1·2 a −18·2	27 45·21	−1·52	43·69	13·88				
	1742	+ 23 57	N		28 10·49	−1·92	8·57	N		32 24·01	−1·51	22·50	13·93	m s 4 13·932	+ 0·002	− 0·024	4 13·910
	1692	+ 17 51	S	*s* Q −1·90	20 12·44	−1·94	10·50	S	*s* Q −1·47	24 26·00	−1·55	24·45	13·95				
	1726	+ 18 30	S		25 13·10	−1·93	11·17	S		29 26·69	−1·55	25·14	13·97				
	1734	+ 18 27	S		26 32·08	−1·93	30·15	S		30 45·68	−1·55	44·13	13·98				
Jan. 4	1614	+ 32 33	N	*I. P. E.*	5 7 34·96	+1·99	36·95	N	*I. P. W.*	5 11 49·31	+1·56	50·87	4 13·92				
	1636	+ 33 50	N	*d* c + 3·4 b + 0·2 a + 1·7	12 6·02	+1·99	8·01	N	*d* c − 0·8 b − 0·7 a −22·6	16 20·41	+1·57	21·98	13·97				
	1658	+ 28 49	N		15 45·82	+1·99	47·81	N		19 20·24	+1·52	21·76	13·95	m s 4 13·980	+ 0·002	− 0·024	4 13·958
	1601	+ 15 54	S	*s* Q +1·90	4 45·28	+1·98	47·26	S	*s* Q +1·49	8 59·84	+1·39	61·23	13·97				
	1624	+ 11 13	S		9 20·84	+1·99	22·83	S		13 35·49	+1·35	36·84	14·01				
	1651	+ 19 42	S		13 48·92	+1·98	50·90	S		18 3·53	+1·43	4·96	14·06				
Jan. 4	1709	+ 29 5	N	*I. P. E.*	5 22 5·96	−1·81	4·15	N	*I. P. W.*	5 26 19·67	−1·46	18·21	4 14·06				
	1714	+ 22 22	N	*d* c + 3·4 b + 0·2 a + 1·7	23 30·64	−1·82	28·82	N	*d* c − 0·8 b − 0·7 a −22·6	27 44·30	−1·53	42·77	13·95				
	1742	+ 23 57	N		28 9·47	−1·82	7·65	N		32 23·25	−1·51	21·74	14·09	m s 4 14·032	+ 0·002	− 0·024	4 14·010
	1692	+ 17 51	S	*s* Q −1·90	20 11·42	−1·82	9·60	S	*s* Q −1·49	24 25·17	−1·57	23·60	14·00				
	1726	+ 18 30	S		25 12·03	−1·82	10·21	S		29 25·80	−1·57	24·23	14·02				
	1734	+ 18 27	S		26 31·03	−1·82	29·21	S		30 44·85	−1·57	43·28	14·07				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

AKYAB (E) *Lat.* 20° 8′, *Long.* 6ʰ 11ᵐ 45ˢ: AND CHITTAGONG (W) *Lat.* 22° 20′, *Long.* 6ʰ 7ᵐ 31ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}031$, $S_N - S_S = -0^s{\cdot}017$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			ʰ ᵐ ˢ	ˢ	ˢ			ʰ ᵐ ˢ	ˢ	ˢ	ᵐ ˢ				
Dec. 26	2161	+ 29 5	N	*I. P. E.*	6 26 54·10	+1·85	55·95	N	*I. P. E.*	6 31 8·69	+1·79	10·48	4 14·53				
	2194	+ 25 15	N	^{d} c + 0·6 b − 1·8 a − 4·4	32 40·12	+1·84	41·96	N	^{d} c + 2·9 b + 1·0 a −66·0	36 54·82	+1·67	56·49	14·53				
	2238	+ 23 44	N		40 49·88	+1·84	51·72	N		45 4·60	+1·62	6·22	14·50	^{m} ^{s} 4 14·557	− 0·025	− 0·024	4 14·508
	2173	+ 19 46	S	^{s} Q +1·86	29 3·29	+1·83	5·12	S	^{s} Q +1·49	33 18·08	+1·51	19·59	14·47				
	2206	+ 13 1	S		34 38·93	+1·82	40·75	S		38 54·06	+1·34	55·40	14·65				
	2255	+ 13 19	S		43 58·31	+1·82	60·13	S		48 13·45	+1·34	14·79	14·66				
Dec. 26	2299	+ 24 23	N	*I. P. E.*	6 51 16·90	−1·88	15·02	N	*I. P. E.*	6 55 30·88	−1·34	29·54	4 14·52				
	2313	+ 22 48	N	^{d} c + 0·6 b − 1·8 a − 4·4	54 15·60	−1·88	13·72	N	^{d} c + 2·9 b + 1·0 a −66·0	58 29·54	−1·39	28·15	14·43				
	2340	+ 30 26	N		59 41·67	−1·87	39·80	N		7 3 55·47	−1·14	54·33	14·53	^{m} ^{s} 4 14·547	− 0·025	− 0·024	4 14·498
	2322	+ 9 21	S	^{s} Q −1·86	55 13·92	−1·91	12·01	S	^{s} Q −1·49	6 59 28·36	−1·74	26·62	14·61				
	2330	+ 16 7	S		57 38·99	−1·90	37·09	S		7 1 53·24	−1·57	51·67	14·58				
	2354	− 0 7	S		7 1 24·00	−1·92	22·08	S		5 38·66	−1·97	36·69	14·61				
Dec. 27	2161	+ 29 5	N	*I. P. W.*	6 27 2·89	+1·87	4·76	N	*I. P. E.*	6 31 17·56	+1·57	19·13	4 14·37				
	2194	+ 25 15	N	^{d} c + 1·9 b − 2·9 a − 2·6	32 48·87	+1·87	50·74	N	^{d} c + 2·7 b − 0·8 a −10·6	37 3·57	+1·55	5·12	14·38				
	2238	+ 23 44	N		40 58·62	+1·86	60·48	N		45 13·33	+1·55	14·88	14·40	^{m} ^{s} 4 14·385	− 0·026	− 0·024	4 14·335
	2173	+ 19 46	S	^{s} Q +1·88	29 12·04	+1·86	13·90	S	^{s} Q +1·49	33 26·77	+1·52	28·29	14·39				
	2206	+ 13 1	S		34 47·86	+1·84	49·70	S		39 2·52	+1·49	4·01	14·31				
	2255	+ 13 19	S		44 7·13	+1·84	8·97	S		48 21·94	+1·49	23·43	14·46				
Dec. 27	2299	+ 24 23	N	*I. P. W.*	6 51 25·72	−1·90	23·82	N	*I. P. E.*	6 55 39·69	−1·43	38·26	4 14·44				
	2313	+ 22 48	N	^{d} c + 1·9 b − 2·9 a − 2·6	54 24·37	−1·90	22·47	N	^{d} c + 2·7 b − 0·8 a −10·6	58 38·25	−1·44	36·81	14·34				
	2340	+ 30 26	N		59 50·46	−1·89	48·57	N		7 4 4·35	−1·40	2·95	14·38	^{m} ^{s} 4 14·387	− 0·026	− 0·024	4 14·337
	2322	+ 9 21	S	^{s} Q +1·88	55 22·74	−1·91	20·83	S	^{s} Q −1·49	6 59 36·74	−1·50	35·24	14·41				
	2330	+ 16 7	S		57 47·85	−1·91	45·94	S		7 2 1·76	−1·48	0·28	14·34				
	2354	− 0 7	S		7 1 32·79	−1·92	30·87	S		5 46·82	−1·54	45·28	14·41				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.031$, $S_N - S_S = -0^s.017$	$\delta L_N + \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec.28	2161	+ 29 5	N	*I. P. W.*	6 27 11·97	+1·77	13·74	N	*I. P. W.*	6 31 26·39	+1·45	27·84	4 14·10				
	2194	+ 25 15	N	d c − 2·3 b − 1·4 a + 0·9	32 58·00	+1·78	59·78	N	d c − 1·7 b − 0·3 a −13·0	37 12·44	+1·43	13·87	14·09				
	2238	+ 23 44	N		41 7·79	+1·78	9·57	N		45 22·16	+1·42	23·58	14·01	m s 4 14·080	− 0·026	− 0·024	4 14·030
	2173	+ 19 46	S	s Q +1·87	29 21·12	+1·79	22·91	S	s Q +1·46	33 35·62	+1·40	37·02	14·11				
	2206	+ 13 1	S		34 56·85	+1·79	58·64	S		39 11·36	+1·36	12·72	14·08				
	2255	+ 13 19	S		44 16·19	+1·79	17·98	S		48 30·71	+1·36	32·07	14·09				
Dec.28	2299	+ 24 23	N	*I. P. W.*	6 51 34·85	−1·96	32·89	N	*I. P. W.*	6 55 48·41	−1·50	46·91	4 14·02				
	2313	+ 22 48	N	d c − 2·3 b − 1·4 a + 0·9	54 33·48	−1·96	31·52	N	d c − 1·7 b − 0·3 a −13·0	58 47·07	−1·51	45·56	14·04				
	2340	+ 30 26	N		59 59·58	−1·97	57·61	N		7 4 13·15	−1·46	11·69	14·08	m s 4 14·080	− 0·026	− 0·024	4 14·030
	2322	+ 9 21	S	s Q −1·87	55 31·82	−1·95	29·87	S	s Q −1·46	6 59 45·58	−1·58	44·00	14·13				
	2330	+ 16 7	S		57 56·90	−1·95	54·95	S		7 2 10·61	−1·54	9·07	14·12				
	2354	− 0 7	S		7 1 41·87	−1·94	39·93	S		5 55·64	−1·62	54·02	14·09				
Dec.29	2161	+ 29 5	N	*I. P. E.*	6 27 20·84	+1·90	22·74	N	*I. P. W.*	6 31 35·37	+1·46	36·83	4 14·09				
	2194	+ 25 15	N	d c + 1·1 b − 0·2 a + 3·3	33 6·84	+1·91	8·75	N	d c − 1·4 b + 0·4 a −11·5	37 21·38	+1·45	22·83	14·08				
	2238	+ 23 44	N		41 16·64	+1·91	18·55	N		45 31·15	+1·45	32·60	14·05	m s 4 14·088	− 0·026	− 0·024	4 14·038
	2173	+ 19 46	S	s Q +1·89	29 29·96	+1·92	31·88	S	s Q +1·46	33 44·52	+1·43	45·95	14·07				
	2206	+ 13 1	S		35 5·68	+1·93	7·61	S		39 20·34	+1·40	21·74	14·13				
	2255	+ 13 19	S		44 25·05	+1·93	26·98	S		48 39·69	+1·40	41·09	14·11				
Dec.29	2299	+ 24 23	N	*I. P. E.*	6 51 43·66	−1·87	41·79	N	*I. P. W.*	6 55 57·36	−1·47	55·89	4 14·10				
	2313	+ 22 48	N	d c + 1·1 b − 0·2 a + 3·3	54 42·33	−1·86	40·47	N	d c − 1·4 b + 0·4 a −11·5	58 56·00	−1·48	54·52	14·05				
	2340	+ 30 26	N		7 0 8·42	−1·89	6·53	N		7 4 22·11	−1·45	20·66	14·13	m s 4 14·152	− 0·026	− 0·024	4 14·102
	2322	+ 9 21	S	s Q −1·89	6 55 40·60	−1·85	38·75	S	s Q −1·46	6 59 54·52	−1·54	52·98	14·23				
	2330	+ 16 7	S		58 5·69	−1·85	3·84	S		7 2 19·55	−1·51	18·04	14·20				
	2354	− 0 7	S		7 1 50·64	−1·84	48·80	S		6 4·58	−1·58	3·00	14·20				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}031$, $S_N - S_S = -0^s{\cdot}017$	$\delta L_N + \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1883		° ′			h m s	s	s			h m s	s	s	m s				
Dec. 30	2161	+ 29 5	N	*I. P. E.*	6 27 29·70	+1·90	31·60	N	*I. P. E.*	6 31 44·51	+1·50	46·01	4 14·41				
	2194	+ 25 15	N	d c + 0·7 b − 1·0 a − 5·0	33 15·76	+1·90	17·66	N	d c − 1·5 b + 1·7 a − 9·7	37 30·54	+1·48	32·02	14·36				
	2238	+ 23 44	N		41 25·47	+1·90	27·37	N		45 40·27	+1·48	41·75	14·38	m s 4 14·424	− 0·027	− 0·019	4 14·378
	2206	+ 13 1	S	s Q + 1·89	35 14·63	+1·88	16·51	S	s Q + 1·47	39 29·54	+1·44	30·98	14·47				
	2255	+ 13 19	S		44 33·96	+1·88	35·84	S		48 48·89	+1·45	50·34	14·50				
Dec. 30	2299	+ 24 23	N	*I. P. E.*	6 51 52·56	−1·88	50·68	N	*I. P. E.*	6 56 6·54	−1·46	5·08	4 14·40				
	2313	+ 22 48	N	d c + 0·7 b − 1·0 a − 5·0	54 51·25	−1·88	49·37	N	d c − 1·5 b + 1·7 a − 9·7	59 5·23	−1·47	3·76	14·39				
	2340	+ 30 26	N		7 0 17·42	−1·88	15·54	N		7 4 31·31	−1·43	29·88	14·34	m s 4 14·418	− 0·027	− 0·024	4 14·367
	2322	+ 9 21	S	s Q − 1·89	6 55 49·58	−1·91	47·67	S	s Q − 1·47	0 3·69	−1·51	2·18	14·51				
	2330	+ 16 7	S		58 14·73	−1·90	12·83	S		2 28·70	−1·50	27·20	14·37				
	2354	− 0 7	S		7 1 59·69	−1·93	57·76	S		6 13·80	−1·54	12·26	14·50				
1884																	
Jan. 2	2161	+ 29 5	N	*I. P. W.*	6 27 58·13	+1·82	59·95	N	*I. P. E.*	6 32 12·83	+1·46	14·29	4 14·34				
	2194	+ 25 15	N	d c − 1·7 b − 2·1 a − 5·9	33 44·15	+1·81	45·96	N	d c − 1·7 b − 1·4 a − 17·3	37 58·89	+1·44	60·33	14·37				
	2238	+ 23 44	N		41 53·90	+1·81	55·71	N		46 8·65	+1·43	10·08	14·37	m s 4 14·368	− 0·027	− 0·024	4 14·317
	2173	+ 19 46	S	s Q + 1·89	30 7·32	+1·80	9·12	S	s Q + 1·49	34 22·08	+1·40	23·48	14·36				
	2206	+ 13 1	S		35 43·08	+1·78	44·86	S		39 57·89	+1·36	59·25	14·39				
	2255	+ 13 19	S		45 2·41	+1·78	4·19	S		49 17·21	+1·36	18·57	14·38				
Jan. 2	2299	+ 24 23	N	*I. P. W.*	6 52 21·04	−1·97	19·07	N	*I. P. E.*	6 56 34·97	−1·54	33·43	4 14·36				
	2313	+ 22 48	N	d c − 1·7 b − 2·1 a − 5·9	55 19·72	−1·97	17·75	N	d c − 1·7 b − 1·4 a − 17·3	59 33·61	−1·56	32·05	14·30				
	2340	+ 30 26	N		7 0 45·77	−1·95	43·82	N		7 4 59·69	−1·51	58·18	14·36	m s 4 14·360	− 0·027	− 0·024	4 14·309
	2322	+ 9 21	S	s Q − 1·89	6 56 18·04	−2·01	16·03	S	s Q − 1·49	0 32·11	−1·65	30·46	14·43				
	2330	+ 16 7	S		58 43·12	−1·99	41·13	S		2 57·14	−1·60	55·54	14·41				
	2354	− 0 7	S		7 2 28·19	−2·02	26·17	S		6 42·18	−1·71	40·47	14·30				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

AKYAB (E) *Lat. 20° 8′, Long. 6h 11m 45s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.031$ $S_N - S_S = -0^s.017$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 3	2161	+ 29 5	N	*I. P. W.*	6 28 7·30	+1·90	9·20	N	*I. P. W.*	6 32 21·69	+1·47	23·16	4 13·96				
	2194	+ 25 15	N	*d* c − 1·4 b + 0·2 *a* − 6·4	33 53·30	+1·88	55·18	N	*d* c − 0·9 b − 1·2 *a* −18·2	38 7·78	+1·44	9·22	14·04				
	2238	+ 23 44	N		42 3·05	+1·88	4·93	N		46 17·50	+1·43	18·93	14·00	m s			
	2173	+ 19 46	S	*s* *Q* +1·90	30 16·49	+1·87	18·36	S	*s* *Q* +1·47	34 30·94	+1·40	32·34	13·98	4 14·012	− 0·027	− 0·024	
	2206	+ 13 1	S		35 52·17	+1·85	54·02	S		40 6·76	+1·35	8·11	14·09				
	2255	+ 13 19	S		45 11·57	+1·85	13·42	S		49 26·07	+1·35	27·42	14·00				
Jan. 3	2299	+ 24 23	N	*I. P. W.*	6 52 30·24	−1·92	28·32	N	*I. P. W.*	6 56 43·76	−1·50	42·26	4 13·94				
	2313	+ 22 48	N	*d* c − 1·4 b + 0·2 *a* − 6·4	55 28·93	−1·92	27·01	N	*d* c − 0·9 b − 1·2 *a* −18·2	59 42·46	−1·52	40·94	13·93				
	2340	+ 30 26	N		7 0 55·02	−1·90	53·12	N		7 5 8·54	−1·45	7·09	13·97	m s			
	2322	+ 9 21	S	*s* *Q* −1·90	6 56 27·25	−1·96	25·29	S	*s* *Q* −1·47	0 41·03	−1·61	39·42	14·13	4 13·998	− 0·027	− 0·024	
	2330	+ 16 7	S		58 52·36	−1·94	50·42	S		3 6·01	−1·57	4·44	14·02				
	2354	− 0 7	S		7 2 37·37	−1·98	35·39	S		6 51·06	−1·67	49·39	14·00				
Jan. 4	2161	+ 29 5	N	*I. P. E.*	6 28 16·15	+1·99	18·14	N	*I. P. W.*	6 32 30·68	+1·52	32·20	4 14·06				
	2194	+ 25 15	N	*d* c + 3·4 b + 0·2 *a* + 1·7	34 2·16	+1·98	4·14	N	*d* c − 0·8 b − 0·7 *a* −22·6	38 16·77	+1·48	18·25	14·11				
	2238	+ 23 44	N		42 11·95	+1·98	13·93	N		46 26·56	+1·46	28·02	14·09	m s			
	2173	+ 19 46	S	*s* *Q* +1·90	30 25·32	+1·98	27·30	S	*s* *Q* +1·49	34 39·96	+1·43	41·39	14·09	4 14·108	− 0·027	− 0·024	
	2206	+ 13 1	S		36 0·99	+1·98	2·97	S		40 15·80	+1·37	17·17	14·20				
	2255	+ 13 19	S		45 20·44	+1·98	22·42	S		49 35·15	+1·37	36·52	14·10				
Jan. 4	2299	+ 24 23	N	*I. P. E.*	6 52 38·98	−1·82	37·16	N	*I. P. W.*	6 56 52·80	−1·51	51·29	4 14·13				
	2313	+ 22 48	N	*d* c + 3·4 b + 0·2 *a* + 1·7	55 37·73	−1·82	35·91	N	*d* c − 0·8 b − 0·7 *a* −22·6	59 51·46	−1·53	49·93	14·02				
	2340	+ 30 26	N		7 1 3·83	−1·81	2·02	N		7 5 17·51	−1·45	16·06	14·04	m s			
	2322	+ 9 21	S	*s* *Q* −1·90	6 56 36·04	−1·81	34·23	S	*s* *Q* −1·49	0 50·00	−1·65	48·35	14·12	4 14·103	− 0·027	− 0·024	
	2330	+ 16 7	S		58 61·09	−1·82	59·27	S		3 15·00	−1·59	13·41	14·14				
	2354	− 0 7	S		7 2 46·09	−1·81	44·28	S		6 60·16	−1·71	58·45	14·17				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat.* 18° 49′, *Long.* 6ʰ 21ᵐ 2ˢ : AND CHITTAGONG (W) *Lat.* 22° 20′, *Long.* 6ʰ 7ᵐ 31ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Peral. Equations $H_N - H_S = +0^s.019$ $S_N - S_S = -0^s.007$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			ʰ ᵐ ˢ	ˢ	ˢ			ʰ ᵐ ˢ	ˢ	ˢ	ᵐ ˢ				
Jan.21	2504	+ 35 18	N	*I. P. W.*	7 30 34·26	+1·61	35·87	N	*I. P. W.*	7 44 4·37	+1·66	6·03	13 30·16				
	2549	+ 26 4	N	^{d} c + 1·0 b − 4·1 a −29·4	36 40·63	+1·48	42·11	N	^{d} c − 0·6 b + 0·6 a −12·4	50 10·67	+1·60	12·27	30·16				
	2563	+ 33 43	N		39 39·83	+1·58	41·41	N		53 9·96	+1·65	11·61	30·20	ᵐ ˢ 13 30·192	+ 0·019	− 0·013	13 30·198
	2519	+ 17 56	S	^{s} Q +1·46	32 24·90	+1·37	26·27	S	^{s} Q +1·58	45 54·92	+1·56	56·48	30·21				
	2526	+ 5 30	S		33 35·61	+1·24	36·85	S		47 5·57	+1·50	7·07	30·22				
	2537	+ 13 46	S		34 59·86	+1·33	61·19	S		48 29·85	+1·54	31·39	30·20				
Jan.21	2617	+ 27 4	N	*I. P. W.*	7 46 4·90	−1·42	3·48	N	*I. P. W.*	7 59 35·28	−1·55	33·73	13 30·25				
	2657	+ 25 43	N	^{d} c + 1·0 b − 4·1 a −29·4	53 35·75	−1·45	34·30	N	^{d} c − 0·6 b + 0·6 a −12·4	8 7 6·11	−1·56	4·55	30·25				
	2636	+ 9 10	S		48 54·58	−1·64	52·94	S		2 24·75	−1·64	23·11	30·17	ᵐ ˢ 13 30·208	+ 0·019	− 0·013	13 30·214
	2649	+ 16 50	S	^{s} Q −1·46	51 35·60	−1·56	34·04	S	^{s} Q −1·58	5 5·81	−1·61	4·20	30·16				
Jan.21	3117	+ 22 31	N	*I. P. E.*	9 2 19·39	+1·27	20·66	N	*I. P. W.*	9 15 49·46	+1·58	51·04	13 30·38				
	3123	+ 22 28	N	^{d} c − 3·7 b − 5·9 a −28·1	3 19·00	+1·27	20·27	N	^{d} c − 0·6 b + 0·6 a −12·4	16 49·04	+1·58	50·62	30·35				
	3144	+ 35 7	N		7 44·90	+1·42	46·32	N		21 14·89	+1·66	16·55	30·23	ᵐ ˢ 13 30·352	+ 0·019	− 0·010	13 30·361
	3132	+ 15 27	S	^{s} Q +1·46	5 34·74	+1·19	35·93	S	^{s} Q +1·58	19 4·77	+1·55	6·32	30·39				
	3171	+ 18 12	S		12 8·35	+1·22	9·57	S		25 38·42	+1·56	39·98	30·41				
Jan.21	3194	+ 25 41	N	*I. P. E.*	9 16 29·81	−1·62	28·19	N	*I. P. W.*	9 29 60·19	−1·56	58·63	13 30·44				
	3204	+ 26 41	N	^{d} c − 3·7 b − 5·9 a −28·1	17 34·65	−1·60	33·05	N	^{d} c − 0·6 b + 0·6 a −12·4	31 4·98	−1·56	3·42	30·37				
	3238	+ 34 10	N		23 23·24	−1·52	21·72	N		36 53·62	−1·51	52·11	30·39	ᵐ ˢ 13 30·447	+ 0·019	− 0·013	13 30·453
	3216	− 4 37	S	^{s} Q −1·46	19 17·11	−1·91	15·20	S	^{s} Q −1·58	32 47·39	−1·71	45·68	30·48				
	3227	+ 9 34	S		21 55·53	−1·77	53·76	S		35 25·94	−1·64	24·30	30·54				
	3250	+ 11 49	S		25 22·45	−1·76	20·69	S		38 52·78	−1·63	51·15	30·46				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*; AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}019$ $S_N - S_S = -0^s{\cdot}007$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 22	2504	+ 35 18	N	*I. P. E.*	7 30 32·11	+1·68	33·79	N	*I. P. E.*	7 44 2·48	+1·95	4·43	13 30·64				
	2549	+ 26 4	N	d c + 0·4 b − 3·6 a −37·7	36 38·46	+1·52	39·98	N	d c − 2·4 b + 5·3 a −46·3	50 8·83	+1·73	10·56	30·58	m s 13 30·630	+ 0·019	− 0·016	13 30·633
	2519	+ 17 56	S		32 22·74	+1·39	24·13	S		45 53·16	+1·58	54·74	30·61				
	2526	+ 5 30	S	s Q +1·48	33 33·44	+1·21	34·65	S	s Q +1·59	47 3·97	+1·34	5·31	30·66				
	2537	+ 13 46	S		34 57·66	+1·33	58·99	S		48 28·16	+1·49	29·65	30·66				
Jan. 22	2586	+ 28 29	N	*I. P. E.*	7 42 24·83	−1·40	23·43	N	*I. P. E.*	7 55 55·48	−1·38	54·10	13 30·67				
	2617	+ 27 4	N	d c + 0·4 b − 3·6 a −37·7	46 2·82	−1·42	1·40	N	d c − 2·4 b + 5·3 a −46·3	59 33·44	−1·42	32·02	30·62				
	2657	+ 25 43	N		53 33·75	−1·45	32·30	N		8 7 4·31	−1·45	2·86	30·56	m s 13 30·655	+ 0·019	− 0·013	13 30·661
	2605	+ 19 37	S	s Q −1·48	44 50·98	−1·55	49·43	S	s Q −1·59	7 58 21·67	−1·58	20·09	30·66				
	2636	+ 9 10	S		48 52·33	−1·69	50·64	S		8 2 23·15	−1·76	21·39	30·75				
	2649	+ 16 50	S		51 33·38	−1·58	31·80	S		5 4·11	−1·64	2·47	30·67				
Jan. 22	3117	+ 22 31	N	*I. P. W.*	9 2 17·53	+1·21	18·74	N	*I. P. E.*	9 15 47·54	+1·66	49·20	13 30·46				
	3123	+ 22 28	N	d c − 6·2 b − 6·0 a −22·3	3 17·07	+1·21	18·28	N	d c − 2·4 b + 5·3 a −46·3	16 47·11	+1·66	48·77	30·49				
	3144	+ 35 7	N		7 43·02	+1·32	44·34	N		21 12·84	+1·94	14·78	30·44	m s 13 30·495	+ 0·019	− 0·013	13 30·501
	3132	+ 15 27	S	s Q +1·48	5 32·83	+1·17	34·00	S	s Q +1·59	19 2·97	+1·52	4·49	30·49				
	3160	− 5 52	S		10 32·43	+1·01	33·44	S		24 2·81	+1·15	3·96	30·52				
	3171	+ 18 12	S		12 6·47	+1·19	7·66	S		25 36·65	+1·58	38·23	30·57				
Jan. 22	3194	+ 25 41	N	*I. P. W.*	9 16 28·05	−1·72	26·33	N	*I. P. E.*	9 29 58·29	−1·45	56·84	13 30·51				
	3204	+ 26 41	N	d c − 6·2 b − 6·0 a −22·3	17 32·84	−1·71	31·13	N	d c − 2·4 b + 5·3 a −46·3	31 3·11	−1·43	1·68	30·55				
	3238	+ 34 10	N		23 21·49	−1·65	19·84	N		36 51·56	−1·26	50·30	30·46	m s 13 30·475	+ 0·019	− 0·013	13 30·481
	3216	− 4 37	S	s Q −1·48	19 15·31	−1·94	13·37	S	s Q −1·59	32 45·82	−2·00	43·82	30·45				
	3227	+ 9 34	S		21 53·79	−1·84	51·95	S		35 24·14	−1·76	22·38	30·43				
	3250	+ 11 49	S		25 20·68	−1·82	18·86	S		38 51·03	−1·72	49·31	30·45				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.019$ $S_N - S_S = -0^s.007$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 23	2504	+ 35 18	N	*I. P. W.*	7 30 30·66	+1·05	31·71	N	*I. P. W.*	7 44 0·19	+1·99	2·18	13 30·47				
	2549	+ 26 4	N	d c − 2·8 b − 6·1 a +11·4	36 36·83	+1·12	37·95	N	d c + 0·7 b + 2·8 a −48·1	50 6·58	+1·76	8·34	30·39				
	2563	+ 33 43	N		39 36·29	+1·06	37·35	N		53 5·74	+1·94	7·68	30·33	m s 13 30·385	+ 0·021	− 0·013	
	2519	+ 17 56	S	s Q +1·38	32 20·97	+1·17	22·14	S	s Q +1·59	45 50·96	+1·59	52·55	30·41				
	2526	+ 5 30	S		33 31·47	+1·25	32·72	S		47 1·77	+1·35	3·12	30·40				13 30·393
	2537	+ 13 46	S		34 55·86	+1·20	57·06	S		48 25·87	+1·50	27·37	30·31				
Jan. 23	2586	+ 28 29	N	*I. P. W.*	7 42 23·14	−1·65	21·49	N	*I. P. W.*	7 55 53·24	−1·37	51·87	13 30·38				
	2617	+ 27 4	N	d c − 2·8 b − 6·1 a +11·4	45 61·06	−1·64	59·42	N	d c + 0·7 b + 2·8 a −48·1	59 31·18	−1·40	29·78	30·36				
	2657	+ 25 43	N		53 31·88	−1·63	30·25	N		8 7 2·06	−1·43	0·63	30·38	m s 13 30·388	+ 0·021	− 0·013	
	2605	+ 19 37	S	s Q −1·38	44 49·06	−1·60	47·46	S	s Q −1·59	7 58 19·39	−1·56	17·83	30·37				
	2636	+ 9 10	S		48 50·31	−1·54	48·77	S		8 2 20·90	−1·76	19·14	30·37				13 30·396
	2649	+ 16 50	S		51 31·36	−1·58	29·78	S		5 1·86	−1·61	0·25	30·47				
Jan. 23	3117	+ 22 31	N	*I. P. E.*	9 2 15·40	+1·32	16·72	N	*I. P. W.*	9 15 45·36	+1·68	47·04	13 30·32				
	3123	+ 22 28	N	d c + 0·9 b − 3·5 a − 5·1	3 15·00	+1·32	16·32	N	d c + 0·7 b + 2·8 a −48·1	16 44·92	+1·68	46·60	30·28				
	3144	+ 35 7	N		7 41·05	+1·35	42·40	N		21 10·62	+1·98	12·60	30·20	m s 13 30·345	+ 0·021	− 0·013	
	3132	+ 15 27	S	s Q +1·38	5 30·64	+1·31	31·95	S	s Q +1·59	19 0·81	+1·54	2·35	30·40				
	3160	− 5 52	S		10 30·00	+1·28	31·28	S		24 0·64	+1·16	1·80	30·52				13 30·353
	3171	+ 18 12	S		12 4·36	+1·32	5·68	S		25 34·43	+1·60	36·03	30·35				
Jan. 23	3194	+ 25 41	N	*I. P. E.*	9 16 25·74	−1·43	24·31	N	*I. P. W.*	9 29 56·09	−1·43	54·66	13 30·35				
	3204	+ 26 41	N	d c + 0·9 b − 3·5 a − 5·1	17 30·59	−1·43	29·16	N	d c + 0·7 b + 2·8 a −48·1	30 60·88	−1·41	59·47	30·31				
	3238	+ 34 10	N		23 19·34	−1·41	17·93	N		36 49·29	−1·23	48·06	30·13	m s 13 30·342	+ 0·021	− 0·013	
	3216	− 4 37	S	s Q −1·38	19 12·65	−1·48	11·17	S	s Q −1·59	32 43·64	−2·00	41·64	30·47				
	3227	+ 9 34	S		21 51·27	−1·46	49·81	S		35 21·99	−1·76	20·23	30·42				13 30·350
	3250	+ 11 49	S		25 18·18	−1·45	16·73	S		38 48·81	−1·71	47·10	30·37				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Pers. Equations $H_N - H_S = +0^s.019$ $S_N - S_S = -0^s.007$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan.24	2504	+ 35 18	N	*I. P. E.*	7 30 27·79	+1·64	29·43	N	*I. P. E.*	7 43 58·08	+2·04	60·12	13 30·69				
	2549	+ 26 4	N	*d* c + 0·1	36 34·14	+1·56	35·70	N	*d* c − 2·1	50 4·48	+1·83	6·31	30·61				
	2563	+ 33 43	N	b + 5·1 a −14·3	39 33·47	+1·62	35·09	N	b + 7·6 a −47·3	53 3·58	+2·01	5·59	30·50	m s 13 30·628	+ 0·021	− 0·013	13 30·636
	2519	+ 17 56	S	*s* Q +1·39	32 18·32	+1·51	19·83	S	*s* Q +1·61	45 48·83	+1·65	50·48	30·65				
	2526	+ 5 30	S		33 28·98	+1·43	30·41	S		46 59·68	+1·41	61·09	30·68				
	2537	+ 13 46	S		34 53·24	+1·48	54·72	S		48 23·80	+1·56	25·36	30·64				
Jan.24	2586	+ 28 29	N	*I. P. E.*	7 42 20·36	−1·20	19·16	N	*I. P. E.*	7 55 51·10	−1·34	49·76	13 30·60				
	2617	+ 27 4	N	*d* c + 0·1	45 58·39	−1·21	57·18	N	*d* c − 2·1	59 29·12	−1·37	27·75	30·57				
	2657	+ 25 43	N	b + 5·1 a −14·3	53 29·22	−1·22	28·00	N	b + 7·6 a −47·3	8 6 59·94	−1·40	58·54	30·54	m s 13 30·595	+ 0·021	− 0·013	13 30·603
	2605	+ 19 37	S	*s* Q −1·39	44 46·45	−1·27	45·18	S	*s* Q −1·61	7 58 17·33	−1·54	15·79	30·61				
	2636	+ 9 10	S		48 47·79	−1·33	46·46	S		8 2 18·85	−1·74	17·11	30·65				
	2649	+ 16 50	S		51 28·85	−1·28	27·57	S		4 59·76	−1·59	58·17	30·60				
Jan.24	3117	+ 22 31	N	*I. P. W.*	9 2 12·97	+1·46	14·43	N	*I. P. E.*	9 15 43·20	+1·75	44·95	13 30·52				
	3123	+ 22 28	N	*d* c − 2·5	3 12·58	+1·46	14·04	N	*d* c − 2·1	16 42·80	+1·75	44·55	30·51				
	3144	+ 35 7	N	b + 4·2 a −17·6	7 38·51	+1·57	40·08	N	b + 7·6 a −47·3	21 8·54	+2·04	10·58	30·50	m s 13 30·540	+ 0·021	− 0·013	13 30·548
	3132	+ 15 27	S	*s* Q +1·39	5 28·30	+1·41	29·71	S	*s* Q +1·61	18 58·64	+1·61	60·25	30·54				
	3160	− 5 52	S		10 27·81	+1·25	29·06	S		23 58·47	+1·20	59·67	30·61				
	3171	+ 18 12	S		12 1·95	+1·43	3·38	S		25 32·28	+1·66	33·94	30·56				
Jan.24	3194	+ 25 41	N	*I. P. W.*	9 16 23·37	−1·30	22·07	N	*I. P. E.*	9 29 53·94	−1·40	52·54	13 30·47				
	3204	+ 26 41	N	*d* c − 2·5	17 28·25	−1·29	26·96	N	*d* c − 2·1	30 58·73	−1·38	57·35	30·39				
	3238	+ 34 10	N	b + 4·2 a −17·6	23 16·87	−1·22	15·65	N	b + 7·6 a −47·3	36 47·24	−1·21	46·03	30·38	m s 13 30·455	+ 0·021	− 0·013	13 30·463
	3216	− 4 37	S	*s* Q −1·39	19 10·57	−1·52	9·05	S	*s* Q −1·61	32 41·53	−1·99	39·54	30·49				
	3227	+ 9 34	S		21 49·05	−1·43	47·62	S		35 19·86	−1·73	18·13	30·51				
	3250	+ 11 49	S		25 15·96	−1·40	14·56	S		38 46·74	−1·69	45·05	30·49				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat.* 18° 49′, *Long.* 6ʰ 21ᵐ 2ˢ : AND CHITTAGONG (W) *Lat.* 22° 20′, *Long.* 6ʰ 7ᵐ 31ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}019$ $S_N - S_S = -0^s{\cdot}007$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			ʰ ᵐ ˢ	ˢ	ˢ			ʰ ᵐ ˢ	ˢ	ˢ	ᵐ ˢ				
Jan. 25	2504	+ 35 18	N	*I. P. W.*	7 30 25·64	+1·55	27·19	N	*I. P. W.*	7 43 55·53	+2·03	57·56	13 30·37				
	2549	+ 26 4	N	d c − 3·9 b + 3·1 a −24·4	36 31·99	+1·45	33·44	N	d c + 0·9 b + 3·4 a −54·5	50 1·91	+1·78	3·69	30·25				
	2563	+ 33 43	N		39 31·16	+1·53	32·69	N		53 1·11	+1·98	3·09	30·40	ᵐ ˢ 13 30·370	+ 0·022	− 0·013	
	2519	+ 17 56	S	s Q +1·39	32 16·17	+1·36	17·53	S	s Q +1·58	45 46·36	+1·58	47·94	30·41				
	2526	+ 5 30	S		33 26·85	+1·24	28·09	S		46 57·21	+1·31	58·52	30·43				13 30·379
	2537	+ 13 46	S		34 51·10	+1·32	52·42	S		48 21·29	+1·49	22·78	30·36				
Jan. 25	2586	+ 28 29	N	*I. P. W.*	7 42 18·27	−1·31	16·96	N	*I. P. W.*	7 55 48·60	−1·32	47·28	13 30·32				
	2617	+ 27 4	N	d c − 3·9 b + 3·1 a −24·4	45 56·25	−1·32	54·93	N	d c + 0·9 b + 3·4 a −54·5	59 26·57	−1·36	25·21	30·28				
	2657	+ 25 43	N		53 27·09	−1·34	25·75	N		8 6 57·51	−1·40	56·11	30·36	ᵐ ˢ 13 30·368	+ 0·022	− 0·013	
	2605	+ 19 37	S	s Q −1·39	44 44·30	−1·40	42·90	S	s Q −1·58	7 58 14·79	−1·55	13·24	30·34				
	2636	+ 9 10	S		48 45·71	−1·50	44·21	S		8 2 16·41	−1·76	14·65	30·44				13 30·377
	2649	+ 16 50	S		51 26·67	−1·43	25·24	S		4 57·32	−1·61	55·71	30·47				
Jan. 25	3117	+ 22 31	N	*I. P. E.*	9 2 10·57	+1·60	12·17	N	*I. P. W.*	9 15 40·70	+1·69	42·39	13 30·22				
	3123	+ 22 28	N	d c + 1·9 b + 5·0 a −23·9	3 10·22	+1·60	11·82	N	d c + 0·9 b + 3·4 a −54·5	16 40·32	+1·69	42·01	30·19				
	3144	+ 35 7	N		7 36·11	+1·75	37·86	N		21 5·97	+2·02	7·99	30·13	ᵐ ˢ 13 30·223	+ 0·022	− 0·013	
	3132	+ 15 27	S	s Q +1·39	5 25·93	+1·52	27·45	S	s Q +1·58	18 56·16	+1·53	57·69	30·24				
	3160	− 5 52	S		10 25·48	+1·31	26·79	S		23 56·07	+1·09	57·16	30·37				13 30·232
	3171	+ 18 12	S		11 59·61	+1·55	61·16	S		25 29·76	+1·59	31·35	30·19				
Jan. 25	3194	+ 25 41	N	*I. P. E.*	9 16 21·01	−1·15	19·86	N	*I. P. W.*	9 29 51·44	−1·40	50·04	13 30·18				
	3204	+ 26 41	N	d c + 1·9 b + 5·0 a −23·9	17 25·80	−1·14	24·66	N	d c + 0·9 b + 3·4 a −54·5	30 56·24	−1·37	54·87	30·21				
	3238	+ 34 10	N		23 14·42	−1·04	13·38	N		36 44·71	−1·16	43·55	30·17	ᵐ ˢ 13 30·250	+ 0·022	− 0·013	
	3216	− 4 37	S	s Q −1·39	19 8·19	−1·46	6·73	S	s Q −1·58	32 39·06	−2·05	37·01	30·28				
	3227	+ 9 34	S		21 46·65	−1·33	45·32	S		35 17·38	−1·76	15·62	30·30				13 30·259
	3250	+ 11 49	S		25 13·47	−1·31	12·16	S		38 44·23	−1·71	42·52	30·36				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s:* AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.019$ $S_N - S_S = -0^s.007$	$\delta L_N - \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 26	2504	+ 35 18	N	*I. P. E.*	7 30 22·91	+1·94	24·85	N	*I. P. E.*	7 43 53·91	+1·58	55·49	13 30·64				
	2549	+ 26 4	N	*d* c − 2·3 b + 3·0 *a* −28·2	36 29·19	+1·80	30·99	N	*d* c − 1·5 b − 0·4 *a* − 4·8	50 0·13	+1·56	1·69	30·70				
	2563	+ 33 43	N		39 28·45	+1·91	30·36	N		52 59·35	+1·58	60·93	30·57	m s 13 30·675	+ 0·022	− 0·013	13 30·684
	2519	+ 17 56	S	*s* *Q* +1·70	32 13·41	+1·71	15·12	S	*s* *Q* +1·60	45 44·32	+1·54	45·86	30·74				
	2526	+ 5 30	S		33 24·12	+1·57	25·69	S		46 54·87	+1·53	56·40	30·71				
	2537	+ 13 46	S		34 48·34	+1·66	50·00	S		48 19·15	+1·54	20·69	30·69				
Jan. 26	2586	+ 28 29	N	*I. P. E.*	7 42 16·10	−1·56	14·54	N	*I. P. E.*	7 55 46·73	−1·64	45·09	13 30·55				
	2617	+ 27 4	N	*d* c − 2·3 b + 3·0 *a* −28·2	45 54·03	−1·58	52·45	N	*d* c − 1·5 b − 0·4 *a* − 4·8	59 24·73	−1·64	23·09	30·64				
	2657	+ 25 43	N		53 24·89	−1·61	23·28	N		8 6 55·67	−1·64	54·03	30·75	m s 13 30·643	+ 0·022	− 0·013	13 30·652
	2605	+ 19 37	S	*s* *Q* −1·70	44 42·18	−1·67	40·51	S	*s* *Q* −1·60	7 58 12·78	−1·66	11·12	30·61				
	2636	+ 9 10	S		48 43·59	−1·79	41·80	S		8 2 14·10	−1·66	12·44	30·64				
	2649	+ 16 50	S		51 24·60	−1·70	22·90	S		4 55·23	−1·66	53·57	30·67				
Jan. 26	3117	+ 22 31	N	*I. P. W.*	9 2 8·18	+1·70	9·88	N	*I. P. E.*	9 15 38·83	+1·55	40·38	13 30·50				
	3123	+ 22 28	N	*d* c − 0·9 b + 0·2 *a* −13·3	3 7·83	+1·70	9·53	N	*d* c − 1·5 b − 0·4 *a* − 4·8	16 38·43	+1·55	39·98	30·45				
	3144	+ 35 7	N		7 33·77	+1·79	35·56	N		21 4·41	+1·58	5·99	30·43	m s 13 30·464	+ 0·022	− 0·010	13 30·476
	3160	− 5 52	S	*s* *Q* +1·70	10 23·08	+1·55	24·63	S	*s* *Q* +1·60	23 53·55	+1·51	55·06	30·43				
	3171	+ 18 12	S		11 57·18	+1·68	58·86	S		25 27·83	+1·54	29·37	30·51				
Jan. 26	3194	+ 25 41	N	*I. P. W.*	9 16 19·27	−1·68	17·59	N	*I. P. E.*	9 29 49·64	−1·64	48·00	13 30·41				
	3204	+ 26 41	N	*d* c − 0·9 b + 0·2 *a* −13·3	17 24·09	−1·67	22·42	N	*d* c − 1·5 b − 0·4 *a* − 4·8	30 54·46	−1·64	52·82	30·40				
	3238	+ 34 10	N		23 12·80	−1·61	11·19	N		36 43·08	−1·62	41·46	30·27	m s 13 30·372	+ 0·022	− 0·013	13 30·381
	3216	− 4 37	S	*s* *Q* −1·70	19 6·40	−1·84	4·56	S	*s* *Q* −1·60	32 36·63	−1·69	34·94	30·38				
	3227	+ 9 34	S		21 44·89	−1·77	43·12	S		35 15·17	−1·66	13·51	30·39				
	3250	+ 11 49	S		25 11·79	−1·76	10·03	S		38 42·07	−1·66	40·41	30·38				

