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## A collection of Galilean satellite eclipse observations, 1652-1983 : II

J. H. Lieske

Jet Propulsion Laboratory, California Institute of Technology, Pasadena, CA 91109, U.S.A.

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**Summary.** — The largest collection of Galilean satellite eclipse observations extent has been gathered from the published literature and from manuscript collections from 1652 to 1983. Many of the observations were thought to have been irretrievably lost for more than a century. The collection will be of great value in evaluating long-term effects on the Galilean satellites such as the possible existence of tidal dissipation on their periods.

**Key words :** planets and satellites : satellites — planets and satellites : Jupiter, Galilean — eclipses — ephemerides — celestial mechanics — observational methods.

### 1. Introduction.

A collection of eclipse observations of Jupiter's Galilean satellites has been assembled from long-forgotten manuscripts and publications spanning the years 1652 to 1983. A general overview of the collection has been presented in Part I of the related paper appearing in *Astronomy and Astrophysics*, Main Journal (Lieske, 1985; Part I). In this paper [Part II] on the eclipse observations of Jupiter's Galilean satellites, I present further details on the collection of observations from 1652 to 1983 and discuss the 16842 observations which are contained in the collection.

Since the original observations are found in diverse sources, including numerous unpublished manuscripts, and since it is valuable to have them available and reduced to a common system for future generations, I present here the entire collection reduced to a proleptic Universal Time (UT) system and based upon the Gregorian calendar. Many of the data had been thought irretrievably lost (Tisserand, 1896) and therefore it is of great value to document the existing data. The data will be valuable for studies in historical astronomy as well as for modern purposes, such as the search for evidence of tidal dissipation in the motion of the Galilean satellites or for the estimation of physical parameters such as Jupiter's pole and the satellite masses.

### 2. Sources of data.

The many observers and sites of observation which are contained in the collection of eclipse observations comprise a living history of astronomy over the past 300 years. Observations made by Ole Rømer (1676; see also Nielsen, 1944, pp. 60-61), for example, were used by him to determine the finite speed of light. Those observations are in this collection and they are remarkably accurate and are quite valuable. Other early observers — such as J.-B. Hodierna in Sicily; J.-D. Cassini, J. Picard, P. de la Hire, and C. Messier in France; J. N. Delisle in Russia and in

France; J. Flamsteed in England; D. Bianchini, Manfredi and Maraldi in Italy; C. Kirch and J. Bode in Germany; P. Noël, P. Fontanay, P. Koegler in China; and the prisoners P. Camille and de Bèze in Malacca (see Lieske, 1983) — all made significant contributions to the observations contained in the collection.

The sources of observations contained in the collection are presented in tables Ia, Ib and Ic which are sorted by Index (Table Ia), by Author (Table Ib), and by Journal (Table Ic). In the tables I list the arbitrarily assigned Index for each journal or manuscript reference in Field 1. The second field contains the year of publication, while the journal reference and author appear in the fields labeled Journal, Volume and Author. The number of observations contained in the collection from each reference is given in the last column of the table. The original sources may contain more observations than those given in this collection because of the possibility of a single observation occurring in several different publications. In general I adopted the earlier publication as the reference source when a given datum has been published in several journals. All together there are 418 different publications and manuscripts which contain the 16802 observations. Table Ia is most useful for determining the source of publication for each observation which appears in the actual collection.

The places of observation are presented in tables IIa, IIb and IIc. These tables are sorted by Index (Table IIa), by Location (Table IIb) and by Longitude (Table IIc). There are 432 different observation sites contained in the collection of eclipse observations. Table IIa is most useful for determining the place of observation for a given eclipse. The other tables are useful for studies involving specific observatories and longitude distributions. In the tables the first column gives the arbitrarily assigned Index number, while the second field gives the longitude (measured East or West from Greenwich in degrees). The third and fourth fields give the name of the observing site and

the country in which it is located, while the fifth field (labeled Comments) presents further information on the observing location. The final field contains the number of observations from that observing site that are contained in the collection.

In figure 1 of Part I, I presented a histogram of the number of observations of all satellites. Here in figures 1a-d I present the number of observations for each satellite as a function of the year in which they were made. As noted in Part I, one can discern the observational trends over three centuries and in these figures one can note the changes in emphasis of observations. For example, the efforts expended in Ole Rømer's determination of the finite speed of light in the mid 1670s is obvious in figure 1a, while the later emphasis on Satellite II is evident in figure 1b.

### 3. Reduction to Mean Time.

Many of the older observations were originally recorded in apparent time (*viz.* the observation times were related to the hour angle of the real Sun) or in terms of sidereal time, and they were often on the Julian calendar. In order to make the data readily useful to current and to future generations of astronomers, I have reduced the original data to a proleptic UT system (*i.e.*, where the day begins at midnight) on the Gregorian calendar. The reduction from apparent to mean time (*i.e.* UT) is based upon the work of Smart (1931), although we have developed the algorithm for the « Equation of Time » in algebraic form, rather than using numerical coefficients as was done in Smart, because it was necessary to reduce data from apparent time to mean time over an interval of several centuries and over that span the secular terms due to the eccentricity and periapsis of the Earth are significant.

If we let  $E$  represent Apparent Solar Time minus Mean Solar Time, then following the development of Smart and expanding expressions for the solar true longitude in terms of the mean longitude and then reducing the results to the Earth equator we obtain

$$E = GHA_{\odot} - (12^h + UT) = R_U - RA_{\odot} \quad (1)$$

where  $GHA_{\odot}$  is the Greenwich hour angle of the real Sun,  $RA_{\odot}$  is its right ascension and  $R_U$  is the « right ascension of the fictitious mean Sun » [Explanatory Supplement (1961), p. 73; Newcomb (1898) p. 9].

The equation can be expanded as

$$\begin{aligned} E = & [-2e(1+y)\cos\tilde{\omega}] \sin\lambda + \\ & + [2e(1-y)\sin\tilde{\omega}] \cos\lambda \\ & + [y(1-4e^2) - 1.25e^2\cos 2\tilde{\omega}] \sin 2\lambda \\ & + [1.25e^2\sin 2\tilde{\omega}] \cos 2\lambda \\ & + [2ey(1+y)\cos\tilde{\omega}] \sin 3\lambda \\ & + [-2ey(1-y)\sin\tilde{\omega}] \cos 3\lambda \\ & + [3.25e^2y\cos 2\tilde{\omega} - 0.5y^2] \sin 4\lambda \\ & + [-3.25e^2y\sin 2\tilde{\omega}] \cos 4\lambda \\ & + [-2ey^2\cos\tilde{\omega}] \sin 5\lambda \\ & + [2ey^2\sin\tilde{\omega}] \cos 5\lambda \\ & + [1/3y^3\sin 6\lambda] \sin 6\lambda \\ & - \Delta\lambda_{LP} - \Delta\lambda_{SP} \\ & + 2y(\Delta\lambda_{LP} + \Delta\lambda_{SP}) \cos 2\lambda \end{aligned} \quad (2)$$

where  $\lambda$  represents the solar mean longitude,  $\Delta\lambda_{LP}$  and  $\Delta\lambda_{SP}$  represent the long- and short-period perturbations (Newcomb, 1898) in the solar mean longitude due to the other planets, and where  $y = \tan^2 \varepsilon/2$ .

In the above formula we employ the solar data of Newcomb (1898)

$$\begin{aligned} e &= 0.01675104 - 0.00004184 T \\ \tilde{\omega} &= 281^{\circ}2208333 + 6189^{\circ}.03 T + 1^{\circ}.63 T^2 \\ \varepsilon &= 23^{\circ}.45229444 - 46^{\circ}.845 T - 0^{\circ}.0059 T^2 \end{aligned} \quad (3)$$

where  $T$  is measured in Julian centuries from 1900 (Julian Date 2415020.0).

The unperturbed mean longitude of the Sun  $\lambda$  and its perturbations  $\Delta\lambda$  are calculated from Newcomb (1898, p. 9; pp. 13-17)

$$\begin{aligned} \lambda &= R_U = 279^{\circ}.6909833 + 8640184^{\circ}.542 T + 0^{\circ}.0929 T^2 \\ \Delta\lambda_{LP} &= A_k \cos(jg + ig - K) \\ \Delta\lambda_{SP} &= 6^{\circ}.454 \sin D. \end{aligned} \quad (4)$$

The long-period perturbations in solar longitude  $\Delta\lambda_{LP}$  are derived from the data of Newcomb, retaining only the terms which are greater than 1 arcsec :

$$\begin{aligned} \Delta\lambda_{LP} = & 7^{\circ}.208 \cos(g_{24} - g_{\oplus} - 3.1334 \text{ rad}) \\ & + 5^{\circ}.526 \cos(2g_{\odot} - 2g_{\oplus} - 3.6946 \text{ rad}) \\ & + 4^{\circ}.838 \cos(g_{\odot} - g_{\oplus} - 1.0629 \text{ rad}) \\ & + 2^{\circ}.731 \cos(2g_{24} - 2g_{\oplus} - 1.5210 \text{ rad}) \\ & + 2^{\circ}.600 \cos(g_{24} - 4.5940 \text{ rad}) \\ & + 2^{\circ}.497 \cos(2g_{\odot} - 3g_{\oplus} - 0.7688 \text{ rad}) \\ & + 2^{\circ}.043 \cos(2g_{\odot} - 2g_{\oplus} - 6.0020 \text{ rad}) \\ & + 1^{\circ}.770 \cos(2g_{\odot} - g_{\oplus} - 3.4977 \text{ rad}) \\ & + 1^{\circ}.610 \cos(2g_{24} - g_{\oplus} - 1.9110 \text{ rad}) \\ & + 1^{\circ}.559 \cos(3g_{\odot} - 4g_{\oplus} - 0.2574 \text{ rad}) \\ & + 1^{\circ}.024 \cos(3g_{\odot} - 5g_{\oplus} - 0.7304 \text{ rad}). \end{aligned} \quad (5)$$

The short-period perturbations  $\Delta\lambda_{SP}$  are due to lunar effects on the earth-moon barycenter. Only the single term depending upon the elongation  $D (= \lambda_{\text{Moon}} - \lambda_{\text{Sun}})$  of the Moon from the Sun is required.

In equation (5) the mean anomalies  $g$  of the planets were taken from the Explanatory Supplement (1961, p. 107) :

$$\begin{aligned} D &= 350^{\circ}.73749 + 12^{\circ}.1907491914 d \\ g_{\odot} &= 212^{\circ}.60332 + 1^{\circ}.6021301540 d \\ g_{\oplus} &= 358^{\circ}.47584 + 0^{\circ}.9856002670 d \\ g_{\sigma} &= 319^{\circ}.52942 + 0^{\circ}.5240207666 d \\ g_{24} &= 225^{\circ}.44465 + 0^{\circ}.08309121571 d \end{aligned} \quad (6)$$

where the rates are in days since 1900 (JD 2415020.0).

As noted earlier, we retained the formulation of equation (2) in its general form because we needed to apply it to data spanning several centuries. In order to show the numerical size of the terms we give them here for the specific epoch of 1900 (JD 2415020.0) :

$$\begin{aligned}
E = & -93^{\circ}5 \sin \lambda - 432^{\circ}4 \cos \lambda \\
& + 596^{\circ}2 \sin 2 \lambda - 1^{\circ}8 \cos 2 \lambda \\
& + 4^{\circ}0 \sin 3 \lambda + 18^{\circ}6 \cos 3 \lambda \\
& - 13^{\circ}3 \sin 4 \lambda + 0^{\circ}2 \sin 4 \lambda \\
& - 0^{\circ}2 \sin 5 \lambda - 0^{\circ}8 \cos 5 \lambda \\
& + 0^{\circ}4 \sin^2 6 \lambda. \quad (7)
\end{aligned}$$

The effect of perturbations  $\Delta\lambda$  of  $10''$  is  $0^{\circ}6$ , while the last term in equation (2) is  $0^{\circ}06$  for  $\Delta\lambda = 10$  arcsec. These values may be compared with those of Smart (1931, p. 150) who evaluated the terms for an epoch in 1931. Through the courtesy of Goldstein (1975) we obtained a copy of Cassini's (1730) tables of apparent minus mean time for 1668 and satisfactorily checked our formulation at that early epoch.

Employing the Equation of Time formulation given in equation (2) we reduced all of the data in apparent time to a consistent UT system. Data which had been recorded in Mean Astronomical Time (i.e., where the day begins at noon) were also reduced to the current (post-1925) UT definition where the day begins at midnight.

#### 4. Tables of $\Delta T$ .

As mentioned in Part I, it is necessary to have tables of  $\Delta T$  (Ephemeris Time minus Universal Time), available in order to calculate residuals based upon the observed time of an eclipse in UT and the calculated time of an eclipse (Lieske, 1981) in ET. I have adopted the basic data of Morrison (1980) but reduced to the Spencer-Jones (1939) value of lunar tidal acceleration  $\dot{n}_{\text{Moon}} = -22.44$  arcsec/cy<sup>2</sup>. See the discussion in Part I for further information, or the recent paper by Krasinsky *et al.* (1985). The Morrison data for a lunar tidal acceleration of  $\dot{n}_{\text{Moon}} = -26$  arcsec/cy<sup>2</sup> (Morrison and Ward, 1975) are presented in figure 2. As noted in Part I, the basic Morrison data can be applied to an evaluation of  $\Delta T$  for a different assumed  $\dot{n}_{\text{Moon}}$  by utilizing

$$\Delta T(\dot{n}_{\text{Moon}}) = \Delta T_{\text{Morrison}} - 0^{\circ}911(\dot{n}_{\text{Moon}} + 26^{\circ}0) T^2 \quad (8)$$

where  $\dot{n}_{\text{Moon}}$  is the lunar tidal acceleration in arcsec/cy<sup>2</sup>.

The effect of adopting a different  $\dot{n}_{\text{Moon}}$  on  $\Delta T$  is shown in figure 3 for the Morrison  $\dot{n}_{\text{Moon}} = -26$  arcsec/cy<sup>2</sup> and for the Spencer-Jones  $\dot{n}_{\text{Moon}} = -22.44$  arcsec/cy<sup>2</sup> values. In the figure  $\Delta T$  is obtained from  $\Delta T = Z - F$ , where  $Z$  represents the lunar drift when *no* tidal acceleration is adopted (*viz.*  $\dot{n}_{\text{Moon}} = 0$ ) as obtained from Morrison's data, and where  $F$  represents the effect of the arbitrarily adopted tidal acceleration  $\dot{n}_{\text{Moon}}$  (e.g.  $F = -22.44$  arcsec/cy<sup>2</sup> for the Spencer-Jones acceleration and  $F = -26.0$  arcsec/cy<sup>2</sup> for the Morrison and Ward acceleration). The  $F$ -curve for the Spencer-Jones value of  $\dot{n}_{\text{Moon}}$  is denoted in the figure by  $S$  while the value of  $\dot{n}_{\text{Moon}}$  for the Morrison and Ward lunar tidal acceleration is denoted by  $M$ . As mentioned in Part I, the Morrison data are smoother and more reliable than the classical Brouwer/Martin data (Brouwer, 1952; Martin, 1969) for  $\Delta T$  prior to 1850. This can be seen from figure 4, where the Morrison values of  $\Delta T$  (reduced to  $\dot{n}_{\text{Moon}} = -22.44$  arcsec/cy<sup>2</sup>) are compared to the Brouwer/Martin values (see also Fig. 5 of the paper by Lieske (1982)).