NOTE.—1^s = $0^s.0025$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.019$ $\delta_N - \delta_S = -0^s.007$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan.29	2504	+ 35 18	N	*I. P. W.*	7 30 15·67	+1·56	17·23	N	*I. P. W.*	7 43 46·02	+1·53	47·55	13 30·32				
	2549	+ 26 4	N	d c − 2·5 b − 4·6 a −18·5	36 21·97	+1·50	23·47	N	d c − 0·8 b − 4·9 a −16·1	49 52·26	+1·47	53·73	30·26				
	2563	+ 33 43	N		39 21·20	+1·55	22·75	N		52 51·50	+1·52	53·02	30·27	m s 13 30·263		− 0·013	
	2519	+ 17 56	S	s Q +1·61	32 6·21	+1·43	7·64	S	s Q +1·58	45 36·51	+1·41	37·92	30·28		+ 0·023		
	2526	+ 5 30	S		33 16·88	+1·35	18·23	S		46 47·11	+1·34	48·45	30·22				
	2537	+ 13 46	S		34 41·14	+1·40	42·54	S		48 11·38	+1·39	12·77	30·23				13 30·273
Jan.29	2586	+ 28 29	N	*I. P. W.*	7 42 8·68	−1·71	6·97	N	*I. P. W.*	7 55 38·92	−1·68	37·24	13 30·27				
	2617	+ 27 4	N	d c − 2·5 b − 4·6 a −18·5	45 46·62	−1·72	44·90	N	d c − 0·8 b − 4·9 a −16·1	59 16·85	−1·69	15·16	30·26				
	2657	+ 25 43	N		53 17·58	−1·72	15·86	N		8 6 47·75	−1·70	46·05	30·19	m s 13 30·238		− 0·013	
	2605	+ 19 37	S	s Q −1·61	44 34·80	−1·77	33·03	S	s Q −1·58	7 58 5·00	−1·74	3·26	30·23		+ 0·023		
	2636	+ 9 10	S		48 36·15	−1·84	34·31	S		8 2 6·32	−1·79	4·53	30·22				
	2649	+ 16 50	S		51 17·17	−1·79	15·38	S		4 47·39	−1·75	45·64	30·26				13 30·248
Jan.29	3117	+ 22 31	N	*I. P. E.*	9 2 0·60	+1·43	2·03	N	*I. P. W.*	9 15 31·03	+1·44	32·47	13 30·44				
	3123	+ 22 28	N	d c − 0·4 b − 8·8 a −25·1	3 0·27	+1·43	1·70	N	d c − 0·8 b − 4·9 a −16·1	16 30·66	+1·44	32·10	30·40				
	3144	+ 35 7	N		7 26·25	+1·56	27·81	N		20 56·59	+1·53	58·12	30·31	m s 13 30·402		− 0·010	
	3160	− 5 52	S	s Q +1·61	10 15·54	+1·18	16·72	S	s Q +1·58	23 45·93	+1·29	47·22	30·50		+ 0·023		
	3171	+ 18 12	S		11 49·67	+1·38	51·05	S		25 20·00	+1·41	21·41	30·36				13 30·415
Jan.29	3194	+ 25 41	N	*I. P. E.*	9 16 11·55	−1·76	9·79	N	*I. P. W.*	9 29 41·80	−1·70	40·10	13 30·31				
	3204	+ 26 41	N	d c − 0·4 b − 8·8 a −25·1	17 16·37	−1·75	14·62	N	d c − 0·8 b − 4·9 a −16·1	30 46·62	−1·69	44·93	30·31				
	3238	+ 34 10	N		23 4·99	−1·67	3·32	N		36 35·17	−1·64	33·53	30·21				
	3216	− 4 37	S	s Q −1·61	18 58·63	−2·02	56·61	S	s Q −1·58	32 28·91	−1·86	27·05	30·44	m s 13 30·352	+ 0·023	− 0·013	
	3227	+ 9 34	S		21 37·17	−1·91	35·26	S		35 7·45	−1·79	5·66	30·40				
	3250	+ 11 49	S		25 4·04	−1·89	2·15	S		38 34·37	−1·78	32·59	30·44				13 30·362

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat. 18° 49′, Long.* $6^h\ 21^m\ 2^s$: AND CHITTAGONG (W) *Lat. 22° 20′, Long.* $6^h\ 7^m\ 31^s$.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.019$ $S_N - S_S = -0^s.007$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 30	2504	+ 35 18	N	*I. P. E.*	7 30 13·26	+1·59	14·85	N	*I. P. E.*	7 43 43·79	+1·64	45·43	13 30·58				
	2549	+ 26 4	N	*d* c − 1·1 b + 2·2 a + 7·9	36 19·31	+1·62	20·93	N	*d* c − 1·2 b + 1·3 a − 9·3	49 50·03	+1·59	51·62	30·69				
	2563	+ 33 43	N		39 18·74	+1·60	20·34	N		52 49·30	+1·63	50·93	30·59	m s 13 30·663	+ 0·022	− 0·013	13 30·672
	2519	+ 17 56	S	*s* Q + 1·62	32 3·43	+1·64	5·07	S	*s* Q + 1·58	45 34·26	+1·56	35·82	30·75				
	2526	+ 5 30	S		33 13·93	+1·69	15·62	S		46 44·83	+1·52	46·35	30·73				
	2537	+ 13 46	S		34 38·34	+1·66	40·00	S		48 9·09	+1·55	10·64	30·64				
Jan. 30	2586	+ 28 29	N	*I. P. E.*	7 42 6·20	−1·62	4·58	N	*I. P. E.*	7 55 36·63	−1·55	35·08	13 30·50				
	2617	+ 27 4	N	*d* c − 1·1 b + 2·2 a + 7·9	45 44·04	−1·62	42·42	N	*d* c − 1·2 b + 1·3 a − 9·3	59 14·61	−1·56	13·05	30·63				
	2657	+ 25 43	N		53 14·87	−1·62	13·25	N		8 6 45·40	−1·57	43·83	30·58	m s 13 30·593	+ 0·022	− 0·013	13 30·602
	2605	+ 19 37	S	*s* Q − 1·62	44 32·07	−1·60	30·47	S	*s* Q − 1·58	7 58 2·71	−1·59	1·12	30·65				
	2636	+ 9 10	S		48 33·35	−1·57	31·78	S		8 2 3·99	−1·63	2·36	30·58				
	2649	+ 16 50	S		51 14·43	−1·59	12·84	S		4 45·06	−1·60	43·46	30·62				
Jan. 30	3117	+ 22 31	N	*I. P. W.*	9 1 58·07	+1·73	59·80	N	*I. P. E.*	9 15 28·76	+1·58	30·34	13 30·54				
	3123	+ 22 28	N	*d* c − 1·3 b + 5·6 a − 3·3	2 57·70	+1·73	59·43	N	*d* c − 1·2 b + 1·3 a − 9·3	16 28·39	+1·58	29·97	30·54				
	3144	+ 35 7	N		7 23·76	+1·76	25·52	N		20 54·33	+1·64	55·97	30·45	m s 13 30·533	+ 0·022	− 0·013	13 30·542
	3132	+ 15 27	S	*s* Q + 1·62	5 13·34	+1·72	15·06	S	*s* Q + 1·58	18 44·05	+1·55	45·60	30·54				
	3160	− 5 52	S		10 12·75	+1·67	14·42	S		23 43·58	+1·48	45·06	30·64				
	3171	+ 18 12	S		11 47·10	+1·72	48·82	S		25 17·75	+1·56	19·31	30·49				
Jan. 30	3194	+ 25 41	N	*I. P. W.*	9 16 9·08	−1·50	7·58	N	*I. P. E.*	9 29 39·56	−1·57	37·99	13 30·41				
	3204	+ 26 41	N	*d* c − 1·3 b + 5·6 a − 3·3	17 13·93	−1·50	12·43	N	*d* c − 1·2 b + 1·3 a − 9·3	30 44·41	−1·56	42·85	30·42				
	3238	+ 34 10	N		23 2·61	−1·49	1·12	N		36 33·01	−1·53	31·48	30·36	m s 13 30·435	+ 0·022	− 0·013	13 30·444
	3216	− 4 37	S	*s* Q − 1·62	18 56·05	−1·56	54·49	S	*s* Q − 1·58	32 26·65	−1·67	24·98	30·49				
	3227	+ 9 34	S		21 34·67	−1·53	33·14	S		35 5·23	−1·63	3·60	30·46				
	3250	+ 11 49	S		24 61·51	−1·53	59·98	S		38 32·07	−1·62	30·45	30·47				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}019$ $S_N - S_S = -0^s{\cdot}007$	$\delta L_M + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan.21	2278	+ 26 4	N	*I. P. W.*	6 38 47·75	+1·48	49·23	N	*I. P. W.*	6 52 17·95	+1·60	19·55	13 30·32				
	2301	+ 29 32	N	*d* c + 1·0 b − 4·1 a −29·4	42 37·68	+1·53	39·21	N	*d* c − 0·6 b + 0·6 a −12·4	56 7·84	+1·62	9·46	30·25	m s 13 30·272	+ 0·009	− 0·010	
	2313	+ 22 49	N		44 48·99	+1·43	50·42	N		58 18·98	+1·58	20·56	30·14				
	2285	+ 16 14	S	*s* Q +1·46	40 5·41	+1·35	6·76	S	*s* Q +1·58	53 35·52	+1·55	37·07	30·31				
	2330	+ 16 7	S		48 12·43	+1·35	13·78	S		7 1 42·57	+1·55	44·12	30·34				
Jan.21	2350	+ 24 19	N	*I. P. W.*	6 51 55·87	−1·47	54·40	N	*I. P. W.*	7 5 26·31	−1·57	24·74	13 30·34				
	2416	+ 36 59	N	*d* c + 1·0 b − 4·1 a −29·4	7 0 49·93	−1·28	48·65	N	*d* c − 0·6 b + 0·6 a −12·4	14 20·54	−1·49	19·05	30·40	m s 13 30·378	+ 0·009	− 0·013	
	2431	+ 25 16	N		2 56·64	−1·46	55·18	N		16 27·10	−1·56	25·54	30·36				
	2362	+ 16 21	S	*s* Q −1·46	6 53 15·00	−1·57	13·43	S	*s* Q −1·58	6 45·40	−1·61	43·79	30·36				
	2373	+ 3 19	S		54 47·80	−1·71	46·09	S		8 18·15	−1·67	16·48	30·39				
	2398	+ 16 45	S		57 57·99	−1·57	56·42	S		11 28·45	−1·61	26·84	30·42				
Jan.21	2871	+ 36 49	N	*I. P. E.*	8 13 46·11	+1·44	47·55	N	*I. P. W.*	8 27 16·27	+1·67	17·94	13 30·39				
	2912	+ 32 21	N	*d* c − 3·7 b − 5·9 a −28·1	19 36·15	+1·38	37·53	N	*d* c − 0·6 b + 0·6 a −12·4	33 6·27	+1·64	7·91	30·38	m s 13 30·406	+ 0·009	− 0·016	
	2853	+ 18 29	S		11 28·40	+1·22	29·62	S		24 58·52	+1·56	60·08	30·46				
	2889	+ 7 2	S	*s* Q +1·46	16 10·55	+1·13	11·67	S	*s* Q +1·58	29 40·57	+1·51	42·08	30·41				
	2899	+ 19 40	S		17 37·31	+1·24	38·55	S		31 7·37	+1·57	8·94	30·39				
Jan.21	2984	+ 33 44	N	*I. P. E.*	8 29 52·18	−1·51	50·67	N	*I. P. W.*	8 43 22·54	−1·51	21·03	13 30·36				
	3016	+ 31 1	N	*d* c − 3·7 b − 5·9 a −28·1	33 42·35	−1·56	40·79	N	*d* c − 0·6 b + 0·6 a −12·4	47 12·72	−1·53	11·19	30·40	m s 13 30·394	+ 0·009	− 0·016	
	2942	+ 13 6	S		23 21·23	−1·75	19·48	S		36 51·52	−1·63	49·89	30·41				
	2958	+ 10 30	S	*s* Q −1·46	24 59·77	−1·76	58·01	S	*s* Q −1·58	38 30·04	−1·64	28·40	30·39				
	2970	+ 12 33	S		27 6·97	−1·76	5·21	S		40 37·25	−1·63	35·62	30·41				

Jan.21	2278	+ 26 4	N	*I. P. W.*	6 38 47·75	+1·48	49·23	N	*I. P. W.*	6 52 17·95	+1·60	19·55	13 30·32				
	2301	+ 29 32	N	*d* c + 1·0 b − 4·1 a −29·4	42 37·68	+1·53	39·21	N	*d* c − 0·6 b + 0·6 a −12·4	56 7·84	+1·62	9·46	30·25	m s 13 30·272	+ 0·009	− 0·010	
	2313	+ 22 49	N		44 48·99	+1·43	50·42	N		58 18·98	+1·58	20·56	30·14				
	2285	+ 16 14	S	*s* Q +1·46	40 5·41	+1·35	6·76	S	*s* Q +1·58	53 35·52	+1·55	37·07	30·31				
	2330	+ 16 7	S		48 12·43	+1·35	13·78	S		7 1 42·57	+1·55	44·12	30·34				
Jan.21	2350	+ 24 19	N	*I. P. W.*	6 51 55·87	−1·47	54·40	N	*I. P. W.*	7 5 26·31	−1·57	24·74	13 30·34				
	2416	+ 36 59	N	*d* c + 1·0 b − 4·1 a −29·4	7 0 49·93	−1·28	48·65	N	*d* c − 0·6 b + 0·6 a −12·4	14 20·54	−1·49	19·05	30·40	m s 13 30·378	+ 0·009	− 0·013	
	2431	+ 25 16	N		2 56·64	−1·46	55·18	N		16 27·10	−1·56	25·54	30·36				
	2362	+ 16 21	S	*s* Q −1·46	6 53 15·00	−1·57	13·43	S	*s* Q −1·58	6 45·40	−1·61	43·79	30·36				
	2373	+ 3 19	S		54 47·80	−1·71	46·09	S		8 18·15	−1·67	16·48	30·39				
	2398	+ 16 45	S		57 57·99	−1·57	56·42	S		11 28·45	−1·61	26·84	30·42				
Jan.21	2871	+ 36 49	N	*I. P. E.*	8 13 46·11	+1·44	47·55	N	*I. P. W.*	8 27 16·27	+1·67	17·94	13 30·39				
	2912	+ 32 21	N	*d* c − 3·7 b − 5·9 a −28·1	19 36·15	+1·38	37·53	N	*d* c − 0·6 b + 0·6 a −12·4	33 6·27	+1·64	7·91	30·38	m s 13 30·406	+ 0·009	− 0·016	
	2853	+ 18 29	S		11 28·40	+1·22	29·62	S		24 58·52	+1·56	60·08	30·46				
	2889	+ 7 2	S	*s* Q +1·46	16 10·55	+1·13	11·67	S	*s* Q +1·58	29 40·57	+1·51	42·08	30·41				
	2899	+ 19 40	S		17 37·31	+1·24	38·55	S		31 7·37	+1·57	8·94	30·39				
Jan.21	2984	+ 33 44	N	*I. P. E.*	8 29 52·18	−1·51	50·67	N	*I. P. W.*	8 43 22·54	−1·51	21·03	13 30·36				
	3016	+ 31 1	N	*d* c − 3·7 b − 5·9 a −28·1	33 42·35	−1·56	40·79	N	*d* c − 0·6 b + 0·6 a −12·4	47 12·72	−1·53	11·19	30·40	m s 13 30·394	+ 0·009	− 0·016	
	2942	+ 13 6	S		23 21·23	−1·75	19·48	S		36 51·52	−1·63	49·89	30·41				
	2958	+ 10 30	S	*s* Q −1·46	24 59·77	−1·76	58·01	S	*s* Q −1·58	38 30·04	−1·64	28·40	30·39				
	2970	+ 12 33	S		27 6·97	−1·76	5·21	S		40 37·25	−1·63	35·62	30·41				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s.*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.019$ $S_N - S_S = -0^s.007$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 22	2278	+ 26 4	N	*I. P. E.*	6 38 46·83	+1·52	48·35	N	*I. P. E.*	6 52 17·23	+1·73	18·96	13 30·61				
	2301	+ 29 32	N	*d* c + 0·4 b − 3·6 *a* −37·7	42 36·66	+1·58	38·24	N	*d* c − 2·4 b + 5·3 *a* −46·3	56 7·06	+1·82	8·88	30·64				
	2313	+ 22 49	N		44 47·95	+1·46	49·41	N		58 18·38	+1·67	20·05	30·64	m s 13 30·680	+ 0·009	− 0·013	13 30·676
	2271	+ 18 3	S	*s* *Q* +1·48	37 26·15	+1·39	27·54	S	*s* *Q* +1·59	50 56·73	+1·58	58·31	30·77				
	2285	+ 16 14	S		40 4·43	+1·37	5·80	S		53 34·94	+1·53	36·47	30·67				
	2330	+ 16 7	S		48 11·45	+1·37	12·82	S		7 1 42·04	+1·53	43·57	30·75				
Jan. 22	2350	+ 24 19	N	*I. P. E.*	6 51 54·95	−1·47	53·48	N	*I. P. E.*	7 5 25·64	−1·48	24·16	13 30·68				
	2416	+ 36 59	N	*d* c + 0·4 b − 3·6 *a* −37·7	7 0 49·11	−1·24	47·87	N	*d* c − 2·4 b + 5·3 *a* −46·3	14 19·71	−1·19	18·52	30·65				
	2431	+ 25 16	N		2 55·65	−1·45	54·20	N		16 26·42	−1·46	24·96	30·76	m s 13 30·722	+ 0·009	− 0·013	13 30·718
	2362	+ 16 21	S	*s* *Q* −1·48	6 53 14·11	−1·59	12·52	S	*s* *Q* −1·59	6 44·85	−1·65	43·20	30·68				
	2373	+ 3 19	S		54 46·89	−1·78	45·11	S		8 17·74	−1·87	15·87	30·76				
	2398	+ 16 45	S		57 57·07	−1·58	55·49	S		11 27·93	−1·64	26·29	30·80				
Jan. 22	2841	+ 26 35	N	*I. P. W.*	8 9 20·36	+1·25	21·61	N	*I. P. E.*	8 22 50·39	+1·75	52·14	13 30·53				
	2871	+ 36 49	N	*d* c − 6·2 b − 6·0 *a* −22·3	13 45·43	+1·34	46·77	N	*d* c − 2·4 b + 5·3 *a* −46·3	27 15·34	+1·98	17·32	30·55				
	2912	+ 32 21	N		19 35·48	+1·29	36·77	N		33 5·47	+1·89	7·36	30·59	m s 13 30·585	+ 0·009	− 0·013	13 30·581
	2853	+ 18 29	S	*s* *Q* +1·48	11 27·60	+1·19	28·79	S	*s* *Q* +1·59	24 57·87	+1·59	59·46	30·67				
	2889	+ 7 2	S		16 9·75	+1·11	10·86	S		29 40·09	+1·38	41·47	30·61				
	2899	+ 19 40	S		17 36·54	+1·20	37·74	S		31 6·69	+1·61	8·30	30·56				
Jan. 22	2984	+ 33 44	N	*I. P. W.*	8 29 51·41	−1·65	49·76	N	*I. P. E.*	8 43 21·68	−1·26	20·42	13 30·66				
	3002	+ 28 46	N	*d* c − 6·2 b − 6·0 *a* −22·3	31 61·68	−1·69	59·99	N	*d* c − 2·4 b + 5·3 *a* −46·3	45 31·97	−1·38	30·59	30·60				
	3016	+ 31 1	N		33 41·57	−1·67	39·90	N		47 11·85	−1·32	10·53	30·63	m s 13 30·665	+ 0·009	− 0·013	13 30·661
	2942	+ 13 6	S	*s* *Q* −1·48	23 20·40	−1·81	18·59	S	*s* *Q* −1·59	36 50·99	−1·70	49·29	30·70				
	2958	+ 10 30	S		24 58·89	−1·83	57·06	S		38 29·51	−1·74	27·77	30·71				
	2970	+ 12 33	S		27 6·13	−1·82	4·31	S		40 36·71	−1·71	35·00	30·69				

NOTE.—$1^d = 0^s.9925$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat.* 18° 49′, *Long.* 6ʰ 21ᵐ 2ˢ: AND CHITTAGONG (W) *Lat.* 22° 20′, *Long.* 6ʰ 7ᵐ 31ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.019$ $\delta_N - \delta_S = -0^s.007$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m ˢ	ˢ	ˢ			h m ˢ	ˢ	ˢ	m ˢ				
Jan.23	2278	+ 26 4	N	*I. P. W.*	6 38 46·09	+1·12	47·21	N	*I. P. W.*	6 52 15·90	+1·76	17·66	13 30·45				
	2301	+ 29 32	N	*d* c − 2·8 b − 6·1 *a* +11·4	42 36·07	+1·11	37·18	N	*d* c + 0·7 b + 2·8 *a* −48·1	56 5·74	+1·84	7·58	30·40				
	2313	+ 22 49	N		44 47·19	+1·14	48·33	N		58 17·10	+1·69	18·79	30·46	m ˢ 13 30·453	+ 0·011	− 0·013	13 30·451
	2271	+ 18 3	S	*s* *Q* +1·38	37 25·28	+1·17	26·45	S	*s* *Q* +1·59	50 55·38	+1·59	56·97	30·52				
	2285	+ 16 14	S		40 3·55	+1·18	4·73	S		53 33·60	+1·56	35·16	30·43				
	2330	+ 16 7	S		48 10·58	+1·18	11·76	S		7 1 40·67	+1·55	42·22	30·46				
Jan.23	2350	+ 24 19	N	*I. P. W.*	6 51 54·03	−1·63	52·40	N	*I. P. W.*	7 5 24·42	−1·46	22·96	13 30·56				
	2416	+ 36 59	N	*d* c − 2·8 b − 6·1 *a* +11·4	7 0 48·48	−1·72	46·76	N	*d* c + 0·7 b + 2·8 *a* −48·1	14 18·39	−1·15	17·24	30·48				
	2431	+ 25 16	N		2 54·80	−1·63	53·17	N		16 25·05	−1·44	23·61	30·44	m ˢ 13 30·507	+ 0·011	− 0·013	13 30·505
	2362	+ 16 21	S	*s* *Q* −1·38	6 53 13·04	−1·58	11·46	S	*s* *Q* −1·59	6 43·56	−1·62	41·94	30·48				
	2373	+ 3 19	S		54 45·56	−1·50	44·06	S		8 16·49	−1·86	14·63	30·57				
	2398	+ 16 45	S		57 55·99	−1·58	54·41	S		11 26·53	−1·61	24·92	30·51				
Jan.23	2841	+ 26 35	N	*I. P. E.*	8 9 19·14	+1·33	20·47	N	*I. P. W.*	8 22 49·18	+1·77	50·95	13 30·48				
	2871	+ 36 49	N	*d* c + 0·9 b − 3·5 *a* − 5·1	13 44·29	+1·36	45·65	N	*d* c + 0·7 b + 2·8 *a* −48·1	27 14·06	+2·03	16·09	30·44				
	2912	+ 32 21	N		19 34·39	+1·34	35·73	N		33 4·21	+1·91	6·12	30·39	m ˢ 13 30·462	+ 0·011	− 0·013	13 30·460
	2853	+ 18 29	S	*s* *Q* +1·38	11 26·38	+1·32	27·70	S	*s* *Q* +1·59	24 56·56	+1·60	58·16	30·46				
	2889	+ 7 2	S		16 8·35	+1·30	9·65	S		29 38·83	+1·38	40·21	30·56				
	2899	+ 19 40	S		17 35·29	+1·32	36·61	S		31 5·42	+1·63	7·05	30·44				
Jan.23	2984	+ 33 44	N	*I. P. E.*	8 29 50·26	−1·41	48·85	N	*I. P. W.*	8 43 20·41	−1·24	19·17	13 30·32				
	3002	+ 28 46	N	*d* c + 0·9 b − 3·5 *a* − 5·1	31 60·35	−1·43	58·92	N	*d* c + 0·7 b + 2·8 *a* −48·1	45 30·70	−1·36	29·34	30·42				
	3016	+ 31 1	N		33 40·30	−1·42	38·88	N		47 10·60	−1·31	9·29	30·41	m ˢ 13 30·420	+ 0·011	− 0·013	13 30·418
	2942	+ 13 6	S	*s* *Q* −1·38	23 19·03	−1·45	17·58	S	*s* *Q* −1·59	36 49·69	−1·69	48·00	30·42				
	2958	+ 10 30	S		24 57·45	−1·46	55·99	S		38 28·19	−1·74	26·45	30·46				
	2970	+ 12 33	S		27 4·66	−1·45	3·21	S		40 35·40	−1·70	33·70	30·49				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s:* AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.019$, $\delta_N - \delta_S = -0^s.007$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan.24	2278	+ 26 4	N	*I. P. E.*	6 38 44·37	+1·56	45·93	N	*I. P. E.*	6 52 14·87	+1·83	16·70	13 30·77				
	2301	+ 29 32	N	*d* c + 0·1 b + 5·1 a −14·3	42 34·31	+1·59	35·90	N	*d* c − 2·1 b + 7·6 a −47·3	56 4·66	+1·91	6·57	30·67				
	2313	+ 22 49	N		44 45·57	+1·53	47·10	N		58 15·97	+1·76	17·73	30·63	m s 13 30·743	+ 0·011	− 0·013	
	2271	+ 18 3	S	*s* Q +1·39	37 23·68	+1·51	25·19	S	*s* Q +1·61	50 54·32	+1·65	55·97	30·78				
	2285	+ 16 14	S		40 1·89	+1·49	3·38	S		53 32·55	+1·62	34·17	30·79				13 30·741
	2330	+ 16 7	S		48 8·99	+1·49	10·48	S		7 1 39·68	+1·62	41·30	30·82				
Jan.24	2350	+ 24 19	N	*I. P. E.*	6 51 52·40	−1·23	51·17	N	*I. P. E.*	7 5 23·34	−1·43	21·91	13 30·74				
	2416	+ 36 59	N	*d* c + 0·1 b + 5·1 a −14·3	7 0 46·68	−1·12	45·56	N	*d* c − 2·1 b + 7·6 a −47·3	14 17·33	−1·12	16·21	30·65				
	2431	+ 25 16	N		2 53·19	−1·22	51·97	N		16 24·09	−1·41	22·68	30·71	m s 13 30·715	+ 0·011	− 0·013	
	2362	+ 16 21	S	*s* Q −1·39	6 53 11·43	−1·28	10·15	S	*s* Q −1·61	6 42·53	−1·60	40·93	30·78				
	2373	+ 3 19	S		54 44·26	−1·37	42·89	S		8 15·45	−1·85	13·60	30·71				13 30·713
	2398	+ 16 45	S		57 54·52	−1·28	53·24	S		11 25·54	−1·60	23·94	30·70				
Jan.24	2841	+ 26 35	N	*I. P. W.*	8 9 17·84	+1·49	19·33	N	*I. P. E.*	8 22 48·02	+1·84	49·86	13 30·53				
	2871	+ 36 49	N	*d* c − 2·5 b + 4·2 a −17·6	13 42·94	+1·58	44·52	N	*d* c − 2·1 b + 7·6 a −47·3	27 12·98	+2·09	15·07	30·55				
	2912	+ 32 21	N		19 33·01	+1·54	34·55	N		33 3·14	+1·97	5·11	30·56	m s 13 30·573	+ 0·011	− 0·013	
	2853	+ 18 29	S	*s* Q +1·39	11 25·09	+1·43	26·52	S	*s* Q +1·61	24 55·46	+1·66	57·12	30·60				
	2889	+ 7 2	S		16 7·29	+1·34	8·63	S		29 37·79	+1·45	39·24	30·61				13 30·571
	2899	+ 19 40	S		17 34·10	+1·44	35·54	S		31 4·44	+1·69	6·13	30·59				
Jan.24	2984	+ 33 44	N	*I. P. W.*	8 29 48·84	−1·23	47·61	N	*I. P. E.*	8 43 19·38	−1·21	18·17	13 30·56				
	3002	+ 28 46	N	*d* c − 2·5 b + 4·2 a −17·6	32 10·25	−1·26	8·99	N	*d* c − 2·1 b + 7·6 a −47·3	45 40·88	−1·33	39·55	30·56				
	3016	+ 31 1	N		33 38·95	−1·25	37·70	N		47 9·58	−1·28	8·30	30·60	m s 13 30·615	+ 0·011	− 0·013	
	2942	+ 13 6	S	*s* Q −1·39	23 17·77	−1·39	16·38	S	*s* Q −1·61	36 48·69	−1·67	47·02	30·64				
	2958	+ 10 30	S		24 56·30	−1·41	54·89	S		38 27·25	−1·71	25·54	30·65				13 30·613
	2970	+ 12 33	S		27 3·46	−1·39	2·07	S		40 34·42	−1·67	32·75	30·68				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}019$ $S_N - S_S = -0^s{\cdot}007$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan.25	2278	+ 26 4	N	*I. P. W.*	6 38 43·48	+1·45	44·93	N	*I. P. W.*	6 52 13·70	+1·78	15·48	13 30·55				
	2301	+ 29 32	N	*d* c − 3·9 b + 3·1 a −24·4	42 33·44	+1·49	34·93	N	*d* c + 0·9 b + 3·4 a −54·5	56 3·48	+1·87	5·35	30·42				
	2313	+ 22 49	N		44 44·69	+1·41	46·10	N		58 14·88	+1·69	16·57	30·47	m s 13 30·505	+ 0·009	− 0·013	
	2271	+ 18 3	S	*s* Q +1·39	37 22·79	+1·36	24·15	S	*s* Q +1·58	50 53·13	+1·58	54·71	30·56				
	2285	+ 16 14	S		40 1·12	+1·34	2·46	S		53 31·41	+1·54	32·95	30·49				
	2330	+ 16 7	S		48 8·11	+1·34	9·45	S		7 1 38·45	+1·54	39·99	30·54				
Jan.25	2350	+ 24 19	N	*I. P. W.*	6 51 51·44	−1·35	50·09	N	*I. P. W.*	7 5 22·11	−1·44	20·67	13 30·58				
	2416	+ 36 59	N	*d* c − 3·9 b + 3·1 a −24·4	7 0 45·67	−1·21	44·46	N	*d* c + 0·9 b + 3·4 a −54·5	14 16·04	−1·07	14·97	30·51				
	2431	+ 25 16	N		2 52·23	−1·34	50·89	N		16 22·78	−1·41	21·37	30·48	m s 13 30·547	+ 0·009	− 0·013	
	2362	+ 16 21	S	*s* Q −1·39	6 53 10·58	−1·43	9·15	S	*s* Q −1·58	6 41·32	−1·62	39·70	30·55				
	2373	+ 3 19	S		54 43·33	−1·56	41·77	S		8 14·24	−1·89	12·35	30·58				
	2398	+ 16 45	S		57 53·57	−1·43	52·14	S		11 24·33	−1·61	22·72	30·58				
Jan.25	2841	+ 26 35	N	*I. P. E.*	8 9 16·61	+1·64	18·25	N	*I. P. W.*	8 22 46·93	+1·79	48·72	13 30·47				
	2871	+ 36 49	N	*d* c + 1·9 b + 5·0 a −23·9	13 41·68	+1·78	43·46	N	*d* c + 0·9 b + 3·4 a −54·5	27 11·79	+2·08	13·87	30·41				
	2912	+ 32 21	N		19 31·74	+1·72	33·46	N		33 1·94	+1·95	3·89	30·43	m s 13 30·452	+ 0·009	− 0·013	
	2853	+ 18 29	S	*s* Q +1·39	11 23·93	+1·55	25·48	S	*s* Q +1·58	24 54·36	+1·59	55·95	30·47				
	2880	+ 7 2	S		16 6·05	+1·43	7·48	S		29 36·63	+1·34	37·97	30·49				
	2899	+ 19 40	S		17 32·83	+1·57	34·40	S		31 3·22	+1·62	4·84	30·44				
Jan.25	2984	+ 33 44	N	*I. P. E.*	8 29 47·66	−1·04	46·62	N	*I. P. W.*	8 43 18·15	−1·18	16·97	13 30·35				
	3002	+ 28 46	N	*d* c + 1·9 b + 5·0 a −23·9	32 9·10	−1·10	8·00	N	*d* c + 0·9 b + 3·4 a −54·5	45 39·65	−1·31	38·34	30·34				
	3016	+ 31 1	N		33 37·76	−1·08	36·68	N		47 8·37	−1·25	7·12	30·44	m s 13 30·420	+ 0·009	− 0·013	
	2942	+ 13 6	S	*s* Q −1·39	23 16·62	−1·28	15·34	S	*s* Q −1·58	36 47·48	−1·68	45·80	30·46				
	2958	+ 10 30	S		24 55·10	−1·32	53·78	S		38 26·02	−1·74	24·28	30·50				
	2970	+ 12 33	S		27 2·35	−1·30	1·05	S		40 33·17	−1·69	31·48	30·43				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s:* AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.019$ $S_N - S_S = -0^s.007$	$\delta L_N + \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 26	2278	+ 26 4	N	*I. P. E.*	6 38 42·17	+1·80	43·97	N	*I. P. E.*	6 52 13·26	+1·56	14·82	13 30·85				
	2301	+ 29 32	N	*d* c − 2·3 b + 3·0 *a* −28·2	42 32·02	+1·86	33·88	N	*d* c − 1·5 b − 0·4 *a* − 4·8	56 3·15	+1·57	4·72	30·84				
	2313	+ 22 49	N		44 43·33	+1·76	45·09	N		58 14·32	+1·55	15·87	30·78	m s 13 30·828	+ 0·008	− 0·013	13 30·823
	2271	+ 18 3	S	*s* *Q* +1·70	37 21·50	+1·71	23·21	S	*s* *Q* +1·60	50 52·52	+1·54	54·06	30·85				
	2285	+ 16 14	S		39 59·75	+1·69	61·44	S		53 30·74	+1·54	32·28	30·84				
	2330	+ 16 7	S		48 6·82	+1·69	8·51	S		7 1 37·78	+1·54	39·32	30·81				
Jan. 26	2350	+ 24 19	N	*I. P. E.*	6 51 50·79	−1·63	49·16	N	*I. P. E.*	7 5 21·71	−1·65	20·06	13 30·90				
	2416	+ 36 59	N	*d* c − 2·3 b + 3·0 *a* −28·2	7 0 45·08	−1·43	43·65	N	*d* c − 1·5 b − 0·4 *a* − 4·8	14 16·00	−1·62	14·38	30·73				
	2431	+ 25 16	N		2 51·70	−1·61	50·09	N		16 22·43	−1·64	20·79	30·70	m s 13 30·817	+ 0·008	− 0·013	13 30·812
	2362	+ 16 21	S	*s* *Q* −1·70	6 53 9·97	−1·71	8·26	S	*s* *Q* −1·60	6 40·68	−1·66	39·02	30·76				
	2373	+ 3 19	S		54 42·75	−1·85	40·90	S		8 13·49	−1·68	11·81	30·91				
	2398	+ 16 45	S		57 52·92	−1·71	51·21	S		11 23·77	−1·66	22·11	30·90				
Jan. 26	2841	+ 26 35	N	*I. P. W.*	8 9 15·78	+1·73	17·51	N	*I. P. E.*	8 22 46·54	+1·56	48·10	13 30·59				
	2871	+ 36 49	N	*d* c − 0·9 b + 0·2 *a* −13·3	13 40·99	+1·80	42·79	N	*d* c − 1·5 b − 0·4 *a* − 4·8	27 11·70	+1·58	13·28	30·49				
	2912	+ 32 21	N		19 31·06	+1·77	32·83	N		33 1·72	+1·57	3·29	30·46	m s 13 30·535	+ 0·008	− 0·013	13 30·530
	2853	+ 18 29	S	*s* *Q* +1·70	11 23·10	+1·68	24·78	S	*s* *Q* +1·60	24 53·78	+1·54	55·32	30·54				
	2889	+ 7 2	S		16 5·21	+1·62	6·83	S		29 35·91	+1·53	37·44	30·61				
	2899	+ 19 40	S		17 32·04	+1·69	33·73	S		31 2·71	+1·54	4·25	30·52				
Jan. 26	2984	+ 33 44	N	*I. P. W.*	8 29 47·51	−1·62	45·89	N	*I. P. E.*	8 43 17·99	−1·62	16·37	13 30·48				
	3002	+ 28 46	N	*d* c − 0·9 b + 0·2 *a* −13·3	32 8·90	−1·65	7·25	N	*d* c − 1·5 b − 0·4 *a* − 4·8	45 39·40	−1·64	37·76	30·51				
	3016	+ 31 1	N		33 37·63	−1·64	35·99	N		47 8·07	−1·63	6·44	30·45	m s 13 30·482	+ 0·008	− 0·013	13 30·477
	2942	+ 13 6	S	*s* *Q* −1·70	23 16·45	−1·75	14·70	S	*s* *Q* −1·60	36 46·77	−1·66	45·11	30·41				
	2958	+ 10 30	S		24 54·87	−1·76	53·11	S		38 25·28	−1·66	23·62	30·51				
	2970	+ 12 33	S		27 2·08	−1·75	0·33	S		40 32·52	−1·66	30.86	30·53				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat.* 18° 49′, *Long.* 6h 21m 2s; AND CHITTAGONG (W) *Lat.* 22° 20′, *Long.* 6h 7m 31s.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Corrn. for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s{\cdot}019$ $\delta_N - \delta_S = -0{\cdot}007$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan.29	2278	+ 26 4	N	*I. P. W.*	6 38 39·47	+1·50	40·97	N	*I. P. W.*	6 52 9·87	+1·47	11·34	13 30·37				
	2301	+ 29 32	N	d c − 2·5 b − 4·6 a −18·5	42 29·40	+1·52	30·92	N	d c − 0·8 b − 4·9 a −16·1	55 59·78	+1·48	61·26	30·34				
	2313	+ 22 49	N		44 40·60	+1·47	42·07	N		58 10·99	+1·44	12·43	30·36	m s 13 30·387	+ 0·011	− 0·013	13 30·385
	2271	+ 18 3	S	s Q +1·61	37 18·86	+1·43	20·29	S	s Q +1·58	50 49·22	+1·41	50·63	30·34				
	2285	+ 16 14	S		39 56·99	+1·42	58·41	S		53 27·48	+1·41	28·89	30·48				
	2330	+ 16 7	S		48 4·08	+1·42	5·50	S		7 1 34·52	+1·41	35·93	30·43				
Jan.29	2350	+ 24 19	N	*I. P. W.*	6 51 47·90	−1·74	46·16	N	*I. P. W.*	7 5 18·30	−1·71	16·59	13 30·43				
	2416	+ 36 59	N	d c − 2·5 b − 4·6 a −18·5	7 0 42·18	−1·64	40·54	N	d c − 0·8 b − 4·9 a −16·1	14 12·51	−1·62	10·89	30·35				
	2431	+ 25 16	N		2 48·67	−1·73	46·94	N		16 19·03	−1·70	17·33	30·39	m s 13 30·365	+ 0·011	− 0·013	13 30·363
	2362	+ 16 21	S	s Q −1·61	6 53 7·09	−1·80	5·29	S	s Q −1·58	6 37·39	−1·75	35·64	30·35				
	2373	+ 3 19	S		54 39·84	−1·88	37·96	S		8 10·10	−1·82	8·28	30·32				
	2398	+ 16 45	S		57 50·05	−1·80	48·25	S		11 20·35	−1·75	18·60	30·35				
Jan.29	2841	+ 26 35	N	*I. P. E.*	8 9 12·60	+1·47	14·07	N	*I. P. W.*	8 22 43·09	+1·47	44·56	13 30·49				
	2871	+ 36 49	N	d c − 0·4 b − 8·8 a −25·1	13 37·88	+1·58	39·46	N	d c − 0·8 b − 4·9 a −16·1	27 8·22	+1·54	9·76	30·30				
	2912	+ 32 21	N		19 27·90	+1·53	29·43	N		32 58·32	+1·51	59·83	30·40	m s 13 30·445	+ 0·011	− 0·013	13 30·443
	2853	+ 18 29	S	s Q +1·61	11 19·98	+1·38	21·36	S	s Q +1·58	24 50·41	+1·41	51·82	30·46				
	2889	+ 7 2	S		16 2·07	+1·28	3·35	S		29 32·55	+1·35	33·90	30·55				
	2899	+ 19 40	S		17 28·92	+1·40	30·32	S		30 59·37	+1·42	60·79	30·47				
Jan.29	2984	+ 33 44	N	*I. P. E.*	8 29 44·20	−1·67	42·53	N	*I. P. W.*	8 43 14·53	−1·64	12·89	13 30·36				
	3002	+ 28 46	N	d c − 0·4 b − 8·8 a −25·1	32 5·57	−1·73	3·84	N	d c − 0·8 b − 4·9 a −16·1	45 35·90	−1·67	34·23	30·39				
	3016	+ 31 1	N		33 34·31	−1·71	32·60	N		47 4·65	−1·67	2·98	30·38	m s 13 30·425	+ 0·011	− 0·013	13 30·423
	2942	+ 13 6	S	s Q −1·61	23 13·13	−1·88	11·25	S	s Q −1·58	36 43·49	−1·77	41·72	30·47				
	2958	+ 10 30	S		24 51·61	−1·90	49·71	S		38 21·97	−1·79	20·18	30·47				
	2970	+ 12 33	S		26 58·85	−1·88	56·97	S		40 29·22	−1·77	27·45	30·48				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*: AND CHITTAGONG (W) *Lat. 22° 20′, Long. 6h 7m 31s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.019$ $S_N - S_S = -0^s.007$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Jan. 30	2278	+ 26 4	N	*I. P. E.*	6 38 38·02	+1·62	39·64	N	*I. P. E.*	6 52 8·75	+1·59	10·34	13 30·70				
	2301	+ 29 32	N	d c − 1·1 b + 2·2 a + 7·9	42 27·92	+1·61	29·53	N	d c − 1·2 b + 1·3 a − 9·3	55 58·70	+1·61	60·31	30·78				
	2313	+ 22 49	N		44 39·09	+1·63	40·72	N		58 9·84	+1·58	11·42	30·70	m s 13 30·745	+ 0·011	− 0·013	13 30·743
	2271	+ 18 3	S	s Q +1·62	37 17·22	+1·64	18·86	S	s Q +1·58	50 48·11	+1·56	49·67	30·81				
	2285	+ 16 14	S		39 55·46	+1·65	57·11	S		53 26·27	+1·56	27·83	30·72				
	2330	+ 16 7	S		48 2·56	+1·65	4·21	S		7 1 33·41	+1·56	34·97	30·76				
Jan. 30	2350	+ 24 19	N	*I. P. E.*	6 51 46·45	−1·62	44·83	N	*I. P. E.*	7 5 17·21	−1·57	15·64	13 30·81				
	2416	+ 36 59	N	d c − 1·1 b + 2·2 a + 7·9	7 0 40·91	−1·66	39·25	N	d c − 1·2 b + 1·3 a − 9·3	14 11·41	−1·50	9·91	30·66				
	2431	+ 25 16	N		2 47·17	−1·62	45·55	N		16 17·95	−1·57	16·38	30·83	m s 13 30·767	+ 0·011	− 0·013	13 30·765
	2362	+ 16 21	S	s Q −1·62	6 53 5·47	−1·59	3·88	S	s Q −1·58	6 36·28	−1·60	34·68	30·80				
	2373	+ 3 19	S		54 38·11	−1·54	36·57	S		8 8·96	−1·65	7·31	30·74				
	2398	+ 16 45	S		57 48·50	−1·59	46·91	S		11 19·27	−1·60	17·67	30·76				
Jan. 30	2841	+ 26 35	N	*I. P. W.*	8 9 11·32	+1·74	13·06	N	*I. P. E.*	8 22 42·14	+1·60	43·74	13 30·68				
	2871	+ 36 49	N	d c − 1·3 b + 5·6 a − 3·3	13 36·54	+1·76	38·30	N	d c − 1·2 b + 1·3 a − 9·3	27 7·23	+1·66	8 89	30·59				
	2912	+ 32 21	N		19 26·61	+1·75	28·36	N		32 57·27	+1·62	58·89	30·53	m s 13 30·617	+ 0·011	− 0·013	13 30·615
	2853	+ 18 29	S	s Q +1·62	11 18·59	+1·72	20·31	S	s Q +1·58	24 49·37	+1·57	50·94	30·63				
	2889	+ 7 2	S		16 0·61	+1·69	2·30	S		29 31·44	+1·52	32·96	30·66				
	2899	+ 19 40	S		17 27·53	+1·72	29·25	S		30 58·29	+1·57	59·86	30·61				
Jan. 30	2984	+ 33 44	N	*I. P. W.*	8 29 43·00	−1·49	41·51	N	*I. P. E.*	8 43 13·52	−1·53	11·99	13 30·48				
	3002	+ 28 46	N	d c − 1·3 b + 5·6 a − 3·3	32 4·35	−1·50	2·85	N	d c − 1·2 b + 1·3 a − 9·3	45 34·93	−1·55	33·38	30·53				
	3016	+ 31 1	N		33 33·04	−1·49	31·55	N		47 3·65	−1·54	2·11	30·56	m s 13 30·582	+ 0·011	− 0·013	13 30·580
	2942	+ 13 6	S	s Q −1·62	23 11·70	−1·53	10·17	S	s Q −1·58	36 42·45	−1·61	40·84	30·67				
	2958	+ 10 30	S		24 50·14	−1·53	48·61	S		38 20·88	−1·62	19·26	30·65				
	2970	+ 12 33	S		26 57·44	−1·53	55·91	S		40 28·13	−1·62	26·51	30·60				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*: AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s.*

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$, $S_N - S_S = -0^s.019$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 8	2672	+ 28 7	N	*I. P. E.*	7 57 17·41	+1·55	18·96	N	*I. P. E.*	8 6 33·61	+1·61	35·22	9 16·26				
	2688	+ 27 51	N	d c + 0·2 b + 0·2 a + 8·7	59 24·33	+1·56	25·89	N	d c − 0·4 b + 0·1 a −16·3	8 40·55	+1·61	42·16	16·27	m s 9 16·310	+ 0·018	− 0·024	9 16·304
	2639	+ 16 6	S		51 17·91	+1·58	19·49	S		0 34·26	+1·52	35·78	16·29				
	2649	+ 16 50	S	s Q +1·57	52 48·04	+1·58	49·62	S	s Q +1·56	2 4·44	+1·53	5·97	16·35				
	2659	+ 17 37	S		55 2·07	+1·57	3·64	S		4 18·49	+1·53	20·02	16·38				
Feb. 8	2727	+ 26 11	N	*I. P. E.*	8 4 9·31	−1·59	7·72	N	*I. P. E.*	8 13 25·59	−1·53	24·06	9 16·34				
	2734	+ 32 49	N	d c + 0·2 b + 0·2 a + 8·7	5 19·25	−1·61	17·64	N	d c − 0·4 b + 0·1 a −16·3	14 35·51	−1·47	34·04	16·40	m s 9 16·312	+ 0·018	− 0·024	9 16·306
	2748	+ 14 21	S		6 49·53	−1·55	47·98	S		16 5·85	−1·61	4·24	16·26				
	2759	+ 18 1	S	s Q −1·57	8 29·52	−1·57	27·95	S	s Q −1·56	17 45·87	−1·58	44·29	16·34				
	2778	+ 9 32	S		11 10·22	−1·54	8·68	S		20 26·54	−1·64	24·90	16·22				
Feb. 8	3238	+ 34 10	N	*I. P. W.*	9 24 36·36	+1·37	37·73	N	*I. P. E.*	9 33 52·29	+1·66	53·95	9 16·22				
	3246	+ 23 29	N	d c − 3·0 b − 2·1 a +11·6	25 59·73	+1·45	61·18	N	d c − 0·4 b + 0·1 a −16·3	35 15·90	+1·57	17·47	16·29	m s 9 16·302	+ 0·018	− 0·016	9 16·304
	3255	+ 28 53	N		27 24·41	+1·41	25·82	N		36 40·49	+1·61	42·10	16·28				
	3227	+ 9 34	S	s Q +1·59	23 8·22	+1·51	9·73	S	s Q +1·56	32 24·63	+1·48	26·11	16·38				
	3270	+ 13 10	S		29 35·46	+1·50	36·96	S		38 51·80	+1·50	53·30	16·34				
Feb. 8	3331	+ 24 18	N	*I. P. W.*	9 40 12·59	−1·74	10·85	N	*I. P. E.*	9 49 28·83	−1·54	27·29	9 16·44				
	3343	+ 21 8	N	d c − 3·0 b − 2·1 a +11·6	42 9·53	−1·72	7·81	N	d c − 0·4 b + 0·1 a −16·3	51 25·73	−1·56	24·17	16·36	m s 9 16·400	+ 0·018	− 0·020	9 16·398
	3371	+ 26 33	N		47 6·60	−1·76	4·84	N		56 22·77	−1·52	21·25	16·41				
	3312	+ 10 25	S	s Q −1·59	35 54·22	−1·67	52·55	S	s Q −1·56	45 10·55	−1·63	8·92	16·37				
	3321	+ 14 33	S		38 21·49	−1·69	19·80	S		47 37·83	−1·61	36·22	16·42				
	3359	+ 4 53	S		45 24·51	−1·65	22·86	S		54 40·93	−1·67	39·26	16·40				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*: AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$, $S_N - S_S = -0^s.019$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 9	2672	+ 28 7	N	*I. P. W.*	7 57 14·88	+1·39	16·27	N	*I. P. W.*	8 6 30·72	+1·51	32·23	9 15·96				
	2688	+ 27 51	N	*d* c − 2·9 b − 1·3 *a* + 3·0	59 21·78	+1·39	23·17	N	*d* c − 2·9 b − 3·3 *a* −16·1	8 37·61	+1·50	39·11	15·94	m s 9 16·002	+ 0·017	− 0·024	9 15·995
	2639	+ 16 6	S		51 15·38	+1·40	16·78	S		0 31·41	+1·42	32·83	16·05				
	2649	+ 16 50	S	*s* *Q* +1·50	52 45·51	+1·40	46·91	S	*s* *Q* +1·60	2 1·57	+1·43	3·00	16·09				
	2659	+ 17 37	S		54 59·58	+1·40	60·98	S		4 15·61	+1·43	17·04	16·06				
Feb. 9	2718	+ 27 49	N	*I. P. W.*	8 2 38·19	−1·61	36·58	N	*I. P. W.*	8 11 54 17	−1·70	52·47	9 15·89				
	2727	+ 26 11	N	*d* c − 2·9 b − 1·3 *a* + 3·0	4 6·68	−1·61	5·07	N	*d* c − 2·9 b − 3·3 *a* −16·1	13 22·78	−1·71	21·07	16·00	m s 9 15·960	+ 0·017	− 0·020	9 15·957
	2734	+ 32 49	N		5 16·65	−1·63	15·02	N		14 32·67	−1·68	30·99	15·97				
	2748	+ 14 21	S	*s* *Q* −1·50	6 46·91	−1·59	45·32	S	*s* *Q* −1·60	16 3·06	−1·79	1·27	15·95				
	2759	+ 18 1	S		8 26·84	−1·60	25·24	S		17 42·98	−1·76	41·22	15·98				
	2778	+ 9 32	S		11 7·54	−1·59	5·95	S		20 23·73	−1·81	21·92	15·97				
Feb. 9	3238	+ 34 10	N	*I. P. E.*	9 24 33·69	+1·17	34·86	N	*I. P. W.*	9 33 49·51	+1·54	51·05	9 16·19				
	3246	+ 23 29	N	*d* c − 1·4 b − 5·4 *a* +21·2	25 57·08	+1·30	58·38	N	*d* c − 2·9 b − 3·3 *a* −16·1	35 12·98	+1·47	14·45	16·07	m s 9 16·138	+ 0·017	− 0·016	9 16·139
	3255	+ 28 53	N		27 21·72	+1·22	22·94	N		36 37·64	+1·51	39·15	16·21				
	3227	+ 9 34	S	*s* *Q* +1·50	23 5·47	+1·43	6·90	S	*s* *Q* +1·60	32 21·65	+1·39	23·04	16·14				
	3270	+ 13 10	S		29 32·76	+1·40	34·16	S		38 48·84	+1·40	50·24	16·08				
Feb. 9	3331	+ 24 18	N	*I. P. E.*	9 40 9·95	−1·71	8·24	N	*I. P. W.*	9 49 26·03	−1·72	24·31	9 16·07				
	3343	+ 21 8	N	*d* c − 1·4 b − 5·4 *a* +21·2	42 6·83	−1·68	5·15	N	*d* c − 2·9 b − 3·3 *a* −16·1	51 22·87	−1·74	21·13	15·98	m s 9 16·123	+ 0·017	− 0·020	9 16·120
	3371	+ 26 33	N		47 3·85	−1·74	2·11	N		56 19·94	−1·70	18·24	16·13				
	3312	+ 10 25	S	*s* *Q* −1·50	38 51·26	−1·58	49·68	S	*s* *Q* −1·60	45 7·70	−1·80	5·90	16·22				
	3321	+ 14 33	S		38 18·64	−1·62	17·02	S		47 34·95	−1·79	33·16	16·14				
	3359	+ 4 53	S		45 21·56	−1·54	20·02	S		54 38·05	−1·83	36·22	16·20				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E) *Lat.* 18° 49′, *Long.* 6ʰ 21ᵐ 2ˢ; AND AKYAB (W) *Lat.* 20° 8′, *Long.* 6ʰ 11ᵐ 45ˢ.

Astronomical Date	Star		Transits Observed at E *By Hearside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = -0^s.019$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			ʰ ᵐ ˢ	ˢ	ˢ			ʰ ᵐ ˢ	ˢ	ˢ	ᵐ ˢ				
Feb.12	2632	+ 20 11	N	*I. P. E.*	7 49 36·83	+1·63	38·46	N	*I. P. E.*	7 58 53·22	+1·53	54·75	9 16·29				
	2672	+ 28 7	N	*d* c + 0·5 b + 5·4 *a* +15·3	57 6·79	+1·59	8·38	N	*d* c − 1·0 b − 2·1 *a* −19·9	8 6 23·08	+1·59	24·67	16·29				
	2688	+ 27 51	N		59 13·72	+1·59	15·31	N		8 30·07	+1·59	31·66	16·35	ᵐ ˢ 9 16·338	+ 0·018	− 0·020	
	2639	+ 16 6	S	*s* *Q* +1·50	51 7·28	+1·66	8·94	S	*s* *Q* +1·60	0 23·81	+1·50	25·31	16·37				
	2649	+ 16 50	S		52 37·45	+1·65	39·10	S		1 53·97	+1·50	55·47	16·37				9 16·336
	2659	+ 17 37	S		54 51·50	+1·65	53·15	S		4 8·00	+1·51	9·51	16·36				
Feb.12	2718	+ 27 49	N	*I. P. E.*	8 2 30·20	−1·41	28·79	N	*I. P. E.*	8 11 46·61	−1·61	45·00	9 16·21				
	2727	+ 26 11	N	*d* c + 0·5 b + 5·4 *a* +15·3	3 58·66	−1·41	57·25	N	*d* c − 1·0 b − 2·1 *a* −19·9	13 15·18	−1·63	13·55	16·30				
	2734	+ 32 49	N		5 8·68	−1·45	7·23	N		14 25·07	−1·56	23·51	16·28	ᵐ ˢ 9 16·290	+ 0·018	− 0·020	
	2748	+ 14 21	S	*s* *Q* −1·50	6 38·84	−1·33	37·51	S	*s* *Q* −1·60	15 55·53	−1·72	53·81	16·30				
	2759	+ 18 1	S		8 18·80	−1·36	17·44	S		17 35·49	−1·69	33·80	16·36				9 16·288
	2778	+ 9 32	S		10 59·43	−1·31	58·12	S		20 16·16	−1·75	14·41	16·29				
Feb.12	3238	+ 34 10	N	*I. P. W.*	9 24 26·03	+1·45	27·48	N	*I. P. E.*	9 33 41·89	+1·64	43·53	9 16·05				
	3246	+ 23 29	N	*d* c − 0·4 b + 6·0 *a* +27·2	25 49·23	+1·59	50·82	N	*d* c − 1·0 b − 2·1 *a* −19·9	35 5·42	+1·56	6·98	16·16				
	3255	+ 28 53	N		27 13·94	+1·52	15·46	N		36 30·06	+1·60	31·66	16·20	ᵐ ˢ 9 16·128	+ 0·018	− 0·020	
	3227	+ 9 34	S	*s* *Q* +1·50	22 57·79	+1·73	59·52	S	*s* *Q* +1·60	32 14·11	+1·45	15·56	16·04				
	3270	+ 13 10	S		29 24·90	+1·69	26·59	S		38 41·30	+1·47	42·77	16·18				9 16·126
	3278	+ 16 57	S		31 21·63	+1·65	23·28	S		40 37·92	+1·50	39·42	16·14				
Feb.12	3331	+ 24 18	N	*I. P. W.*	9 40 2·12	−1·42	0·70	N	*I. P. E.*	9 49 18·41	−1·63	16·78	9 16·08				
	3343	+ 21 8	N	*d* c − 0·4 b + 6·0 *a* +27·2	41 58·94	−1·40	57·54	N	*d* c − 1·0 b − 2·1 *a* −19·9	51 15·32	−1·66	13·66	16·12				
	3371	+ 26 33	N		46 56·11	−1·45	54·66	N		56 12·34	−1·62	10·72	16·06	ᵐ ˢ 9 16·070	+ 0·018	− 0·020	
	3312	+ 10 25	S	*s* *Q* −1·50	35 43·55	−1·28	42·27	S	*s* *Q* −1·60	44 60·09	−1·75	58·34	16·07				
	3321	+ 14 33	S		38 10·92	−1·32	9·60	S		47 27·36	−1·72	25·64	16·04				9 16·068
	3359	+ 4 53	S		45 13·89	−1·23	12·66	S		54 30·50	−1·79	28·71	16·05				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

PROME (E). *Lat.* 18° 49′, *Long.* 6ʰ 21ᵐ 2ˢ: AND AKYAB (W) *Lat.* 20° 8′, *Long.* 6ʰ 11ᵐ 45ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = -0^s.019$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			ʰ ᵐ ˢ	ˢ	ˢ			ʰ ᵐ ˢ	ˢ	ˢ	ᵐ ˢ				
Feb.13	2632	+ 20 11	N	*I. P. W.*	7 49 34·31	+1·34	35·65	N	*I. P. W.*	7 58 50·36	+1·40	51·76	9 16·11				
	2672	+ 28 7	N	*d* c − 1·3 b − 5·8 *a* − 9·9	57 4·28	+1·36	5·64	N	*d* c − 2·4 b − 5·4 *a* −19·9	8 6 20·24	+1·46	21·70	16·06				
	2688	+ 27 51	N		59 11·18	+1·36	12·54	N		8 27·07	+1·46	28·53	15·99	ᵐ ˢ 9 16·070	+ 0·019	− 0·020	9 16·069
	2639	+ 16 6	S	*s* *Q* +1·50	51 4·81	+1·32	6·13	S	*s* *Q* +1·59	0 20·89	+1·37	22·26	16·13				
	2649	+ 16 50	S		52 35·00	+1·32	36·32	S		1 50·99	+1·37	52·36	16·04				
	2659	+ 17 37	S		54 49·00	+1·33	50·33	S		4 5·04	+1·38	6·42	16·09				
Feb.13	2718	+ 27 49	N	*I. P. W.*	8 2 27·52	−1·64	25·88	N	*I. P. W.*	8 11 43·66	−1·72	41·94	9 16·06				
	2734	+ 32 49	N	*d* c − 1·3 b − 5·8 *a* − 9·9	5 6·02	−1·63	4·39	N	*d* c − 2·4 b − 5·4 *a* −19·9	14 22·08	−1·67	20·41	16·02				
	2748	+ 14 21	S		6 36·32	−1·68	34·64	S		15 52·51	−1·82	50·69	16·05	ᵐ ˢ 9 16·048	+ 0·019	− 0·024	9 16·043
	2759	+ 18 1	S	*s* *Q* −1·50	8 16·39	−1·67	14·72	S	*s* *Q* −1·59	17 32·52	−1·80	30·72	16·00				
	2778	+ 9 32	S		10 57·01	−1·70	55·31	S		20 13·26	−1·84	11·42	16·11				
Feb.13	3238	+ 34 10	N	*I. P. E.*	9 24 23·01	+1·24	24·25	N	*I. P. W.*	9 33 38·98	+1·51	40·49	9 16·24				
	3246	+ 23 29	N	*d* c + 0·3 b −11·0 *a* − 2·3	25 46·49	+1·24	47·73	N	*d* c − 2·4 b − 5·4 *a* −19·9	35 2·52	+1·43	3·95	16·22				
	3255	+ 28 53	N		27 11·19	+1·24	12·43	N		36 27·11	+1·47	28·58	16·15	ᵐ ˢ 9 16·207	+ 0·019	− 0·020	9 16·206
	3227	+ 9 34	S	*s* *Q* +1·50	22 55·04	+1·25	56·29	S	*s* *Q* +1·59	32 11·16	+1·34	12·50	16·21				
	3270	+ 13 10	S		29 22·24	+1·25	23·49	S		38 38·40	+1·35	39·75	16·26				
	3278	+ 16 57	S		31 18·94	+1·25	20·19	S		40 34·98	+1·37	36·35	16·16				
Feb.13	3331	+ 24 18	N	*I. P. E.*	9 39 59·34	−1·75	57·59	N	*I. P. W.*	9 49 15·52	−1·74	13·78	9 16·19				
	3343	+ 21 8	N	*d* c + 0·3 b −11·0 *a* − 2·3	41 56·22	−1·76	54·46	N	*d* c − 2·4 b − 5·4 *a* −19·9	51 12·40	−1·77	10·63	16·17				
	3371	+ 26 33	N		46 53·35	−1·75	51·60	N		56 9·44	−1·73	7·71	16·11				
	3312	+ 10 25	S	*s* *Q* −1·50	35 40·90	−1·75	39·15	S	*s* *Q* −1·59	44 57·21	−1·84	55·37	16·22	ᵐ ˢ 9 16·162	+ 0·019	− 0·020	9 16·161
	3321	+ 14 33	S		38 8·24	−1·75	6·49	S		47 24·46	−1·83	22·63	16·14				
	3359	+ 4 53	S		45 11·33	−1·74	9·59	S		54 27·61	−1·88	25·73	16·14				