#### 5. The collection of eclipse observations.

The basic data which represent the lasting value of this paper are presented in table III, which contains the individual observations of eclipses from 1652 to 1983 sorted by date. The general description of the meaning of each field of the table is given in Part I. The table contains the collection of eclipse observations, as well as the Observed minus Calculated (O-C) time of eclipse in seconds for two popular ephemerides : E-2 (Lieske, 1980) and G-5 (Arlot, 1982). These two ephemerides were based on analyses which did not include the present data.

Lieske's E-2 ephemeris was based on the study of approximately 1800 eclipse observations from 1878 to 1972, together with 85 mutual event observations in 1973 and about 3000 photographic observations from 1967 to 1978. Arlot's G-5 ephemeris was based on the study of approximately 8700 photographic observations from 1891 to 1978. See the discussion in Part I for a description of the E-2 and G-5 parameters and statistics. The O-C residuals given here are based upon the ephemerides as published by the two authors (Lieske, 1980; Arlot, 1982) *without any alterations or adjustments*, using the Spencer-Jones value of  $\dot{n}_{\text{Moon}} = -22.44$  arcsec/cy<sup>2</sup>. Hence they show the extrapolated long-term value of these two ephemerides. Future studies of the data presented here will be analyzed to produce revised and updated parameters for the orbits and for the physical parameters involved.

The first column of the table (Field 1) labeled Number contains a number arbitrarily assigned to each observation. The next three fields contain the Year, Month and Day of observation on a proleptic UT system (where the day begins at midnight) and are expressed in the Gregorian calendar. The fifth field, labeled Sigma, contains  $\sigma_a$ , the *a priori* standard deviation (in s) to be used for weighting purposes, together with a suffix V (for visual) or P (for photometric) which indicates the type of observation. The sixth field (Sat) contains the satellite number and the type of event. All events are reduced to mid-time of disappearance D or reappearance R. See the discussion in Part I for additional information. The seventh and eighth fields contain *Pub* and *Loc*, the publication source referenced to table Ia and the observation site referenced to table IIa, respectively.

The ninth field, labeled Notes, contains an asterisk (\*) if the observation should not be included in an analysis of the data. It may be so marked because of large residuals (possibly suggesting an erroneous interpretation of the time of observation) or it may be due to the fact that the observation is a duplicate of another datum already contained in the collection (in which case it is also marked with the symbol @). In general, I deleted all duplicate observations except for some of the « Computer I and Computer II » records, as described in the Part I paper, which were given by Sampson (1910) and by Arlot *et al.* (1984). Such records were retained in the collection but marked as deleted (\*) duplicate (@) observations so that one could readily identify the original source of the actual observation which perhaps had not been noted in the « Computer records ». If several observations of the same event were made at a given observing site, then they have been combined together and the resultant « normal place » is marked with a « V » while the individual data compris-

ing that normal place are marked as « duplicates » (@) and « deleted » (\*).

It generally has been assumed (except for photometric observations) that the observer noted the beginning (B) of an eclipse by determining the time of « last speck » of light before disappearance or that he observed the end (E) of an eclipse by observing the « first speck » of light upon reappearance. In such cases the observed times B or E were reduced to mid-event (or « half-brightness ») times D (on disappearance) or R (on reappearance). In cases where the observer did not observe the first/last speck of light B or E but rather observed the mid-event times D or R (such as happens, for example, with small-aperture telescopes or under unfavorable observing conditions), then I did not change the observation time but inserted an « S » (for « switched ») in Field 9. Other analysts are thus free to reconstruct and to reinterpret the data if they so desire.

The 10th field contains  $T_Q$ : the time required for the satellite to move a distance equal to its radius in a direction normal to the eclipse cone. It thus represents the difference between last speck of light (B) and half-brightness time on disappearance (D) or the difference between the first speck of light (E) and half-brightness time on reappearance (R). The relationships between the two sets of times are given by

$$\begin{aligned} t_B &= t_D + t_Q \\ t_E &= t_R + t_Q. \end{aligned} \quad (9)$$

For disappearances  $T_Q$  is positive, while for reappearances  $T_Q$  is negative. Fields 11-13 contain the O-C residuals in seconds of time based upon the ephemerides E-2 (Lieske, 1980), G-5 (Arlot, 1982) and E2 + (described in the Part I paper) in order to give some idea of the quality of the observations.

It should be emphasized that *no adjustment* of the E-2 or G-5 parameters has been made, but that the residuals are merely the « extrapolated result » of comparing the predicted times of eclipse using these two ephemerides with the actually observed time. Hence it may be assumed that ultimately one can get better adjustments to the data, although as can be seen in the figures presented in Part I, the ephemerides are already quite good for the inner three satellites. The time-residuals can be converted to approximate longitude residuals (in km) by multiplication by  $-v$ , the speed of the satellite: 18 km/s for Io, 14 km/s for Europa, 11 km/s for Ganymede, and 8 km/s for Callisto.

These data represent the most comprehensive collection of Galilean satellite eclipses extant which have been reduced to a standard system. They should prove to be of immeasurable value to future generations of astronomers. Since it would be nearly impossible to re-do this effort in the future (an opinion that was already expressed by Sampson (1910, p. 200)), they are presented here in memory of what Galileo has discovered and in anticipation of their great value for future investigations.

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TABLE Ia. — Observer list (sorted by index).

Index	Year	Journal	Volume	Author	No. Obs.	Index	Year	Journal	Volume	Author	No. Obs.
AA	1825	Astron. Nachr.	4: 143,360	Hallaschka,	23	CF	1826	Mem. Ast. Soc. London	2: 285	Colebrooke, R.	40
AB	1827	Astron. Nachr.	5: 137,469	Hallaschka,	5	CG	1826	Mem. Ast. Soc. London	2: 288	Hodgson, J.	24
AC	1829	Astron. Nachr.	7: 191,351	Hallaschka,	7	CH	1734	Philos. Trans. Abridg.	6(I): 225	Dorham, W.	[PT#402] 140
AD	1830	Astron. Nachr.	8: 62,359	Hallaschka,	7	CJ	1734	Philos. Trans. Abridg.	6(I): 236	Bianchini,	[PT#407] 87
AE	1832	Astron. Nachr.	10: 63	Hallaschka,	2	CI	1734	Philos. Trans. Abridg.	6(I): 240,8: 180	Lynn, G.	[PT#393,440] 22
AF	1834	Astron. Nachr.	11: 379	Husey, T.	10	CK	1734	Philos. Trans. Abridg.	6(I): 241	Carbone, J.	[PT#401] 19
AG	1826	Astron. Nachr.	5: 251	Lang, A.	2	CL	1734	Philos. Trans. Abridg.	6(I): 244	Carbone, J.	[PT#404] 2
AH	1833	Astron. Nachr.	10: 263	Lang, A.	16	CM	1734	Philos. Trans. Abridg.	6(I): 246	Koegler, I.	[PT#416,420,424] 161
AI	1837	Astron. Nachr.	18: 77	Petersen,	2	CN	1747	Philos. Trans. Abridg.	8(I): 179	Manfredi, E.	[PT#429] 14
AJ	1833	Mem. R. Astron. Soc.	5: 379	(Airy?)	46	CQ	1747	Philos. Trans. Abridg.	8(I): 180	DeLisle, J.	[PT#441] 10
AK	1833	Mem. R. Astron. Soc.	6: 186	(Airy?)	65	CP	1747	Philos. Trans. Abridg.	8(I): 183	"Jesuits"	[PT#468] 47
AL	1836	Mem. R. Astron. Soc.	9: 265	(Airy?)	28	CR	1756	Philos. Trans. Abridg.	10(I): 121	Sarmiento, J. deC.	[PT#490] 24
AM	1823	Astron. Nachr.	1: 313, 4: 107	Ruemker,	5	CS	1822	Quart. J. Sci., London	48: 546	Sastry, J.	2
AN	1837	Astron. Nachr.	19: 323	Schumacher, R.	8	CT	1755	Philos. Trans.	48: 546	Chevalier, J.	2
AP	1848	Astron. Nachr.	27: 52	Schumacher, R.	44	CU	1770	Philos. Trans.	59: 399	Maskelyne, N.	4
AQ	1851	Astron. Nachr.	31: 49	Schumacher, R.	50	CV	1771	Philos. Trans.	60: 502	Herberden, T.	24
AR	1851	Astron. Nachr.	31: 381	Schumacher, R.	10	CW	1774	Philos. Trans.	64: 184	Maskelyne, N.	16
AS	1826	Astron. Nachr.	4: 59,489	Schwarsenbrunner, B.	9	CX	1777	Philos. Trans.	67: 162	Wargentin, P.	464
AT	1833	Astron. Nachr.	10: 119	Schwarsenbrunner, B.	4	CY	?	Paris Obs. Manuscripts	A 5 1-A 5 8	Delisle Manuscripts	1973
AU	1835	Astron. Nachr.	16: 313	de Slavinski, P.	4	CZ	1784	Astron. Jahr. Berlin	147	Bode, J. [ed]	[publ: 1781] 4
AV	1836	Astron. Nachr.	17: 247	de Slavinski, P.	9	DA	1786	Astron. Jahr. Berlin	161,173	Bode, J.	[publ: 1783] 39
AW	1837	Astron. Nachr.	19: 235	de Slavinski, P.	5	DB	1787	Astron. Jahr. Berlin	163	Bode, J.	[publ: 1784] 20
AX	1838	Astron. Nachr.	20: 269	de Slavinski, P.	4	DC	1788	Astron. Jahr. Berlin	167	Bode, J.	[publ: 1785] 6
AY	1910	Mem. R. Astron. Soc.	59: 26	Sampson, R.	[*Delambre] 1505	DD	1789	Astron. Jahr. Berlin	129,155,156	Bode, J.	[publ: 1786] 58
AZ	1741	Operaum Math. Phys.	Works III	Horrebow, P.	95	DE	1790	Astron. Jahr. Berlin	147	Bode, J.	[publ: 1787] 4
BA	1915	K. Danske Videns. Selsk.	7 Raek., Afd. 12: 106	Mayer, K.	3	DF	1791	Astron. Jahr. Berlin	128,153,179,240	Bode, J.	[publ: 1788] 90
BB	1978	Roemer et. vit lumiere	143-157	Debarbat, S. (R. Taton, Ed)	2	DG	1792	Astron. Jahr. Berlin	132,250	Bode, J.	[publ: 1789] 46
BC	1901	An. Océst. 17. Siècle	Gauthier-Villars, Paris	Bigourdan, M.	[*Pिंगre] 1033	DH	1793	Astron. Jahr. Berlin	109,210,231	Bode, J.	[publ: 1790] 59
BD	1725	Hist. Coel. Brit.	I (# Ed): 351-360	Flamsteed, J.	12	DI	1794	Astron. Jahr. Berlin	92,111,139,256	Bode, J.	[publ: 1791] 107
BE	1803	Trans. Am. Phil. Soc.	6: 61,113	Ellicott, A.	33	DJ	1795	Astron. Jahr. Berlin	102,137,204	Bode, J.	[publ: 1792] 42
BF	1810	Trans. Am. Phil. Soc.	1: 93 (New Ser)	Ellicott, A.	12	DK	1796	Astron. Jahr. Berlin	108,155,212	Bode, J.	[publ: 1793] 49
BG	1809	Philos. Trans. Abridg.	6: 92	Bianchini,	[PT#340] 5	DL	1797	Astron. Jahr. Berlin	104,121	Bode, J.	[publ: 1794] 28
BH	1809	Philos. Trans. Abridg.	7: 55	Carbone, J.	[PT#385] 11	DM	1798	Astron. Jahr. Berlin	127,200	Bode, J.	[publ: 1795] 14
BJ	1809	Philos. Trans. Abridg.	7: 143	Carbone, J.	[PT#394] 7	DN	1799	Astron. Jahr. Berlin	163,182,190,230	Bode, J.	[publ: 1796] 67
BK	1809	Philos. Trans. Abridg.	7: 165	Bianchini,	[PT#396] 7	DP	1800	Astron. Jahr. Berlin	229	Bode, J.	[publ: 1797] 8
BL	1809	Philos. Trans. Abridg.	7: 265	Manfredi, E.	[PT#404] 10	DQ	1801	Astron. Jahr. Berlin	99,184	Bode, J.	[publ: 1798] 22
BM	1809	Philos. Trans. Abridg.	7: 273	Koegler, I.	[PT#405] 21	DR	1802	Astron. Jahr. Berlin	152,213,247	Bode, J.	[publ: 1799] 35
BN	1809	Philos. Trans. Abridg.	7: 274	"Jesuits"	[PT#405] 16	DS	1803	Astron. Jahr. Berlin	169,173,179,183,196	Bode, J.	[publ: 1800] 72
BP	1809	Philos. Trans. Abridg.	7: 335	DeLisle, J.	[PT#407] 40	DT	1804	Astron. Jahr. Berlin	108,129,158,181	Bode, J.	[publ: 1801] 64
BQ	1809	Philos. Trans. Abridg.	7: 418	"Missionaries"	[PT#414] 47	DU	1805	Astron. Jahr. Berlin	127,159,176	Bode, J.	[publ: 1802] 44
BR	1809	Philos. Trans. Abridg.	10: 3	Gaubil, A.	[PT#494] 6	DV	1806	Astron. Jahr. Berlin	137,143,165	Bode, J.	[publ: 1803] 52
BS	1809	Philos. Trans. Abridg.	10: 567	Chevalier, J.	[PT 48: 546] 3	DW	1807	Astron. Jahr. Berlin	146,171	Bode, J.	[publ: 1804] 21
BT	1809	Philos. Trans. Abridg.	11: 158	Chevalier, J.	[PT 50: 374] 7	DX	1808	Astron. Jahr. Berlin	96,123,127	Bode, J.	[publ: 1805] 33
BU	1809	Philos. Trans. Abridg.	12: 352	Wargentin, P.	[PT 56: 278] 46	DY	1809	Astron. Jahr. Berlin	105,148	Bode, J.	[publ: 1806] 11
BV	1809	Philos. Trans. Abridg.	12: 670	Wilson,	[PT 59: 402] 12	DZ	1810	Astron. Jahr. Berlin	134,170,190	Bode, J.	[publ: 1807] 34
BW	1809	Philos. Trans. Abridg.	12: 671	Maskelyne, N.	[PT 59: 402] 15	EA	1811	Astron. Jahr. Berlin	103,109,131,194	Bode, J.	[publ: 1808] 43
BX	1809	Philos. Trans. Abridg.	13: 526	Holland, S.	[PT 64: 171] 28	EB	1812	Astron. Jahr. Berlin	104,115,146,216	Bode, J.	[publ: 1809] 67
BY	1809	Philos. Trans. Abridg.	13: 528	Wright, T.	[PT 64: 190] 17	EC	1813	Astron. Jahr. Berlin	100,125,166	Bode, J.	[publ: 1810] 27
BZ	1826	Mem. Ast. Soc. London	2: 439	Hodgson, J.	19	ED	1814	Astron. Jahr. Berlin	97,104,126,165	Bode, J.	[publ: 1811] 77
CA	1827	Mem. Ast. Soc. London	3: 75	Beaufoy, M.	11	EE	1815	Astron. Jahr. Berlin	125,133,141,166,173,222	Bode, J.	[publ: 1812] 77
CB	1827	Mem. Ast. Soc. London	3: 106	Goldingham, J.	90	EF	1816	Astron. Jahr. Berlin	126,129,146,150,162,210	Bode, J.	[publ: 1813] 123
CC	1829	Mem. Ast. Soc. London	3: 344	Hodgson, J.	8	EG	1817	Astron. Jahr. Berlin	100,141,148,241	Bode, J.	[publ: 1814] 52
CD	1829	Mem. Ast. Soc. London	3: 368	Slawinski, M.	9	EH	1818	Astron. Jahr. Berlin	118,138,159,214,260	Bode, J.	[publ: 1815] 70
CE	1826	Mem. Ast. Soc. London	2: 129	Beaufoy, M.	58	EI	1819	Astron. Jahr. Berlin	102,121,147,175	Bode, J.	[publ: 1816] 66