NOTE.—$1^d = 0^s.9225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat.* 18° 49′, *Long.* 6ʰ 21ᵐ 2ˢ: AND AKYAB (W) *Lat.* 20° 8′, *Long.* 6ʰ 11ᵐ 45ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$, $S_N - S_S = -0^s.019$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Feb. 8	2841	+ 26 35	N	*I. P. E.*	8 13 31·21	+1·57	32·78	N	*I. P. E.*	8 22 47·49	+1·60	49·09	9 16·31				
	2871	+ 36 49	N	d c + 0·2 b + 0·2 a + 8·7	17 56·46	+1·53	57·99	N	d c − 0·4 b + 0·1 a − 16·3	27 12·63	+1·68	14·31	16·32				
	2912	+ 32 21	N		23 46·44	+1·56	48·00	N		33 2·62	+1·64	4·26	16·26	m s 9 16·294	+ 0·043	− 0·016	9 16·321
	2853	+ 18 29	S	s Q +1·59	15 38·44	+1·59	40·03	S	s Q +1·56	24 54·79	+1·54	56·33	16·30				
	2889	+ 7 2	S		20 20·47	+1·63	22·10	S		29 36·91	+1·47	38·38	16·28				
Feb. 8	2937	+ 21 53	N	*I. P. E.*	8 27 16·95	−1·60	15·35	N	*I. P. E.*	8 36 33·30	−1·56	31·74	9 16·39				
	2953	+ 18 35	N	d c + 0·2 b + 0·2 a + 8·7	28 48·22	−1·59	46·63	N	d c − 0·4 b + 0·1 a − 16·3	38 4·52	−1·58	2·94	16·31				
	2965	+ 29 11	N		30 23·29	−1·61	21·68	N		39 39·60	−1·50	38·10	16·42				
	3000	+ 28 42	N	s Q −1·59	36 12·70	−1·61	11·09	N	s Q −1·56	45 28·99	−1·51	27·48	16·39	m s 9 16·387	+ 0·043	− 0·017	9 16·413
	2953	+ 18 35	S		28 48·15	−1·59	46·56	S		38 4·54	−1·58	2·96	16·40				
	2978	+ 6 16	S		32 59·77	−1·55	58·22	S		42 16·30	−1·66	14·64	16·42				
	2990	+ 18 26	S		34 48·65	−1·59	47·06	S		44 5·02	−1·58	3·44	16·38				
Feb. 8	3439	+ 35 34	N	*I. P. W.*	9 49 38·07	+1·36	39·43	N	*I. P. E.*	9 58 54·17	+1·67	55·84	9 16·41				
	3485	+ 21 45	N	d c − 3·0 b − 2·1 a +11·6	58 45·70	+1·46	47·16	N	d c − 0·4 b + 0·1 a − 16·3	10 8 2·06	+1·56	3·62	16·46				
	3500	+ 29 53	N		10 0 18·07	+1·40	19·47	N		9 34·29	+1·62	35·91	16·44	m s 9 16·430	+ 0·043	− 0·020	9 16·453
	3453	+ 17 20	S	s Q +1·59	9 51 39·52	+1·48	41·00	S	s Q +1·56	0 55·84	+1·53	57·37	16·37				
	3463	+ 6 45	S		53 49·17	+1·52	50·69	S		3 5·68	+1·47	7·15	16·46				
	3475	+ 13 56	S		56 2·93	+1·49	4·42	S		5 19·35	+1·51	20·86	16·44				
Feb. 8	3522	+ 20 4	N	*I. P. W.*	10 4 7·49	−1·72	5·77	N	*I. P. E.*	10 13 23·81	−1·57	22·24	9 16·47				
	3602	+ 32 58	N	d c − 3·0 b − 2·1 a +11·6	15 58·39	−1·80	56·59	N	d c − 0·4 b + 0·1 a − 16·3	25 14·49	−1·47	13·02	16·43				
	3610	+ 35 35	N		17 35·14	−1·82	33·32	N		26 51·15	−1·45	49·70	16·38	m s 9 16·433	+ 0·043	− 0·020	9 16·456
	3561	+ 9 22	S	s Q −1·59	9 50·46	−1·67	48·79	S	s Q −1·56	19 6·86	−1·64	5·22	16·43				
	3562	+ 9 22	S		10 10·63	−1·67	8·96	S		19 27·04	−1·64	25·40	16·44				
	3621	+ 7 33	S		19 26·93	−1·66	25·27	S		28 43·37	−1·65	41·72	16·45				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat.* 18° 49′, *Long.* 6ʰ 21ᵐ 2ˢ: AND AKYAB (W) *Lat.* 20° 8′, *Long.* 6ʰ 11ᵐ 45ˢ.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $H_N - H_S = +0^s.021$, $S_N - S_S = -0^s.019$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s	m s			
Feb. 9	2841	+ 26 35	N	*I. P. W.*	8 13 24·78	+1·39	26·17	N	*I. P. W.*	8 22 40·69	+1·50	42·19	9 16·02				
	2871	+ 36 49	N	d c − 2·9 b − 1·3 a + 3·0	17 49·98	+1·36	51·34	N	d c − 2·9 b − 3·3 a −16·1	27 5·80	+1·56	7·36	16·02				
	2899	+ 19 40	N		21 40·87	+1·40	42·27	N		30 56·92	+1·45	58·37	16·10	m s 9 16·077	+ 0·043	− 0·013	9 16·107
	2912	+ 32 21	N	s Q +1·50	23 39·88	+1·37	41·25	N	s Q +1·60	32 55·88	+1·52	57·40	16·15				
	2853	+ 18 29	S		15 31·98	+1·40	33·38	S		24 48·00	+1·44	49·44	16·06				
	2889	+ 7 2	S		20 13·92	+1·41	15·33	S		29 30·06	+1·38	31·44	16·11				
Feb. 9	2937	+ 21 53	N	*I. P. W.*	8 27 10·42	−1·60	8·82	N	*I. P. W.*	8 36 26·55	−1·74	24·81	9 15·99				
	2953	+ 18 35	N	d c − 2·9 b − 1·3 a + 3·0	28 41·64	−1·60	40·04	N	d c − 2·9 b − 3·3 a −16·1	37 57·79	−1·76	56·03	15·99				
	2965	+ 29 11	N		30 16·78	−1·61	15·17	N		39 32·87	−1·68	31·19	16·02				
	3000	+ 28 42	N	s Q −1·50	36 6·19	−1·61	4·58	N	s Q −1·60	45 22·30	−1·69	20·61	16·03	m s 9 16·023	+ 0·043	− 0·017	9 16·049
	2953	+ 18 35	S		28 41·57	−1·60	39·97	S		37 57·77	−1·76	56·01	16·04				
	2978	+ 6 16	S		32 53·24	−1·59	51·65	S		42 9·59	−1·83	7·76	16·11				
	2990	+ 18 26	S		34 42·17	−1·60	40·57	S		43 58·31	−1·76	56·55	15·98				
Feb. 9	3439	+ 35 34	N	*I. P. E.*	9 49 31·68	+1·15	32·83	N	*I. P. W.*	9 58 47·44	+1·55	48·99	9 16·16				
	3485	+ 21 45	N	d c − 1·4 b − 5·4 a +21·2	58 39·11	+1·31	40·42	N	d c − 2·9 b − 3·3 a −16·1	10 7 55·22	+1·46	56·68	16·26				
	3500	+ 29 53	N		10 0 11·47	+1·22	12·69	N		9 27·53	+1·51	29·04	16·35	m s 9 16·247	+ 0·043	− 0·020	9 16·270
	3453	+ 17 20	S	s Q +1·50	9 51 32·91	+1·35	34·26	S	s Q +1·60	0 49·06	+1·43	50·49	16·23				
	3463	+ 6 45	S		53 42·48	+1·45	43·93	S		2 58·85	+1·38	60·23	16·30				
	3475	+ 13 56	S		55 56·29	+1·39	57·68	S		5 12·45	+1·41	13·86	16·18				
Feb. 9	3522	+ 20 4	N	*I. P. E.*	10 3 60·76	−1·67	59·09	N	*I. P. W.*	10 13 17·03	−1·75	15·28	9 16·19				
	3602	+ 32 58	N	d c − 1·4 b − 5·4 a +21·2	15 51·74	−1·82	49·92	N	d c − 2·9 b − 3·3 a −16·1	25 7·75	−1·67	6·08	16·16				
	3610	+ 35 35	N		17 28·48	−1·85	26·63	N		26 44·46	−1·65	42·81	16·18	m s 9 16·188	+ 0·043	− 0·020	9 16·211
	3561	+ 9 22	S	s Q −1·50	9 43·66	−1·57	42·09	S	s Q −1·60	18 60·07	−1·81	58·26	16·17				
	3562	+ 9 22	S		10 3·84	−1·57	2·27	S		19 20·26	−1·81	18·45	16·18				
	3621	+ 7 33	S		19 20·09	−1·55	18·54	S		28 36·61	−1·82	34·79	16·25				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *wil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6h 21m 2s*: AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $H_N - H_S = +0^s.021$ $S_N - S_S = -0^s.019$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Feb.12	2841	+ 26 35	N	*I. P. E.*	8 13 3·37	+1·59	4·96	N	*I. P. E.*	8 22 19·81	+1·58	21·39	9 16·43				
	2871	+ 36 49	N	*d* c + 0·5 b + 5·4 a +15·3	17 28·69	+1·52	30·21	N	*d* c − 1·0 b − 2·1 a −19·9	26 44·89	+1·67	46·56	16·35				
	2899	+ 19 40	N		21 19·49	+1·63	21·12	N		30 36·01	+1·53	37·54	16·42	m s 9 16·383	+ 0·051	− 0·013	
	2912	+ 32 21	N	*s* Q +1·50	23 18·58	+1·56	20·14	N	*s* Q +1·60	32 34·94	+1·63	36·57	16·43				
	2853	+ 18 29	S		15 10·64	+1·64	12·28	S		24 27·03	+1·52	28·55	16·27				
	2889	+ 7 2	S		19 52·49	+1·70	54·19	S		29 9·16	+1·43	10·59	16·40				
Feb.12	2937	+ 21 53	N	*I. P. E.*	8 26 49·07	−1·38	47·69	N	*I. P. E.*	8 36 5·60	−1·65	3·95	9 16·26				
	2953	+ 18 35	N	*d* c + 0·5 b + 5·4 a +15·3	28 20·22	−1·36	18·86	N	*d* c − 1·0 b − 2·1 a −19·9	37 36·84	−1·68	35·16	16·30				
	2965	+ 29 11	N		29 55·37	−1·42	53·95	N		39 11·90	−1·60	10·30	16·35	m s 9 16·314	+ 0·051	− 0·017	
	3000	+ 28 42	N	*s* Q −1·50	35 44·85	−1·42	43·43	N	*s* Q −1·60	44 61·33	−1·60	59·73	16·30				
	2953	+ 18 35	S		28 20·14	−1·36	18·78	S		37 36·81	−1·68	35·13	16·35				
	2978	+ 6 16	S		32 31·84	−1·30	30·54	S		41 48·64	−1·78	46·86	16·32				
	2990	+ 18 26	S		34 20·71	−1·36	19·35	S		43 37·35	−1·68	35·67	16·32				
Feb.12	3439	+ 35 34	N	*I. P. W.*	9 49 10·36	+1·43	11·79	N	*I. P. E.*	9 58 26·41	+1·66	28·07	9 16·28				
	3485	+ 21 45	N	*d* c − 0·4 b + 6·0 a +27·2	58 17·91	+1·60	19·51	N	*d* c − 1·0 b − 2·1 a −19·9	10 7 34·19	+1·54	35·73	16·22				
	3500	+ 29 53	N		59 50·31	+1·51	51·82	N		9 6·43	+1·61	8·04	16·22	m s 9 16·247	+ 0·051	− 0·020	
	3453	+ 17 20	S	*s* Q +1·50	51 11·68	+1·65	13·33	S	*s* Q +1·60	0 28·06	+1·51	29·57	16·24				
	3463	+ 6 45	S		53 21·16	+1·75 †	22·91	S		2 37·84	+1·43	39·27	16·36				
	3475	+ 13 56	S		55 35·05	+1·70	36·75	S		4 51·43	+1·48	52·91	16·16				
Feb.12	3522	+ 20 4	N	*I. P. W.*	10 3 39·45	−1·38	38·07	N	*I. P. E.*	10 12 55·97	−1·67	54·30	9 16·23				
	3602	+ 32 58	N	*d* c − 0·4 b + 6·0 a +27·2	15 30·44	−1·53	28·91	N	*d* c − 1·0 b − 2·1 a −19·9	24 46·68	−1·56	45·12	16·21				
	3610	+ 35 35	N		17 7·17	−1·57	5·60	N		26 23·36	−1·54	21·82	16·22	m s 9 16·185	+ 0·051	− 0·020	
	3561	+ 9 22	S	*s* Q −1·50	9 22·48	−1·27	21·21	S	*s* Q −1·60	18 39·06	−1·76	37·30	16·09				
	3562	+ 9 22	S		9 42·58	−1·27	41·31	S		18 59·30	−1·76	57·54	16·23				
	3621	+ 7 33	S		18 58·94	−1·26	57·68	S		28 15·58	−1·77	13·81	16·13				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

† Includes (N − S) Equation + $0^s.03$.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

PROME (E) *Lat. 18° 49′, Long. 6ʰ 21ᵐ 2ˢ*: AND AKYAB (W) *Lat. 20° 8′, Long. 6ʰ 11ᵐ 45ˢ*.

Astronomical Date	Star		Transits Observed at E *By Heaviside, with Telescope No. 1*					Transits Observed at W *By Strahan, with Telescope No. 2*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perml. Equations $H_N - H_S = +0^s{\cdot}021$ $S_N - S_S = -0^s{\cdot}019$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			ʰ ᵐ ˢ	ˢ	ˢ			ʰ ᵐ ˢ	ˢ	ˢ	ᵐ ˢ				
Feb.13	2841	+ 26 35	N	*I. P. W.*	8 12 55·44	+1·36	56·80	N	*I. P. W.*	8 22 11·47	+1·45	12·92	9 16·12				
	2871	+ 36 49	N	*d* c − 1·3 b − 5·8 a − 9·9	17 20·58	+1·39	21·97	N	*d* c − 2·4 b − 5·4 a −19·9	26 36·53	+1·53	38·06	16·09				
	2899	+ 19 40	N		21 11·54	+1·33	12·87	N		30 27·65	+1·40	29·05	16·18	m ˢ 9 16·117	+ 0·053	− 0·013	9 16·157
	2912	+ 32 21	N	*s* Q +1·50	23 10·51	+1·38	11·89	N	*s* Q +1·59	32 26·54	+1·50	28·04	16·15				
	2853	+ 18 29	S		15 2·77	+1·33	4·10	S		24 18·74	+1·39	20·13	16·03				
	2889	+ 7 2	S		19 44·72	+1·29	46·01	S		29 0·82	+1·32	2·14	16·13				
Feb.13	2937	+ 21 53	N	*I. P. W.*	8 26 41·17	−1·66	39·51	N	*I. P. W.*	8 35 57·29	−1·76	55·53	9 16·02				
	2953	+ 18 35	N	*d* c − 1·3 b − 5·8 a − 9·9	28 12·39	−1·67	10·72	N	*d* c − 2·4 b − 5·4 a −19·9	37 28·54	−1·79	26·75	16·03				
	2965	+ 29 11	N		29 47·44	−1·63	45·81	N		39 3·53	−1·71	1·82	16·01	m ˢ 9 16·013	+ 0·053	− 0·017	9 16·049
	3000	+ 28 42	N	*s* Q −1·50	35 36·92	−1·64	35·28	N	*s* Q −1·59	44 52·99	−1·71	51·28	16·00				
	2953	+ 18 35	S		28 12·29	−1·67	10·62	S		37 28·42	−1·79	26·63	16·01				
	2978	+ 6 16	S		32 24·14	−1·71	22·43	S		41 40·27	−1·87	38·40	15·97				
	2990	+ 18 26	S		34 12·83	−1·67	11·16	S		43 29·00	−1·79	27·21	16·05				
Feb.13	3439	+ 35 34	N	*I. P. E.*	9 49 2·14	+1·24	3·38	N	*I. P. W.*	9 58 18·15	+1·53	19·68	9 16·30				
	3485	+ 21 45	N	*d* c + 0·3 b −11·0 a − 2·3	58 9·90	+1·24	11·14	N	*d* c − 2·4 b − 5·4 a −19·9	10 7 25·91	+1·41	27·32	16·18				
	3500	+ 29 53	N		59 42·29	+1·24	43·53	N		8 58·15	+1·48	59·63	16·10	m ˢ 9 16·200	+ 0·053	− 0·030	9 16·233
	3453	+ 17 20	S	*s* Q +1·50	51 3·69	+1·25	4·94	S	*s* Q +1·59	0 19·78	+1·38	21·16	16·22				
	3463	+ 6 45	S		53 13·44	+1·26	14·70	S		2 29·59	+1·32	30·91	16·21				
	3475	+ 13 56	S		55 27·14	+1·28†	28·42	S		4 43·25	+1·36	44·61	16·19				
Feb.13	3522	+ 20 4	N	*I. P. E.*	10 3 31·48	−1·75	29·73	N	*I. P. W.*	10 12 47·70	−1·78	45·92	9 16·19				
	3602	+ 32 58	N	*d* c + 0·3 b −11·0 a − 2·3	15 22·27	−1·77	20·50	N	*d* c − 2·4 b − 5·4 a −19·9	24 38·41	−1·67	36·74	16·24				
	3610	+ 35 35	N		16 58·96	−1·76	57·20	N		26 15·07	−1·65	13·42	16·22	m ˢ 9 16·175	+ 0·053	− 0·030	9 16·208
	3561	+ 9 22	S	*s* Q −1·50	9 14·60	−1·75	12·85	S	*s* Q −1·59	18 30·80	−1·85	28·95	16·10				
	3562	+ 9 22	S		9 34·74	−1·75	32·99	S		18 51·00	−1·85	49·15	16·16				
	3621	+ 7 33	S		18 51·05	−1·75	49·30	S		28 7·31	−1·87	5·44	16·14				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

† Includes (N − S) Equation + $0^s{\cdot}02$.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s:* AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perl. Equations $S_W - S_S = +0^s{\cdot}025$ $H_N - H_S = +0^s{\cdot}022$	$\delta L_W - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 8	3522	+ 20 4	N	*I. P. E.*	10 13 17·58	+1·60	19·18	N	*I. P. W.*	10 22 56·05	+1·62	57·67	9 38·49				
	3602	+ 32 59	N	d c − 0·8 b + 1·2 a − 5·6	25 8·38	+1·63	10·01	N	d c − 0·7 b − 0·9 a +16·8	34 47·01	+1·52	48·53	38·52				
	3610	+ 35 35	N		26 45·05	+1·64	46·69	N		36 23·70	+1·50	25·20	38·51	m s 9 38·512	+ 0·071	− 0·002	9 38·581
	3561	+ 9 22	S	s Q +1·58	19 0·60	+1·57	2·17	S	s Q +1·67	28 39·03	+1·69	40·72	38·55				
	3562	+ 9 22	S		19 20·82	+1·57	22·39	S		28 59·13	+1·69	60·82	38·43				
	3621	+ 7 33	S		28 37·13	+1·57	38·70	S		38 15·56	+1·71	17·27	38·57				
Mar. 8	3661	+ 32 19	N	*I. P. E.*	10 35 36·50	−1·53	34·97	N	*I. P. W.*	10 45 15·34	−1·81	13·53	9 38·56				
	3671	+ 23 48	N	d c − 0·8 b + 1·2 a − 5·6	37 1·68	−1·55	0·13	N	d c − 0·7 b − 0·9 a +16·8	46 40·46	−1·75	38·71	38·58				
	3643	+ 16 44	S		32 36·45	−1·57	34·88	S		42 15·03	−1·69	13·34	38·46	m s 9 38·562	+ 0·071	− 0·002	9 38·631
	3684	+ 3 6	S	s Q −1·58	39 6·08	−1·60	4·48	S	s Q −1·67	48 44·67	−1·61	43·06	38·58				
	3693	+ 14 48	S		40 11·79	−1·57	10·22	S		49 50·53	−1·68	48·85	38·63				
Mar. 9	3522	+ 20 4	N	*I. P. W.*	10 13 6·85	+1·45	8·30	N	*I. P. W.*	10 22 45·56	+1·54	47·10	9 38·80				
	3602	+ 32 59	N	d c − 2·8 b − 3·6 a −36·0	24 57·48	+1·66	59·14	N	d c − 2·5 b − 3·1 a +18·4	34 36·48	+1·41	37·89	38·75				
	3610	+ 35 35	N		26 34·12	+1·72	35·84	N		36 13·19	+1·38	14·57	38·73	m s 9 38·692	+ 0·073	− 0·001	9 38·764
	3561	+ 9 22	S	s Q +1·56	18 50·08	+1·32	51·40	S	s Q +1·68	28 28·44	+1·62	30·06	38·66				
	3562	+ 9 22	S		19 10·27	+1·32	11·59	S		28 48·56	+1·62	50·18	38·59				
	3621	+ 7 33	S		28 26·59	+1·29	27·88	S		38 4·87	+1·63	6·50	38·63				
Mar. 9	3661	+ 32 19	N	*I. P. W.*	10 35 25·59	−1·46	24·13	N	*I. P. W.*	10 45 4·79	−1·94	2·85	9 38·72				
	3671	+ 23 48	N	d c − 2·8 b − 3·6 a −36·0	36 50·92	−1·61	49·31	N	d c − 2·5 b − 3·1 a +18·4	46 29·82	−1·86	27·96	38·65				
	3643	+ 16 44	S		32 25·81	−1·71	24·10	S		42 4·55	−1·79	2·76	38·66	m s 9 38·693	+ 0·073	− 0·002	9 38·763
	3684	+ 3 6	S	s Q −1·56	38 55·57	−1·89	53·68	S	s Q −1·68	48 34·10	−1·70	32·40	38·72				
	3693	+ 14 48	S		39 61·19	−1·74	59·45	S		49 39·94	−1·78	38·16	38·71				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.025$, $H_N - H_S = +0^s.022$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.10	3522	+ 20 4	N	*I. P. W.*	10 12 55·73	+1·49	57·22	N	*I. P. E.*	10 22 34·16	+1·56	35·72	9 38·50				
	3602	+ 32 59	N	d c − 2·7 b − 2·4 a −38·6	24 46·35	+1·71	48·06	N	d c − 2·2 b − 1·8 a +23·4	34 25·20	+1·40	26·60	38·54				
	3610	+ 35 35	N		26 22·99	+1·77	24·76	N		36 1·95	+1·36	3·31	38·55	m s 9 38·508	+ 0·076	− 0·002	9 38·582
	3561	+ 9 22	S	s Q +1·55	18 38·98	+1·33	40·31	S	s Q +1·66	28 17·06	+1·66	18·72	38·41				
	3562	+ 9 22	S		18 59·13	+1·33	60·46	S		28 37·27	+1·66	38·93	38·47				
	3621	+ 7 33	S		28 15·42	+1·30	16·72	S		37 53·62	+1·68	55·30	38·58				
Mar.10	3661	+ 32 19	N	*I. P. W.*	10 35 14·43	−1·40	13·03	N	*I. P. E.*	10 44 53·52	−1·92	51·60	9 38·57				
	3671	+ 23 48	N	d c − 2·7 b − 2·4 a −38·6	36 39·76	−1·56	38·20	N	d c − 2·2 b − 1·8 a +23·4	46 18·55	−1·80	16·75	38·55				
	3643	+ 16 44	S		32 14·62	−1·67	12·95	S		41 53·18	−1·73	51·45	38·50	m s 9 38·504	+ 0·076	− 0·002	9 38·578
	3684	+ 3 6	S	s Q −1·55	38 44·48	−1·86	42·62	S	s Q −1·66	48 22·63	−1·61	21·02	38·40				
	3693	+ 14 48	S		39 50·04	−1·70	48·34	S		49 28·55	−1·71	26·84	38·50				
Mar.10	4031	+ 16 17	N	*I. P. E.*	11 49 12·19	+1·62	13·81	N	*I. P. E.*	11 58 50·72	+1·60	52·32	9 38·51				
	4057	+ 43 42	N	d c + 4·0 b − 0·9 a −41·5	55 42·34	+2·25	44·59	N	d c − 2·2 b − 1·8 a +23·4	12 5 21·78	+1·23	23·01	38·42				
	4059	+ 43 45	N		56 4·97	+2·25	7·22	N		5 44·34	+1·23	45·57	38 35				
	4066	+ 22 7	N	s Q +1·55	57 49·63	+1·73	51·36	N	s Q +1·66	7 28·27	+1·54	29·81	38·45	m s 9 38·437	+ 0·076	− 0·001	9 38·512
	4031	+ 16 17	S		49 12·22	+1·62	13·84	S		11 58 50·75	+1·60	52·35	38·51				
	4039	+ 4 8	S		51 47·09	+1·42	48·51	S		12 1 25·23	+1·70	26·93	38·42				
	4049	+ 4 18	S		53 30·32	+1·42	31·74	S		3 8·44	+1·70	10·14	38·40				
Mar.10	4100	+ 27 57	N	*I. P. E.*	12 4 24·87	−1·26	23·61	N	*I. P. E.*	12 14 3·94	−1·87	2·07	9 38·46				
	4127	+ 24 36	N	d c + 4·0 b − 0·9 a −41·5	9 60·71	−1·32	59·39	N	d c − 2·2 b − 1·8 a +23·4	19 39·63	−1·81	37·82	38·43				
	4079	+ 10 18	S		0 48·03	−1·58	46·45	S		10 26·60	−1·67	24·93	38·48	m s 9 38·458	+ 0·076	− 0·002	9 38·532
	4094	+ 2 33	S	s Q −1·55	3 17·61	−1·70	15·91	S	s Q −1·66	12 55·97	−1·60	54·37	38·46				
	4116	+ 2 53	S		7 33·17	−1·70	31·47	S		17 11·53	−1·60	9·93	38·46				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perpl. Equations $S_N - S_S = +0^s{\cdot}025$ $H_N - H_S = +0^s{\cdot}022$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.11	3522	+ 20 4	N	*I. P. E.*	10 12 44·15	+1·57	45·72	N	*I. P. W.*	10 22 22·72	+1·52	24·24	9 38·52				
	3602	+ 32 59	N	*d* c − 1·2 b − 1·0 *a* −37·7	24 34·73	+1·79	36·52	N	*d* c − 2·2 b − 2·9 *a* +28·4	34 13·71	+1·33	15·04	38·52				
	3610	+ 35 35	N		26 11·41	+1·84	13·25	N		35 50·42	+1·28	51·70	38·45	m s 9 38·498	+ 0·078	− 0·001	
	3561	+ 9 22	S	*s* *Q* +1·56	18 27·39	+1·40	28·79	S	*s* *Q* +1·65	28 5·60	+1·64	7·24	38·45				
	3562	+ 9 22	S		18 47·53	+1·40	48·93	S		28 25·83	+1·64	27·47	38·54				
	3621	+ 7 33	S		28 3·88	+1·37	5·25	S		37 42·09	+1·67	43·76	38·51				
Mar.11	3661	+ 32 19	N	*I. P. E.*	10 35 2·94	−1·34	1·60	N	*I. P. W.*	10 44 42·05	−1·97	40·08	9 38·48				
	3671	+ 23 48	N	*d* c − 1·2 b − 1·0 *a* −37·7	36 28·24	−1·49	26·75	N	*d* c − 2·2 b − 2·9 *a* +28·4	46 7·09	−1·83	5·26	38·51	m s 9 38·528	+ 0·078	− 0·002	
	3684	+ 3 6	S		38 32·95	−1·81	31·14	S		48 11·26	−1·59	9·67	38·53				
	3693	+ 14 48	S	*s* *Q* −1·56	39 38·44	−1·64	36·80	S	*s* *Q* −1·65	49 17·11	−1·72	15·39	38·59				
Mar.11	4031	+ 16 17	N	*I. P. W.*	11 49 0·60	+1·55	2·15	N	*I. P. W.*	11 58 39·17	+1·56	40·73	9 38·58				
	4057	+ 43 42	N	*d* c + 2·0 b − 2·7 *a* −42·2	55 30·67	+2·15	32·82	N	*d* c − 2·2 b − 2·9 *a* +28·4	12 5 10·35	+1·13	11·48	38·66				
	4059	+ 43 45	N		55 53·30	+2·15	55·45	N		5 32·94	+1·13	34·07	38·62				
	4066	+ 22 7	N	*s* *Q* +1·56	57 37·99	+1·64	39·63	N	*s* *Q* +1·65	7 16·80	+1·49	18·29	38·66	m s 9 38·603	+ 0·078	− 0·001	
	4031	+ 16 17	S		49 0·65	+1·55	2·20	S		11 58 39·12	+1·56	40·68	38·48				
	4039	+ 4 8	S		51 35·46	+1·35	36·81	S		12 1 13·73	+1·70	15·43	38·62				
	4049	+ 4 18	S		53 18·66	+1·35	20·01	S		2 56·91	+1·70	58·61	38·60				
Mar.11	4100	+ 27 57	N	*I. P. W.*	12 4 13·21	−1·36	11·85	N	*I. P. W.*	12 13 52·37	−1·90	50·47	9 38·62				
	4110	+ 21 10	N	*d* c + 2·0 b − 2·7 *a* −42·2	5 36·15	−1·50	34·65	N	*d* c − 2·2 b − 2·9 *a* +28·4	15 15·16	−1·80	13·36	38·71				
	4127	+ 24 36	N		9 49·07	−1·43	47·64	N		19 28·21	−1·84	26·37	38·73	m s 9 38·665	+ 0·078	− 0·001	
	4079	+ 10 18	S	*s* *Q* −1·56	0 36·42	−1·68	34·74	S	*s* *Q* −1·65	10 15·07	−1·67	13·40	38·66				
	4094	+ 2 33	S		3 5·94	−1·80	4·14	S		12 44·35	−1·58	42·77	38·63				
	4116	+ 2 53	S		7 21·56	−1·79	19·77	S		16 59·99	−1·58	58·41	38·64				
																	9 38·575
																	9 38·604
																	9 38·680
																	9 38·742