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EL	1822	Astron. Jahr. Berlin	114,124,139,169	Bode, J.	[publ: 1819] 39
EM	1823	Astron. Jahr. Berlin	125,142,147,153,234	Bode, J.	[publ: 1820] 42
EN	1824	Astron. Jahr. Berlin	139,145,171,199	Bode, J.	[publ: 1821] 48
EP	1825	Astron. Jahr. Berlin	129,138,178	Bode, J.	[publ: 1822] 48
EQ	1826	Astron. Jahr. Berlin	104,143,155,174,216	Bode, J.	[publ: 1823] 45
ER	1827	Astron. Jahr. Berlin	109,115,128,185,198	Bode, J.	[publ: 1824] 32
ES	1828	Astron. Jahr. Berlin	114,121,137,180,181*	Bode, J.	[publ: 1825] 39
ET	1829	Astron. Jahr. Berlin	100,147	Bode, J.	[publ: 1826] 17
EU	1981	Personal Commun.		Bretones, P.	15
EV	1981	Personal Commun.		Loader, B.	39
EW	1981	Personal Commun.		Debarbat, S.	9
EX	1981	Personal Commun.		Wieth-Knudsen, N.	143
EY	1977	Sky Telesc.	53: 230	Ashbrook, J.	134
EZ	1977	Sky Telesc.	54: 153	Ashbrook, J.	104
FA	1981	Obs. Astron. Antares		Beserra, U.	51
FB	1978	Sky Telesc.	55: 285	Ashbrook, J.	95
FC	1978	Sky Telesc.	56: 170	Ashbrook, J.	132
FD	1979	Sky Telesc.	57: 310	Ashbrook, J.	51
FE	1979	Sky Telesc.	58: 377	Ashbrook, J.	264
FF	1980	Sky Telesc.	60: 258	Ashbrook, J.	147
FG	1972	Sterne	49: 34	Ahnert, P.	88
FH	1976	Sterne	42: 39	Ahnert, P.	103
FI	1978	Sterne	54: 45	Ahnert, P.	68
FJ	1982	Personal Commun.		Correa, O.	7
FK	1982	Personal Commun.		Owen, W.	4
FL	1982	Aust. Planetary Obser.		McNamara, G.	71
FM	1982	Assoc. Lun. Plan. Obs.		Westfall, J.	32
FN	1982	Personal Commun.		Debarbat, S.	16
FO	1982	Personal Commun.		Loader, B.	47
FQ	1983	Assoc. Lun. Plan. Obs.		Westfall, J.	122
FR	1982	Personal Commun.		Wieth-Knudsen, N.	15
FS	1984	Astron. Astrophys.	136: 142	Arlot, J. et al.	514
FT	1984	Iris (NAPO Australia)	2: Nr. 2	McNamara, G.	182
FU	1984	Personal Commun.		Loader, B.	80
PA	1907	Harvard Annals	52: Part 1, 1-148	Pickering, E.	665
PB	1961	Planets and Satellites	3: 328	Harris, D. (Kuiper, Ed)	8
PC	1971	Beving Research Lab.	12180-14193-1	Greene, T. et al.	5
PD	1973	Icarus	20: 7-17	Cruikshank, D. Murphy, R.	16
PE	1974	Personal Commun.		Millis, R., Lockwood, G.	11
PF	1974	Icarus	23: 425-430	Millis, R. et al.	15
PG	1974	Icarus	23: 431-436	Frans, O., Millis, R.	4
PH	1965	Sterne	41: 32-34	Ahnert, P.	57
PI	1966	Sterne	42: 214-218	Ahnert, P.	24
PJ	1969	Sterne	45: 19-22	Ahnert, P.	12
PK	1948	Astron. J.	54: 87-88	Ashbrook, J.	87
PL	1949	Astron. J.	55: 148-149	Ashbrook, J.	14
PM	1953	Astron. J.	58: 195	Ashbrook, J.	23
PN	1921	Mon. Not. R. Ast. Soc.	12180-14193-1	Greene, T. et al.	5
PP	1968	Rise hværd Roč (Czech)	49: 11-13	Dujain, M.	21
PQ	1922	J. des Obs.	5: 63-67	Guillaume, J.	94
PR	1922	Astron. J.	34: 30	Hall, A., Bower, E.	9

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PT	1930	Astron. J.	40: 119-120	Hall, A. et al.	29
PU	1955	Astron. J.	60: 115-117	Hasegawa, I.	77
PV	1975	Personal Commun.		Hasegawa, I.	53
PW	1959	Mem. Jpn. Astr. Assoc.	2: 87-82	Mitani, T.	82
PX	1934	Astron. Nachr.	252: 81-84	Jaschek, W.	2
PY	1972	Cent. Obs. Volongo	13: Nr. 10-14	Machado, L.	21
PZ	1922	Astron. Nachr.	217: 30-32	Palitz, J.	21</

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RX	1861	Mon. Not. R. Ast. Soc.	21: 166	(Christy)	2	UB	1900	Astron. Nachr.	152: 379	Dubiago, A.	42
RY	1861	Mon. Not. R. Ast. Soc.	21: 184	(Christy)	2	UC	1904	Astron. Nachr.	166: 293	Dubiago, A.	6
RZ	1861	Mon. Not. R. Ast. Soc.	21: 213	(Christy)	4	UD	1905	Astron. Nachr.	168: 294	Dubiago, A.	9
SA	1861	Mon. Not. R. Ast. Soc.	21: 239	(Christy)	2	UE	1898	Astron. Nachr.	147: 329	Geelmuyden, H.	9
SB	1862	Mon. Not. R. Ast. Soc.	22: 50,87,165,238,274,290	(Christy)	9	UF	1874	Mon. Not. R. Ast. Soc.	35: 98	Gledhill, J.	12
SC	1863	Mon. Not. R. Ast. Soc.	23: 195,249	(Christy)	13	UG	1880	Mon. Not. R. Ast. Soc.	40: 287	Gledhill, J.	5
SD	1865	Mon. Not. R. Ast. Soc.	26: 287	(Christy)	11	UH	1881	Mon. Not. R. Ast. Soc.	41: 283	Gledhill, J.	15
SE	1866	Mon. Not. R. Ast. Soc.	27: 82	(Christy)	4	UI	1882	Mon. Not. R. Ast. Soc.	42: 425	Gledhill, J.	6
SF	1867	Mon. Not. R. Ast. Soc.	28: 172	(Christy)	12	UJ	1885	Mon. Not. R. Ast. Soc.	43: 448	Gledhill, J.	10
SG	1869	Mon. Not. R. Ast. Soc.	29: 253	(Airy)	11	UK	1885	Mon. Not. R. Ast. Soc.	45: 166	Gledhill, J.	18
SH	1870	Mon. Not. R. Ast. Soc.	30: 176	(Airy)	11	UL	1886	Mon. Not. R. Ast. Soc.	46: 150	Gledhill, J.	7
SI	1872	Mon. Not. R. Ast. Soc.	32: 78	(Airy)	12	UM	1891	Mon. Not. R. Ast. Soc.	51: 358	Gledhill, J.	7
SJ	1873	Mon. Not. R. Ast. Soc.	33: 158	(Airy)	23	UN	1892	Mon. Not. R. Ast. Soc.	52: 159	Gledhill, J.	12
SK	1874	Mon. Not. R. Ast. Soc.	34: 121,308	(Airy)	14	UP	1893	Mon. Not. R. Ast. Soc.	53: 144	Gledhill, J.	12
SL	1875	Mon. Not. R. Ast. Soc.	35: 238	(Airy)	10	UQ	1894	Mon. Not. R. Ast. Soc.	54: 443	Gledhill, J.	18
SM	1876	Mon. Not. R. Ast. Soc.	36: 97	(Airy)	8	UR	1895	Mon. Not. R. Ast. Soc.	55: 391	Gledhill, J.	18
SN	1877	Mon. Not. R. Ast. Soc.	37: 116	(Airy)	0	US	1896	Mon. Not. R. Ast. Soc.	56: 489	Gledhill, J.	20
SP	1878	Mon. Not. R. Ast. Soc.	38: 301	(Airy)	2	UT	1897	Mon. Not. R. Ast. Soc.	57: 653	Gledhill, J.	2
SQ	1879	Mon. Not. R. Ast. Soc.	39: 178	(Airy)	8	UU	1898	Mon. Not. R. Ast. Soc.	58: 506	Gledhill, J.	6
SR	1880	Mon. Not. R. Ast. Soc.	40: 150	(Airy)	11	UV	1885	Astron. Nachr.	110: 267	de Glaseapp, S.	13
SS	1881	Mon. Not. R. Ast. Soc.	41: 123	(Airy)	14	UW	1883	Mon. Not. R. Ast. Soc.	43: 115	Goldney, G. G.	9
ST	1882	Mon. Not. R. Ast. Soc.	42: 242,286	(Airy)	11	UX	1920	Astron. Nachr.	212: 185	Graf, K.	4
SU	1884	Mon. Not. R. Ast. Soc.	44: 98	(Airy)	16	UY	1915	J. des Obs.	5: 35	Guillaume, J.	49
SV	1885	Mon. Not. R. Ast. Soc.	45: 159	(Airy)	18	UZ	1887	Astron. Nachr.	45: 217	Hoek, M.	7
SW	1886	Mon. Not. R. Ast. Soc.	46: 139	(Airy)	13	VA	1879	Astron. Nachr.	95: 151	Holetschek, J.	11
SX	1887	Mon. Not. R. Ast. Soc.	47: 111	(Airy)	15	VB	1881	Mon. Not. R. Ast. Soc.	41: 281	Johnson, S.	13
SY	1888	Mon. Not. R. Ast. Soc.	48: 128	(Airy)	5	VC	1893	Mon. Not. R. Ast. Soc.	53: 449	Johnson, S.	12
SZ	1889	Mon. Not. R. Ast. Soc.	49: 134	(Airy)	4	VD	1869	Mon. Not. R. Ast. Soc.	29: 171	Joynton, J.	11
TA	1890	Mon. Not. R. Ast. Soc.	50: 120	(Airy)	5	VE	1864	Astron. Nachr.	61: 270	Kaiser, F.	69
TB	1891	Mon. Not. R. Ast. Soc.	51: 149	(Airy)	10	VF	1864	Astron. Nachr.	63: 153	Kaiser, F.	6
TC	1892	Mon. Not. R. Ast. Soc.	52: 171	(Airy)	11	VG	1869	Astron. Nachr.	78: 297	Kaiser, F.	14
TD	1893	Mon. Not. R. Ast. Soc.	53: 138	(Airy)	13	VH	1886	Astron. Nachr.	115: 261	Lakis, F.	5
TE	1894	Mon. Not. R. Ast. Soc.	54: 148	(Airy)	14	VI	1872	Mon. Not. R. Ast. Soc.	32: 311	Main, I.	11
TF	1895	Mon. Not. R. Ast. Soc.	55: 156	(Airy)	9	VJ	1873	Mon. Not. R. Ast. Soc.	33: 488	Main, I.	18
TG	1896	Mon. Not. R. Ast. Soc.	56: 139	(Airy)	16	VK	1874	Mon. Not. R. Ast. Soc.	34: 417	Main, I.	8
TH	1897	Mon. Not. R. Ast. Soc.	57: 184	(Airy)	17	VL	1877	Mon. Not. R. Ast. Soc.	37: 344	Main, I.	6
TI	1898	Mon. Not. R. Ast. Soc.	58: 101	(Airy)	3	VM	1881	Astron. Nachr.	101: 135	Meyer, M.	8
TJ	1899	Mon. Not. R. Ast. Soc.	59: 174	(Airy)	3	VN	1886	Astron. Nachr.	114: 139	Morise, H.	12
TK	1902	Mon. Not. R. Ast. Soc.	62: 214	(Airy)	1	VP	1879	Astron. Nachr.	94: 131	Nielsen, L.	7
TL	1906	Astron. J.	25: 46	Baker, R.	29	VQ	1895	Astron. Nachr.	138: 317	Nijland, A.	3
TM	1909	Astron. Nachr.	181: 85	Baranow, W.	8	VR	1896	Astron. Nachr.	141: 413	Nijland, A.	11
TN	1886	Astron. Nachr.	114: 405	Bastermann, H.	29	VS	1898	Astron. Nachr.	141: 413	Schur, W.	11
TP	1925	Astron. Nachr.	228: 251	Bastermann, H.	6	VT	1891	Astron. Nachr.	145: 73	Nijland, A.	11
TQ	1916	Harvard Annals	80: 153-190	King, E.	220	VU	1900	Astron. Nachr.	152: 193	Nijland, A.	17
TR	1871	Astron. Nachr.	77: 287	Becker, E.	6	VV	1901	Astron. Nachr.	156: 203	Nijland, A.	2
TS	1877	Mon. Not. R. Ast. Soc.	33: 71	Bixby, W.	5	VW	1904	Astron. Nachr.	166: 139	Nijland, A.	7
TT	1896	Astron. Nachr.	141: 119	von Boink, B.	2	VX	1905	Astron. Nachr.	169: 203	Nijland, A.	13
TU	1875	Mon. Not. R. Ast. Soc.	36: 41	Crossley, E.	4	VY	1855	Astron. Nachr.	39: 219	Oudemans, J.	5
TV	1884	Mon. Not. R. Ast. Soc.	44: 270	Davidson, G.	2	VZ	1855	Astron. Nachr.	42: 162	Oudemans, J.	7
TW	1881	Astron. Nachr.	100: 199	Doberck, W.	13	WA	1856	Astron. Nachr.	43: Nr. 1015	Oudemans, J.	5
TX	1890	Astron. Nachr.	124: 183	Doberck, W.	8	WB	1873	Mon. Not. R. Ast. Soc.	33: 426	Perry, S.	12
TY	1885	Astron. Nachr.	110: 375	Doolittle, C.	92	WC	1874	Mon. Not. R. Ast. Soc.	34: 413	Perry, S.	8
TZ	1915	Astron. Nachr.	202: 49	Dresler, E.	7	WD	1877	Mon. Not. R. Ast. Soc.	38: 72	Perry, S.	7
UA	1896	Astron. Nachr.	140: 361	Dubiago, A.	16	WE	1879	Mon. Not. R. Ast. Soc.	39: 177	Perry, S.	3