NOTE.—$1^s = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*; AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Peral. Equations $S_N - S_S = +0^s{\cdot}025$, $H_N - H_S = +0^s{\cdot}022$	$\delta L_N - \rho$
	B A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.12	3522	+ 20 4	N	*I. P. W.*	10 12 32·15	+1·69	33·84	N	*I. P. E.*	10 22 10·82	+1·73	12·55	9 38·71				
	3602	+ 32 59	N	d c + 2·9 b − 1·6 a −44·6	24 22·72	+1·97	24·69	N	d c + 0·4 b + 3·0 a +20·5	34 1·71	+1·62	3·33	38·64				
	3610	+ 35 35	N		25 59·35	+2·04	61·39	N		35 38·44	+1·59	40·03	38·64	m s 9 38·662	+ 0·079	− 0·002	
	3561	+ 9 22	S	s Q +1·59	18 15·42	+1·49	16·91	S	s Q +1·66	27 53·75	+1·82	55·57	38·66				
	3562	+ 9 22	S		18 35·59	+1·49	37·08	S		28 13·91	+1·82	15·73	38·65				9 38·739
	3621	+ 7 33	S		27 51·94	+1·46	53·40	S		37 30·24	+1·83	32·07	38·67				
Mar.12	3661	+ 32 19	N	*I. P. W.*	10 34 50·91	−1·22	49·69	N	*I. P. E.*	10 44 30·05	−1·70	28·35	9 38·66				
	3671	+ 23 48	N	d c + 2·9 b − 1·6 a −44·6	36 16·27	−1·42	14·85	N	d c + 0·4 b + 3·0 a +20·5	45 55·12	−1·62	53·50	38·65				
	3643	+ 16 44	S		31 51·17	−1·56	49·61	S		41 29·81	−1·56	28·25	38·64	m s 9 38·624	+ 0·079	− 0·002	
	3684	+ 3 6	S	s Q −1·59	38 21·03	−1·79	19·24	S	s Q −1·66	47 59·28	−1·45	57·83	38·59				
	3693	+ 14 48	S		39 26·61	−1·59	25·02	S		49 5·15	−1·55	3·60	38·58				9 38·701
Mar.12	4031	+ 16 17	N	*I. P. E.*	11 48 48·90	+1·55	50·45	N	*I. P. E.*	11 58 27·24	+1·76	29·00	9 38·55				
	4057	+ 43 42	N	d c − 1·3 b − 0·5 a −42·0	55 19·17	+2·14	21·31	N	d c + 0·4 b + 3·0 a +20·5	12 4 58·24	+1·48	59·72	38·41				
	4059	+ 43 45	N		55 41·73	+2·14	43·87	N		5 20·87	+1·48	22·35	38·48				
	4066	+ 22 7	N	s Q +1·59	57 26·45	+1·65	28·10	N	s Q +1·66	7 4·85	+1·71	6·56	38·46	m s 9 38·487	+ 0·079	− 0·001	
	4031	+ 16 17	S		48 48·97	+1·55	50·52	S		11 58 27·26	+1·76	29·02	38·50				9 38·565
	4039	+ 4 8	S		51 23·82	+1·35	25·17	S		12 1 1·82	+1·86	3·68	38·51				
	4049	+ 4 18	S		53 7·04	+1·35	8·39	S		2 45·03	+1·86	46·89	38·50				
Mar.12	4100	+ 27 57	N	*I. P. E.*	12 4 1·71	−1·42	0·29	N	*I. P. E.*	12 13 40·48	−1·65	38·83	9 38·54				
	4110	+ 21 10	N	d c − 1·3 b − 0·5 a −42·0	5 24·63	−1·55	23·08	N	d c + 0·4 b + 3·0 a +20·5	15 3·20	−1·60	1·60	38·52				
	4127	+ 24 36	N		9 37·58	−1·48	36·10	N		19 16·22	−1·63	14·59	38·49	m s 9 38·520	+ 0·079	− 0·001	
	4079	+ 10 18	S	s Q −1·59	0 24·93	−1·74	23·19	S	s Q −1·66	10 3·19	−1·51	1·68	38·49				
	4094	+ 2 33	S		2 54·40	−1·86	52·54	S		12 32·54	−1·45	31·09	38·55				9 38·598
	4116	+ 2 53	S		7 10·01	−1·85	8·16	S		16 48·14	−1·45	46·69	38·53				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *xii*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s{\cdot}025$ $H_N - H_S = +0^s{\cdot}022$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.13	3522	+ 20 4	N	*I. P. E.*	10 12 20·33	+1·69	22·02	N	*I. P. W.*	10 21 58·76	+1·72	60·48	9 38·46				
	3602	+ 32 59	N	*d* c − 1·0 b + 1·7 *a* −41·0	24 10·85	+1·93	12·78	N	*d* c − 2·7 b + 5·3 *a* +22·5	33 49·71	+1·58	51·29	38·51				
	3610	+ 35 35	N		25 47·52	+1·99	49·51	N		35 26·43	+1·55	27·98	38·47	m s 9 38·467	+ 0·082	− 0·002	
	3561	+ 9 22	S	*s* *Q* +1·61	18 3·51	+1·51	5·02	S	*s* *Q* +1·66	27 41·71	+1·81	43·52	38·50				9 38·549
	3562	+ 9 22	S		18 23·72	+1·51	25·23	S		28 1·80	+1·81	3·61	38·38				
	3621	+ 7 33	S		27 40·05	+1·48	41·53	S		37 18·19	+1·82	20·01	38·48				
Mar.13	3661	+ 32 19	N	*I. P. E.*	10 34 39·18	−1·30	37·88	N	*I. P. W.*	10 44 18·05	−1·73	16·32	9 38·44				
	3671	+ 23 48	N	*d* c − 1·0 b + 1·7 *a* −41·0	36 4·48	−1·46	3·02	N	*d* c − 2·7 b + 5·3 *a* +22·5	45 43·12	−1·65	41·47	38·45				
	3643	+ 16 44	S		31 39·34	−1·59	37·75	S		41 17·79	−1·58	16·21	38·46	m s 9 38·446	+ 0·082	− 0·002	
	3684	+ 3 6	S	*s* *Q* −1·61	38 9·18	−1·80	7·38	S	*s* *Q* −1·66	47 47·28	−1·46	45·82	38·44				9 38·528
	3693	+ 14 48	S		39 14·73	−1·62	13·11	S		48 53·11	−1·56	51·55	38·44				
Mar.13	4031	+ 16 17	N	*I. P. W.*	11 48 36·64	+1·77	38·41	N	*I. P. W.*	11 58 15·10	+1·78	16·88	9 38·47				
	4057	+ 43 42	N	*d* c + 4·5 b + 2·8 *a* −54·8	55 6·54	+2·62	9·16	N	*d* c − 2·7 b + 7·0 *a* +22·5	12 4 46·18	+1·49	47·67	38·51				
	4059	+ 43 45	N		55 29·13	+2·62	31·75	N		5 8·77	+1·49	10·26	38 51	m s 9 38·480	+ 0·082	− 0·001	
	4066	+ 22 7	N	*s* *Q* +1·61	57 14·01	+1·92	15·93	N	*s* *Q* +1·66	6 52·70	+1·73	54·43	38·50				9 38·561
	4031	+ 16 17	S		48 36·72	+1·77	38·49	S		11 58 15·12	+1·78	16·90	38·41				
	4039	+ 4 8	S		51 11·58	+1·51	13·09	S		12 0 49·65	+1·88	51·53	38·44				
	4049	+ 4 18	S		52 54·77	+1·51	56·28	S		2 32·92	+1·88	34·80	38·52				
Mar.13	4100	+ 27 57	N	*I. P. W.*	12 3 49·34	−1·15	48·19	N	*I. P. W.*	12 13 28·34	−1·64	26·70	9 38·51				
	4110	+ 21 10	N	*d* c + 4·5 b + 2·8 *a* −54·8	5 12·35	−1·32	11·03	N	*d* c − 2·7 b + 7·0 *a* +22·5	14 51·13	−1·58	49·55	38·52				
	4127	+ 24 36	N		9 25·24	−1·24	24·00	N		19 4·12	−1·62	2·50	38·50	m s 9 38·495	+ 0·082	− 0·001	
	4079	+ 10 18	S	*s* *Q* −1·61	0 12·64	−1·59	11·05	S	*s* *Q* −1·66	9 51·04	−1·48	49·56	38·51				9 38·576
	4094	+ 2 33	S		2 42·22	−1·75	40·47	S		12 20·36	−1·43	18·93	38·46				
	4116	+ 2 53	S		6 57·85	−1·74	56·11	S		16 36·01	−1·43	34·58	38·47				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns for Persl. Equations $S_N - S_S = +0^s.025$, $H_N - H_S = +0^s.022$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	′ ″	m s				
Mar.14	3522	+ 20 4	N	*I. P. W.*	10 12 7·75	+1·77	9·52	N	*I. P. E.*	10 21 46·50	+1·68	48·18	9 38·66				
	3602	+ 32 59	N	d c + 2·4 b + 0·6 a −58·4	23 58·23	+2·13	60·36	N	d c − 1·1 b + 2·4 a +23·3	33 37·34	+1·54	38·88	38·52				
	3610	+ 35 35	N		25 34·83	+2·23	37·06	N		35 14·09	+1·50	15·59	38·53	m s 9 38·575	+ 0·084	− 0·002	9 38·657
	3561	+ 9 22	S	s Q +1·61	17 51·02	+1·50	52·52	S	s Q +1·66	27 29·35	+1·77	31·12	38·60				
	3562	+ 9 22	S		18 11·36	+1·50	12·76	S		27 49·55	+1·77	51·32	38·56				
	3621	+ 7 33	S		27 27·56	+1·46	29·02	S		37 5 81	+1·79	7·60	38·58				
Mar.14	3661	+ 32 19	N	*I. P. W.*	10 34 26·47	−1·10	25·37	N	*I. P. E*	10 44 5·65	−1·77	3·88	9 38·51				
	3671	+ 23 48	N	d c + 2·4 b + 0·6 a −58·4	35 51·87	−1·36	50·51	N	d c − 1·1 b + 2·4 a +23·3	45 30·78	−1·68	29·10	38·59				
	3643	+ 16 44	S		31 26·81	−1·53	25·28	S		41 5·46	−1·61	3·85	38 57	m s 9 38·576	+ 0·084	− 0·002	9 38·658
	3684	+ 3 6	S	s Q −1·61	37 56·71	−1·85	54·86	S	s Q −1·66	47 34·96	−1·49	33·47	38·61				
	3693	+ 14 48	S		39 2·22	−1·58	0·64	S		48 40·83	−1·59	39·24	38·60				
Mar.14	4081	+ 16 17	N	*I. P. E.*	11 48 24·46	+1·48	25·94	N	*I. P. E.*	11 58 2·90	+1·72	4·62	9 38·68				
	4057	+ 43 42	N	d c − 4·5 b − 0·9 a −63·8	54 54·39	+2·36	56·75	N	d c − 1·1 b + 2·4 a +23·3	12 4 33·91	+1·39	35·30	38·55				
	4059	+ 43 45	N		55 16·96	+2·36	19·32	N		4 56·52	+1·39	57·91	38·59				
	4066	+ 22 7	N	s Q +1·61	57 1·88	+1·63	3·51	N	s Q +1·66	6 40·48	+1·66	42·14	38·63	m s 9 38·616	+ 0·084	− 0·001	9 38·699
	4031	+ 16 17	S		48 24·51	+1·48	25·99	S		11 58 2·85	+1·72	4·57	38·58				
	4039	+ 4 8	S		50 59·43	+1·18	60·61	S		12 0 37·43	+1·82	39·25	38 64				
	4049	+ 4 18	S		52 42·66	+1·18	43·84	S		2 20·66	+1·82	22·48	38·64				
Mar.14	4100	+ 27 57	N	*I. P. E.*	12 3 37·24	−1·41	35·83	N	*I. P. E.*	12 13 16·06	−1·73	14·33	9 38·50				
	4110	+ 21 10	N	d c − 4·5 b − 0·9 a −63·8	4 60·24	−1·61	58·63	N	d c − 1·1 b + 2·4 a +23·3	14 38·83	−1·65	37·18	38·55				
	4127	+ 24 36	N		9 13·13	−1·52	11·61	N		18 51·85	−1·69	50·16	38·55				
	4079	+ 10 18	S	s Q −1·61	11 59 60·50	−1·89	58·61	S	s Q −1·66	9 38·81	−1·56	37·25	38·64	m s 9 38·570	+ 0·084	− 0·001	9 38·653
	4094	+ 2 33	S		12 2 30·08	−2·07	28·01	S		12 8·13	−1·48	6·65	38 64				
	4116	+ 2 53	S		6 45·77	−2·07	43·70	S		16 23·73	−1·49	22·24	38·54				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.025$, $H_N - H_S = +0^s.022$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.15	3522	+ 20 4	N	*I. P. E.*	10 11 55·31	+1·69	57·00	N	*I. P. W.*	10 21 34·01	+1·50	35·51	9 38·51				
	3602	+ 32 59	N	d c − 2·2 b + 2·3 a −58·0	23 45·82	+2·04	47·86	N	d c − 2·3 b − 3·7 a +22·5	33 25·02	+1·35	26·37	38·51				
	3610	+ 35 35	N		25 22·44	+2·13	24·57	N		35 1·79	+1·32	3·11	38·54	m s 9 38·543	+ 0·084	− 0·002	9 38·625
	3561	+ 9 22	S	s Q +1·60	17 38·64	+1·43	40·07	S	s Q +1·66	27 17·08	+1·62	18·70	38·63				
	3562	+ 9 22	S		17 58·79	+1·43	60·22	S		27 37·10	+1·62	38·72	38·50				
	3621	+ 7 33	S		27 15·16	+1·39	16·55	S		36 53·49	+1·63	55·12	38·57				
Mar.15	3661	+ 32 19	N	*I. P. E.*	10 34 14·08	−1·18	12·90	N	*I. P. W.*	10 43 53·33	−1·96	51·37	9 38·47				
	3671	+ 23 48	N	d c − 2·2 b + 2·3 a −58·0	35 39·48	−1·41	38·07	N	d c − 2·3 b − 3·7 a +22·5	45 18·39	−1·86	16·53	38·46				
	3643	+ 16 44	S		31 14·39	−1·59	12·80	S		40 53·08	−1·78	51·30	38·50	m s 9 38·500	+ 0·084	− 0·002	9 38·582
	3684	+ 3 6	S	s Q −1·60	37 44·32	−1·90	42·42	S	s Q −1·66	47 22·57	−1·65	20·92	38·50				
	3693	+ 14 48	S		38 49·74	−1·64	48·10	S		48 28·43	−1·76	26·67	38·57				
Mar.15	4031	+ 16 17	N	*I. P. W.*	11 48 11·71	+1·64	13·35	N	*I. P. W.*	11 57 50·52	+1·54	52·06	9 38·71				
	4057	+ 43 42	N	d c + 1·9 b + 0·4 a −63·2	54 41·54	+2·57	44·11	N	d c − 2·3 b − 3·7 a +22·5	12 4 21·50	+1·20	22·70	38·59				
	4059	+ 43 45	N		55 4·30	+2·57	6·87	N		4 44·08	+1·20	45·28	38·41				
	4066	+ 22 7	N	s Q +1·60	56 49·10	+1·81	50·91	N	s Q +1·66	6 28·19	+1·48	29·67	38·76	m s 9 38·647	+ 0·084	− 0·001	9 38·730
	4031	+ 16 17	S		48 11·77	+1·64	13·41	S		11 57 50·52	+1·54	52·06	38·65				
	4039	+ 4 8	S		50 46·67	+1·35	48·02	S		12 0 25·07	+1·66	26·73	38·71				
	4049	+ 4 18	S		52 29·89	+1·35	31·24	S		2 8·28	+1·66	9·94	38·70				
Mar.15	4100	+ 27 57	N	*I. P. W.*	12 3 24·40	−1·22	23·18	N	*I. P. W.*	12 13 3·67	−1·90	1·77	9 38·59				
	4110	+ 21 10	N	d c + 1·9 b + 0·4 a −63·2	4 47·41	−1·41	46·00	N	d c − 2·3 b − 3·7 a +22·5	14 26·48	−1·83	24·65	38·65				
	4127	+ 24 36	N		8 60·30	−1·32	58·98	N		18 39·50	−1·87	37·63	38·65	m s 9 38·648	+ 0·084	− 0·001	9 38·731
	4079	+ 10 18	S	s Q −1·60	11 59 47·79	−1·71	46·08	S	s Q −1·66	9 26·45	−1·71	24·74	38·66				
	4094	+ 2 33	S		12 2 17·34	−1·89	15·45	S		11 55·81	−1·65	54·16	38·71				
	4116	+ 2 53	S		6 32·98	−1·88	31·10	S		16 11·38	−1·65	9·73	38·63				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perpl. Equations $S_N - S_S = +0^s{\cdot}025$, $H_N - H_S = +0^s{\cdot}022$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar. 8	3757	+ 41 3	N	*I. P. E.*	10 43 49·64	+1·66	51·30	N	*I. P. W.*	10 53 28·54	+1·44	°29·98	9 38·68				
	3776	+ 20 48	N	d c − 0·8 b + 1·2 a − 5·6	46 59·73	+1·60	61·33	N	d c − 0·7 b − 0·9 a +16·8	56 38·36	+1·62	39·98	38·65	m s 9 38·705	+ 0·017	− 0·002	9 38·720
	3797	+ 26 10	N		51 42·23	+1·61	43·84	N		11 1 20·93	+1·58	22·51	38·67				
	3768	+ 4 15	S	s Q +1·58	45 25·76	+1·56	27·32	N	s Q +1·67	10 55 4·30	+1·73	6·03	38·71				
	3780	+ 8 12	S		48 30·95	+1·57	32·52	S		58 9·63	+1·70	11·33	38·81				
	3788	+ 7 59	S		49 53·50	+1·57	55·07	S		59 32·08	+1·70	33·78	38·71				
Mar. 8	3838	+ 16 4	N	*I. P. E*	10 59 3·67	−1·57	2·10	N	*I. P W.*	11 8 42·52	−1·69	40·83	9 38·73				
	3851	+ 32 11	N	d c − 0·8 b + 1·2 a − 5·6	11 2 54·14	−1·53	52·61	N	d c − 0·7 b − 0·9 a +16·8	12 33·09	−1·81	31·28	38·67	m s 9 38·718	+ 0·017	− 0·001	9 38·734
	3856	+ 38 50	N		3 43·01	−1·51	41·50	N		13 22·00	−1·88	20·12	38·62				
	3824	+ 15 3	S	s Q −1·58	10 56 33·22	−1·57	31·65	S	s Q −1·67	6 12·09	−1·68	10·41	38·76				
	3838	+ 16 4	S		59 3·60	−1·57	2·03	S		8 42·53	−1·69	40·84	38·81				
Mar. 9	3757	+ 41 3	N	*I. P. W.*	10 43 46·78	+1·83	48·61	N	*I. P. W.*	10 53 26·14	+1·31	27·45	9 38·84				
	3776	+ 20 48	N	d c − 2·8 b − 3·6 a −36 0	46 57·16	+1·46	58·62	N	d c − 2·5 b − 3·1 a +18·4	56 35·88	+1·54	37·42	38·80	m s 9 38·755	+ 0·017	− 0·001	9 38·771
	3797	+ 26 10	N		51 39·62	+1·55	41·17	N		11 1 18·46	+1·48	19·94	38·77				
	3768	+ 4 15	S	s Q +1·56	45 23·48	+1·25	24·73	S	s Q +1·68	10 55 1·74	+1·65	3·39	38·66				
	3780	+ 8 12	S		48 28·64	+1·30	29·94	S		58 7·05	+1·63	8·68	38·74				
	3788	+ 7 59	S		49 51·21	+1·30	52·51	S		59 29·60	+1·63	31·23	38·72				
Mar. 9	3838	+ 16 4	N	*I. P. W.*	10 58 61·35	−1·72	59·63	N	*I. P. W.*	11 8 40·07	−1·79	38·28	9 38·65				
	3824	+ 15 3	S	d c − 2·8 b − 3·6 a −36·0	56 30·87	−1·73	29·14	S	d c − 2·5 b − 3·1 a +18·4	6 9·66	−1·78	7·88	38·74	m s 9 38·739	+ 0·017	− 0·002	9 38·745
	3838	+ 16 4	S		58 61·22	−1·72	59·50	S		8 40·09	−1·79	38·30	38·80				
				s Q −1·56					s Q −1·68								

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s: AND* PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s{\cdot}025$ $H_N - H_S = +0^s{\cdot}022$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s.				
Mar.10	3757	+ 41 3	N	*I. P. W.*	10 43 44·30	+1·88	46·18	N	*I. P. E.*	10 53 23·59	+1·28	24·87	9 38·69				
	3776	+ 20 48	N	d c − 2·7 b − 2·4 a −38·6	46 54·77	+1·50	56·27	N	d c − 2·2 b − 1·8 a +23·4	56 33·36	+1·55	34·91	38·64				
	3797	+ 26 10	N		51 37·22	+1·58	38·80	N		11 1 15·98	+1·49	17·47	38·67	m s 9 38·650	+ 0·015	− 0·002	
	3768	+ 4 15	S	s Q +1·55	45 21·09	+1·25	22·34	S	s Q +1·66	10 54 59·31	+1·70	61·01	38·67				9 38·663
	3780	+ 8 12	S		48 26·28	+1·31	27·59	S		58 4·52	+1·67	6·19	38·60				
	3788	+ 7 59	S		49 48·79	+1·31	50·10	S		59 27·06	+1·67	28·73	38·63				
Mar.10	3838	+ 16 4	N	*I. P. W.*	10 58 58·93	−1·68	57·25	N	*I. P. E.*	11 8 37·59	−1·72	35·87	9 38·62				
	3851	+ 32 11	N	d c − 2·7 b − 2·4 a −38·6	11 2 49·04	−1·40	47·64	N	d c − 2·2 b − 1·8 a +23·4	12 28·35	−1·91	26·44	38·80				
	3856	+ 38 50	N		3 37·78	−1·27	36·51	N		13 17·27	−2·00	15·27	38·76				
	3869	+ 18 4	N	s Q −1·55	7 14·35	−1·65	12·70	N	s Q −1·66	16 53·10	−1·74	51·36	38·66	m s 9 38·670	+ 0·015	− 0·001	
	3821	+ 15 3	S		10 56 28·53	−1·69	26·84	S		6 7·15	−1·71	5·44	38·60				9 38·684
	3838	+ 16 4	S		58 58·85	−1·68	57·17	S		8 37·57	−1·72	35·85	38·68				
	3861	+ 5 31	S		11 5 50·27	−1·83	48·44	S		15 28·64	−1·63	27·01	38·57				
Mar.10	4199	+ 26 34	N	*I. P. E.*	12 12 36·37	+1·81	38·18	N	*I. P. E.*	12 22 15·28	+1·48	16·76	9 38·58				
	4207	+ 26 34	N	d c + 4·0 b − 0·9 a −41·5	13 53·21	+1·81	55·02	N	d c − 2·2 b − 1·8 a +23·4	23 32·08	+1·48	33·56	38·54				
	4240	+ 23 17	N		19 50·40	+1·75	52·15	N		29 29·18	+1·53	30·71	38·56	m s 9 38·555	+ 0·015	− 0·001	
	4250	+ 9 26	S	s Q +1·55	22 1·71	+1·50	3·21	S	s Q +1·66	31 40·09	+1·66	41·75	38·54				9 38·569
Mar.10	4285	+ 39 54	N	*I. P. E.*	12 30 18·91	−0·97	17·94	N	*I. P. E.*	12 39 58·44	−2·02	56·42	9 38·48				
	4267	+ 11 5	S	d c + 4·0 b − 0·9 a −41·5	26 33·23	−1·57	31·66	S	d c − 2·2 b − 1·8 a +23·4	36 11·81	−1·68	10·13	38·47				
	4277	− 0 56	S		28 30·32	−1·76	28·56	S		38 8·69	−1·57	7·12	38·56	m s 9 38·498	+ 0·015	− 0·002	
	4292	+ 12 35	S	s Q −1·55	32 12·78	−1·55	11·23	S	s Q −1·66	41 51·40	−1·69	49·71	38·48				9 38·511

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s:* AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s{\cdot}025$, $H_N - H_S = +0^s{\cdot}022$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.11	3757	+ 41 3	N	*I. P. E.*	10 43 42·27	+1·96	44·23	N	*I. P. W.*	10 53 21·65	+1·18	22·83	9 38·60				
	3776	+ 20 48	N	d c − 1·2 b − 1·0 a −37·7	46 52·64	+1·58	54·22	N	d c − 2·2 b − 2·9 a +28·4	56 31·38	+1·51	32·89	38·67				
	3797	+ 26 10	N		51 35·03	+1·67	36·70	N		11 1 13·94	+1·43	15·37	38·67	m s 9 38·632	+ 0·014	− 0·001	9 38·645
	3768	+ 4 15	S	s Q +1·56	45 18·91	+1·33	20·24	S	s Q +1·65	10 54 57·18	+1·70	58·88	38·64				
	3780	+ 8 12	S		48 24·09	+1·39	25·48	S		58 2·43	+1·66	4·09	38·61				
	3788	+ 7 59	S		49 46·66	+1·38	48·04	S		59 24·98	+1·66	26·64	38·60				
Mar.11	3838	+ 16 4	N	*I. P. E.*	10 58 56·74	−1·62	55·12	N	*I. P. W.*	11 8 35·50	−1·74	33·76	9 38·64				
	3851	+ 32 11	N	d c − 1·2 b − 1·0 a −37·7	11 2 46·96	−1·35	45·61	N	d c − 2·2 b − 2·9 a +28·4	12 26·21	−1·95	24·26	38·65				
	3856	+ 38 50	N		3 35·75	−1·21	34·54	N		13 15·17	−2·07	13·10	38·56	m s 9 38·649	+ 0·014	− 0·001	9 38·662
	3869	+ 18 4	N	s Q −1·56	7 12·24	−1·59	10·65	N	s Q −1·65	16 51·10	−1·76	49·34	38·69				
	3824	+ 15 3	S		10 56 26·36	−1·63	24·73	S		6 5·14	−1·73	3·41	38·68				
	3838	+ 16 4	S		58 56·73	−1·62	55·11	S		8 35·52	−1·74	33·78	38·67				
	3861	+ 5 31	S		11 5 48·11	−1·77	46·34	S		15 26·60	−1·61	24·99	38·65				
Mar.11	4207	+ 26 34	N	*I. P. W.*	12 13 50·97	+1·73	52·70	N	*I. P. W.*	12 23 30·11	+1·42	31·53	9 38·83				
	4240	+ 23 17	N	d c + 2·0 b − 2·7 a −42·2	19 48·21	+1·66	49·87	N	d c − 2·2 b − 2·9 a +28·4	29 27·21	+1·48	28·69	38·82				
	4218	+ 10 22	S		15 24·42	+1·44	25·86	S		25 2·96	+1·63	4·59	38·73	m s 9 38·760	+ 0·014	− 0·002	9 38·772
	4228	+ 10 57	S	s Q +1·56	17 54·87	+1·46	56·33	S	s Q +1·65	27 33·39	+1·62	35·01	38·68				
	4250	+ 9 26	S		21 59·48	+1·43	60·91	S		31 38·01	+1·64	39·65	38·74				
Mar.11	4285	+ 39 54	N	*I. P. W.*	12 30 16·71	−1·08	15·63	N	*I. P. W.*	12 39 56·48	−2·09	54·39	9 38·76				
	4304	+ 28 11	N	d c + 2·0 b − 2·7 a −42·2	34 25·14	−1·36	23·78	N	d c − 2·2 b − 2·9 a +28·4	44 4·43	−1·90	2·53	38·75				
	4315	+ 28 10	N		36 49·72	−1·36	48·36	N		46 28·98	−1·90	27·08	38·72	m s 9 38·772	+ 0·014	− 0·002	9 38·784
	4267	+ 11 5	S	s Q −1·56	26 30·99	−1·66	29·33	S	s Q −1·65	36 9·77	−1·68	8·09	38·76				
	4277	− 0 56	S		28 28·15	−1·85	26·30	S		38 6·64	−1·54	5·10	38·80				
	4292	+ 12 35	S		32 10·48	−1·64	8·84	S		41 49·38	−1·70	47·68	38·84				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns for Persl. Equations $S_N - S_S = +0^s.025$, $H_N - H_S = +0.022$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.12	3757	+ 41 3	N	*I. P. W.*	10 43 39·97	+2·19	42·16	N	*I. P. E.*	10 53 19·29	+1·52	20·81	9 38·65				
	3776	+ 20 48	N	d c + 2·9 b − 1·6 a −44·6	46 50·46	+1·70	52·16	N	d c + 0·4 b + 3·0 a +20·5	56 29·13	+1·72	30·85	38·69				
	3797	+ 26 10	N		51 32·87	+1·81	34·68	N		11 1 11·72	+1·67	13·39	38·71	m s 9 38·692	+ 0·012	− 0·001	
	3768	+ 4 15	S	s Q +1·59	45 16·78	+1·41	18·19	S	s Q +1·66	10 54 55·00	+1·86	56·86	38·67				
	3780	+ 8 12	S		48 21·94	+1·47	23·41	S		58 0·31	+1·83	2·14	38·73				
	3788	+ 7 59	S		49 44·51	+1·47	45·98	S		59 22·85	+1·83	24·68	38·70				
Mar.12	3838	+ 16 4	N	*I. P. W.*	10 58 54·76	−1·57	53·19	N	*I. P. E.*	11 8 33·41	−1·56	31·85	9 38·66				
	3851	+ 32 11	N	d c + 2·9 b − 1·6 a −44·6	11 2 44·78	−1·23	43·55	N	d c + 0·4 b + 3·0 a +20·5	12 24·05	−1·70	22·35	38·80				
	3856	+ 38 50	N		3 33·49	−1·06	32·43	N		13 12·97	−1·77	11·20	38·77				
	3869	+ 18 4	N	s Q −1·59	7 10·14	−1·53	8·61	N	s Q −1·66	16 48·97	−1·57	47·40	38·79	m s 9 38·759	+ 0·012	− 0·001	
	3824	+ 15 3	S		10 56 24·25	−1·59	22·66	S		6 3·00	−1·55	1·45	38·79				
	3838	+ 16 4	S		58 54·59	−1·57	53·02	S		8 33·34	−1·56	31·78	38·76				
	3861	+ 5 31	S		11 5 46·05	−1·75	44·30	S		15 24·51	−1·47	23·04	38·74				
Mar.12	4199	+ 26 34	N	*I. P. E.*	12 12 32·40	+1·73	34·13	N	*I. P. E.*	12 22 11·03	+1·67	12·70	9 38·57				
	4207	+ 26 34	N	d c − 1·3 b − 0·5 a −42·0	13 49·22	+1·73	50·95	N	d c + 0·4 b + 3·0 a +20·5	23 27·91	+1·67	29·58	38·63				
	4240	+ 23 17	N		19 46·39	+1·67	48·06	N		29 24·94	+1·70	26·64	38·58	m s 9 38·608	+ 0·012	− 0·002	
	4218	+ 10 22	S	s Q +1·59	15 22·65	+1·44	24·09	S	s Q +1·66	25 0·83	+1·81	2·64	38·55				
	4228	+ 10 57	S		17 53·00	+1·46	54·46	S		27 31·30	+1·80	33·10	38·64				
	4250	+ 9 26	S		21 57·66	+1·43	59·09	S		31 35·95	+1·82	37·77	38·68				
Mar.12	4285	+ 39 54	N	*I. P. E.*	12 30 14·97	−1·15	13·82	N	*I. P. E.*	12 39 54·13	−1·79	52·34	9 38·52				
	4304	+ 28 11	N	d c − 1·3 b − 0·5 a −42·0	34 23·44	−1·41	22·03	N	d c + 0·4 b + 3·0 a +20·5	44 2·25	−1·66	0·59	38·56				
	4315	+ 28 10	N		36 48·02	−1·41	46·61	N		46 26·81	−1·66	25·15	38·54	m s 9 38·573	+ 0·012	− 0·001	
	4267	+ 11 5	S	s Q −1·59	26 29·29	−1·72	27·57	S	s Q −1·66	36 7·61	−1·52	6·09	38·52				
	4277	− 0 56	S		28 26·40	−1·91	24·49	S		38 4·59	−1·43	3·16	38·67				
	4292	+ 12 35	S		32 8·74	−1·70	7·04	S		41 47·20	−1·53	45·67	38·63				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s:* AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perml. Equations $S_N - S_S = +0^s.025$, $H_N - H_S = +0^s.022$	$\delta L_S + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.13	3757	+ 41 3	N	*I. P. E.*	10 43 38·34	+2·14	40·48	N	*I. P. W.*	10 53 17·59	+1·48	19·07	9 38·59				
	3776	+ 20 48	N	d c − 1·0	46 48·74	+1·70	50·44	N	d c − 2·7	56 27·32	+1·71	29·03	38·59				
	3797	+ 26 10	N	b + 1·7 a −41·0	51 31·16	+1·79	32·95	N	b + 5·3 a +22·5	11 1 9·94	+1·65	11·59	38·64	m s 9 38·590	+ 0·012	− 0·002	9 38·600
	3768	+ 4 15	S	s Q +1·61	45 15·05	+1·43	16·48	S	s Q +1·66	10 54 53·17	+1·85	55·02	38·54				
	3780	+ 8 12	S		48 20·32	+1·49	21·71	S		57 58·49	+1·81	60·30	38·59				
	3788	+ 7 59	S		49 42·77	+1·49	44·26	S		59 21·03	+1·82	22·85	38·59				
Mar.13	3838	+ 16 4	N	*I. P. E.*	10 58 53·02	−1·60	51·42	N	*I. P. W.*	11 8 31·50	−1·57	29·93	9 38·51				
	3851	+ 32 11	N	d c − 1·0	11 2 43·20	−1·30	41·90	N	d c − 2·7	12 22·20	−1·73	20·47	38·57				
	3856	+ 38 50	N	b + 1·7 a −41·0	3 31·87	−1·14	30·73	N	b + 5·3 a +22·5	13 11·14	−1·82	9·32	38·59				
	3869	+ 18 4	N	s Q −1·61	7 8·51	−1·57	6·94	N	s Q −1·66	16 47·09	−1·58	45·51	38·57	m s 9 38·571	+ 0·012	− 0·001	9 38·582
	3824	+ 15 3	S		10 56 22·61	−1·61	21·00	S		5 61·10	−1·57	59·53	38·53				
	3838	+ 16 4	S		58 52·90	−1·60	51·30	S		8 31·57	−1·57	30·00	38·70				
	3861	+ 5 31	S		11 5 44·41	−1·77	42·64	S		15 22·65	−1·48	21·17	38·53				
Mar.13	4199	+ 26 34	N	*I. P. W.*	12 12 30·26	+2·03	32·29	N	*I. P. W.*	12 22 9·18	+1·68	10·86	9 38·57				
	4207	+ 26 34	N	d c + 4·5	13 47·11	+2·03	49·14	N	d c − 2·7	23 26·01	+1·68	27·69	38·55				
	4240	+ 23 17	N	b + 2·8 a −54·8	19 44·29	+1·95	46·24	N	b + 7·0 a +22·5	29 23·10	+1·72	24·82	38·58	m s 9 38·557	+ 0·012	− 0·001	9 38·568
	4218	+ 10 22	S	s Q +1·61	15 20·67	+1·63	22·30	S	s Q +1·66	24 58·99	+1·84	60·83	38·53				
	4228	+ 10 57	S		17 51·00	+1·65	52·65	S		27 29·40	+1·83	31·23	38·58				
	4250	+ 9 26	S		21 55·72	+1·62	57·34	S		31 34·03	+1·84	35·87	38·53				
Mar.13	4285	+ 39 54	N	*I. P. W.*	12 30 12·78	−0·76	12·02	N	*I. P. W.*	12 39 52·36	−1·79	50·57	9 38·55				
	4304	+ 28 11	N	d c + 4·5	34 21·40	−1·14	20·26	N	d c − 2·7	43 60·45	−1·64	58·81	38·55				
	4315	+ 28 10	N	b + 2·8 a −54·8	36 45·90	−1·14	44·76	N	b + 7·0 a +22·5	46 25·04	−1·64	23·40	38·64	m s 9 38·590	+ 0·012	− 0·002	9 38·600
	4267	+ 11 5	S	s Q −1·61	26 27·24	−1·57	25·67	S	s Q −1·66	36 5·79	−1·49	4·30	38·63				
	4277	− 0 56	S		28 24·55	−1·82	22·73	S		38 2·71	−1·40	1·31	38·58				
	4292	+ 12 35	S		32 6·82	−1·54	5·28	S		41 45·37	−1·50	43·87	38·59				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 2s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_W - S_E = +0^s{\cdot}035$ $H_N - H_E = +0^s{\cdot}022$	$\delta L_W + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.14	3757	+ 41 3	N	*I. P. W.*	10 43 36·06	+2·42	38·48	N	*I. P. E.*	10 53 15·75	+1·44	17·19	9 38·71				
	3776	+ 20 48	N	d c + 2·4 b + 0·6 a −58·4	46 46·69	+1·79	48·48	N	d c − 1·1 b + 2·4 a +23·3	56 25·58	+1·67	27·25	38·77				
	3797	+ 26 10	N		51 29·04	+1·93	30·97	N		11 1 8·07	+1·62	9·69	38·72	m s 9 38·730	+ 0·012	− 0·001	9 38·741
	3768	+ 4 15	S	s Q +1·61	45 13·12	+1·39	14·51	S	s Q +1·66	10 54 51·44	+1·82	53·26	38·75				
	3780	+ 8 12	S		48 18·25	+1·48	19·73	S		57 56·68	+1·78	58·46	38·73				
	3788	+ 7 59	S		49 40·82	+1·47	42·29	S		59 19·20	+1·79	20·99	38·70				
Mar.14	3838	+ 16 4	N	*I. P. W.*	10 58 51·05	−1·55	49·50	N	*I. P. E.*	11 8 29·69	−1·60	28·09	9 38·59				
	3851	+ 32 11	N	d c + 2·4 b + 0·6 a −58·4	11 2 41·04	−1·11	39·93	N	d c − 1·1 b + 2·4 a +23·3	12 20·37	−1·77	18·60	38·67				
	3856	+ 38 50	N		3 29·70	−0·88	28·82	N		13 9·32	−1·85	7·47	38·65	m s 9 38·644	+ 0·012	− 0·001	9 38·655
	3869	+ 18 4	N	s Q −1·61	7 6·46	−1·50	4·96	N	s Q −1·66	16 45·24	−1·62	43·62	38·66				
	3824	+ 15 3	S		10 56 20·63	−1·58	19·05	S		5 59·25	−1·60	57·65	38·60				
	3838	+ 16 4	S		58 50·94	−1·55	49·39	S		8 29·69	−1·60	28·09	38·70				
	3861	+ 5 31	S		11 5 42·45	−1·80	40·65	S		15 20·80	−1·51	19·29	38·64				
Mar.14	4199	+ 26 34	N	*I. P. E.*	12 12 28·58	+1·76	30·34	N	*I. P. E.*	12 22 7·37	+1·61	8·98	9 38·64				
	4207	+ 26 34	N	d c − 4·5 b − 0·9 a −63·8	13 45·44	+1·76	47·20	N	d c − 1·1 b + 2·4 a +23·3	23 24·25	+1·61	25·86	38·66				
	4240	+ 23 17	N		19 42·66	+1·67	44·33	N		29 21·35	+1·65	23·00	38·67	m s 9 38·675	+ 0·012	− 0·001	9 38·686
	4218	+ 10 22	S	s Q +1·61	15 18·97	+1·33	20·30	S	s Q +1·66	24 57·27	+1·76	59·03	38·73				
Mar.14	4285	+ 39 54	N	*I. P. E.*	12 30 11·17	−1·02	10·15	N	*I. P. E.*	12 39 50·63	−1·86	48·77	9 38·62				
	4304	+ 28 11	N	d c − 4·5 b − 0·9 a −63·8	34 19·72	−1·42	18·30	N	d c − 1·1 b + 2·4 a +23·3	43 58·65	−1·73	56·92	38·62				
	4315	+ 28 10	N		36 44·34	−1·42	42·92	N		46 23·27	−1·73	21·54	38·62				
	4267	+ 11 5	S	s Q −1·61	26 25·70	−1·87	23·83	S	s Q −1·66	36 4·02	−1·57	2·45	38·62	m s 9 38·652	+ 0·012	− 0·002	9 38·662
	4277	− 0 56	S		28 22·94	−2·16	20·78	S		37 60·95	−1·45	59·50	38·72				
	4293	+ 12 35	S		32 5·16	−1·83	3·33	S		41 43·62	−1·58	42·04	38·71				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND PROME (W) *Lat. 18° 49′, Long. 6h 21m 9s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = +0^s.025$, $H_N - H_S = +0^s.022$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.15	3757	+ 41 3	N	*I. P. E.*	10 43 34·56	+2·31	36·87	N	*I. P. W.*	10 53 14·25	+1·24	15·49	9 38·62				
	3776	+ 20 48	N	d c − 2·2 b + 2·3 a −58·0	46 45·13	+1·71	46·84	N	d c − 2·3 b − 3·7 a +22·5	56 24·02	+1·49	25·51	38·67				
	3797	+ 26 10	N		51 27·59	+1·84	29·43	N		11 1 6·65	+1·44	8·09	38·66	m s 9 38·663		− 0·001	9 38·673
	3768	+ 4 15	S	s Q +1·60	45 11·57	+1·32	12·89	S	s Q +1·66	10 54 49·87	+1·66	51·53	38·64		+ 0·011		
	3780	+ 8 12	S		48 16·72	+1·41	18·13	S		57 55·13	+1·62	56·75	38·62				
	3788	+ 7 59	S		49 39·24	+1·40	40·64	S		59 17·78	+1·63	19·41	38·77				
Mar.15	3838	+ 16 4	N	*I. P. E.*	10 58 49·43	−1·61	47·82	N	*I. P. W.*	11 8 28·26	−1·77	26·49	9 38·67				
	3851	+ 32 11	N	d c − 2·2 b + 2·3 a −58·0	11 2 39·46	−1·18	38·28	N	d c − 2·3 b − 3·7 a +22·5	12 18·90	−1·96	16·94	38·66				
	3856	+ 38 50	N		3 28·13	−0·96	27·17	N		13 7·85	−2·05	5·80	38 63	m s 9 38·683		− 0·001	9 38·693
	3869	+ 18 4	N	s Q −1·60	7 4·88	−1·57	3·31	N	s Q −1·66	16 43·81	−1·79	42·02	38·71		+ 0·011		
	3824	+ 15 3	S		10 56 19·04	−1·63	17·41	S		5 57·85	−1·77	56·08	38·67				
	3838	+ 16 4	S		58 49·33	−1·61	47·72	S		8 28·25	−1·77	26·48	38·76				
	3861	+ 5 31	S		11 5 40·88	−1·85	39·03	S		15 19·38	−1·67	17·71	38·68				
Mar.15	4240	+ 23 17	N	*I. P. W.*	12 19 40·65	+1·84	42·49	N	*I. P. W.*	12 29 19·93	+1·47	21·40	9 38·91				
	4218	+ 10 22	S	d c + 1·9 b + 0·4 a −63·2	15 17·00	+1·49	18·49	S	d c − 2·3 b − 3·7 a +22·5	24 55·77	+1·61	57·38	38·89				
	4228	+ 10 57	S		17 47·38	+1·51	48·89	S		27 26·22	+1·60	27·82	38·93	m s 9 38·918	+ 0·011	− 0·002	9 38·927
	4250	+ 9 26	S	s Q +1·60	21 52·08	+1·47	53·55	S	s Q +1·66	31 30·88	+1·61	32·49	38·94				
Mar.15	4285	+ 39 54	N	*I. P. W.*	12 30 9·11	−0·80	8·31	N	*I. P. W.*	12 39 49·09	−2·07	47·02	9 38·71				
	4304	+ 28 11	N	d c + 1·9 b + 0·4 a −63·2	34 17·75	−1·21	16·54	N	d c − 2·3 b − 3·7 a +22·5	43 57·20	−1·90	55·30	38·76				
	4315	+ 28 10	N		36 42·31	−1·21	41·10	N		46 21·80	−1·90	19·90	38·80				
	4267	+ 11 5	S	s Q −1·60	26 23·72	−1·69	22·03	S	s Q −1·66	36 2·55	−1·72	0·83	38·80	m s 9 38·785	+ 0·011	− 0·002	9 38·794
	4277	− 0 56	S		28 21·00	−1·97	19·03	S		37 59·49	−1·62	57·87	38·84				
	4292	+ 12 35	S		32 3·21	−1·65	1·56	S		41 42·10	−1·74	40·36	38·80				