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WH	1882	Mon. Not. R. Ast. Soc.	43: 282	Perry, S.	8	YM	1880	Astron. Nachr.	96: 347	Todd, D.	35
WI	1884	Mon. Not. R. Ast. Soc.	44: 263	Perry, S.	15	YN	1884	Astron. Nachr.	107: 221	Weinek, L.	2
WJ	1885	Mon. Not. R. Ast. Soc.	45: 345	Perry, S.	7	YP	1884	Astron. Nachr.	107: 336	Weinek, L.	3
WK	1886	Mon. Not. R. Ast. Soc.	46: 315	Perry, S.	6	YQ	1885	Astron. Nachr.	110: 233	Weinek, L.	14
WL	1888	Mon. Not. R. Ast. Soc.	49: 35	Perry, S.	13	YR	1886	Astron. Nachr.	114: 409	Weinek, L.	23
WM	1882	Mon. Not. R. Ast. Soc.	42: 113	Popson, N.	6	YS	1888	Astron. Nachr.	119: 210	Weinek, L.	28
WN	1875	Mon. Not. R. Ast. Soc.	35: 391	Lucas, A.	5	YT	1906	Astron. Nachr.	172: 260	Weinek, L.	18
WP	1897	Astron. Nachr.	144: 141	Ristenpart, F.	2	YU	1907	Astron. Nachr.	175: 297	Weinek, L.	15
WQ	1856	Astron. Nachr.	43: 53	Schmidt, J.	7	YV	1897	Astron. Nachr.	144: 281	Wilhelm, A.	8
WR	1858	Astron. Nachr.	48: 183	Schmidt, J.	13	YW	1881	Astron. Nachr.	99: 197	Winkler, W.	11
WS	1850	Astron. Nachr.	31: 249	Schoenfeld, E.	1	YX	1884	Astron. Nachr.	108: 243	Winkler, W.	20
WT	1896	Astron. Nachr.	141: 413	Schur, W.	7	YY	1887	Astron. Nachr.	117: 5	Winkler, W.	7
WU	1896	Astron. Nachr.	141: 413	Nijland, A.	0	YZ	1893	Astron. Nachr.	134: 15	Winkler, W.	12
WV	1882	Mon. Not. R. Ast. Soc.	42: 245	Stone, E.	6	ZA	1895	Astron. Nachr.	138: 13	Winkler, W.	15
WX	1883	Mon. Not. R. Ast. Soc.	43: 37	Stone, E.	22	ZB	1896	Astron. Nachr.	140: 267	Winkler, W.	8
WY	1894	Mon. Not. R. Ast. Soc.	46: 419	Stone, E.	9	ZC	1897	Astron. Nachr.	148: 95	Winkler, W.	7
WZ	1896	Astron. Nachr.	115: 299	Stuyvaert, E.	18	ZD	1898	Astron. Nachr.	148: 293	Winkler, W.	3
XA	1888	Astron. Nachr.	119: 75	Stuyvaert, E.	10	ZE	1899	Astron. Nachr.	148: 251	Winkler, W.	5
XB	1897	Astron. Nachr.	148: 301	Stuyvaert, E.	22	ZF	1875	Astron. Nachr.	86: 146	Winnecke, A.	25
XC	1862	Mon. Not. R. Ast. Soc.	23: 287	Talmage, C.	4	ZG	1876	Astron. Nachr.	88: 308	Winnecke, A.	5
XD	1885	Astron. Nachr.	118: 57	Tallock, J.	14	ZH	1878	Astron. Nachr.	91: 349	Winnecke, A.	8
XE	1867	Mon. Not. R. Ast. Soc.	28: 215	Tebbutt, J.	39	ZI	1878	Astron. Nachr.	93: 341	Winnecke, A.	24
XF	1871	Mon. Not. R. Ast. Soc.	32: 61	Tebbutt, J.	10	ZJ	1880	Astron. Nachr.	96: 371	Winnecke, A.	16
XG	1874	Mon. Not. R. Ast. Soc.	34: 121	Tebbutt, J.	7	ZK	1848	Mon. Not. R. Ast. Soc.	8: 189	Bayfield, Capt.	10
XH	1875	Mon. Not. R. Ast. Soc.	36: 100	Tebbutt, J.	28	ZL	1822	Astron. Nachr.	1: 176,208,302,423,485	Beaufoy, M.	22
XI	1876	Astron. Nachr.	89: 87	Tebbutt, J.	17	ZM	1824	Astron. Nachr.	2: 90,347,439	Beaufoy, M.	27
XJ	1878	Astron. Nachr.	92: 75	Tebbutt, J.	8	ZN	1825	Astron. Nachr.	3: 173,235	Beaufoy, M.	23
XK	1879	Astron. Nachr.	95: 119	Tebbutt, J.	26	ZO	1826	Astron. Nachr.	4: 43,171,475	Beaufoy, M.	28
XL	1880	Astron. Nachr.	97: 37	Tebbutt, J.	22	ZP	1827	Astron. Nachr.	5: 385	Beaufoy, M.	3
XM	1883	Astron. Nachr.	106: 323	Tebbutt, J.	16	ZR	1822	Astron. Nachr.	1: 217	Bianchi, J.	2
XN	1886	Astron. Nachr.	118: 387	Tebbutt, J.	15	ZS	1832	Astron. Nachr.	10: 290	Bianchi, J.	16
XP	1886	Mon. Not. R. Ast. Soc.	47: 30	Tebbutt, J.	23	ZT	1831	Astron. Nachr.	9: 377	Cerquero, J.	30
XQ	1888	Mon. Not. R. Ast. Soc.	48: 129	Tebbutt, J.	24	ZU	1831	Astron. Nachr.	9: 387	Cerquero, J.	194
XR	1889	Mon. Not. R. Ast. Soc.	49: 329	Tebbutt, J.	28	ZV	1849	Astron. Nachr.	28: 363	d'Arrest, H.	7
XS	1890	Mon. Not. R. Ast. Soc.	50: 335	Tebbutt, J.	8	ZW	1832	Astron. Nachr.	10: 127,215,297	David, Prof.	25
XT	1891	Mon. Not. R. Ast. Soc.	51: 420	Tebbutt, J.	19	ZX	1828	Astron. Nachr.	5: 458	Gambart, G.	27
XU	1892	Mon. Not. R. Ast. Soc.	52: 598	Tebbutt, J.	9	ZY	1846	Astron. Nachr.	25: 47	Gerling, G.	4
XV	1893	Mon. Not. R. Ast. Soc.	54: 32	Tebbutt, J.	3	ZZ	1846	Astron. Nachr.	24: 130	Hackel, J.	4
XW	1895	Mon. Not. R. Ast. Soc.	55: 517	Tebbutt, J.	13						
XX	1896	Mon. Not. R. Ast. Soc.	57: 26	Tebbutt, J.	16						
XY	1898	Mon. Not. R. Ast. Soc.	58: 484	Tebbutt, J.	11						
XZ	1900	Mon. Not. R. Ast. Soc.	59: 620	Tebbutt, J.	11						
YA	1905	Mon. Not. R. Ast. Soc.	66: 14	Tebbutt, J.	15						
YB	1875	Astron. Nachr.	88: 265	Tisserand, M.	25						
YC	1875	Astron. Nachr.	87: 59	Tisserand, M.	32						
YD	1877	Mon. Not. R. Ast. Soc.	37: 284	Todd, C.	21						
YE	1878	Mon. Not. R. Ast. Soc.	39: 2	Todd, C.	17						
YF	1880	Mon. Not. R. Ast. Soc.	40: 170	Todd, C.	12						
YG	1886	Mon. Not. R. Ast. Soc.	46: 353	Todd, C.	18						
YH	1875	Astron. Nachr.	88: 155	Todd, D.	19						
YI	1877	Astron. Nachr.	89: 297	Todd, D.	48						
YJ	1878										

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Index	Year	Journal	Volume	Author	No. Obs.	Index	Year	Journal	Volume	Author	No. Obs.
PH 1965	Sterne	41: 32-34	Ahnert, P.	24	TM 1909	Astron. Nachr.	181: 55	Baranow, W.	8		
PJ 1969	Sterne	42: 214-218	Ahnert, P.	57	TN 1886	Astron. Nachr.	114: 405	Battermann, H.	29		
PI 1969	Sterne	45: 19-22	Ahnert, P.	82	TP 1925	Astron. Nachr.	226: 251	Battermann, H.	66		
FG 1972	Sterne	48: 34	Ahnert, P.	88	ZK 1848	Mon. Not. R. Ast. Soc.	8: 189	Bayfield, Capt.	10		
FH 1976	Sterne	52: 39	Ahnert, P.	103	ZL 1822	Astron. Nachr.	1: 176,208,302,423,485	Beaufoy, M.	22		
FI 1978	Sterne	54: 45	Ahnert, P.	68	ZM 1824	Astron. Nachr.	2: 90,347,439	Beaufoy, M.	27		
AJ 1833	Mem. R. Astron. Soc.	5: 379	(Airy?)	46	ZN 1825	Astron. Nachr.	3: 173,235	Beaufoy, M.	23		
AK 1833	Mem. R. Astron. Soc.	6: 186	(Airy?)	65	ZP 1826	Astron. Nachr.	4: 43,171,475	Beaufoy, M.	28		
AL 1836	Mem. R. Astron. Soc.	9: 265	(Airy?)	26	CE 1826	Mem. Ast. Soc. London	2: 129	Beaufoy, M.	58		
SG 1869	Mon. Not. R. Ast. Soc.	20: 253	(Airy)	12	ZQ 1827	Astron. Nachr.	5: 383	Beaufoy, M.	3		
SH 1870	Mon. Not. R. Ast. Soc.	30: 176	(Airy)	11	CA 1827	Mem. Ast. Soc. London	3: 75	Beaufoy, M.	11		
SI 1872	Mon. Not. R. Ast. Soc.	32: 78	(Airy)	22	TR 1871	Astron. Nachr.	77: 267	Becker, E.	6		
SJ 1873	Mon. Not. R. Ast. Soc.	33: 158	(Airy)	13	EA 1881	Obs. Astron. Antares	1: 217	Beserra, U.	51		
SK 1874	Mon. Not. R. Ast. Soc.	34: 121,308	(Airy)	14	ZR 1822	Astron. Nachr.	1: 217	Bianchi, J.	2		
SL 1875	Mon. Not. R. Ast. Soc.	35: 238	(Airy)	10	ZS 1832	Astron. Nachr.	10: 290	Bianchi, J.	16		
SM 1876	Mon. Not. R. Ast. Soc.	36: 97	(Airy)	8	CI 1734	Philos. Trans. Abridg.	6(1): 236	Bianchini, [PT#407]	87		
SN 1877	Mon. Not. R. Ast. Soc.	37: 116	(Airy)	0	BG 1809	Philos. Trans. Abridg.	6: 92	Bianchini, [PT#340]	5		
SP 1878	Mon. Not. R. Ast. Soc.	38: 301	(Airy)	2	BK 1809	Philos. Trans. Abridg.	7: 165	Bianchini, [PT#396]	7		
SQ 1879	Mon. Not. R. Ast. Soc.	39: 178	(Airy)	8	BS 1901	An. Célest. 17. Siècle	Gauthier-Villars, Paris	Bigourdan, M. ["Pingre"]	1033		
SR 1880	Mon. Not. R. Ast. Soc.	40: 150	(Airy)	12	TC 1877	Mon. Not. R. Ast. Soc.	38: 71	Bixby, W.	5		
SS 1881	Mon. Not. R. Ast. Soc.	41: 123	(Airy)	14	CZ 1784	Astron. Jahrb. Berlin	147	Bode, J.[ed]	publ: 1781		
ST 1882	Mon. Not. R. Ast. Soc.	42: 242,286	(Airy)	11	DA 1786	Astron. Jahrb. Berlin	161,173	Bode, J.	publ: 1783		
SU 1884	Mon. Not. R. Ast. Soc.	44: 98	(Airy)	18	DB 1787	Astron. Jahrb. Berlin	163	Bode, J.	publ: 1784		
SV 1885	Mon. Not. R. Ast. Soc.	45: 159	(Airy)	16	DC 1788	Astron. Jahrb. Berlin	167	Bode, J.	publ: 1785		
SW 1886	Mon. Not. R. Ast. Soc.	46: 139	(Airy)	13	DD 1789	Astron. Jahrb. Berlin	129,155,156	Bode, J.	publ: 1786		
SX 1887	Mon. Not. R. Ast. Soc.	47: 111	(Airy)	15	DE 1790	Astron. Jahrb. Berlin	147	Bode, J.	publ: 1787		
SY 1888	Mon. Not. R. Ast. Soc.	48: 126	(Airy)	5	DF 1791	Astron. Jahrb. Berlin	128,153,179,240	Bode, J.	publ: 1788		
SZ 1889	Mon. Not. R. Ast. Soc.	49: 134	(Airy)	4	DG 1792	Astron. Jahrb. Berlin	132,250	Bode, J.	publ: 1789		
TA 1890	Mon. Not. R. Ast. Soc.	50: 120	(Airy)	5	DH 1793	Astron. Jahrb. Berlin	109,210,231	Bode, J.	publ: 1790		
TB 1891	Mon. Not. R. Ast. Soc.	51: 149	(Airy)	10	DI 1794	Astron. Jahrb. Berlin	92,111,139,256	Bode, J.	publ: 1791		
TC 1892	Mon. Not. R. Ast. Soc.	52: 171	(Airy)	11	DJ 1795	Astron. Jahrb. Berlin	102,137,204	Bode, J.	publ: 1792		
TD 1893	Mon. Not. R. Ast. Soc.	53: 138	(Airy)	13	DK 1796	Astron. Jahrb. Berlin	108,155,212	Bode, J.	publ: 1793		
TE 1894	Mon. Not. R. Ast. Soc.	54: 148	(Airy)	14	DL 1797	Astron. Jahrb. Berlin	104,121	Bode, J.	publ: 1794		
TF 1895	Mon. Not. R. Ast. Soc.	55: 136	(Airy)	9	DM 1798	Astron. Jahrb. Berlin	127,200	Bode, J.	publ: 1795		
TG 1896	Mon. Not. R. Ast. Soc.	56: 139	(Airy)	16	DN 1799	Astron. Jahrb. Berlin	163,182,190,230	Bode, J.	publ: 1796		
TH 1897	Mon. Not. R. Ast. Soc.	57: 184	(Airy)	17	DP 1800	Astron. Jahrb. Berlin	229	Bode, J.	publ: 1797		
TI 1898	Mon. Not. R. Ast. Soc.	58: 101	(Airy)	3	DQ 1801	Astron. Jahrb. Berlin	99,184	Bode, J.	publ: 1798		
TJ 1899	Mon. Not. R. Ast. Soc.	59: 174	(Airy)	3	DR 1802	Astron. Jahrb. Berlin	152,213,247	Bode, J.	publ: 1799		
TK 1902	Mon. Not. R. Ast. Soc.	62: 214	(Airy)	1	DS 1803	Astron. Jahrb. Berlin	169,173,179,183,196	Bode, J.	publ: 1800		
RQ 1912	Astron. Nachr.	109: 33-36	Amann, M., Roset, C.	9	DT 1804	Astron. Jahrb. Berlin	108,129,158,181	Bode, J.	publ: 1801		
RR 1877	Mon. Not. R. Ast. Soc.	37: 259-260	Arcimis, A.	27	DU 1805	Astron. Jahrb. Berlin	127,159,176	Bode, J.	publ: 1802		
RS 1840	Astron. Nachr.	18: 135	Argelander, F.	13	DV 1806	Astron. Jahrb. Berlin	137,143,165	Bode, J.	publ: 1803		
FS 1984	Astron. Astrophys.	186: 142	Arlot, J. et al.	584	DW 1807	Astron. Jahrb. Berlin	146,171	Bode, J.	publ: 1804		
PK 1948	Astron. J.	54: 87-88	Ashbrook, J.	17	DX 1808	Astron. Jahrb. Berlin	96,123,127	Bode, J.	publ: 1805		
PL 1949	Astron. J.	55: 148-149	Ashbrook, J.	24	DY 1809	Astron. Jahrb. Berlin	105,148	Bode, J.	publ: 1806		
PM 1953	Astron. J.	58: 105	Ashbrook, J.	13	EZ 1810	Astron. Jahrb. Berlin	134,170,190	Bode, J.	publ: 1807		
EY 1977	Sky Telesc.	53: 230	Ashbrook, J.	134	EA 1811	Astron. Jahrb. Berlin	103,109,131,194	Bode, J.	publ: 1808		
EZ 1977	Sky Telesc.	54: 153	Ashbrook, J.	104	EB 1812	Astron. Jahrb. Berlin	104,115,146,216	Bode, J.	publ: 1809		
FB 1978	Sky Telesc.	54: 265	Ashbrook, J.	95	EC 1813	Astron. Jahrb. Berlin	100,125,166	Bode, J.	publ: 1810		
FC 1978	Sky Telesc.	56: 170	Ashbrook, J.	132	ED 1814	Astron. Jahrb. Berlin	97,104,126,165	Bode, J.	publ: 1811		
FD 1979	Sky Telesc.	57: 310	Ashbrook, J.	152	EE 1815	Astron. Jahrb. Berlin	125,133,141,166,173,222	Bode, J.	publ: 1812		
FE 1979	Sky Telesc.	58: 377	Ashbrook, J.	204	EF 1816	Astron. Jahrb. Berlin	126,129,146,150,162,210	Bode, J.	publ: 1813		
FF 1980	Sky Telesc.	60: 258	Ashbrook, J.	167	EG 1817	Astron. Jahrb. Berlin	100,141,148,241	Bode, J.	publ: 1814		
TL 1906	Astron. J.	28: 46	Baker, R.	29	EH 1818	Astron. Jahrb. Berlin	118,138,159,214,260	Bode, J.	publ: 1815		