NOTE.—$1^d = 0^s.9225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s:* AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perel. Equations $S_N - S_S = -0^s{\cdot}004$, $H_N - H_S = +0^s{\cdot}046$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.26	3964	+ 22 0	N	*I. P. E.*	11 34 50·04	+1·57	51·61	N	*I. P. E.*	11 53 44·66	+1·80	46·46	18 54·85				
	3990	+ 20 52	N	d c − 0·2 b − 1·6 a − 0·2	42 4·98	+1·57	6·55	N	d c − 0·6 b + 1·7 a − 1·2	12 0 59·58	+1·80	61·38	54·83				
	3998	+ 35 35	N		43 44·96	+1·56	46·52	N		2 39·58	+1·81	41·39	54·87	m s 18 54·823	− 0·028	+ 0·025	18 54·820
	3971	+ 5 23	S	s Q + 1·61	36 16·37	+1·57	17·94	S	s Q + 1·77	11 55 10·90	+1·79	12·69	54·75				
	3975	− 6 2	S		38 4·69	+1·58	6·27	S		56 59·32	+1·78	61·10	54·83				
	3982	+ 7 11	S		39 58·80	+1·57	60·37	S		58 53·39	+1·79	55·18	54·81				
Mar.26	4039	+ 4 8	S	*I. P. E.*	11 52 25·44	−1·65	23·79	S	*I. P. E.*	12 11 20·38	−1·75	18·63	18 54·84	m s 18 54·830	− 0·028	+ 0·050	18 54·852
	4049	+ 4 18	S	d c − 0·2 b − 1·6 a − 0·2 s Q − 1·61	54 8·64	−1·65	6·99	S	d c − 0·6 b + 1·7 a − 1·2 s Q − 1·77	13 3·56	−1·75	1·81	54·82				
Mar.27	3964	+ 22 0	N	*I. P. W.*	11 34 52·05	+1·65	53·70	N	*I. P. W.*	11 53 46·94	+1·68	48·62	18 54·92				
	3990	+ 20 52	N	d c + 1·3 b + 0·1 a − 7·6	42 6·96	+1·64	8·60	N	d c − 0·2 b − 2·9 a − 2·4	12 1 1·95	+1·68	3·63	55·03				
	3998	+ 35 35	N		43 46·91	+1·71	48·62	N		2 41·94	+1·68	43·62	55·00	m s 18 54·962	− 0·030	+ 0·025	18 54·957
	3971	+ 5 23	S	s Q + 1·60	36 18·42	+1·60	20·02	S	s Q + 1·75	11 55 13·26	+1·68	14·94	54·92				
	3975	− 6 2	S		38 6·79	+1·56	8·35	S		57 1·66	+1·67	3·33	54·98				
	3982	+ 7 11	S		40 0·85	+1·60	2·45	S		58 55·69	+1·68	57·37	54·92				
Mar.27	4018	+ 41 34	N	*I. P. W.*	11 47 59·07	−1·46	57·61	N	*I. P. W.*	12 6 54·44	−1·81	52·63	18 55·02				
	4056	+ 22 44	N	d c + 1·3 b + 0·1 a − 7·6	55 57·96	−1·55	56·41	N	d c − 0·2 b − 2·9 a − 2·4	14 53·16	−1·82	51·34	54·93				
	4066	+ 22 6	N		58 30·35	−1·55	28·80	N		17 25·59	−1·82	23·77	54·97	m s 18 54·948	− 0·030	+ 0·025	18 54·943
	4031	+ 16 18	S	s Q − 1·60	49 52·80	−1·57	51·23	S	s Q − 1·75	8 47·95	−1·82	46·13	54·90				
	4039	+ 4 8	S		52 27·48	−1·61	25·87	S		11 22·64	−1·82	20·82	54·95				
	4049	+ 4 18	S		54 10·73	−1·61	9·12	S		13 5·86	−1·82	4·04	54·92				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Hearnside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.004$, $H_N - H_S = +0^s.046$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.27	4594	+ 26 17	N	*I. P. E.*	13 41 27·19	+1·68	28·87	N	*I. P. W.*	14 0 22·12	+1·68	23·80	18 54·93				
	4664	+ 22 16	N	d c + 0·7 b + 0·3 a −11·9	53 19·96	+1·66	21·62	N	d c − 0·2 b − 2·9 a − 2·4	12 14·81	+1·68	16·49	54·87	m s 18 54·900	0·030	+ 0·030	18 54·900
	4615	+ 16 22	S		44 0·04	+1·63	1·67	S		2 54·93	+1·68	56·61	54·94				
	4651	+ 1 37	S	s Q +1·60	50 40·69	+1·56	42·25	S	s Q +1·75	9 35·46	+1·67	37·13	54·88				
	4672	+ 2 6	S		55 51·95	+1·56	53·51	S		14 46·72	+1·67	48·39	54·88				
Mar.27	4699	+ 44 24	N	*I. P. E.*	14 3 27·67	−1·40	26·27	N	*I. P. W.*	14 22 23·08	−1·81	21·27	18 55·00				
	4706	+ 25 38	N	d c + 0·7 b + 0·3 a −11·9	5 16·81	−1·52	15·29	N	d c − 0·2 b − 2·9 a − 2·4	24 12·02	−1·81	10·21	54·92	m s 18 54·892	0·030	+ 0·030	18 54·892
	4716	− 9 44	S		6 53·26	−1·69	51·57	S		25 48·28	−1·84	46·44	54·87				
	4721	+ 13 30	S	s Q −1·60	8 40·86	−1·58	39·28	S	s Q −1·75	27 35·94	−1·83	34·11	54·83				
	4727	− 5 27	S		10 6·66	−1·67	4·99	S		28 61·66	−1·83	59·83	54·84				
Mar.28	4594	+ 26 17	N	*I. P. W.*	13 41 29·63	+1·64	31·27	N	*I. P. E.*	14 0 24·46	+1·69	26·15	18 54·88				
	4664	+ 22 16	N	d c + 0·4 b − 0·5 a −10·3	53 22·25	+1·62	23·87	N	d c − 1·8 b − 1·7 a − 6·3	12 17·13	+1·69	18·82	54·95	m s 18 54·883	0·033	+ 0·035	18 54·875
	4678	+ 32 13	N		57 33·73	+1·67	35·40	N		16 28·67	+1·71	30·38	54·98				
	4615	+ 16 22	S	s Q +1·60	44 2·50	+1·60	4·10	S	s Q +1·76	2 57·31	+1·67	58·98	54·88				
	4651	+ 1 37	S		50 43·09	+1·54	44·63	S		9 37·83	+1·63	39·46	54·83				
	4672	+ 2 6	S		55 54·39	+1·54	55·93	S		14 49·07	+1·64	50·71	54·78				
Mar.28	4694	+ 31 24	N	*I. P. W.*	14 1 30·27	−1·53	28·74	N	*I. P. E.*	14 20 25·45	−1·82	23·63	18 54·89				
	4699	+ 44 24	N	d c + 0·4 b − 0·5 a −10·3	3 30·06	−1·45	28·61	N	d c − 1·8 b − 1·7 a − 6·3	22 25·36	−1·79	23·57	54·96	m s 18 54·903	0·033	+ 0·025	18 54·895
	4706	+ 25 38	N		5 19·19	−1·56	17·63	N		24 14·40	−1·82	12·58	54·95				
	4716	− 9 44	S	s Q −1·60	6 55·70	−1·70	54·00	S	s Q −1·76	25 50·75	−1·90	48·85	54·85				
	4721	+ 13 30	S		8 43·22	−1·61	41·61	S		27 38·38	−1·86	36·52	54·91				
	4727	− 5 27	S		10 9·02	−1·69	7·33	S		29 4·08	−1·89	2·19	54·86				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.004$ $H_N - H_S = +0^s.046$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s.	m s				
Mar.29	3964	+ 22 0	N	*I. P. W.*	11 34 56·97	+1·68	58·65	N	*I. P. W.*	11 53 51·87	+1·80	53·67	18 55·02				
	3990	+ 20 52	N	d c + 1·3 b + 0·7 a − 14·8	42 11·94	+1·68	13·62	N	d c + 0·8 b + 1·0 a + 3·3	12 1 6·81	+1·80	8·61	54·99				
	3998	+ 35 35	N		43 51·80	+1·79	53·59	N		2 46·82	+1·79	48·61	55·02	m s 18 55·018	− 0·032	+ 0·025	18 55·011
	3971	+ 5 23	S	s Q + 1·60	36 23·46	+1·59	25·05	S	s Q + 1·76	11 55 18·22	+1·82	20·04	54·99				
	3975	− 6 2	S		38 11·81	+1·51	13·32	S		57 6·56	+1·83	8·39	55·07				
	3982	+ 7 11	S		40 5·84	+1·60	7·44	S		59 0·64	+1·82	2·46	55·02				
Mar.29	4056	+ 22 44	N	*I. P. W.*	11 56 2·87	−1·51	1·36	N	*I. P. W.*	12 14 58·08	−1·72	56·36	18 55·00				
	4066	+ 22 6	N	d c + 1·3 b + 0·7 a − 14·8	58 35·28	−1·52	33·76	N	d c + 0·8 b + 1·0 a + 3·3	17 30·53	−1·72	28·81	55·05				
	4031	+ 16 18	S		49 57·74	−1·55	56·19	S		8 52·90	−1·71	51·19	55·00	m s 18 55·028	− 0·033	+ 0·030	18 55·026
	4039	+ 4 8	S	s Q − 1·60	52 32·47	−1·62	30·85	S	s Q − 1·76	11 27·62	−1·70	25·92	55·07				
	4049	+ 4 18	S		54 15·70	−1·62	14·08	S		13 10·80	−1·70	9·10	55·02				
Mar.29	4594	+ 26 17	N	*I. P. E.*	13 41 32·21	+1·72	33·93	N	*I. P. W.*	14 0 26·96	+1·79	28·75	18 54·82				
	4664	+ 22 16	N	d c + 1·1 b + 0·6 a − 19·2	53 24·89	+1·69	26·58	N	d c + 0·8 b + 1·0 a + 3·3	12 19·69	+1·80	21·49	54·91				
	4678	+ 32 13	N		57 36·35	+1·79	38·14	N		16 31·19	+1·79	32·98	54·84	m s 18 54·924	− 0·032	+ 0·020	18 54·912
	4615	+ 16 22	S	s Q + 1·60	44 5·04	+1·64	6·68	S	s Q + 1·76	2 59·87	+1·81	61·68	55·00				
	4651	+ 1 37	S		50 45·70	+1·52	47·22	S		9 40·45	+1·82	42·27	55·95				
Mar.29	4694	+ 31 24	N	*I. P. E.*	14 1 32·79	−1·42	31·37	N	*I. P. W.*	14 20 27·96	−1·73	26·23	18 54·86				
	4699	+ 44 24	N	d c + 1·1 b + 0·6 a − 19·2	3 32·60	−1·27	31·33	N	d c + 0·8 b + 1·0 a + 3·3	22 27·86	−1·74	26·12	54·79				
	4706	+ 25 38	N		5 21·78	−1·49	20·29	N		24 16·94	−1·73	15·21	54·92	m s 18 54·897	− 0·032	+ 0·025	18 54·890
	4716	− 9 44	S	s Q − 1·60	6 58·35	−1·75	56·60	S	s Q − 1·76	25 53·24	−1·68	51·56	54·96				
	4721	+ 13 30	S		8 45·86	−1·58	44·28	S		27 40·87	−1·71	39·16	54·88				
	4727	− 5 27	S		10 11·65	−1·73	9·92	S		29 6·58	−1·69	4·89	54·97				

NOTE.—$1^d = 0^s.9225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Perpl. Equations $S_N - S_S = -0^s{\cdot}004$, $H_N - H_S = +0^s{\cdot}046$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.30	3964	+ 22 0	N	*I. P. E.*	11 34 59·29	+1·62	60·91	N	*I. P. E.*	11 53 54·13	+1·74	55·87	18 54·96				
	3990	+ 20 52	N	*d* c − 0·8 b + 0·1 *a* −19·5	42 14·32	+1·62	15·94	N	*d* c − 0·2 b − 0·7 *a* − 4·4	12 1 9·16	+1·74	10·90	54·96				
	3998	+ 35 35	N		43 54·10	+1·76	55·86	N		2 49·12	+1·76	50·88	55·02	m s 18 55·007	− 0·026	+ 0·025	18 55·006
	3971	+ 5 23	S	*s* *Q* +1·60	36 25·75	+1·50	27·25	S	*s* *Q* +1·76	11 55 20·58	+1·71	22·29	55·04				
	3975	− 6 2	S		38 14·18	+1·41	15·59	S		57 8·96	+1·71	10·67	55·08				
	3982	+ 7 11	S		40 8·14	+1·51	9·65	S		59 2·91	+1·72	4·63	54·98				
Mar.30	4018	+ 41 34	N	*I. P. E.*	11 48 6·24	−1·37	4·87	N	*I. P. E.*	12 6 1·59	−1·74	59·85	18 54·98				
	4056	+ 22 44	N	*d* c − 0·8 b + 0·1 *a* −19·5	56 5·20	−1·57	3·63	N	*d* c − 0·2 b − 0·7 *a* − 4·4	14 60·41	−1·78	58·63	55·00				
	4066	+ 22 6	N		58 37·62	−1·58	36·04	N		17 32·68	−1·78	30·90	54·86	m s 18 54·930	− 0·026	+ 0·025	18 54·929
	4031	+ 16 18	S	*s* *Q* −1·60	49 60·04	−1·62	58·42	S	*s* *Q* −1·76	8 55·10	−1·79	53·31	54·89				
	4039	+ 4 8	S		52 34·83	−1·71	33·12	S		11 29·83	−1·81	28·02	54·90				
	4049	+ 4 18	S		54 18·07	−1·71	16·36	S		13 13·12	−1·81	11·31	54·95				
Mar.30	4594	+ 26 17	N	*I. P. W.*	13 41 34·44	+1·71	36·15	N	*I. P. E.*	14 0 29·35	+1·74	31·09	18 54·94				
	4664	+ 22 16	N	*d* c + 0·2 b + 0·8 *a* −17·9	53 27·11	+1·66	28·77	N	*d* c − 0·2 b − 0·7 *a* − 4·4	12 21·95	+1·74	23·69	54·92				
	4678	+ 32 13	N		57 38·51	+1·76	40·27	N		16 33·52	+1·75	35·27	55·00	m s 18 54·963	− 0·026	+ 0·025	18 54·962
	4615	+ 16 22	S	*s* *Q* +1·60	44 7·29	+1·62	8·91	S	*s* *Q* +1·76	3 2·15	+1·73	3·88	54·97				
	4651	+ 1 37	S		50 47·94	+1·52	49·46	S		9 42·74	+1·71	44·45	54·99				
	4672	+ 2 6	S		55 59·21	+1·52	60·73	S		14 53·98	+1·71	55·69	54·96				
Mar.30	4694	+ 31 24	N	*I. P. W.*	14 1 34·99	−1·45	33·54	N	*I. P. E.*	14 20 30·36	−1·77	28·59	18 55·05				
	4699	+ 44 24	N	*d* c + 0·2 b + 0·8 *a* −17·9	3 34·77	−1·31	33·46	N	*d* c − 0·2 b − 0·7 *a* − 4·4	22 30·24	−1·73	28·51	55·05				
	4706	+ 25 38	N		5 24·04	−1·51	22·53	N		24 19·24	−1·77	17·47	54·94	m s 18 54·998	− 0·026	+ 0·025	18 54·997
	4716	− 9 44	S	*s* *Q* −1·60	6 60·55	−1·76	58·79	S	*s* *Q* −1·76	25 55·60	−1·82	53·78	54·99				
	4721	+ 13 30	S		8 48·08	−1·60	46·48	S		27 43·21	−1·79	41·42	54·94				
	4727	− 5 27	S		10 13·93	−1·73	12·20	S		29 9·03	−1·81	7·22	55·02				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s:* AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.004$, $H_N - H_S = +0^s.046$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.31	3964	+ 22 0	N	*I. P. W.*	11 35 0·97	+1·64	2·61	N	*I. P. W.*	11 53 55·83	+1·76	57·59	18 54·98				
	3990	+ 20 52	N	*d* c − 0·1 b + 0·2 *a* −16·9	42 15·92	+1·63	17·55	N	*d* c + 0·1 b + 0·1 *a* + 0·6	12 1 10·80	+1·76	12·56	55·01				
	3998	+ 35 35	N		43 55·73	+1·76	57·49	N		2 50·80	+1·76	52·56	55·07	m s 18 55·008	− 0·023	+ 0·025	18 55·010
	3971	+ 5 23	S	*s* *Q* +1·60	36 27·43	+1·53	28·96	S	*s* *Q* +1·76	11 55 22·16	+1·76	23·92	54·96				
	3975	− 6 2	S		38 15·86	+1·45	17·31	S		57 10·58	+1·77	12·35	55·04				
	3982	+ 7 11	S		40 9·83	+1·54	11·37	S		59 4·60	+1·76	6·36	54·99				
Mar.31	4018	+ 41 34	N	*I. P. W.*	11 48 7·82	−1·38	6·44	N	*I. P. W.*	12 7 3·31	−1·77	1·54	18 55·10				
	4056	+ 22 44	N	*d* c − 0·1 b + 0·2 *a* −16·9	56 6·88	−1·56	5·32	N	*d* c + 0·1 b + 0·1 *a* + 0·6	15 2·08	−1·76	0·32	55·00				
	4031	+ 16 18	S		50 1·71	−1·60	0·11	S		8 56·77	−1·76	55·01	54·90	m s 18 55·006	− 0·023	+ 0·030	18 55·013
	4039	+ 4 8	S	*s* *Q* −1·60	52 36·48	−1·68	34·80	S	*s* *Q* −1·76	11 31·56	−1·76	29·80	55·00				
	4049	+ 4 18	S		54 19·72	−1·68	18·04	S		13 14·83	−1·76	13·07	55·03				
Mar.31	4594	+ 26 17	N	*I. P. E.*	13 41 36·22	+1·71	37·93	N	*I. P. W.*	14 0 30·90	+1·76	32·66	18 54·73				
	4664	+ 22 16	N	*d* c + 0·5 b + 0·6 *a* −20·5	53 28·86	+1·67	30·53	N	*d* c + 0·1 b + 0·1 *a* + 0·6	12 23·61	+1·76	25·37	54·84				
	4678	+ 32 13	N		57 40·35	+1·78	42·13	N		16 35·17	+1·76	36·93	54·80	m s 18 54·835	− 0·023	+ 0·025	18 54·837
	4615	+ 16 22	S	*s* *Q* +1·60	44 9·07	+1·62	10·69	S	*s* *Q* +1·76	3 3·78	+1·76	5·54	54·85				
	4651	+ 1 37	S		50 49·67	+1·50	51·17	S		9 44·28	+1·76	46·04	54·87				
	4672	+ 2 6	S		56 0·95	+1·51	2·46	S		14 55·62	+1·76	57·38	54·92				
Mar.31	4694	+ 31 24	N	*I. P. E.*	14 1 36·76	−1·43	35·33	N	*I. P. W.*	14 20 31·97	−1·76	30·21	18 54·88				
	4699	+ 44 24	N	*d* c + 0·5 b + 0·6 *a* −20·5	3 36·47	−1·26	35·21	N	*d* c + 0·1 b + 0·1 *a* + 0·6	22 31·93	−1·77	30·16	54·95				
	4706	+ 25 38	N		5 25·72	−1·50	24·22	N		24 20·94	−1·76	19·18	54·96	m s 18 54·897	− 0·023	+ 0·025	18 54·899
	4716	− 9 44	S	*s* *Q* −1·60	7 2·28	−1·79	0·49	S	*s* *Q* −1·76	25 57·10	−1·75	55·35	54·86				
	4721	+ 13 30	S		8 49·79	−1·60	48·19	S		27 44·79	−1·76	43·03	54·84				
	4727	− 5 27	S		10 15·62	−1·75	13·87	S		29 10·51	−1·75	8·76	54·89				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE IX. OBSERVATIONS OF TRANSITS WITH E CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N - \rho$.*

MOULMEIN (E) *Lat.* 16° 30′, *Long.* 6ʰ 30ᵐ 41ˢ: AND AKYAB (W) *Lat.* 20° 8′, *Long.* 6ʰ 11ᵐ 45ˢ.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of E Clock	Corrns. for Persl. Equations $S_N - S_S = -0'.004$ $H_N - H_S = +0'.046$	$\delta L_N - \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			ʰ ᵐ ˢ	ˢ	ˢ			ʰ ᵐ ˢ	ˢ	ˢ	ᵐ ˢ				
Apr. 1	3964	+ 22 0	N	*I. P. E.*	11 35 2·84	+1·69	4·53	N	*I. P. E.*	11 53 57·71	+1·67	59·38	18 54·85				18 54·846
	3998	+ 35 35	N	d c + 0·8	43 57·60	+1·84	59·44	N	d c − 1·5	12 2 52·81	+1·62	54·43	54·99				
	3971	+ 5 23	S	b + 0·9 a −22·0	36 29·32	+1·55	30·87	S	b − 1·7 a + 6·6	11 55 23·91	+1·73	25·64	54·77	ᵐ ˢ 18 54·840	− 0·024	+ 0·030	
	3975	− 6 2	S	s Q +1·60	38 17·74	+1·45	19·19	S	s Q +1·76	57 12·20	+1·77	13·97	54·78				
	3982	+ 7 11	S		40 11·74	+1·56	13·30	S		59 6·39	+1·72	8·11	54 81				
Apr. 1	4018	+ 41 34	N	*I. P. E.*	11 48 9·73	−1·28	8·45	N	*I. P. E.*	12 7 5·27	−1·93	3·34	18 54·89				18 54·803
	4056	+ 22 44	N	d c + 0·8	56 8·73	−1·50	7·23	N	d c − 1·5	15 3·89	−1·85	2·04	54·81				
	4066	+ 22 6	N	b + 0·9 a −22·0	58 41·12	−1·51	39·61	N	b − 1·7 a + 6·6	17 36·26	−1·85	34·41	54·80	ᵐ ˢ 18 54·802	− 0·024	− 0·025	
	4031	+ 16 18	S	s Q −1·60	50 3·60	−1·56	2·04	S	s Q −1·76	8 58·58	−1·83	56·75	54·71				
	4039	+ 4 8	S		52 38·38	−1·67	36·71	S		11 33·28	−1·79	31·49	54·78				
	4049	+ 4 18	S		54 21·59	−1·67	19·92	S		13 16·53	−1·79	14·74	54·82				
Apr. 1	4594	+ 26 17	N	*I. P. W.*	13 41 37·95	+1·67	39·62	N	*I. P. E.*	14 0 32·78	+1·66	34·44	18 54·82				18 54·809
	4664	+ 22 16	N	d c − 0·6	53 30·62	+1·64	32·26	N	d c − 1·5	12 25·44	+1·67	27·11	54·85				
	4678	+ 32 13	N	b + 0·2 a −21·0	57 42·04	+1·74	43·78	N	b − 1·7 a + 6·6	16 37·03	+1·64	38·67	54·89	ᵐ ˢ 18 54·868	− 0·024	+ 0·025	
	4615	+ 16 22	S	s Q +1·60	44 10·89	+1·59	12·48	S	s Q +1·76	3 5·51	+1·69	7·20	54·72				
	4651	+ 1 37	S		50 51·51	+1·47	52·98	S		9 46·01	+1·74	47·75	54·77				
	4672	+ 2 6	S		56 2·71	+1·47	4·18	S		14 57·24	+1·74	58·98	54·80				
Apr. 1	4694	+ 31 24	N	*I. P. W.*	14 1 38·51	−1·47	37·04	N	*I. P. E.*	14 20 33·77	−1·87	31·90	18 54·86				18 54·872
	4699	+ 44 24	N	d c − 0·6	3 38·28	−1·30	36·98	N	d c − 1·5	22 33·80	−1·95	31·85	54·87				
	4716	− 9 44	S	b + 0·2 a −21·0	7 4·11	−1·82	2·29	S	b − 1·7 a + 6·6	25 58·90	−1·74	57·16	54·87	ᵐ ˢ 18 54·866	− 0·024	+ 0·030	
	4721	+ 13 30	S	s Q −1·60	8 51·61	−1·64	49·97	S	s Q −1·76	27 46·66	−1·81	44·85	54·88				
	4727	− 5 27	S		10 17·45	−1·79	15·66	S		29 12·27	−1·76	10·51	54·85				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat.* 16° 30′, *Long.* 6ʰ 30ᵐ 41ˢ: AND AKYAB (W) *Lat.* 20° 8′, *Long.* 6ʰ 11ᵐ 45ˢ.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.004$, $H_N - H_S = +0^s.046$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.26	4223	+ 25 12	N	*I. P. E.*	12 6 17·87	+1·57	19·44	N	*I. P. E.*	12 25 12·62	+1·80	14·42	18 54·98				
	4240	+ 23 16	N	d c − 0·2 b − 1·6 a − 0·2	10 9·14	+1·57	10·71	N	d c − 0·6 b + 1·7 a − 1·2	29 3·85	+1·80	5·65	54·94				
	4260	+ 21 42	N		14 25·88	+1·57	27·45	N		33 20·71	+1·80	22·51	55·06	m s 18 54·974	+ 0·010	+ 0·020	18 55·004
	4228	+ 10 56	S	s Q +1·61	8 15·55	+1·57	17·12	S	s Q +1·77	27 10·24	+1·80	12·04	54·92				
	4267	+ 11 4	S		16 48·60	+1·57	50·17	S		35 43·34	+1·80	45·14	54·97				
Mar.26	4304	+ 28 11	N	*I. P. E.*	12 24 46·35	−1·66	44 69	N	*I. P. E.*	12 43 41·43	−1·75	39·68	18 54·99				
	4315	+ 28 11	N	d c − 0·2 b − 1·6 a − 0·2	27 10·94	−1 66	9·28	N	d c − 0·6 b + 1·7 a − 1·2	46 6·00	−1·75	4·25	54·97				
	4328	+ 21 53	N		28 43·12	−1·65	41·47	N		47 38·18	−1·74	36·44	54·97	m s 18 54·940	+ 0·010	+ 0·025	18 54·975
	4286	+ 8 18	S	s Q −1·61	20 53·61	−1·65	51·96	S	s Q −1·77	39 48·60	−1·75	46·85	54·89				
	4292	+ 12 36	S		22 31·38	−1·65	29·73	S		41 26·41	−1·74	24·67	54·94				
	4340	+ 4 2	S		30 53·79	−1·65	52·14	S		49 48·77	−1·75	47·02	54·88				
Mar.26	4969	+ 27 24	N	*I. P. W.* d c − 0·6 b − 3·2 a − 0·9 s Q −1·61	14 40 36·01	−1·71	34·30	N	*I. P. E.* d c − 0·6 b + 1·7 a − 1·2 s Q −1·77	14 59 31·19	−1·75	29·44	18 55·14	m s 18 55·140	+ 0·010	0·000	18 55·150†
Mar.27	4223	+ 25 12	N	*I. P. W.*	12 6 16·89	+1·66	18·55	N	*I. P. W.*	12 25 11·91	+1·69	13·60	18 55·05				
	4240	+ 23 16	N	d c + 1·3 b + 0·1 a − 7·6	10 8·13	+1·65	9·78	N	d c − 0·2 b − 2·9 a − 2·4	29 3·17	+1·68	4 85	55·07				
	4260	+ 21 42	N		14 24·92	+1·65	26·57	N		33 19·95	+1·68	21·63	55·06	m s 18 55·032	+ 0·010	+ 0·025	18 55·067
	4228	+ 10 56	S	s Q +1·60	8 14·58	+1·61	16·19	S	s Q +1·75	27 9·55	+1·67	11·22	55·03				
	4250	+ 9 26	S		12 19·25	+1·61	20·86	S		31 14·16	+1·68	15·84	54·98				
	4267	+ 11 4	S		16 47·65	+1·61	49·26	S		35 42·59	+1·67	44·26	55·00				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations. † Excluded from the final results.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s{\cdot}004$, $H_N - H_S = +0{\cdot}046$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.27	4304	+ 28 11	N	*I. P. W.*	12 24 45·35	−1·53	43·82	N	*I. P. W.*	12 43 40·71	−1·82	38·89	18 55·07				
	4315	+ 28 11	N	d c + 1·3 b + 0·1 a − 7·6	27 9·92	−1·53	8·39	N	d c − 0·2 b − 2·9 a − 2·4	46 5·24	−1·82	3·42	55·03				
	4328	+ 21 53	N		28 42·15	−1·55	40·60	N		47 37·47	−1·82	35·65	55·05	m s 18 55·007	+ 0·010	+ 0·025	18 55·042
	4286	+ 8 18	S	s Q −1·60	20 52·69	−1·60	51·09	S	s Q −1·75	39 47·91	−1·82	46·09	55·00				
	4292	+ 12 36	S		22 30·48	−1·58	28·90	S		41 25·68	−1·83	23·85	54·95				
	4340	+ 4 2	S		30 52·93	−1·61	51·32	S		49 48·09	−1·83	46·26	54·94				
Mar.27	4864	+ 27 1	N	*I. P. E.*	14 19 23·07	+1·68	24·75	N	*I. P. W.*	14 38 18·04	+1·68	19·72	18 54·97				
	4876	+ 27 34	N	d c + 0·7 b + 0·3 a −11·9	20 58·86	+1·69	60·55	N	d c − 0·2 b − 2·9 a − 2·4	39 53·78	+1·68	55·46	54·91				
	4897	+ 38 17	N		25 36·95	+1·76	38·71	N		44 31·96	+1·68	33·64	54·93	m s 18 54·930	+ 0·010	+ 0·025	18 54·965
	4847	+ 16 55	S	s Q +1·60	16 20·23	+1·63	21·86	S	s Q +1·75	35 15·08	+1·68	16·76	54·90				
	4855	− 5 9	S		18 0·89	+1·53	2·42	S		36 55·72	+1·67	57·39	54·97				
	4886	+ 2 31	S		22 37·26	+1·57	38·83	S		41 32·06	+1·67	33·73	54·90				
Mar.27	4934	+ 41 36	N	*I. P. E.*	14 32 43·99	−1·42	42·57	N	*I. P. W.*	14 51 39·36	−1·81	37·55	18 54·98				
	4958	+ 40 51	N	d c + 0·7 b + 0·3 a −11·9	38 41·19	−1·42	39·77	N	d c − 0·2 b − 2·9 a − 2·4	57 36·49	−1·81	34·68	54·91				
	4969	+ 27 24	N		40 35·20	−1·51	33·69	N		59 30·45	−1·82	28·63	54·94	m s 18 54·920	+ 0·010	+ 0·020	18 54·950
	4926	+ 14 55	S	s Q −1·60	31 51·61	−1·58	50·03	S	s Q −1·75	50 46·76	−1·83	44·93	54·90				
	4939	− 8 3	S		35 53·76	−1·68	52·08	S		54 48·79	−1·84	46·95	54·87				
Mar.28	4223	+ 25 12	N	*I. P. E.*	12 6 16·17	+1·70	17·87	N	*I. P. E*	12 25 10·98	+1·69	12·67	18 54·80				
	4240	+ 23 16	N	d c + 0·4 b + 1·3 a −15·5	10 7·40	+1·68	9·08	N	d c − 1·8 b − 1·7 a − 6·3	29 2·28	+1·69	3·97	54·89				
	4260	+ 21 42	N		14 24·17	+1·67	25·84	N		33 18·98	+1·68	20·66	54·82	m s 18 54·810	+ 0·011	+ 0·025	18 54·846
	4228	+ 10 56	S	s Q +1·60	8 13·93	+1·61	15·54	S	s Q +1·76	27 8·63	+1·66	10·29	54·75				
	4250	+ 9 26	S		12 18·56	+1·60	20·16	S		31 13·26	+1·65	14·91	54·75				
	4267	+ 11 4	S		16 46·98	+1·61	48·59	S		35 41·78	+1·66	43·44	54·85				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns for Persl. Equations $S_N - S_S = -0^s.004$ $H_N - H_S = +0^s.046$	$\delta L_N + \rho$
	B.A.C Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.28	4304	+ 28 11	N	*I. P. E.*	12 24 44·57	−1·48	43·09	N	*I. P. E.*	12 43 39 82	−1·83	37·99	18 54·90				
	4315	+ 28 11	N	d c + 0·4	27 9·16	−1·48	7·68	N	d c − 1·8	46 4·37	−1·83	2·54	54·86				
	4328	+ 21 53	N	b + 1·3 a −15·5	28 41·33	−1·52	39·81	N	b − 1·7 a − 6·3	47 36·55	−1·83	34·72	54·91	m s 18 54·853			
	4286	+ 8 18	S	s Q −1·60	20 51·92	−1·61	50·31	S	s Q −1·76	39 47·05	−1·87	45·18	54·87		+ 0·011	+ 0·025	18 54·889
	4292	+ 12 36	S		22 29·75	−1·58	28·17	S		41 24·83	−1·86	22·97	54·80				
	4340	+ 4 2	S		30 52·18	−1·64	50·54	S		49 47·20	−1·88	45·32	54·78				
Mar.28	4864	+ 27 1	N	*I. P. W.*	14 19 22·24	+1·65	23·89	N	*I. P. E.*	14 38 17·17	+1·69	18·86	18 54·97				
	4876	+ 27 34	N	d c + 0·4	20 58·01	+1·65	59·66	N	d c − 1·8	39 52·85	+1·69	54·54	54·88				
	4897	+ 38 17	N	b − 0·5 a −10·3	25 36·11	+1·71	37·82	N	b − 1·7 a − 6·3	44 31·12	+1·72	32·84	55·02	m s 18 54·933			
	4847	+ 16 55	S	s Q +1·60	16 19·41	+1·60	21·01	S	s Q +1·76	35 14·23	+1·67	15·90	54·89		+ 0·011	+ 0·025	18 54·969
	4855	− 5 9	S		18 0·07	+1·51	1·58	S		36 54·83	+1·63	56·46	54·88				
	4886	+ 2 31	S		22 36·45	+1·54	37·99	S		41 31·31	+1·64	32·95	54·96				
Mar.28	4934	+ 41 36	N	*I. P. W.*	14 32 43·16	−1·47	41·69	N	*I. P. E.*	14 51 38·42	−1·79	36·63	18 54·94				
	4958	+ 40 51	N	d c + 0·4	38 40·29	−1·47	38·82	N	d c − 1·8	57 35·60	−1·79	33·81	54·99				
	4969	+ 27 24	N	b − 0·5 a −10·3	40 34·31	−1·55	32·76	N	b − 1·7 a − 6·3	59 29·61	−1·83	27·78	55·02	m s 18 54·927			
	4926	+ 14 55	S	s Q −1·60	31 50·75	−1·61	49·14	S	s Q −1·76	50 45·92	−1·85	44·07	54·93		+ 0·011	+ 0·025	18 54·963
	4939	− 8 3	S		35 52·93	−1·70	51·23	S		54 47·92	−1·90	46·02	54·79				
	4945	− 7 7	S		37 4·53	−1·69	2·84	S		55 59·63	−1·90	57·73	54·89				
Mar.29	4223	+ 25 12	N	*I. P. W.*	12 6 15·17	+1·70	16·87	N	*I. P. W.*	12 25 10·11	+1·79	11·90	18 55·03				
	4240	+ 23 16	N	d c + 1·3	10 6·44	+1·69	8·13	N	d c + 0·8	29 1·36	+1·80	3·16	55·03				
	4260	+ 21 42	N	b + 0·7 a −14·8	14 23·22	+1·68	24·90	N	b + 1·0 a + 3·3	33 18·22	+1·80	20·02	55·12	m s 18 55·077			
	4228	+ 10 56	S	s Q +1·60	8 12·93	+1·62	14·55	S	s Q +1·76	27 7·82	+1·81	9·63	55·08		+ 0·011	+ 0·025	18 55·113
	4250	+ 9 26	S		12 17·60	+1·61	19·21	S		31 12·46	+1·81	14·27	55·06				
	4267	+ 11 4	S		16 46·02	+1·62	47·64	S		35 40·97	+1·81	42·78	55·14				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*; AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.004$ $H_N - H_S = +0^s.046$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar 29	4304	+ 28 11	N	*I. P. W.*	12 24 43·62	−1·47	42·15	N	*I. P. W.*	12 43 38·93	−1·72	37·21	18 55·06				
	4315	+ 28 11	N	*d* c + 1·3 b + 0·7 *a* −14·8	27 8·18	−1·47	6·71	N	*d* c + 0·8 b + 1·0 *a* + 3·3	46 3·55	−1·72	1·83	55·12				
	4328	+ 21 53	N		28 40·41	−1·52	38·89	N		47 35·74	−1·72	34·02	55·13	m s 18 55·043	+ 0·011	+ 0·025	18 55·079
	4286	+ 8 18	S	*s* *Q* −1·60	20 50·96	−1·60	49·36	S	*s* *Q* −1·76	39 46·08	−1·70	44·38	55·02				
	4292	+ 12 36	S		22 28·79	−1·57	27·22	S		41 23·95	−1·71	22·24	55·02				
	4340	+ 4 2	S		30 51·23	−1·62	49·61	S		49 46·22	−1·70	44·52	54·91				
Mar.29	4864	+ 27 1	N	*I. P. E.*	14 19 21·38	+1·73	23·11	N	*I. P. W.*	14 38 16·31	+1·80	18·11	18 55·00				
	4876	+ 27 34	N	*d* c + 1·1 b + 0·6 *a* −19·2	20 57·13	+1·73	58·86	N	*d* c + 0·8 b + 1·0 *a* + 3·3	39 52·08	+1·80	53·88	55·02				
	4897	+ 38 17	N		25 35·23	+1·86	37·09	N		44 30·17	+1·78	31·95	54·86	m s 18 54·947	+ 0·011	+ 0·025	18 54·983
	4847	+ 16 55	S	*s* *Q* +1·60	16 18·52	+1·64	20·16	S	*s* *Q* +1·76	35 13·33	+1·80	15·13	54·97				
	4855	− 5 9	S		17 59·34	+1·47	60·81	S		36 53·90	+1·83	55·73	54·92				
	4886	+ 2 31	S		22 35·71	+1·53	37·24	S		41 30·33	+1·82	32·15	54·91				
Mar.29	4934	+ 41 36	N	*I. P. E.*	14 32 42·20	−1·31	40·89	N	*I. P. W.*	14 51 37·65	−1·75	35·90	18 55·01				
	4958	+ 40 51	N	*d* c + 1·1 b + 0·6 *a* −19·2	38 39·44	−1·31	38·13	N	*d* c + 0·8 b + 1·0 *a* + 3·3	57 34·86	−1·74	33·12	54·99				
	4969	+ 27 24	N		40 33·54	−1·47	32·07	N		59 28·79	−1·72	27·07	55·00	m s 18 55·010	+ 0·011	+ 0·025	18 55·046
	4926	+ 14 55	S	*s* *Q* −1·60	31 49·93	−1·57	48·36	S	*s* *Q* −1·76	50 45·02	−1·71	43·31	54·95				
	4939	− 8 3	S		35 52·12	−1·75	50·37	S		54 47·12	−1·68	45·44	55·07				
	4945	− 7 7	S		37 3·78	−1·74	2·04	S		55 58·77	−1·69	57·08	55·04				
Mar.30	4210	+ 23 16	N	*I. P. E.*	12 10 5·73	+1·64	7·37	N	*I. P. E.*	12 29 0·56	+1·75	2·31	18 54·94				
	4260	+ 21 42	N	*d* c − 0·8 b + 0·1 *a* −19·5	14 22·55	+1·62	24·17	N	*d* c − 0·2 b − 0·7 *a* − 4·4	33 17·37	+1·74	19·11	54·94				
	4228	+ 10 56	S		8 12·16	+1·54	13·70	S		27 7·08	+1·72	8·80	55·10	m s 18 54·950	+ 0·011	+ 0·030	18 54·991
	4250	+ 9 26	S	*s* *Q* +1·60	12 17·00	+1·53	18·53	S	*s* *Q* +1·76	31 11·68	+1·72	13·40	54·87				
	4267	+ 11 4	S		16 45·33	+1·54	46·87	S		35 40·05	+1·72	41·77	54·90				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s·1* AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s.*