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EI 1819	Astron. Jahrb. Berlin	102,121,147,175	Bode, J.	publ: 1816	66	UC 1904	Astron. Nachr.	166: 293	Dubiago, A.	6	
EJ 1820	Astron. Jahrb. Berlin	99,150,168,194	Bode, J.	publ: 1817	93	UD 1905	Astron. Nachr.	168: 294	Dubiago, A.	9	
EK 1821	Astron. Jahrb. Berlin	99,132,156,168,178	Bode, J.	publ: 1818	33	PP 1968	Růše hvězd Roč (Czech)	49: 11-13	Dujnic, M.	21	
EL 1822	Astron. Jahrb. Berlin	114,124,139,169	Bode, J.	publ: 1819	39	BE 1803	Trans. Am. Phil. Soc.	6: 61,113	Ellicott, A.	33	
EM 1823	Astron. Jahrb. Berlin	125,142,147,153,234	Bode, J.	publ: 1820	42	BF 1810	Trans. Am. Phil. Soc.	1: 93 [New Ser]	Ellicott, A.	12	
EN 1824	Astron. Jahrb. Berlin	139,145,171,199	Bode, J.	publ: 1821	48	BD 1725	Hist. Coel. Brit.	I(8 Ed): 351-360	Flamsteed, J.	12	
EP 1825	Astron. Jahrb. Berlin	129,138,178	Bode, J.	publ: 1822	48	PG 1974	Icarus	3: 431-436	Frans, O., Millis, R.	6	
EQ 1826	Astron. Jahrb. Berlin	104,143,155,174,216	Bode, J.	publ: 1823	45	ZY 1826	Astron. Nachr.	8: 453	Gambart, A.	27	
ER 1827	Astron. Jahrb. Berlin	109,115,128,189,198	Bode, J.	publ: 1824	92	BR 1809	Philos. Trans. Abridg.	10: 3	Gaunl, A. [PT#494]	4	
ES 1828	Astron. Jahrb. Berlin	114,121,137,180,181*	Bode, J.	publ: 1825	39	UE 1898	Astron. Nachr.	147: 329	Geelmuyden, H.	9	
ET 1829	Astron. Jahrb. Berlin	100,147	Bode, J.	publ: 1826	17	ZY 1846	Astron. Nachr.	25: 47	Gerling, G.	5	
EU 1981	Personal Commun.		Bretones, P.		15	UF 1874	Mon. Not. R. Ast. Soc.	35: 98	Gledhill, J.	12	
CK 1734	Philos. Trans. Abridg.	6(1): 241	Carbone, J.	[PT#401]	19	UG 1880	Mon. Not. R. Ast. Soc.	40: 287	Gledhill, J.	5	
CL 1734	Philos. Trans. Abridg.	6(1): 244	Carbone, J.	[PT#404]	2	UH 1881	Mon. Not. R. Ast. Soc.	41: 283	Gledhill, J.	15	
BH 1809	Philos. Trans. Abridg.	7: 55	Carbone, J.	[PT#385]	11	UI 1882	Mon. Not. R. Ast. Soc.	42: 425	Gledhill, J.	6	
BJ 1809	Philos. Trans. Abridg.	7: 143	Carbone, J.	[PT#394]	10	UJ 1883	Mon. Not. R. Ast. Soc.	43: 448	Gledhill, J.	10	
ZT 1831	Astron. Nachr.	9: 377	Cerquero, J.	30	UK 1885	Mon. Not. R. Ast. Soc.	45: 166	Gledhill, J.	18		
ZU 1831	Astron. Nachr.	9: 387	Cerquero, J.	194	UL 1886	Mon. Not. R. Ast. Soc.	46: 150	Gledhill, J.	7		
CT 1755	Philos. Trans.	48: 546	Chevalier, J.	2	UM 1891	Mon. Not. R. Ast. Soc.	51: 358	Gledhill, J.	7		
BS 1809	Philos. Trans. Abridg.	10: 567	Chevalier, J.	[PT 48: 546]	3	UN 1892	Mon. Not. R. Ast. Soc.	52: 159	Gledhill, J.	12	
BT 1809	Philos. Trans. Abridg.	11: 158	Chevalier, J.	[PT 60: 374]	7	UP 1893	Mon. Not. R. Ast. Soc.	53: 144	Gledhill, J.	12	
RT 1860	Mon. Not. R. Ast. Soc.	20: 19	(Christy)	10	UQ 1894	Mon. Not. R. Ast. Soc.	54: 443	Gledhill, J.	18		
RU 1860	Mon. Not. R. Ast. Soc.	20: 85	(Christy)	3	UR 1895	Mon. Not. R. Ast. Soc.	55: 391	Gledhill, J.	18		
RV 1860	Mon. Not. R. Ast. Soc.	20: 260	(Christy)	7	US 1896	Mon. Not. R. Ast. Soc.	56: 489	Gledhill, J.	20		
RW 1860	Mon. Not. R. Ast. Soc.	20: 291	(Christy)	4	UT 1897	Mon. Not. R. Ast. Soc.	57: 653	Gledhill, J.	2		
RX 1861	Mon. Not. R. Ast. Soc.	21: 166	(Christy)	2	UU 1898	Mon. Not. R. Ast. Soc.	58: 506	Gledhill, J.	6		
RY 1861	Mon. Not. R. Ast. Soc.	21: 184	(Christy)	4	CB 1827	Mem. Ast. Soc. London	8: 106	Goldingham, J.	90		
RZ 1861	Mon. Not. R. Ast. Soc.	21: 213	(Christy)	2	UW 1883	Mon. Not. R. Ast. Soc.	43: 115	Goldney, G.	9		
SA 1861	Mon. Not. R. Ast. Soc.	21: 236	(Christy)	2	UX 1890	Astron. Nachr.	212: 165	Graff, K.	4		
SB 1862	Mon. Not. R. Ast. Soc.	22: 50,87,165,238,274,290	(Christy)	9	PC 1971	Boeing Research Lab.	D180-14193-1	Green, T. et al.	5		
SC 1863	Mon. Not. R. Ast. Soc.	23: 195,249	(Christy)	13	UY 1915	J. des Obs.	5: 35	Guillaume, J.	49		
SD 1865	Mon. Not. R. Ast. Soc.	26: 287	(Christy)	11	PQ 1922	J. des Obs.	5: 63-67	Guillaume, J.	94		
SE 1866	Mon. Not. R. Ast. Soc.	27: 82	(Christy)	4	ZZ 1846	Astron. Nachr.	24: 130	Hackel, H.	4		
SF 1867	Mon. Not. R. Ast. Soc.	28: 172	(Christy)	12	PT 1930	Astron. J.	40: 119-120	Hall, A. et al.	29		
CF 1826	Mem. Ast. Soc. London	2: 285	Colebrooke, R.	40	PR 1922	Astron. J.	34: 30	Hall, A., Bower, E.	9		
PN 1921	Mon. Not. R. Ast. Soc.	83: 58	Cooke, W.	4	PS 1923	Astron. J.	35: 107	Hall, A., Bower, E.	9		
FJ 1982	Personal Commun.		Correa, O.	7	AA 1825	Astron. Nachr.	4: 143,360	Hallaschka, H.	23		
TD 1876	Mon. Not. R. Ast. Soc.	36: 41	Crossley, E.	4	AB 1827	Astron. Nachr.	5: 137,469	Hallaschka, H.	5		
PU 1973	Icarus	20: 7-17	Cruikshank, D., Murphy, R.	16	AC 1829	Astron. Nachr.	7: 191,351	Hallaschka, H.	7		
ZW 1832	Astron. Nachr.	10: 127,215,297	David, Prof.	26	AD 1830	Astron. Nachr.	8: 62,359	Hallaschka, H.	7		