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s{\cdot}004$, $H_N - H_S = +0\,046$	$\delta L_N + \rho$
	B A C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.30	4304	+ 28 11	N	*I. P. E.*	12 24 42·95	−1·52	41·43	N	*I. P. E.*	12 43 38·17	−1·77	36·40	18 54·97				
	4315	+ 28 11	N	d c − 0·8	27 7·48	−1·52	5·96	N	d c − 0·2	46 2·66	−1·77	0·89	54·93				
	4328	+ 21 53	N	b + 0·1 a −19·5	28 39·75	−1·58	38·17	N	b − 0·7 a − 4·4	47 34·90	−1·78	33·12	54·95	m s 18 54·950	+ 0·011	+ 0·025	18 54·986
	4286	+ 8 18	S	s Q −1·60	20 50·31	−1·68	48·63	S	s Q −1·76	39 45·40	−1·80	43·60	54·97				
	4292	+ 12 36	S		22 28·06	−1·65	26·41	S		41 23·21	−1·79	21·42	55·01				
	4340	+ 4 2	S		30 50·56	−1·72	48·84	S		49 45·52	−1·81	43·71	54·87				
Mar.30	4864	+ 27 1	N	*I. P. W.*	14 19 20·53	+1·71	22·24	N	*I. P. E.*	14 38 15·58	+1·74	17·32	18 55·08				
	4876	+ 27 34	N	d c + 0·2	20 56·31	+1·72	58·03	N	d c − 0·2	39 51·24	+1·74	52·98	54·95				
	4897	+ 38 17	N	b + 0·8 a −17·9	25 34·37	+1·82	36·19	N	b − 0·7 a − 4·4	44 29·48	+1·77	31·25	55·06	m s 18 54·992	+ 0·011	+ 0·025	18 55·028
	4847	+ 16 55	S	s Q +1·60	16 17·77	+1·62	19·39	S	s Q +1·76	35 12·51	+1·73	14·24	54·85				
	4855	− 5 9	S		17 58·46	+1·47	59·93	S		36 53·26	+1·71	54·97	55·04				
	4886	+ 2 31	S		22 34·83	+1·52	36·35	S		41 29·61	+1·71	31·32	54·97				
Mar.30	4934	+ 41 36	N	*I. P. W.*	14 32 41·46	−1·34	40·12	N	*I. P. E.*	14 51 36·76	−1·74	35·02	18 54·90				
	4958	+ 40 51	N	d c + 0·2	38 38·62	−1·35	37·27	N	d c − 0·2	57 34·00	−1·74	32·26	54·99				
	4969	+ 27 24	N	b + 0·8 a −17·9	40 32·70	−1·48	31·22	N	b − 0·7 a − 4·4	59 27·93	−1·78	26·15	54·93	m s 18 54·942	+ 0·011	+ 0·025	18 54·978
	4926	+ 14 55	S	s Q −1·60	31 49·12	−1·59	47·53	S	s Q −1·76	50 44·27	−1·79	42·48	54·95				
	4939	− 8 3	S		35 51·36	−1·75	49·61	S		54 46·41	−1·82	44·59	54·98				
	4945	− 7 7	S		37 2·98	−1·74	1·24	S		55 57·96	−1·82	56·14	54·90				
Mar.31	4223	+ 25 12	N	*I. P. W.*	12 6 13·52	+1·66	15·18	N	*I. P. W.*	12 25 8·51	+1·76	10·27	18 55·09				
	4240	+ 23 16	N	d c − 0·1	10 4·82	+1·65	6·47	N	d c + 0·1	28 59·71	+1·76	61·47	55·00				
	4260	+ 21 42	N	b + 0·2 a −16·9	14 21·62	+1·64	23·26	N	b + 0·1 a + 0·6	33 16·50	+1·76	18·26	55·00	m s 18 55·016	+ 0·011	+ 0·020	18 55·047
	4250	+ 9 26	S	s Q +1·60	12 15·99	+1·55	17·54	S	s Q +1·76	31 10·75	+1·76	12·51	54·97				
	4267	+ 11 4	S		16 44·36	+1·56	45·92	S		35 39·18	+1·76	40·94	55·02				

NOTE.—$1^d = 0^s{\cdot}0225$. Transcribing Equation *sil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat. 16° 30′, Long. 6h 30m 41s*: AND AKYAB (W) *Lat. 20° 8′, Long. 6h 11m 45s*.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Persl. Equations $S_N - S_S = -0^s.004$, $H_N - H_S = +0^s.046$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Mar.31	4304	+ 28 11	N	*I. P. W.*	12 24 41·98	−1·50	40·48	N	*I. P. W.*	12 43 37·34	−1·76	35·58	18 55·10				
	4315	+ 28 11	N	d c − 0·1	27 6·56	−1·50	5·06	N	d c + 0·1	46 1·89	−1·76	0·13	55·07				
	4328	+ 21 53	N	b + 0·2 a −16·9	28 38·84	−1·56	37·28	N	b + 0·1 a + 0·6	47 34·10	−1·76	32·34	55·06	m s 18 55·018	+ 0·011	+ 0·025	18 55·054
	4286	+ 8 18	S	s Q −1·60	20 49·38	−1·66	47·72	S	s Q −1·76	39 44·47	−1·76	42·71	54·99				
	4292	+ 12 36	S		22 27·17	−1·63	25·54	S		41 22·26	−1·76	20 50	54·96				
	4340	+ 4 2	S		30 49·65	−1·68	47·97	S		49 44·66	−1·76	42·90	54·93				
Mar.31	4864	+ 27 1	N	*I. P. E*	14 19 19·82	+1·71	21·53	N	*I. P. W.*	14 38 14·65	+1·76	16·41	18 54·88				
	4876	+ 27 34	N	d c + 0·5	20 55·54	+1·72	57·26	N	d c + 0·1	39 50·45	+1·76	52·21	54·95				
	4897	+ 38 17	N	b + 0·6 a −20·5	25 33·59	+1·85	35·44	N	b + 0·1 a + 0·6	44 28·64	+1·75	30·39	54·95	m s 18 54·874	+ 0·011	+ 0·020	18 54·905
	4847	+ 16 55	S	s Q +1·60	16 17·05	+1·62	18·67	S	s Q +1·76	35 11·74	+1·76	13·50	54·83				
	4886	+ 2 31	S		22 34·16	+1·51	35·67	S		41 28·67	+1·76	30·43	54·76				
Mar.31	4969	+ 27 24	N	*I. P. E.*	14 40 31·91	−1·48	30·43	N	*I. P. W.*	14 59 27·21	−1·76	25·45	18 55·02				
	4926	+ 14 55	S	d c + 0·5	31 48·34	−1·59	46·75	S	d c + 0·1	50 43·43	−1·76	41·67	54·92				
	4939	− 8 3	S	b + 0·6 a −20·5	35 50·56	−1·77	48·79	S	b + 0·1 a + 0·6	54 45·65	−1·75	43·90	55·11	m s 18 55·017	+ 0·011	+ 0·033	18 55·061
				s Q −1·60					s Q −1·76								
Apr. 1	4223	+ 25 12	N	*I. P. E.*	12 6 12·80	+1·72	14·52	N	*I. P. E.*	12 25 7·77	+1·67	9·44	18 54·92				
	4240	+ 23 16	N	d c + 0·8	10 4·07	+1·70	5·77	N	d c − 1·5	28 58·93	+1·67	60·60	54·83				
	4260	+ 21 42	N	b + 0·9 a −22·0	14 20·87	+1·69	22·56	N	b − 1·7 a + 6·6	33 15·78	+1·68	17·46	54·90	m s 18 54·840	+ 0·010	+ 0·020	18 54·870
	4228	+ 10 56	S	s Q +1·60	8 10·54	+1·59	12·13	S	s Q +1·76	27 5·18	+1·71	6·89	54·76				
	4250	+ 9 26	S		12 15·26	+1·58	16·84	S		31 9·91	+1·72	11·63	54·79				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

TABLE X. OBSERVATIONS OF TRANSITS WITH W CLOCK, AND DEDUCTION OF THE APPARENT DIFFERENCE OF LONGITUDES, $\delta L_N + \rho$.*

MOULMEIN (E) *Lat.* 16° 30′, *Long.* 6h 30m 41s: AND AKYAB (W) *Lat.* 20° 8′, *Long.* 6h 11m 45s.

Astronomical Date	Star		Transits Observed at E *By Strahan, with Telescope No. 2*					Transits Observed at W *By Heaviside, with Telescope No. 1*					Difference of Corrected Times (W − E)		Correction for Rate of W Clock	Corrns. for Perel. Equations $S_N - S_S = -0^s.004$, $H_N - H_S = +0^s.046$	$\delta L_N + \rho$
	B.A.C. Number	Declination	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	Star's Aspect	Instrumental Position and Correction Constants	Mean Observed Time	Total Correction	Seconds of Corrected Time	By each Star	Mean of Group			
1884		° ′			h m s	s	s			h m s	s	s	m s				
Apr. 1	4304	+ 28 11	N	*I. P. E.*	12 24 41·18	−1·45	39·73	N	*I. P. E.*	12 43 36·58	−1·86	34·72	18 54·99				
	4315	+ 28 11	N	d c + 0·8	27 5·84	−1·45	4·39	N	d c − 1·5	45 61·16	−1·86	59·30	54·91	m s 18 54·896	+ 0·010	+ 0·020	18 54·926
	4328	+ 21 53	N	b + 0·9 a −22·0	28 38·08	−1·51	36·57	N	b − 1·7 a + 6·6	47 33·27	−1·85	31·42	54·85				
	4286	+ 8 18	S	s Q −1·60	20 48·66	−1·63	47·03	S	s Q −1·76	39 43·70	−1·80	41·90	54·87				
	4340	+ 4 2	S		30 48·89	−1·67	47·22	S		49 43·87	−1·79	42·08	54·86				
Apr. 1	4864	+ 27 1	N	*I. P. W.*	14 19 18·95	+1·68	20·63	N	*I. P. E.*	14 38 13·88	+1·66	15·54	18 54·91				
	4897	+ 38 17	N	d c − 0·6	25 32·78	+1·81	34·59	N	d c − 1·5	44 28·03	+1·61	29·64	55·05	m s 18 54·922	+ 0·010	+ 0·030	18 54·962
	4847	+ 16 55	S	b + 0·2 a −21·0	16 16·19	+1·59	17·78	S	b − 1·7 a + 6·6	35 10·90	+1·69	12·59	54·81				
	4855	− 5 9	S	s Q +1·60	17 56·86	+1·41	58·27	S	s Q +1·76	36 51·45	+1·76	53·21	54·94				
	4886	+ 2 31	S		22 33·22	+1·48	34·70	S		41 27·86	+1·74	29·60	54·90				
Apr. 1	4934	+ 41 36	N	*I. P. W.*	14 32 39·81	−1·34	38·47	N	*I. P. E.*	14 51 35·34	−1·93	33·41	18 54·94				
	4958	+ 40 51	N	d c − 0·6	38 36·95	−1·35	35·60	N	d c − 1·5	57 32·51	−1·92	30·59	54·99	m s 18 54·918	+ 0·010	+ 0·025	18 54·953
	4969	+ 27 24	N	b + 0·2 a −21·0	40 31·05	−1·52	29·53	N	b − 1·7 a + 6·6	59 26·43	−1·86	24·57	55·04				
	4926	+ 14 55	S	s Q −1·60	31 47·54	−1·62	45·92	S	s Q −1·76	50 42·58	−1·82	40·76	54·84				
	4939	− 8 3	S		35 49·75	−1·81	47·94	S		54 44·53	−1·75	42·78	54·84				
	4945	− 7 7	S		36 61·37	−1·80	59·57	S		55 56·18	−1·75	54·43	54·86				

NOTE.—$1^d = 0^s.0225$. Transcribing Equation *nil*, all records having been transcribed by the same person.

* ρ is the retardation of an electric signal between the stations.

Arc	Approximate Difference of Longitude	Intervals between Nights of Observations	Rate Corrections for both Clocks Deduced from Transits Observed at both Stations, *viz.*: α, Corrections for the Intervals between Nights of Observations, and β, Hourly Corrections for Nights of Observations, Interpolated by means of the Quantities α.								
			α at E Station for		α at W Station for		Astronomical Dates of Observations	β for		Correction to Observed Difference of Times of Transit for	
			E Clock	W Clock	E Clock	W Clock		E Clock	W Clock	E Clock	W Clock
Akyab (E), and Calcutta (W)	$18^m\ 9^s$	1883-84	s	s	s	s	1883-84	s	s	s	s
		.....	...	...	...	...	Nov. 27	− 0·150*	+ 0·263*	− 0·045	+ 0·080
		Dec. 8 to 9	− 0·24	− 1·09	+ 0·08†	− 0·76†	Dec. 8	− ·010	− ·045	− ·003	− ·014
		„ 9 „ 10	− 0·31†	− 0·77†	− 0·35	− 0·92	„ 9	− ·012	− ·042	− ·004	− ·013
		„ 10 „ 11	− 0·29	− 0·25	− 0·66†	− 0·64†	„ 10	− ·013	− ·024	− ·004	− ·007
		„ 11 „ 12	− 0·44†	− 0·09†	− 0·39	+ 0·11	„ 11	− ·014	− ·003	− ·004	− ·001
		„ 12 „ 13	− 0·25	+ 0·23	+ 0·12†	+ 0·56†	„ 12	− ·013	+ ·007	− ·004	+ ·002
		„ 13 „ 14	+ 0·10†	+ 0·35†	− 0·20	+ 0·06	„ 13	− ·009	+ ·006	− ·003	+ ·002
		.....	...	...	...	...	„ 14	− ·008	+ ·003	− ·002	+ ·001
Akyab (E), and Chittagong (W)	$4^m\ 14^s$	Dec. 26 to 27	+ 0·65†	− 8·81†	+ 0·78	− 8·64	Dec. 26	+ 0·033	− 0·360	+ 0·002	− 0·025
		„ 27 „ 28	+ 0·68	− 9·03	+ 0·96†	− 8·72†	„ 27	+ ·030	− ·368	+ ·002	− ·026
		„ 28 „ 29	+ 0·76†	− 8·94†	+ 0·79	− 8·98	„ 28	+ ·031	− ·375	+ ·002	− ·026
		„ 29 „ 30	+ 0·76	− 8·91	+ 0·39†	− 9·21†	„ 29	+ ·032	− ·373	+ ·002	− ·026
		„ 30 „ Jan. 2	+ 1·95†	−28·35†	+ 2·01	−28·29	„ 30	+ ·031	− ·377	+ ·002	− ·027
		.....	...	...	...	...	Jan. 2	+ ·031	− ·387	+ ·002	− ·027
		Jan. 2 to 3	+ 0·76	− 9·24	+ 1·13†	− 8·88†	„ 3	+ ·033	− ·381	+ ·002	− ·027
		„ 3 „ 4	+ 0·94†	− 8·93†	+ 0·84	− 9·03	„ 4	+ ·035	− ·376	+ ·002	− ·027
Prome (E), and Chittagong (W)	$13^m\ 30^s$	Jan. 21 to 22	+ 2·01	+ 0·90	+ 1·77†	+ 0·60†	Jan. 21	+ 0·084	+ 0·038	+ 0·019	+ 0·009
		„ 22 „ 23	‡	+ 1·08	‡	+ 1·28†	„ 22	+ ·086	+ ·041	+ ·019	+ ·009
		„ 23 „ 24	+ 2·26	+ 1·19	+ 2·07†	+ 0·99†	„ 23	+ ·092	+ ·047	+ ·021	+ ·011
		„ 24 „ 25	+ 2·28	+ 1·05	+ 2·53†	+ 1·23†	„ 21	+ ·095	+ ·047	+ ·021	+ ·011
		„ *25 „ 26	+ 2·32	+ 0·81	+ 2·09†	+ 0·62†	„ 25	+ ·096	+ ·039	+ ·022	+ ·009
		„ 26 „ 29	+ 7·67	+ 3·21	+ 7·91†	+ 3·47†	„ 26	+ ·099	+ ·036	+ ·022	+ ·008
		„ 29 „ 30	+ 2·37	+ 1·21	+ 2·12†	+ 0·93†	„ 29	+ ·101	+ ·049	+ ·023	+ ·011
		.....	...	...	...	...	„ 30	+ ·099	+ ·050	+ ·022	+ ·011
Prome (E), and Akyab (W)	$9^m\ 16^s$	Feb. 8 to 9	+ 2·74	+ 6·66	+ 3·01†	+ 6·92†	Feb. 8	+ 0·114	+ 0·278	+ 0·018	+ 0·043
		„ 9 „ 12	+ 7·65	+ 21·06	+ 7·50†	+ 20·91†	„ 9	+ ·112	+ ·281	+ ·017	+ ·043
		„ 12 „ 13	+ 2·95	+ 8·26	+ 3·04†	+ 8·42†	„ 12	+ ·119	+ ·331	+ ·018	+ ·051
		.....	...	...	...	...	„ 13	+ ·123	+ ·344	+ ·019	+ ·053

* Determined from Nautical Almanac stars observed during that night. † These values being burdened with the pivot errors of the telescopes are neglected.
‡ E Clock was stopped on the morning of 23rd January 1884.

Arc	Approximate Difference of Longitude	Intervals between Nights of Observations	Rate Corrections for both Clocks Deduced from Transits Observed at both Stations, *viz.*: α, Corrections for the Intervals between Nights of Observations, and β, Hourly Corrections for Nights of Observations, Interpolated by means of the Quantities α.								
			α at E Station for		α at W Station for		Astronomical Dates of Observations	β for		Correction to Observed Difference of Times of Transit for	
			E Clock	W Clock	E Clock	W Clock		E Clock	W Clock	E Clock	W Clock
Moulmein (E), and Prome (W)	$9^m\ 39^s$	1884	s	s	s	s	1884	s	s	s	s
		Mar. 8 to 9	+10·82*	+ 2·59*	+10·66	+ 2·57	Mar. 8	+ 0·444	+ 0·107	+ 0·071	+ 0·017
		„ 9 „ 10	+11·10	+ 2·37	+11·29*	+ 2·46*	„ 9	+ ·453	+ ·103	+ ·073	+ ·017
		„ 10 „ 11	+11·62	+ 2·15	+11·52*	+ 2·07*	„ 10	+ ·473	+ ·094	+ ·076	+ ·015
		„ 11 „ 12	+11·71	+ 1·93	+11·72*	+ 1·96*	„ 11	+ ·486	+ ·085	+ ·078	+ ·014
		„ 12 „ 13	+11·99	+ 1·75	+12·08*	+ 1·84*	„ 12	+ ·494	+ ·077	+ ·079	+ ·012
		„ 13 „ 14	+12·46	+ 1·94	+12·34*	+ 1·85*	„ 13	+ ·509	+ ·077	+ ·082	+ ·012
		„ 14 „ 15	+12·54	+ 1·70	+12·54*	+ 1·64*	„ 14	+ ·521	+ ·076	+ ·084	+ ·012
		.....	...	...	...	...	„ 15	+ ·523	+ ·071	+ ·084	+ ·011
Moulmein (E), and Akyab (W)	$18^m\ 55^s$	Mar. 26 to 27	− 2·09	+ 0·75	− 2·22	+ 0·81*	Mar. 26	− 0·090	+ 0·031	− 0·028	+ 0·010
		„ 27 „ 28	− 2·37	+ 0·80	− 2·36	+ 0·89*	„ 27	− ·094	+ ·032	− ·030	+ ·010
		„ 28 „ 29	− 2·65	+ 0·86	− 2·66	+ 0·73*	„ 28	− ·105	+ ·035	− ·033	+ ·011
		„ 29 „ 30	− 2·23	+ 0·80	− 2·24*	+ 0·86*	„ 29	− ·102	+ ·035	− ·032	+ ·011
		„ 30 „ 31	− 1·71	+ 0·84	− 1·66*	+ 0·82*	„ 30	− ·082	+ ·034	− ·026	+ ·011
		„ 31 „ Apr. 1	− 1·83	+ 0·78	− 1·73*	+ 0·87*	„ 31	− ·074	+ ·034	− ·023	+ ·011
		.....	...	...	...	...	Apr. 1	− ·076	+ ·033	− ·024	+ ·010

* These values being burdened with the pivot errors of the telescopes are neglected.

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1883-84.

AKYAB (E), AND CALCUTTA (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1883			h m s	m s	m s	m s	m s	m s
November 27	*I. P. E.*	*I. P. E.*	4 23 15	+ 0 10·869	17 58·767	18 9·636	18 9·474	18 9·642
" "	"	"	41 41	10·904	58·767	9·671	9·484	9·666
December 8	*I. P. W.*	"	5 15 51	17·704	51·738	9·442	9·414	9·462
" "	"	"	29 31	17·793	51·726	9·519	9·391	9·495
" 9	"	*I. P. W.*	15 51	18·312	50·877	9·189	9·020	9·152
" "	"	"	29 31	18·264	50·866	9·130	9·145	9·173
" 10	*I. P. E.*	"	15 52	18·826	50·354	9·180	9·145	9·363
" "	"	"	29 31	18·897	50·349	9·246	9·093	9·258
" 11	"	*I. P. E.*	15 52	19·160	50·392	9·552	9·448	9·713
" "	"	"	29 32	19·220	50·392	9·612	9·515	9·713
" 12	*I. P. W.*	"	15 52	18·584	50·784	9·368	9·397	9·493
" "	"	"	29 32	18·751	50·789	9·540	9·452	9·544
" 13	"	*I. P. W.*	15 53	17·908	51·251	9·159	8·989	9·196
" "	"	"	29 32	17·898	51·250	9·148	9·134	9·184
" 14	*I. P. E.*	"	15 53	17·893	51·488	9·381	9·315	9·507
" "	"	"	29 32	18·032	51·488	9·520	9·402	9·440
Mean of daily mean values for instrumental position *I. P. E.* at both stations ...						18 9·618	18 9·480	18 9·684
" " *I. P. W.* at E Station and *I. P. E.* at W Station						9·467	9·414	9·498
" " *I. P. W.* at both stations ...						9·156	9·072	9·176
" " *I. P. E.* at E Station and *I. P. W.* at W Station						9·332	9·239	9·392
General Means ...						18 9·393	18 9·301	18 9·437

Whence	δL_N =	m s 18 9·393	m s 18 9·369
Correction for Relative Personal Equation,	$H_N - S_N$ =	+ 0·008	+ 0·008
	ΔL_N =	18 9·401	18 9·377
Again	δL_S =	18 9·365	18 9·341
Correction for Relative Personal Equation,	$H_S - S_S$ =	− 0·029	− 0·029
	ΔL_S =	18 9·336	18 9·312
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$	=	m s 18 9·368	m s 18 9·345
	ρ =	+ 0·056	+ 0·068

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1883-84.

AKYAB (E), AND CHITTAGONG (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	By Clock Comparisons: Epoch by E Clock T_E	By Clock Comparisons: Corrected Difference of Observed Times at Epoch T_E Reduced to Stars of North Aspect M_N	By Clock Comparisons: Deduced Clock Difference D at Epoch T_E	By Clock Comparisons: Apparent Difference of Longitude by Stars of North Aspect $\delta L_N = D + M_N$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	By Transits at both Stations with the same Clock: Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1883-84			h m s	m s	m s	m s	m s	m s
December 26	*I. P. E.*	*I. P. E.*	5 51 16	+ 0 16·461	3 58·026	4 14·487	4 14·436	4 14·508
" "	"	"	6 6 32	16·575	57·914	14·489	14·368	14·498
" 27	*I. P. W.*	"	5 51 15	25·773	48·586	14·359	14·253	14·335
" "	"	"	6 6 32	25·837	48·484	14·321	14·291	14·337
" 28	"	*I. P. W.*	5 51 14	35·130	38·916	14·046	14·010	14·030
" "	"	"	6 7 39	35·241	38·793	14·034	13·970	14·030
" 29	*I. P. E.*	"	5 51 13	44·867	29·182	14·049	13·928	14·038
" "	"	"	6 6 30	44·969	29·072	14·041	13·983	14·102
" 30	"	*I. P. E.*	5 51 13	54·789	19·531	14·320	14·343	14·378
" "	"	"	6 5 21	54·949	19·435	14·384	14·316	14·367
January 2	*I. P. W.*	"	5 51 11	1 24·974	2 49·300	14·274	14·248	14·317
" "	"	"	6 6 28	25·086	49·188	14·274	14·280	14·309
" 3	"	*I. P. W.*	5 51 10	34·576	39·295	13·871	13·863	13·961
" "	"	"	6 6 27	34·748	39·187	13·935	13·910	13·947
" 4	*I. P. E.*	"	5 51 9	44·589	29·443	14·032	13·958	14·057
" "	"	"	6 6 26	44·649	29·326	13·975	14·010	14·052
Mean of daily mean values for instrumental position *I. P. E.* at both stations ...						4 14·420	4 14·366	4 14·438
" " *I. P. W.* at E Station and *I. P. E.* at W Station						14·307	14·268	14·325
" " *I. P W.* at both stations ...						13·972	13·938	13·992
" " *I. P. E.* at E Station and *I. P. W.* at W Station						14·024	13·970	14·062
General Means ...						4 14·181	4 14·136	4 14·204

	By Clock Comparisons	By Transits at both Stations with the same Clock
Whence	δL_N = 4 m 14·181 s	δL_N = 4 m 14·170 s
Correction for Relative Personal Equation,	$H_N - S_N$ = + 0·008	$H_N - S_N$ = + 0·008
	ΔL_N = 4 m 14·189 s	ΔL_N = 4 m 14·178 s
Again	δL_S = 4 m 14·229 s	δL_S = 4 m 14·218 s
Correction for Relative Personal Equation,	$H_S - S_S$ = − 0·029	$H_S - S_S$ = − 0·029
	ΔL_S = 4 m 14·200 s	ΔL_S = 4 m 14·189 s
Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ =	4 m 14·195 s	ΔL = 4 m 14·183 s
	ρ = + 0·036	ρ = + 0·034

AND THE RETARDATION OF SIGNALS, ρ, SEASON 1883-84.

PROME (E), AND CHITTAGONG (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$ (m s)	Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$ (m s)
1884 January 21	*I. P. W.*	*I. P. W.*	13 30·198	13 30·271
			30·214	30·374
„ „	*I. P. E.*	„	30·361	30·399
			30·453	30·387
„ 22	„	*I. P. E.*	30·633	30·676
			30·661	30·718
„ „	*I. P. W.*	„	30·501	30·581
			30·481	30·661
„ 23	„	*I. P. W.*	30·393	30·451
			30·396	30·505
„ „	*I. P. E.*	„	30·353	30·460
			30·350	30·418
„ 24	„	*I. P. E.*	30·636	30·741
			30·603	30·713
„ „	*I. P. W.*	„	30·548	30·571
			30·463	30·613
„ 25	„	*I. P. W.*	30·379	30·501
			30·377	30·543
„ „	*I. P. E*	„	30·232	30·448
			30·259	30·416
„ 26	„	*I. P. E.*	30·684	30·823
			30·652	30·812
„ „	*I. P. W.*	„	30·476	30·530
			30·381	30·477
„ 29	„	*I. P. W.*	30·273	30·385
			30·248	30·363
„ „	*I. P. E.*	„	30·415	30·443
			30·362	30·423
„ 30	„	*I. P. E.*	30·672	30·743
			30·602	30·705
„ „	*I. P. W.*	„	30·542	30·615
			30·444	30·580
Mean of daily mean values for instrumental position: *I. P. E.* at both stations ...			13 30·643	13 30·749
I. P. W. at E Station and *I. P. E.* at W Station			30·480	30·579
I. P. W. at both stations ...			30·310	30·424
I. P. E. at E Station and *I. P. W.* at W Station			30·348	30·424
General Means ...			13 30·445	13 30·544

		m	s
Whence	δL_N =	13	30·495
Correction for Relative Personal Equation,	$H_N - S_N$ = +		0·008
	ΔL_N =	13	30·503
Again	δL_S =	13	30·521
Correction for Relative Personal Equation,	$H_S - S_S$ = −		0·029
	ΔL_S =	13	30·492

Finally $\Delta L = \frac{1}{2} (\Delta L_N + \Delta L_S)$ = 13 30·497

ρ = + 0·050

PROME (E), AND AKYAB (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$ (m s)	Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$ (m s)
1884 February 8	*I. P. E.*	*I. P. E.*	9 16·304	9 16·321
„ „	„	„	16·306	16·413
„ „	*I. P. W.*	„	16·304	16·453
„ „	„	„	16·398	16·456
„ 9	„	*I. P. W.*	15·995	16·107
„ „	„	„	15·957	16·049
„ „	*I. P. E.*	„	16·139	16·270
„ „	„	„	16·120	16·211
„ 12	„	*I. P. E.*	16 336	16·421
„ „	„	„	16·288	16·348
„ „	*I. P. W.*	„	16·126	16·278
„ „	„	„	16·068	16·216
„ 13	„	*I. P. W.*	16·069	16·157
„ „	„	„	16·043	16·049
„ „	*I. P. E.*	„	16·206	16·233
„ „	„	„	16·161	16·208
Mean of daily mean values for instrumental position: *I. P. E.* at both stations ...			9 16 309	9 16·376
I. P. W. at E Station and *I. P. E.* at W Station			16·224	16·351
I. P. W. at both stations ...			16·016	16·090
I. P. E. at E Station and *I. P. W.* at W Station			16·156	16·231
General Means ...			9 16·176	9 16·262

		m	s
Whence	δL_N =	9	16·219
Correction for Relative Personal Equation,	$H_N - S_N$ = +		0·008
	ΔL_N =	9	16·227
Again	δL_S =	9	16·259
Correction for Relative Personal Equation,	$H_S - S_S$ = −		0·029
	ΔL_S =	9	16·230

Finally $\Delta L = \frac{1}{2} (\Delta L_N + \Delta L_S)$ = 9 16·229

ρ = + 0·043

TABLE XII. DEDUCTION OF THE DIFFERENCE OF LONGITUDE, ΔL AND THE RETARDATION OF SIGNALS, ρ, SEASON 1883–84.

MOULMEIN (E), AND PROME (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1884			m s	m s
March 8	*I. P. E.*	*I. P. W.*	9 38·581	9 38·720
			38·631	38·734
„ 9	*I. P. W.*	„	38·764	38·771
			38·703	38·745
„ 10	„	*I. P. E.*	38·582	38·663
			38·578	38·684
„ „	*I. P. E.*	„	38·512	38·569
			38·532	38·511
„ 11	„	*I. P. W.*	38·575	38·645
			38·604	38·662
„ „	*I. P. W.*	„	38·680	38·772
			38·742	38·784
„ 12	„	*I. P. E.*	38·739	38·703
			38·701	38·770
„ „	*I. P. E.*	„	38·565	38·618
			38·598	38·584
„ 13	„	*I. P. W.*	38·549	38·600
			38·528	38·582
„ „	*I. P. W.*	„	38·561	38·568
			38·576	38·600
„ 14	„	*I. P. E.*	38·657	38·741
			38·658	38·655
„ „	*I. P. E.*	„	38·699	38 686
			38·653	38·662
„ 15	„	*I. P. W.*	38·625	38·673
			38·582	38·693
„ „	*I. P. W.*	„	38·730	38·927
			38·731	38·794
Mean of daily mean values for instrumental position: *I. P. E.* at both stations ...			9 38·593	9 38·605
Mean of daily mean values for instrumental position: *I. P. W.* at E Station and *I. P. E.* at W Station			38·653	38·703
Mean of daily mean values for instrumental position: *I. P. W.* at both stations ...			38·693	38·745
Mean of daily mean values for instrumental position: *I. P. E.* at E Station and *I. P. W.* at W Station			38·584	38·664

Weighted Mean	δL_N =	m s 9 38·657
Correction for Relative Personal Equation, $S_N - H_N$ =		− 0·008
	ΔL_N =	9 38·649
Again	δL_S =	9 38·660
Correction for Relative Personal Equation, $S_S - H_S$ =		+ 0·029
	ΔL_S =	9 38·689

Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ = m s 9 38·669

ρ = + 0·025

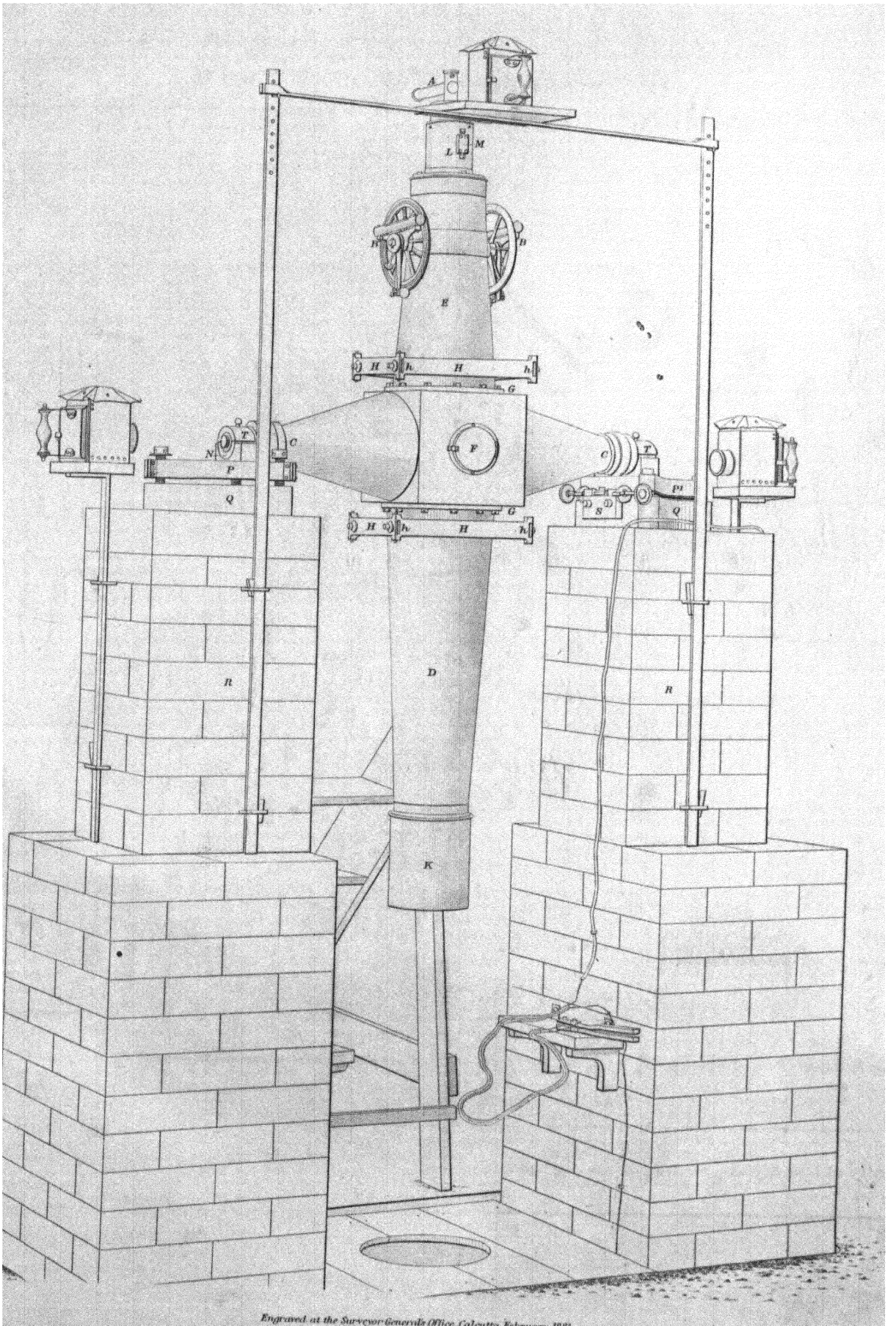
MOULMEIN (E), AND AKYAB (W).

Astronomical Date	Instrumental Position at E	Instrumental Position at W	Apparent Difference of Longitude by Stars of North Aspect by Observations with E Clock $= \delta L_N - \rho$	Apparent Difference of Longitude by Stars of North Aspect by Observations with W Clock $= \delta L_N + \rho$
1884			m s	m s
March 26	*I. P. E.*	*I. P. E.*	18 54·820	18 55·004
			54·852	54·975
„ 27	*I. P. W.*	*I. P. W.*	54·957	55·067
			54·943	55·042
„ „	*I. P. E.*	„	54·900	54·965
			54·892	54·950
„ 28	„	*I. P. E.*	.....	54·846
			.....	54·889
„ „	*I. P. W.*	„	54·875	54·969
			54·895	54·963
„ 29	„	*I. P. W.*	55·011	55·113
			55·026	55·079
„ „	*I. P. E.*	„	54·912	54·983
			54·890	55·046
„ 30	„	*I. P. E.*	55·006	54·991
			54·929	54·986
„ „	*I. P. W.*	„	54·962	55·028
			54·997	54·978
„ 31	„	*I. P. W.*	55·010	55·047
			55·013	55·054
„ „	*I. P. E.*	„	54·837	54·905
			54·899	55·061
April 1	„	*I. P. E.*	54·846	54·870
			54·803	54·926
„ „	*I. P. W.*	„	54·809	54·962
			54·872	54·953
Mean of daily mean values for instrumental position: *I. P. E.* at both stations ...			18 54·876	18 54·936
Mean of daily mean values for instrumental position: *I. P. W.* at E Station and *I. P. E.* at W Station			54·902	54·976
Mean of daily mean values for instrumental position: *I. P. W.* at both stations ...			54·993	55·067
Mean of daily mean values for instrumental position: *I. P. E* at E Station and *I. P. W.* at W Station			54·888	54·985

Weighted Mean	δL_N =	m s 18 54·946
Correction for Relative Personal Equation, $S_N - H_N$ =		− 0·008
	ΔL_N =	18 54·938
Again	δL_S =	18 54·896
Correction for Relative Personal Equation, $S_S - H_S$ =		+ 0·029
	ΔL_S =	18 54·925

Finally $\Delta L = \frac{1}{2}(\Delta L_N + \Delta L_S)$ = m s 18 54·932

ρ = + 0·038



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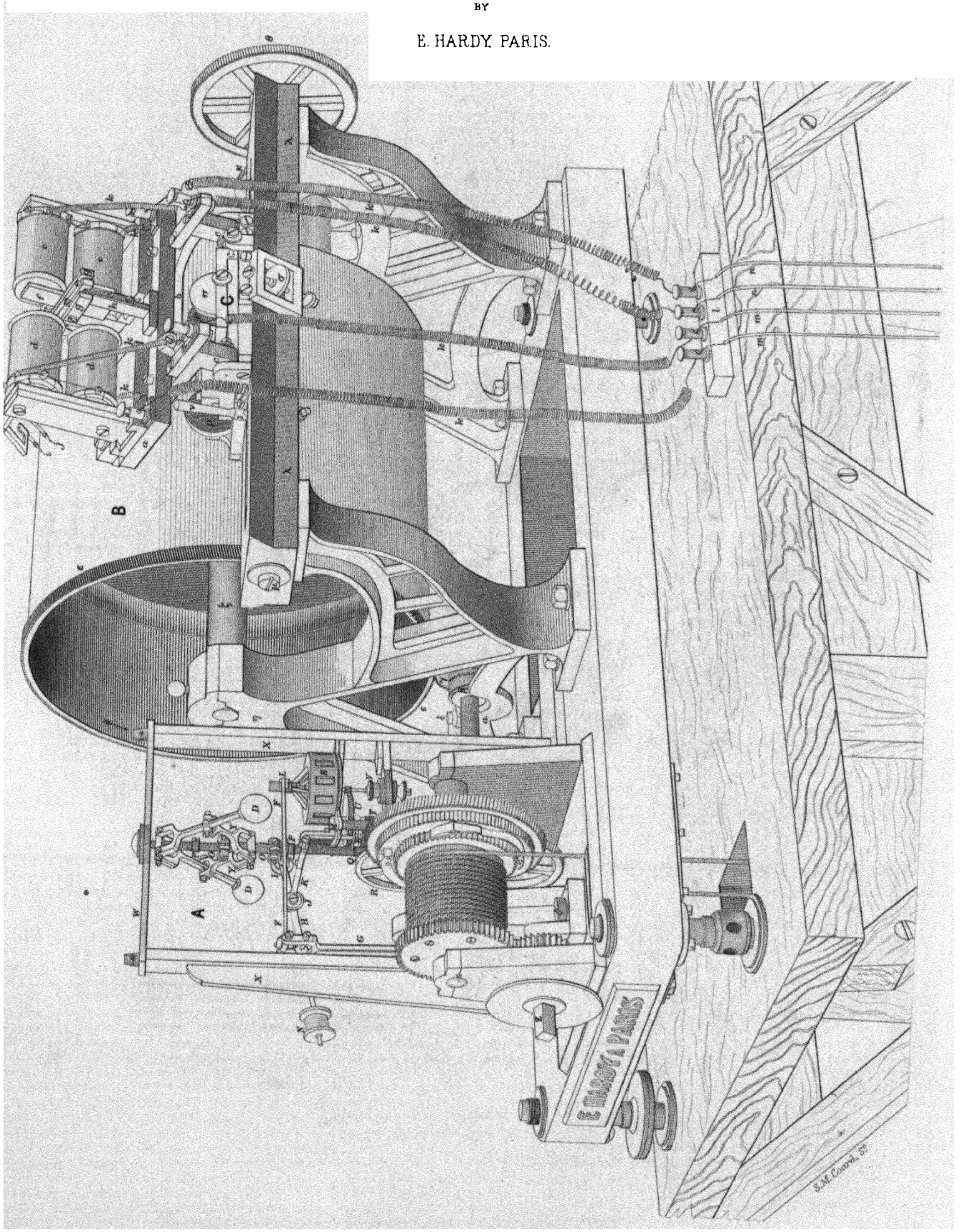
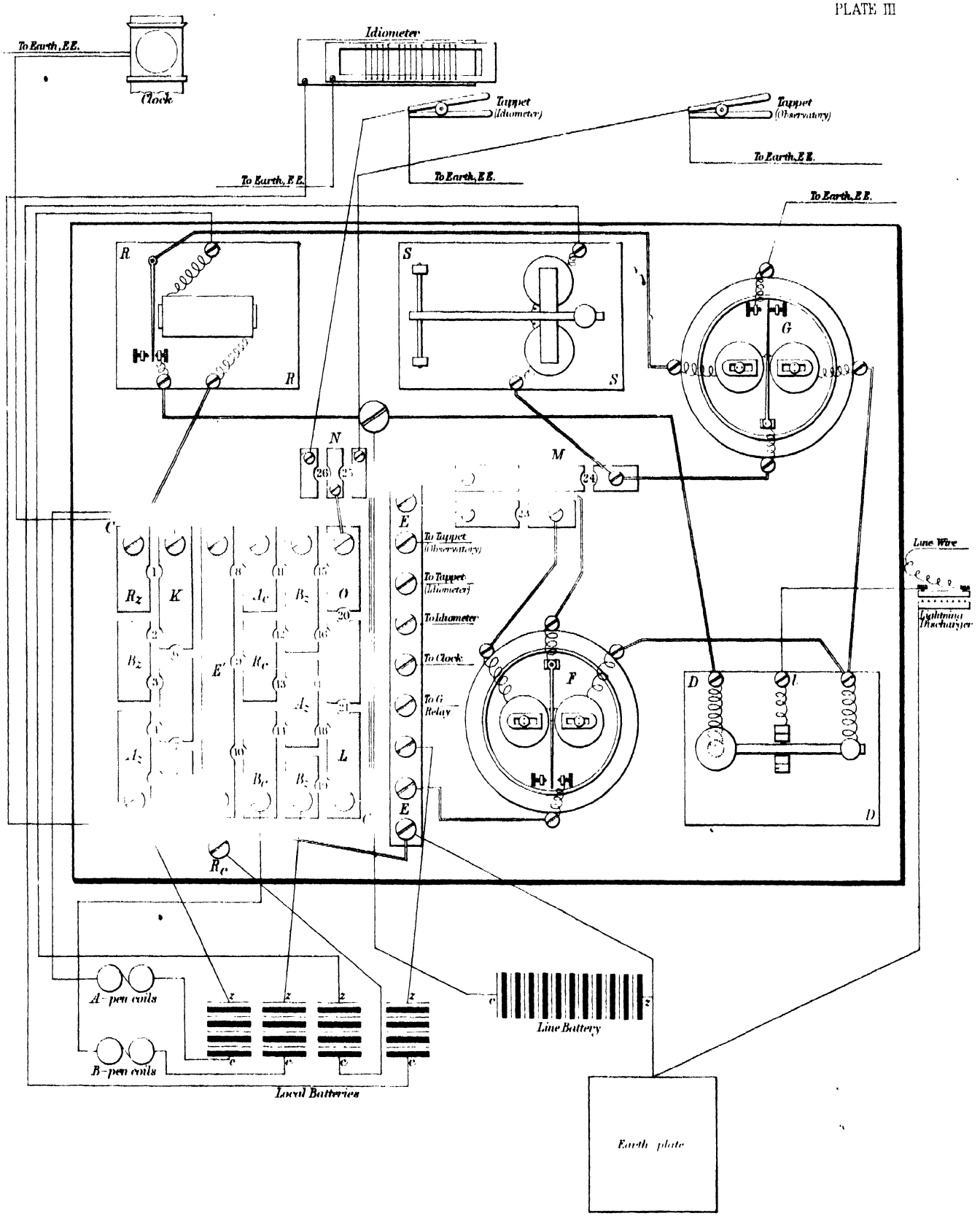


COMMUTATOR BOARD

Scale about 4 real size.

PLATE III



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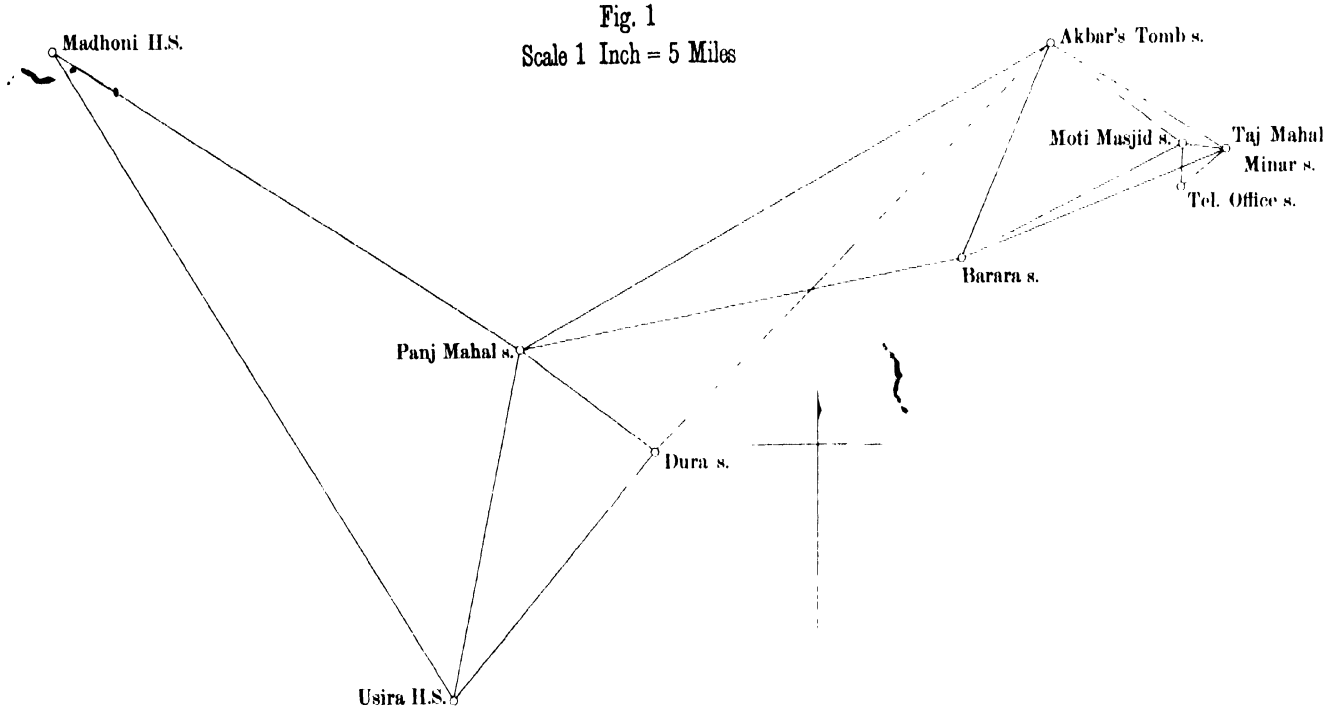
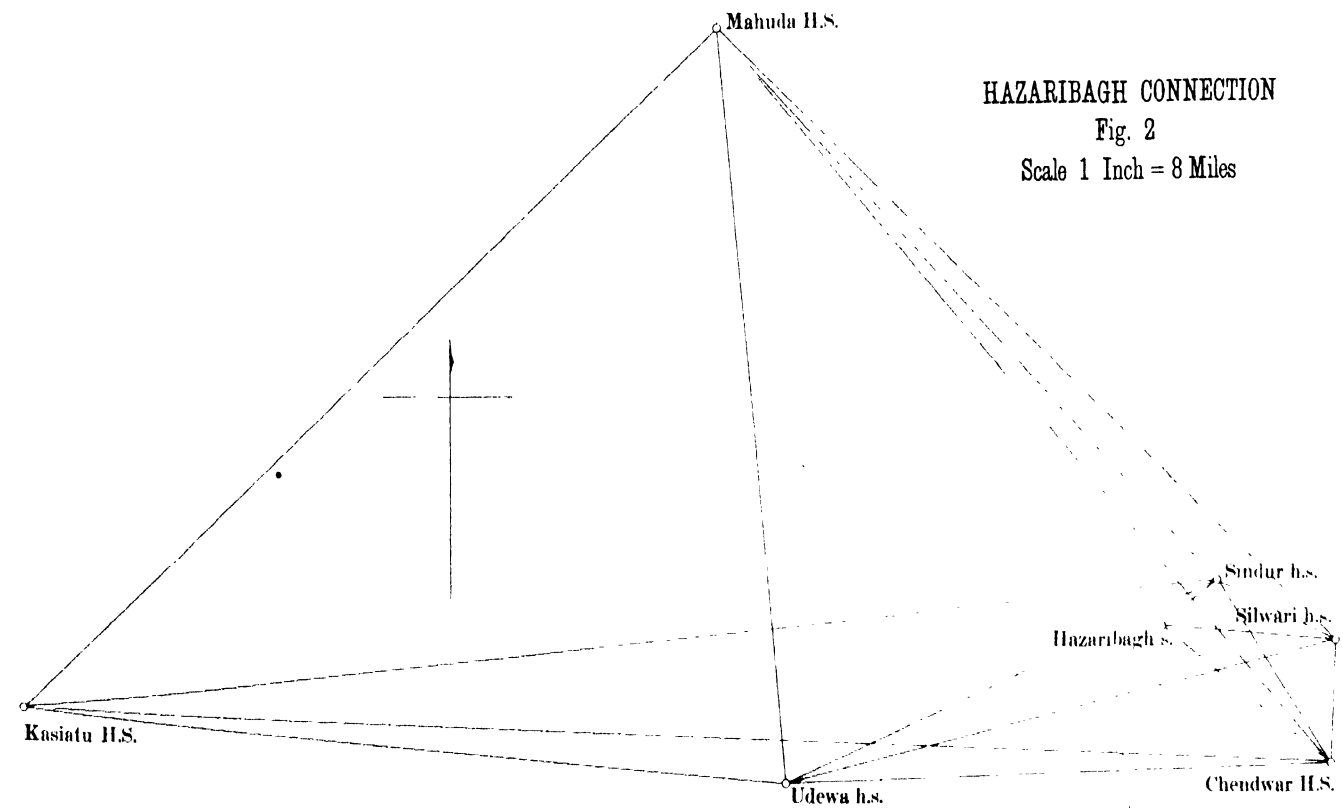
T.B. Rodger Sc.

AGRA CONNECTION
Fig. 1
Scale 1 Inch = 5 Miles



HAZARIBAGH CONNECTION
Fig. 2
Scale 1 Inch = 8 Miles



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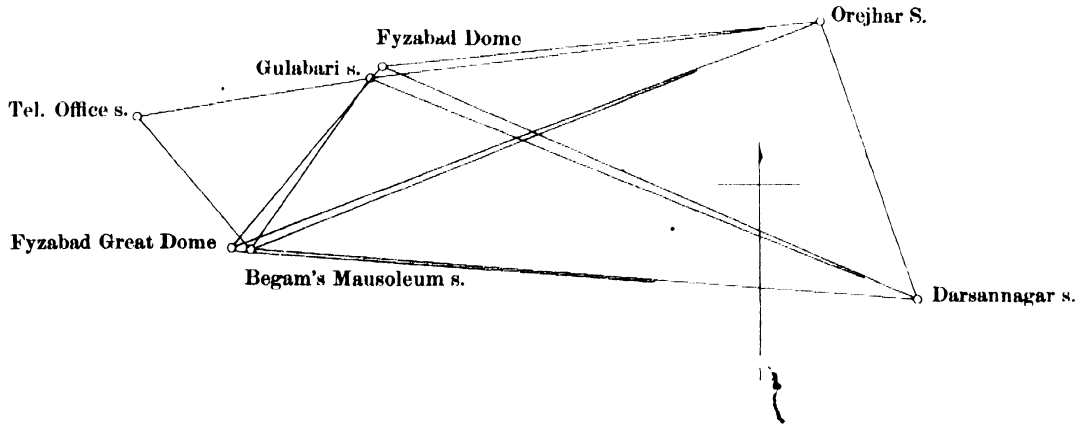
FYZABAD CONNECTION

Fig. 1

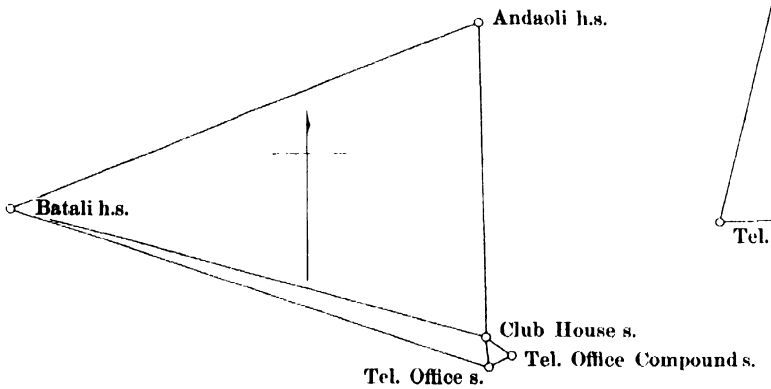
Scale 1 Inch = 1 Mile



CHITTAGONG CONNECTION

Fig. 2

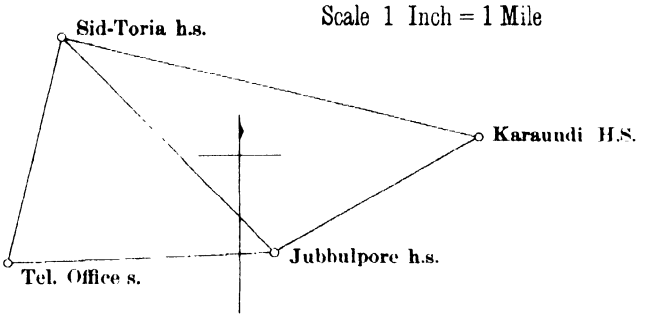
Scale 2 Inches = 1 Mile



JUBBULPORE CONNECTION

Fig. 3

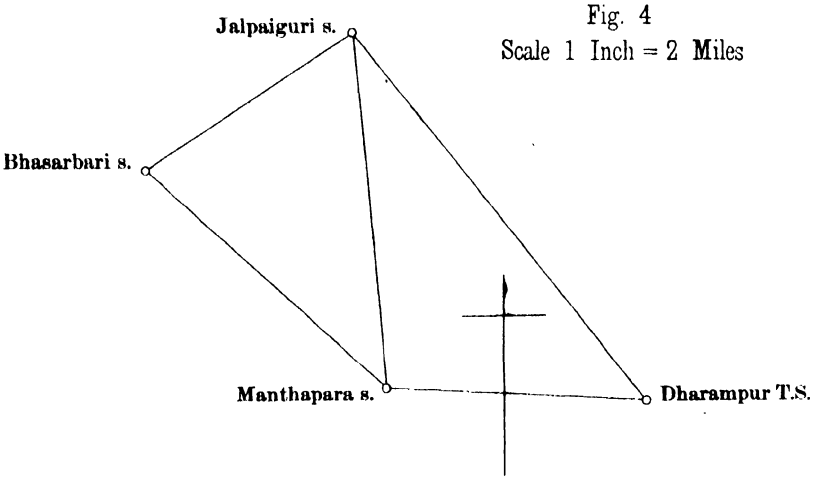
Scale 1 Inch = 1 Mile



JALPAIGURI CONNECTION

Fig. 4

Scale 1 Inch = 2 Miles



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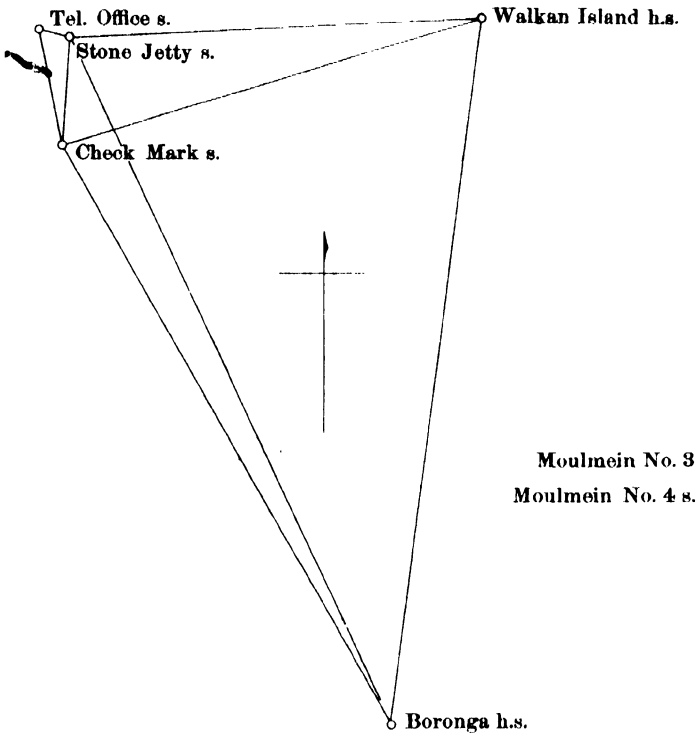
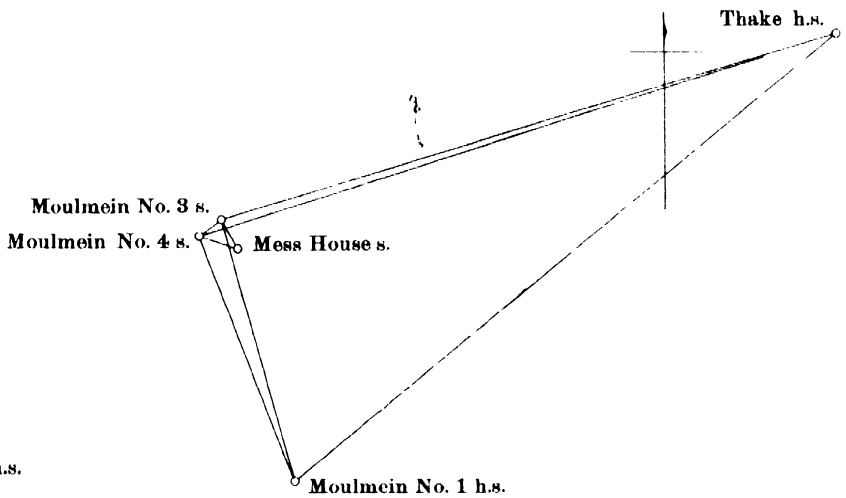
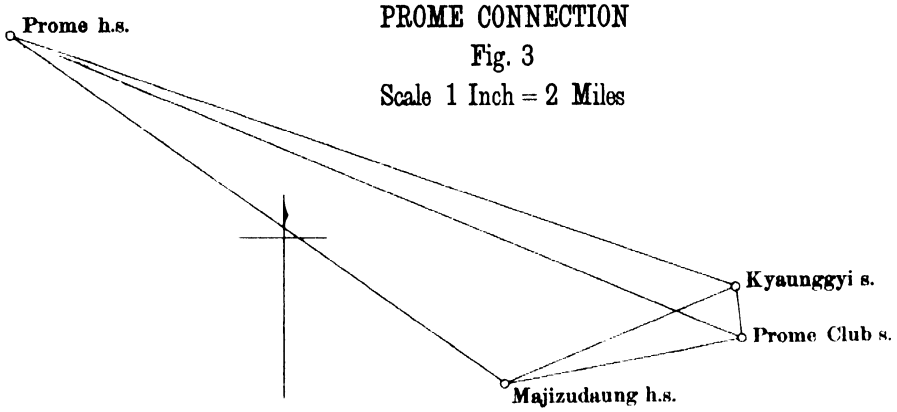
AKYAB CONNECTION
Fig. 1
Scale 1 Inch = 2 Miles



MOULMEIN CONNECTION
Fig. 2
Scale 1 Inch = 1 Mile



PROME CONNECTION
Fig. 3
Scale 1 Inch = 2 Miles



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An Account of the Measurement of two Sections of the Meridional Arc of India, bounded by the parallels of 18° 3′ 5″; 24° 7′ 11″; and 29° 30′ 18″. By Lieutenant-Colonel Everest, F.R.S., &c., late Surveyor General of India, and his Assistants. London, 1847. (*Out of print*).

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Do. III. The Principal Triangulation, the Base-Line Figures, the Karáchi Longitudinal, N.W. Himalaya, and the Great Indus Series of the North-West Quadrilateral. By Colonel J. T. Walker, R.E., F.R.S., &c., &c., Superintendent of the Survey, and his Assistants. Dehra Dún, 1873.

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Do. V. Details of the Pendulum Operations by Captains J. P. Basevi, R.E., and W. J. Heaviside, R.E., and of their Reduction. Prepared under the directions of Major-General J. T. Walker, C.B., R.E., F.R.S., &c., &c., Surveyor General of India and Superintendent of the Trigonometrical Survey. Dehra Dún and Calcutta, 1879.

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