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RH	1909	Mon. Not. R. Ast. Soc.	70: 28-47	Innes, R.	18	PW	1959	Mem. Jpn. Astr. Assoc.	2: 57-62	Mitani, T.	82
RI	1910	Transvaal Obs. Circ.	5: 49	Innes, R.	60	VN	1886	Astron. Nachr.	114: 139	Morise, H.	12
RI	1911	Transvaal Obs. Circ.	12: 103	Innes, R.	39	YP	1879	Astron. Nachr.	94: 131	Nielsen, L.	7
RP	1920	Union Obs. Circ.	50: 67	Innes, R.	66	VQ	1895	Astron. Nachr.	158: 317	Nijland, A.	3
RK	1912	Union Obs. Circ.	3: 23	Innes, R., Wood, H.	33	VR	1896	Astron. Nachr.	141: 413	Nijland, A.	14
RL	1913	Union Obs. Circ.	12: 87	Innes, R., Wood, H.	47	WU	1896	Astron. Nachr.	141: 413	Nijland, A.	0
RM	1915	Union Obs. Circ.	23: 177	Innes, R., Wood, H.	31	VT	1898	Astron. Nachr.	146: 73	Nijland, A.	11
RN	1916	Union Obs. Circ.	34: 261	Innes, R., Wood, H.	41	VU	1900	Astron. Nachr.	152: 193	Nijland, A.	17
QY	1922	Union Obs. Circ.	55: 140-146	Innes, R., Wood, H.	112	VV	1901	Astron. Nachr.	156: 203	Nijland, A.	2
QZ	1922	Union Obs. Circ.	56: 162-163	Innes, R., Wood, H.	32	VW	1904	Astron. Nachr.	166: 139	Nijland, A.	7
RA	1925	Union Obs. Circ.	64: 299-300	Innes, R., Wood, H.	17	VX	1905	Astron. Nachr.	169: 203	Nijland, A.	13
RB	1926	Union Obs. Circ.	67: 334-335	Innes, R., Wood, H.	28	VY	1855	Astron. Nachr.	39: 219	Oudemans, J.	5
RC	1926	Union Obs. Circ.	72: 400-404	Innes, R., Wood, H.	25	VZ	1855	Astron. Nachr.	42: 162	Oudemans, J.	5
PX	1934	Astron. Nachr.	252: 81-84	Jaschek, W.	2	WA	1856	Astron. Nachr.	43: Nr. 1015	Oudemans, J.	5
QW	1934	Astron. Nachr.	258: 389-390	Jaschek, W.	3	FK	1982	Personal Commun.		Owen, W.	4
CQ	1747	Philos. Trans. Abridg.	8(I): 183	*Jesuits*	47	PZ	1922	Astron. Nachr.	217: 30-32	Palisa, J.	21
BN	1809	Philos. Trans. Abridg.	7: 274	*Jesuits*	16	WB	1873	Mon. Not. R. Ast. Soc.	33: 426	Perry, S.	12
VB	1881	Mon. Not. R. Ast. Soc.	41: 281	Johnson, S.	13	WC	1874	Mon. Not. R. Ast. Soc.	34: 413	Perry, S.	8
VC	1893	Mon. Not. R. Ast. Soc.	53: 449	Johnson, S.	12	WD	1877	Mon. Not. R. Ast. Soc.	38: 72	Perry, S.	7
VD	1869	Mon. Not. R. Ast. Soc.	29: 171	Joyson, J.	11	WE	1879	Mon. Not. R. Ast. Soc.	39: 177	Perry, S.	3
VE	1864	Astron. Nachr.	61: 270	Kaiser, F.	69	WF	1881	Mon. Not. R. Ast. Soc.	41: 134	Perry, S.	11
VF	1864	Astron. Nachr.	63: 153	Kaiser, F.	6	WG	1882	Mon. Not. R. Ast. Soc.	42: 122	Perry, S.	13
VG	1869	Astron. Nachr.	73: 297	Kaiser, F.	14	WH	1882	Mon. Not. R. Ast. Soc.	43: 282	Perry, S.	8
RD	1901	Astron. Circ., Russian	218: 22	Kalnikov, M.	8	WI	1884	Mon. Not. R. Ast. Soc.	44: 263	Perry, S.	15
TD	1916	Harvard Annals	80: 153-190	King, E.	220	WJ	1885	Mon. Not. R. Ast. Soc.	45: 345	Perry, S.	7
CM	1794	Philos. Trans. Abridg.	6(I): 246	Koehler, I.	161	WK	1886	Mon. Not. R. Ast. Soc.	46: 315	Perry, S.	6
BM	1809	Philos. Trans. Abridg.	7: 273	Koehler, I.	21	WL	1888	Mon. Not. R. Ast. Soc.	49: 35	Perry, S.	13
RE	1955	Astron. Circ., Russian	163: 10-11	Kosik, C.	18	AI	1837	Astron. Nachr.	18: 77	Petersen, E.	2
RF	1956	Astron. Circ., Russian	173: 7-8	Kosik, C.	28	PA	1907	Harvard Annals	52: Part 1, 1-148	Pickering, E.	685
VH	1886	Astron. Nachr.	115: 261	Lakits, F.	5	WM	1882	Mon. Not. R. Ast. Soc.	42: 113	Pogson, N.	66
AG	1826	Astron. Nachr.	5: 251	Lang, A.	2	WP	1897	Astron. Nachr.	144: 141	Ristenpart, F.	2
AH	1833	Astron. Nachr.	10: 263	Lang, A.	16	QA	1944	J. des Obs.	27: 25-27	Rougier, G.	11
EV	1981	Personal Commun.		Loader, B.	39	AM	1823	Astron. Nachr.	1: 313, 4: 107	Ruemker, K.	5
FP	1982	Personal Commun.		Loader, B.	47	AY	1910	Mem. R. Astron. Soc.	59: 26	Sampson, R.	1505
FU	1984	Personal Commun.		Loader, B.	80	CR	1756	Philos. Trans. Abridg.	10(I): 121	Sarmiento, J. deC.	24
WN	1875	Mon. Not. R. Ast. Soc.	35: 391	Lacan, J.	5	CB	1923	J. des Obs.	4: 74	Schaumasse, A.	12
CJ	1734	Philos. Trans. Abridg.	6(I): 240, 8: 180	Lynn, G.	22	QC	1923	J. des Obs.	6: 23	Schaumasse, A.	6
PY	1972	Contr. Obs. Volongo	II, Nr. 10-14	Machado, L.	41	QD	1924	J. des Obs.	7: 84	Schaumasse, A.	6
VI	1872	Mon. Not. R. Ast. Soc.	32: 311	Main, J.	11	QE	1934	Astron. Nachr.	256: 29-32	Schenbor, F.	4
VJ	1873	Mon. Not. R. Ast. Soc.	33: 488	Main, J.	18	QF	1936	Astron. Nachr.	259: 253-258	Schenbor, F.	7
VK	1874	Mon. Not. R. Ast. Soc.	34: 417	Main, J.	6	QG	1936	Astron. Nachr.	262: 455-458	Schenbor, F.	6
VL	1877	Mon. Not. R. Ast. Soc.	37: 344	Main, J.	8	QH	1937	Astron. Nachr.	266: 133-138	Schenbor, F.	1
CN	1747	Philos. Trans. Abridg.	8(I): 179	Manfredi, E.	14	QI	1938	Astron. Nachr.	268: 259-268	Schenbor, F.	0
BL	1809	Philos. Trans. Abridg.	7: 265	Manfredi, E.	11	WQ	1856	Astron. Nachr.	43: 53	Schmidt, J.	13
CU	1770	Philos. Trans.	59: 399	Maskekyne, N.	4	WR	1858	Astron. Nachr.	48: 183	Schmidt, J.	13
CW	1774	Philos. Trans.	64: 184	Maskekyne, N.	16	WS	1850	Astron. Nachr.	31: 249	Schoenfeld, E.	7
BW	1809	Philos. Trans. Abridg.	7: 271	Maskekyne, N.	15	AN	1837	Astron. Nachr.	19: 323	Schumacher, R.	68
BA	1915	K. Danske Vidensk. Selsk.	7 Raek., Afd. 12: 106	Mayer, K.	7	AP	1848	Astron. Nachr.	27: 52	Schumacher, R.	50
FL	1982	Aust. Planetary Obser.		McNamara, G.	71	AQ	1851	Astron. Nachr.	31: 49	Schumacher, R.	10
FT	1984	Iris [NAFO Australia]	2: Nr. 2	McNamara, G.	112	AR	1851	Astron. Nachr.	31: 381	Schumacher, R.	8
VM	1881	Astron. Nachr.	101: 135	Meyer, M.	11	QX	1886	Astron. Nachr.	114: 133-134	Schur, W.	11
PF	1974	Icarus	23: 425-430	Millis, R. et al.	15	VS	1896	Astron. Nachr.	141: 413	Schur, W.	11
PE	1974	Personal Commun.		Millis, R., Lockwood, G.	11	WT	1896	Astron. Nachr.	141: 413	Schur, W.	1
BQ	1809	Philos. Trans. Abridg.	7: 418	*Missionaries*	47	AS	1826	Astron. Nachr.	4: 59,489	Schwarzenbrunner, B.	9

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AT	1833	Astron. Nachr.	10: 119	Schwarzenbrunner, B.	4	CX	1777	Philos. Trans.	67: 162	Wargentin, P.	464
CD	1829	Mem. Ast. Soc. London	3: 368	Slawinski, M.	8	BU	1809	Philos. Trans. Abridg.	12: 352	Wargentin, P.	46
CS	1822	Quart. J. Sci., London		South, J.	4	YN	1884	Astron. Nachr.	107: 221	Weinek, L.	2
WV	1882	Mon. Not. R. Ast. Soc.	42: 245	Stone, E.	6	YP	1884	Astron. Nachr.	107: 336	Weinek, L.	3
WX	1883	Mon. Not. R. Ast. Soc.	43: 437	Stone, E.	22	YQ	1885	Astron. Nachr.	110: 233	Weinek, L.	14
WY	1884	Mon. Not. R. Ast. Soc.	44: 419	Stone, E.	9	YR	1886	Astron. Nachr.	114: 409	Weinek, L.	23
WZ	1886	Astron. Nachr.	115: 299	Stuyvaert, E.	18	YS	1888	Astron. Nachr.	119: 210	Weinek, L.	28
XA	1888	Astron. Nachr.	119: 75	Stuyvaert, E.	10	YT	1906	Astron. Nachr.	172: 260	Weinek, L.	18
XB	1887	Astron. Nachr.	148: 301	Stuyvaert, E.	22	YU	1907	Astron. Nachr.	175: 297	Weinek, L.	15
XC	1882	Mon. Not. R. Ast. Soc.	22: 287	Talmage, C.	4	FM	1982	Assoc. Lun. Plan. Obs.		Westfall, J.	32
XD	1885	Astron. Nachr.	113: 57	Tatlock, J.	14	FQ	1983	Assoc. Lun. Plan. Obs.		Westfall, J.	122
XE	1867	Mon. Not. R. Ast. Soc.	28: 215	Tebbutt, J.	39	EX	1981	Personal Commun.		Wieth-Knudsen, N.	143
XF	1871	Mon. Not. R. Ast. Soc.	32: 61	Tebbutt, J.	10	FR	1982	Personal Commun.		Wieth-Knudsen, N.	15
XG	1874	Mon. Not. R. Ast. Soc.	34: 421	Tebbutt, J.	18	YV	1897	Astron. Nachr.	144: 281	Wilhelm, A.	8
XH	1875	Mon. Not. R. Ast. Soc.	36: 100	Tebbutt, J.	24	BV	1809	Philos. Trans. Abridg.	12: 670	Wilson, [PT 59: 402]	12
XI	1876	Astron. Nachr.	89: 57	Tebbutt, J.	17	YW	1881	Astron. Nachr.	99: 197	Winkler, W.	11
XJ	1878	Astron. Nachr.	92: 75	Tebbutt, J.	8	YX	1884	Astron. Nachr.	108: 243	Winkler, W.	20
XK	1879	Astron. Nachr.	95: 119	Tebbutt, J.	26	YY	1887	Astron. Nachr.	117: 5	Winkler, W.	7
XL	1887	Astron. Nachr.	97: 37	Tebbutt, J.	22	YZ	1893	Astron. Nachr.	134: 15	Winkler, W.	12
XM	1883	Astron. Nachr.	108: 323	Tebbutt, J.	16	ZA	1895	Astron. Nachr.	138: 13	Winkler, W.	15
XN	1886	Astron. Nachr.	115: 387	Tebbutt, J.	15	ZB	1896	Astron. Nachr.	140: 287	Winkler, W.	8
XP	1886	Mon. Not. R. Ast. Soc.	47: 30	Tebbutt, J.	23	ZC	1897	Astron. Nachr.	148: 95	Winkler, W.	7
XQ	1888	Mon. Not. R. Ast. Soc.	48: 129	Tebbutt, J.	24	ZD	1898	Astron. Nachr.	146: 293	Winkler, W.	3
XR	1889	Mon. Not. R. Ast. Soc.	49: 329	Tebbutt, J.	28	ZE	1899	Astron. Nachr.	148: 251	Winkler, W.	5
XS	1890	Mon. Not. R. Ast. Soc.	50: 335	Tebbutt, J.	8	ZF	1875	Astron. Nachr.	86: 146	Winnecke, A.	25
XT	1891	Mon. Not. R. Ast. Soc.	51: 420	Tebbutt, J.	19	ZG	1876	Astron. Nachr.	88: 308	Winnecke, A.	5
XU	1892	Mon. Not. R. Ast. Soc.	52: 598	Tebbutt, J.	3	ZH	1878	Astron. Nachr.	91: 349	Winnecke, A.	8
XV	1893	Mon. Not. R. Ast. Soc.	54: 32	Tebbutt, J.	9	ZI	1878	Astron. Nachr.	93: 341	Winnecke, A.	24
XW	1895	Mon. Not. R. Ast. Soc.	56: 517	Tebbutt, J.	13	ZJ	1880	Astron. Nachr.	96: 371	Winnecke, A.	16
XX	1896	Mon. Not. R. Ast. Soc.	57: 26	Tebbutt, J.	11	QV	1926	Bull. Ast. Inst. Neth.	4: 15	Wiltou, A.	13
XY	1898	Mon. Not. R. Ast. Soc.	58: 464	Tebbutt, J.	16	BY	1809	Philos. Trans. Abridg.	13: 528	Wright, T.	17
XZ	1900	Mon. Not. R. Ast. Soc.	60: 620	Tebbutt, J.	11	ZV	1849	Astron. Nachr.	28: 363	d'Arrest, H.	7
YA	1905	Mon. Not. R. Ast. Soc.	66: 14	Tebbutt, J.	15	UV	1685	Astron. Nachr.	110: 267	de Glasenapp, S.	13
YB	1875	Astron. Nachr.	83: 265	Tisserand, M.	22	AU	1835	Astron. Nachr.	16: 313	de Slaviniski, P.	4
YC	1875	Astron. Nachr.	87: 59	Tisserand, M.	35	AV	1836	Astron. Nachr.	17: 247	de Slaviniski, P.	9
YD	1877	Mon. Not. R. Ast. Soc.	37: 284	Todd, C.	21	AW	1837	Astron. Nachr.	19: 235	de Slaviniski, P.	5
YE	1878	Mon. Not. R. Ast. Soc.	39: 2	Todd, C.	17	AX	1838	Astron. Nachr.	20: 269	de Slaviniski, P.	4
YF	1880	Mon. Not. R. Ast. Soc.	40: 170	Todd, C.	12	QL	1927	Bull. Ast. Inst. Neth.	8: 265-272	van der Bilt, J. et al.	26
YG	1886	Mon. Not. R. Ast. Soc.	46: 353	Todd, C.	19	TT	1896	Astron. Nachr.	141: 119	van Boinik,	

TABLE Ic. — Observer list (sorted by journal).

Index	Year	Journal	Volume	Author	No. Obs.	Index	Year	Journal	Volume	Author	No. Obs.
BC	1901	<i>An. Célest. 17. Siècle</i>	<i>Gauthier-Villars, Paris</i>	Bigourdan, M.	[*Pingre*] 1033	EM	1823	<i>Astron. Jahr. Berlin</i>	125,142,147,153,234	Bode, J.	[publ: 1820] 42
FM	1982	<i>Assoc. Lun. Plan. Obs.</i>		Westfall, J.	32	EN	1824	<i>Astron. Jahr. Berlin</i>	139,145,171,199	Bode, J.	[publ: 1821] 48
FQ	1983	<i>Assoc. Lun. Plan. Obs.</i>		Westfall, J.	122	EP	1825	<i>Astron. Jahr. Berlin</i>	129,138,178	Bode, J.	[publ: 1822] 48
FS	1984	<i>Astron. Astrophys.</i>	136: 142	Arlot, J. et al.	584	EQ	1826	<i>Astron. Jahr. Berlin</i>	104,143,155,174,216	Bode, J.	[publ: 1823] 45
RE	1955	<i>Astron. Circ., Russian</i>	163: 10-11	Kosik, C.	18	ER	1827	<i>Astron. Jahr. Berlin</i>	109,115,128,189,198	Bode, J.	[publ: 1824] 92
RF	1956	<i>Astron. Circ., Russian</i>	173: 7-8	Kosik, C.	8	ES	1828	<i>Astron. Jahr. Berlin</i>	114,121,137,180,181*	Bode, J.	[publ: 1825] 39
RD	1961	<i>Astron. Circ., Russian</i>	218: 2-2	Kalinkov, M.	28	ET	1829	<i>Astron. Jahr. Berlin</i>	100,147	Bode, J.	[publ: 1826] 17
TL	1906	<i>Astron. J.</i>	25: 46	Baker, R.	29	ZL	1822	<i>Astron. Nachr.</i>	1: 176,208,302,423,485	Beaufoy, M.	22
QK	1921	<i>Astron. J.</i>	33: 202	Van Biesbroeck, G.	8	ZR	1822	<i>Astron. Nachr.</i>	1: 217	Bianchi, J.	2
PR	1922	<i>Astron. J.</i>	34: 30	Hall, A., Bower, E.	9	AM	1823	<i>Astron. Nachr.</i>	1: 313, 4: 107	Ruenker, M.	5
PS	1923	<i>Astron. J.</i>	35: 107	Hall, A., Bower, E.	9	ZM	1824	<i>Astron. Nachr.</i>	2: 90,347,439	Beaufoy, M.	27
PT	1948	<i>Astron. J.</i>	40: 119-120	Hall, A. et al.	29	ZN	1825	<i>Astron. Nachr.</i>	3: 173,235	Beaufoy, M.	23
PK	1948	<i>Astron. J.</i>	54: 87-88	Ashbrook, J.	17	ZX	1826	<i>Astron. Nachr.</i>	3: 458	Gambart, F.	27
PL	1949	<i>Astron. J.</i>	55: 148-149	Ashbrook, J.	24	ZP	1826	<i>Astron. Nachr.</i>	4: 43,171,475	Beaufoy, M.	28
PM	1953	<i>Astron. J.</i>	58: 195	Ashbrook, J.	13	AA	1825	<i>Astron. Nachr.</i>	4: 143,360	Hallaschka, H.	23
PU	1955	<i>Astron. J.</i>	60: 115-117	Hasegawa, I.	77	AS	1826	<i>Astron. Nachr.</i>	4: 59,489	Schwarsenbrunner, B.	9
CZ	1784	<i>Astron. Jahr. Berlin</i>	147	Bode, J. [ed]	[publ: 1781] 4	AG	1826	<i>Astron. Nachr.</i>	5: 251	Lang, A.	2
DA	1786	<i>Astron. Jahr. Berlin</i>	161,173	Bode, J.	[publ: 1783] 39	ZQ	1827	<i>Astron. Nachr.</i>	5: 383	Beaufoy, M.	3
DB	1787	<i>Astron. Jahr. Berlin</i>	163	Bode, J.	[publ: 1784] 20	AB	1827	<i>Astron. Nachr.</i>	5: 137,469	Hallaschka, H.	5
DC	1788	<i>Astron. Jahr. Berlin</i>	167	Bode, J.	[publ: 1785] 6	AC	1829	<i>Astron. Nachr.</i>	7: 191,351	Hallaschka, H.	7
DD	1789	<i>Astron. Jahr. Berlin</i>	129,155,156	Bode, J.	[publ: 1786] 58	AD	1830	<i>Astron. Nachr.</i>	8: 62,359	Hallaschka, H.	7
DE	1790	<i>Astron. Jahr. Berlin</i>	147	Bode, J.	[publ: 1787] 4	ZU	1831	<i>Astron. Nachr.</i>	9: 377	Cerquero, J.	30
DF	1791	<i>Astron. Jahr. Berlin</i>	128,153,179,240	Bode, J.	[publ: 1788] 90	ZV	1831	<i>Astron. Nachr.</i>	9: 387	Cerquero, J.	194
DG	1792	<i>Astron. Jahr. Berlin</i>	132,250	Bode, J.	[publ: 1789] 46	AE	1832	<i>Astron. Nachr.</i>	10: 63	Hallaschka, H.	2
DH	1793	<i>Astron. Jahr. Berlin</i>	109,210,231	Bode, J.	[publ: 1790] 59	AT	1833	<i>Astron. Nachr.</i>	10: 119	Schwarsenbrunner, B.	4
DI	1794	<i>Astron. Jahr. Berlin</i>	92,111,139,256	Bode, J.	[publ: 1791] 107	ZW	1832	<i>Astron. Nachr.</i>	10: 127,215,297	David, Prof.	25
DJ	1795	<i>Astron. Jahr. Berlin</i>	102,137,204	Bode, J.	[publ: 1792] 42	AH	1833	<i>Astron. Nachr.</i>	10: 263	Lang, A.	16
DK	1796	<i>Astron. Jahr. Berlin</i>	108,155,212	Bode, J.	[publ: 1793] 49	ZS	1832	<i>Astron. Nachr.</i>	10: 290	Bianchi, J.	16
DL	1797	<i>Astron. Jahr. Berlin</i>	104,121	Bode, J.	[publ: 1794] 28	AF	1834	<i>Astron. Nachr.</i>	11: 379	Husey, T.	10
DM	1798	<i>Astron. Jahr. Berlin</i>	127,200	Bode, J.	[publ: 1795] 14	AU	1835	<i>Astron. Nachr.</i>	16: 313	de Slawinski, P.	4
DN	1799	<i>Astron. Jahr. Berlin</i>	163,182,190,230	Bode, J.	[publ: 1796] 67	AV	1836	<i>Astron. Nachr.</i>	17: 247	de Slawinski, P.	9
DQ	1800	<i>Astron. Jahr. Berlin</i>	229	Bode, J.	[publ: 1797] 8	AI	1837	<i>Astron. Nachr.</i>	18: 77	Petersen, E.	2
DR	1801	<i>Astron. Jahr. Berlin</i>	99,184	Bode, J.	[publ: 1798] 22	AW	1837	<i>Astron. Nachr.</i>	19: 235	de Slawinski, P.	5
DR	1802	<i>Astron. Jahr. Berlin</i>	152,213,247	Bode, J.	[publ: 1799] 35	AN	1837	<i>Astron. Nachr.</i>	19: 323	Schumacher, R.	68
DS	1803	<i>Astron. Jahr. Berlin</i>	169,173,179,183,196	Bode, J.	[publ: 1800] 72	AX	1838	<i>Astron. Nachr.</i>	20: 269	de Slawinski, P.	4
DT	1804	<i>Astron. Jahr. Berlin</i>	108,129,158,181	Bode, J.	[publ: 1801] 64	RS	1840	<i>Astron. Nachr.</i>	18: 135	Argelander, F.	4
DU	1805	<i>Astron. Jahr. Berlin</i>	127,159,176	Bode, J.	[publ: 1802] 44	ZZ	1846	<i>Astron. Nachr.</i>	24: 130	Hackel, E.	4
DV	1806	<i>Astron. Jahr. Berlin</i>	137,143,165	Bode, J.	[publ: 1803] 52	ZY	1846	<i>Astron. Nachr.</i>	25: 47	Gerling, G.	5
DW	1807	<i>Astron. Jahr. Berlin</i>	146,171	Bode, J.	[publ: 1804] 21	AP	1848	<i>Astron. Nachr.</i>	27: 52	Schumacher, R.	44
DX	1808	<i>Astron. Jahr. Berlin</i>	96,123,127	Bode, J.	[publ: 1805] 33	ZV	1849	<i>Astron. Nachr.</i>	28: 363	d'Arrest, H.	7
DY	1809	<i>Astron. Jahr. Berlin</i>	105,148	Bode, J.	[publ: 1806] 11	AQ	1851	<i>Astron. Nachr.</i>	31: 49	Schumacher, R.	50
DZ	1810	<i>Astron. Jahr. Berlin</i>	134,170,190	Bode, J.	[publ: 1807] 34	WS	1850	<i>Astron. Nachr.</i>	31: 249	Schoenfeld, E.	7
EA	1811	<i>Astron. Jahr. Berlin</i>	103,109,131,194	Bode, J.	[publ: 1808] 43	AR	1851	<i>Astron. Nachr.</i>	31: 381	Schumacher, R.	10
EB	1812	<i>Astron. Jahr. Berlin</i>	104,115,146,216	Bode, J.	[publ: 1809] 67	VY	1855	<i>Astron. Nachr.</i>	39: 219	Oudemans, J.	5
EC	1813	<i>Astron. Jahr. Berlin</i>	100,125,166	Bode, J.	[publ: 1810] 27	VZ	1855	<i>Astron. Nachr.</i>	42: 162	Oudemans, J.	7
ED	1814	<i>Astron. Jahr. Berlin</i>	97,104,126,165	Bode, J.	[publ: 1811] 77	WA	1856	<i>Astron. Nachr.</i>	43: Nr. 1015	Oudemans, J.	5
EE	1815	<i>Astron. Jahr. Berlin</i>	125,133,141,166,173,222	Bode, J.	[publ: 1812] 77	WQ	1856	<i>Astron. Nachr.</i>	43: 53	Schmidt, J.	7
EF	1816	<i>Astron. Jahr. Berlin</i>	126,129,146,150,162,210	Bode, J.	[publ: 1813] 123	UZ	1857	<i>Astron. Nachr.</i>	45: 217	Hoek, M.	7
EG	1817	<i>Astron. Jahr. Berlin</i>	100,141,148,241	Bode, J.	[publ: 1814] 52	WR	1858	<i>Astron. Nachr.</i>	46: 183	Schmidt, J.	13
EH	1818	<i>Astron. Jahr. Berlin</i>	118,138,159,214,260	Bode, J.	[publ: 1815] 70	VE	1864	<i>Astron. Nachr.</i>	61: 270	Kaiser, F.	6
EI	1819	<i>Astron. Jahr. Berlin</i>	102,121,147,175	Bode, J.	[publ: 1816] 66	VF	1864	<i>Astron. Nachr.</i>	63: 153	Kaiser, F.	6
EJ	1820	<i>Astron. Jahr. Berlin</i>	99,150,168,194	Bode, J.	[publ: 1817] 93	VG	1869	<i>Astron. Nachr.</i>	73: 297	Kaiser, F.	14
EK	1821	<i>Astron. Jahr. Berlin</i>	99,132,156,168,178	Bode, J.	[publ: 1818] 33	TR	1871	<i>Astron. Nachr.</i>	77: 267	Becker, E.	6
EL	1822	<i>Astron. Jahr. Berlin</i>	114,124,139,169	Bode, J.	[publ: 1819] 39	YB	1875	<i>Astron. Nachr.</i>	83: 265	Tisserand, M.	22

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YH	1875	<i>Astron. Nachr.</i>	85: 155	Todd, D.	18	VT	1898	<i>Astron. Nachr.</i>	146: 73	Nijland, A.	11
ZF	1875	<i>Astron. Nachr.</i>	86: 146	Winnecke, A.	25	ZD	1898	<i>Astron. Nachr.</i>	146: 293	Winkler, W.	3
YC	1875	<i>Astron. Nachr.</i>	87: 59	Tisserand, M.	35	UE	1898	<i>Astron. Nachr.</i>	147: 329	Geelmuyden, H.	9
ZG	1876	<i>Astron. Nachr.</i>	88: 308	Winnecke, A.	5	ZE	1899	<i>Astron. Nachr.</i>	148: 251	Winkler, W.	5
XI	1876	<i>Astron. Nachr.</i>	89: 57	Tebbutt, J.	17	VU	1900	<i>Astron. Nachr.</i>	152: 193	Nijland, A.	17
YI	1877	<i>Astron. Nachr.</i>	89: 297	Todd, D.	48	VV	1900	<i>Astron. Nachr.</i>	152: 379	Dubiago, A.	42
ZH	1878	<i>Astron. Nachr.</i>	91: 349	Winnecke, A.	8	VW	1901	<i>Astron. Nachr.</i>	156: 203	Nijland, A.	2
YJ	1878	<i>Astron. Nachr.</i>	92: 43	Todd, D.	32	VX	1904	<i>Astron. Nachr.</i>	166: 139	Nijland, A.	4
XJ	1878	<i>Astron. Nachr.</i>	92: 75	Tebbutt, J.	8	UC	1904	<i>Astron. Nachr.</i>	166: 293	Dubiago, A.	6
ZI	1878	<i>Astron. Nachr.</i>	93: 341	Winnecke, A.	24	UD	1905	<i>Astron. Nachr.</i>	168: 294	Dubiago, A.	9
VP	1879	<i>Astron. Nachr.</i>	94: 131	Nielsen, L.	7	VX	1905	<i>Astron. Nachr.</i>	169: 203	Nijland, A.	13
YK	1879	<i>Astron. Nachr.</i>	94: 379	Todd, D.	28	YT	1906	<i>Astron. Nachr.</i>	172: 260	Weinek, L.	18
XK	1879	<i>Astron. Nachr.</i>	95: 119	Tebbutt, J.	26	YU	1907	<i>Astron. Nachr.</i>	176: 297	Weinek, L.	15
VA	1879	<i>Astron. Nachr.</i>	95: 151	Holetschek, J.	11	TM	1909	<i>Astron. Nachr.</i>	181: 55	Baranow, W.	8
YL	1879	<i>Astron. Nachr.</i>	95: 201	Todd, D.	16	TR	1912	<i>Astron. Nachr.</i>	196: 33-36	Amann, M., Roset, C.	9
YM	1880	<i>Astron. Nachr.</i>	96: 347	Todd, D.	35	TZ	1915	<i>Astron. Nachr.</i>	202: 49	Dresler, E.	7
ZJ	1880	<i>Astron. Nachr.</i>	96: 371	Winnecke, A.	16	UX	1920	<i>Astron. Nachr.</i>	212: 165	Graff, K.	21
XL	1880	<i>Astron. Nachr.</i>	97: 37	Tebbutt, J.	22	UY	1920	<i>Astron. Nachr.</i>	217: 30-32	Paliss, J.	4
YW	1881	<i>Astron. Nachr.</i>	99: 187	Winkler, W.	11	PZ	1925	<i>Astron. Nachr.</i>	226: 261	Battermann, H.	66
TX	1881	<i>Astron. Nachr.</i>	100: 199	Doberck, W.	13	QM	1926	<i>Astron. Nachr.</i>	229: 31-32	Vocca, P.	1
VM	1881	<i>Astron. Nachr.</i>	101: 135	Meyer, M.	8	QN	1927	<i>Astron. Nachr.</i>	233: 263-264	Vocca, P.	1
XM	1883	<i>Astron. Nachr.</i>	108: 323	Tebbutt, J.	18	QP	1928	<i>Astron. Nachr.</i>	235: 105-106	Vocca, P.	0
YN	1884	<i>Astron. Nachr.</i>	107: 221	Weinek, L.	2	QR	1929	<i>Astron. Nachr.</i>	235: 175-176	Vocca, P.	4
YP	1884	<i>Astron. Nachr.</i>	107: 336	Weinek, L.	3	QS	1929	<i>Astron. Nachr.</i>	235: 315-316	Vocca, P.	3
YX	1884	<i>Astron. Nachr.</i>	108: 243	Winkler, W.	10	QT	1929	<i>Astron. Nachr.</i>	236: 13-14	Vocca, P.	3
YQ	1885	<i>Astron. Nachr.</i>	110: 233	Weinek, L.	24	QU	1929	<i>Astron. Nachr.</i>	236: 163-164	Vocca, P.	1
UY	1885	<i>Astron. Nachr.</i>	110: 267	de Glasenapp, S.	13	PX	1934	<i>Astron. Nachr.</i>	252: 81-84	Jaschek, W.	2
TU	1885	<i>Astron. Nachr.</i>	110: 375	Doolittle, C.	92	QE	1934	<i>Astron. Nachr.</i>	256: 29-32	Schembor, F.	4
XD	1885	<i>Astron. Nachr.</i>	113: 57	Tallock, J.	14	QF	1934	<i>Astron. Nachr.</i>	258: 385-390	Jaschek, W.	

TABLE Ic (continued)

Index	Year	Journal	Volume	Author	No. Obs.	Index	Year	Journal	Volume	Author	No. Obs.
CF 1826	Mem. Ast. Soc. London	2: 285	Colebrooke, R.	40	YE 1878	Mon. Not. R. Ast. Soc.	89: 2	Todd, C.	17		
CG 1826	Mem. Ast. Soc. London	2: 288	Hodgson, J.	24	WE 1879	Mon. Not. R. Ast. Soc.	89: 177	Perry, S.	3		
BC 1826	Mem. Ast. Soc. London	2: 439	Hodgson, J.	19	SQ 1879	Mon. Not. R. Ast. Soc.	89: 178	(Airy)	8		
CA 1827	Mem. Ast. Soc. London	8: 75	Beaufay, M.	11	SR 1880	Mon. Not. R. Ast. Soc.	40: 150	(Airy)	12		
CB 1827	Mem. Ast. Soc. London	8: 106	Goldingham, J.	90	YF 1880	Mon. Not. R. Ast. Soc.	40: 170	Todd, C.	12		
CC 1829	Mem. Ast. Soc. London	8: 344	Hodgson, J.	9	UG 1880	Mon. Not. R. Ast. Soc.	40: 287	Gledhill, J.	5		
CD 1829	Mem. Ast. Soc. London	8: 368	Slawinski, M.	8	SS 1881	Mon. Not. R. Ast. Soc.	41: 123	(Airy)	14		
PW 1959	Mem. Jpn. Astr. Assoc.	2: 57-62	Mitani, T.	82	WF 1881	Mon. Not. R. Ast. Soc.	41: 134	Perry, S.	11		
AJ 1833	Mem. R. Astron. Soc.	5: 379	(Airy?)	46	VB 1881	Mon. Not. R. Ast. Soc.	41: 281	Johnson, S.	13		
AK 1833	Mem. R. Astron. Soc.	6: 186	(Airy?)	65	UH 1881	Mon. Not. R. Ast. Soc.	41: 283	Gledhill, J.	15		
AL 1836	Mem. R. Astron. Soc.	9: 265	(Airy?)	26	WM 1882	Mon. Not. R. Ast. Soc.	42: 113	Pogson, N.	66		
AY 1910	Mem. R. Astron. Soc.	59: 26	Sampson, R.	1805	WG 1882	Mon. Not. R. Ast. Soc.	42: 122	Perry, S.	13		
ZK 1848	Mon. Not. R. Ast. Soc.	8: 189	Bayfield, Capt.	10	WV 1882	Mon. Not. R. Ast. Soc.	42: 245	Stone, E.	6		
RT 1860	Mon. Not. R. Ast. Soc.	20: 19	(Christy)	10	UI 1882	Mon. Not. R. Ast. Soc.	42: 425	Gledhill, J.	6		
RU 1860	Mon. Not. R. Ast. Soc.	20: 85	(Christy)	3	UW 1883	Mon. Not. R. Ast. Soc.	43: 115	Goldney, G.	9		
RV 1860	Mon. Not. R. Ast. Soc.	20: 280	(Christy)	7	ST 1882	Mon. Not. R. Ast. Soc.	43: 242,286	(Airy)	11		
RW 1860	Mon. Not. R. Ast. Soc.	20: 291	(Christy)	2	WH 1882	Mon. Not. R. Ast. Soc.	43: 282	Perry, S.	8		
RX 1861	Mon. Not. R. Ast. Soc.	21: 166	(Christy)	4	UJ 1883	Mon. Not. R. Ast. Soc.	43: 448	Gledhill, J.	10		
RY 1861	Mon. Not. R. Ast. Soc.	21: 184	(Christy)	2	WX 1883	Mon. Not. R. Ast. Soc.	43: 437	Stone, E.	22		
RZ 1861	Mon. Not. R. Ast. Soc.	21: 213	(Christy)	2	SU 1884	Mon. Not. R. Ast. Soc.	44: 98	(Airy)	16		
SA 1861	Mon. Not. R. Ast. Soc.	21: 239	(Christy)	2	WI 1884	Mon. Not. R. Ast. Soc.	44: 263	Perry, S.	15		
SB 1862	Mon. Not. R. Ast. Soc.	22: 50,87,165,238,274,290	(Christy)	9	TV 1884	Mon. Not. R. Ast. Soc.	44: 270	Davidson, G.	2		
XC 1862	Mon. Not. R. Ast. Soc.	22: 287	Talmage, C.	4	WY 1884	Mon. Not. R. Ast. Soc.	44: 419	Stone, E.	9		
SC 1863	Mon. Not. R. Ast. Soc.	28: 195,249	(Christy)	13	SV 1885	Mon. Not. R. Ast. Soc.	45: 159	(Airy)	18		
SD 1865	Mon. Not. R. Ast. Soc.	28: 287	(Christy)	11	UK 1885	Mon. Not. R. Ast. Soc.	45: 168	Gledhill, J.	18		
SE 1866	Mon. Not. R. Ast. Soc.	27: 82	(Christy)	4	WJ 1885	Mon. Not. R. Ast. Soc.	45: 345	Perry, S.	7		
SF 1867	Mon. Not. R. Ast. Soc.	28: 172	(Christy)	12	SW 1886	Mon. Not. R. Ast. Soc.	46: 139	(Airy)	13		
XE 1867	Mon. Not. R. Ast. Soc.	28: 215	Tebbutt, J.	39	UL 1886	Mon. Not. R. Ast. Soc.	46: 150	Gledhill, J.	7		
SG 1869	Mon. Not. R. Ast. Soc.	29: 253	(Airy)	12	WK 1886	Mon. Not. R. Ast. Soc.	46: 315	Perry, S.	6		
VD 1869	Mon. Not. R. Ast. Soc.	29: 171	Joynson, J.	11	YG 1886	Mon. Not. R. Ast. Soc.	46: 353	Todd, C.	19		
SH 1870	Mon. Not. R. Ast. Soc.	30: 176	(Airy)	11	XP 1886	Mon. Not. R. Ast. Soc.	47: 30	Tebbutt, J.	23		
XF 1871	Mon. Not. R. Ast. Soc.	32: 61	Tebbutt, J.	11	SX 1887	Mon. Not. R. Ast. Soc.	47: 111	(Airy)	15		
VI 1872	Mon. Not. R. Ast. Soc.	32: 78	(Airy)	12	SY 1888	Mon. Not. R. Ast. Soc.	48: 126	(Airy)	5		
VI 1872	Mon. Not. R. Ast. Soc.	32: 311	Main	12	XQ 1888	Mon. Not. R. Ast. Soc.	48: 129	Tebbutt, J.	24		
SI 1873	Mon. Not. R. Ast. Soc.	33: 158	(Airy)	23	WL 1888	Mon. Not. R. Ast. Soc.	49: 35	Perry, S.	13		
WB 1873	Mon. Not. R. Ast. Soc.	33: 426	Perry, S.	12	SZ 1889	Mon. Not. R. Ast. Soc.	49: 134	(Airy)	4		
VJ 1873	Mon. Not. R. Ast. Soc.	33: 488	Main	18	XR 1889	Mon. Not. R. Ast. Soc.	49: 329	Tebbutt, J.	28		
SK 1874	Mon. Not. R. Ast. Soc.	34: 121,308	(Airy)	14	TA 1890	Mon. Not. R. Ast. Soc.	50: 120	(Airy)	5		
WC 1874	Mon. Not. R. Ast. Soc.	34: 413	Perry, S.	8	XS 1890	Mon. Not. R. Ast. Soc.	50: 335	Tebbutt, J.	8		
VK 1874	Mon. Not. R. Ast. Soc.	34: 417	Main	8	TB 1891	Mon. Not. R. Ast. Soc.	51: 149	(Airy)	10		
XG 1874	Mon. Not. R. Ast. Soc.	34: 421	Tebbutt, J.	28	UM 1891	Mon. Not. R. Ast. Soc.	51: 358	Gledhill, J.	7		
UF 1874	Mon. Not. R. Ast. Soc.	35: 98	Gledhill, J.	12	XT 1891	Mon. Not. R. Ast. Soc.	51: 420	Tebbutt, J.	19		
SL 1875	Mon. Not. R. Ast. Soc.	35: 238	(Airy)	10	UN 1892	Mon. Not. R. Ast. Soc.	52: 159	Gledhill, J.	12		
WN 1875	Mon. Not. R. Ast. Soc.	35: 391	Lucas,	5	TC 1892	Mon. Not. R. Ast. Soc.	52: 171	(Airy)	11		
TU 1876	Mon. Not. R. Ast. Soc.	36: 41	Crossley, E.	4	XU 1892	Mon. Not. R. Ast. Soc.	52: 398	Tebbutt, J.	13		
SM 1876	Mon. Not. R. Ast. Soc.	36: 97	(Airy)	8	TD 1893	Mon. Not. R. Ast. Soc.	53: 138	(Airy)	13		
XH 1878	Mon. Not. R. Ast. Soc.	36: 100	Tebbutt, J.	14	UP 1893	Mon. Not. R. Ast. Soc.	53: 144	Gledhill, J.	12		
SN 1877	Mon. Not. R. Ast. Soc.	37: 116	(Airy)	0	VC 1893	Mon. Not. R. Ast. Soc.	53: 449	Johnson, S.	12		
RR 1877	Mon. Not. R. Ast. Soc.	37: 259-260	Arcimia, A.	27	XV 1893	Mon. Not. R. Ast. Soc.	54: 32	Tebbutt, J.	3		
YD 1877	Mon. Not. R. Ast. Soc.	37: 284	Todd, C.	21	TE 1894	Mon. Not. R. Ast. Soc.	54: 148	(Airy)	14		
VL 1877	Mon. Not. R. Ast. Soc.	37: 344	Main,	6	UQ 1894	Mon. Not. R. Ast. Soc.	54: 443	Gledhill, J.	18		
TS 1877	Mon. Not. R. Ast. Soc.	38: 71	Bixby, W.	5	TF 1895	Mon. Not. R. Ast. Soc.	55: 156	(Airy)	9		
WD 1877	Mon. Not. R. Ast. Soc.	38: 72	Perry, S.	7	UR 1895	Mon. Not. R. Ast. Soc.	55: 391	Gledhill, J.	18		
SP 1878	Mon. Not. R. Ast. Soc.	38: 301	(Airy)	2	XW 1895	Mon. Not. R. Ast. Soc.	55: 517	Tebbutt, J.	13		

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Index	Year	Journal	Volume	Author	No. Obs.	Index	Year	Journal	Volume	Author	No. Obs.
TG 1896	Mon. Not. R. Ast. Soc.	56: 139	(Airy)	16	EY 1977	Sky Telesc.	53: 230	Ashbrook, J.	134		
US 1896	Mon. Not. R. Ast. Soc.	56: 489	Gledhill, J.	20	EZ 1977	Sky Telesc.	54: 153	Ashbrook, J.	104		
CX 1896	Mon. Not. R. Ast. Soc.	57: 26	Tebbutt, J.	16	FB 1978	Sky Telesc.	55: 265	Ashbrook, J.	95		
TH 1897	Mon. Not. R. Ast. Soc.	57: 184	(Airy)	17	FC 1978	Sky Telesc.	56: 170	Ashbrook, J.	132		
UT 1897	Mon. Not. R. Ast. Soc.	57: 653	Gledhill, J.	2	FD 1979	Sky Telesc.	57: 310	Ashbrook, J.	51		
TI 1898	Mon. Not. R. Ast. Soc.	58: 101	(Airy)	3	FE 1979	Sky Telesc.	58: 377	Ashbrook, J.	264		
XY 1898	Mon. Not. R. Ast. Soc.	58: 464	Tebbutt, J.	11	FF 1980	Sky Telesc.	60: 258	Ashbrook, J.	147		
UU 1898	Mon. Not. R. Ast. Soc.	58: 506	Gledhill, J.	6	PH 1965	Sterne	41: 32-34	Ahnert, P.	24		
CT 1899	Mon. Not. R. Ast. Soc.	59: 174	(Airy)	3	PI 1966	Sterne	42: 214-218	Ahnert, P.	57		
XZ 1900	Mon. Not. R. Ast. Soc.	60: 620	Tebbutt, J.	11	PJ 1969	Sterne	45: 19-22	Ahnert, P.	82		
TK 1902	Mon. Not. R. Ast. Soc.	62: 214	(Airy)	1	PG 1972	Sterne	48: 34	Ahnert, P.	88		
YA 1905	Mon. Not. R. Ast. Soc.	66: 14	Tebbutt, J.	15	FH 1976	Sterne	52: 39	Ahnert, P.	103		
RG 1909	Mon. Not. R. Ast. Soc.	69: 512-539	Innes, R.	12	FI 1978	Sterne	54: 45	Ahnert, P.	68		
RH 1909	Mon. Not. R. Ast. Soc.	70: 28-47	Innes, R.	18	BE 1803	Trans. Am. Phil. Soc.	6: 61,113	Ellicott, A.	33		
PN 1921	Mon. Not. R. Ast. Soc.	82: 58	Cooke, W.	4	BF 1810	Trans. Am. Phil. Soc.	1: 93 [New Ser]	Ellicott, A.	12		
FA 1981	Obs. Astron. Antares		Beserra, U.	51	RI 1910	Transvaal Obs. Circ.	5: 49	Innes, R.	60		
AZ 1741	Opera Math.-Phys.	Works III	Horrebow, P.	80	RJ 1911	Transvaal Obs. Circ.	12: 103	Innes, R.	39		
CY 7	Paris Obs. Manuscripts	A 5 1-A 5 8	Delisle Manuscripts	1973	RK 1912	Union Obs. Circ.	3: 23	Innes, R., Wood, H.	33		
CT 1755	Philos. Trans.	48: 546	Chevalier, J.	2	RL 1913	Union Obs. Circ.	12: 87	Innes, R., Wood, H.	47		
CU 1770	Philos. Trans.	59: 399	Maslyne, N.	4	RM 1915	Union Obs. Circ.	28: 177	Innes, R., Wood, H.	31		
CV 1771	Philos. Trans.	60: 802	Herbert, T.	24	RN 1916	Union Obs. Circ.	34: 261	Innes, R., Wood, H.	41		
CW 1774	Philos. Trans.	64: 184	Maslyne, N.	16	RP 1920	Union Obs. Circ.	50: 81	Innes, R.	66		
CX 1777	Philos. Trans.	67: 162	Wargentin, P.	464	QY 1922	Union Obs. Circ.	55: 140-146	Innes, R., Wood, H.	112		
CH 1734	Philos. Trans. Abridg.	6(1): 225	Derham, W.	140	QZ 1922	Union Obs. Circ.	56: 162-163	Innes, R., Wood, H.	32		
CI 1734	Philos. Trans. Abridg.	6(1): 236	Bianchini,	87	RA 1925	Union Obs. Circ.	64: 299-300	Innes, R., Wood, H.	17		
CJ 1734	Philos. Trans. Abridg.	6(1): 240,8: 180	Lynn, G.	22	RB 1926	Union Obs. Circ.	67: 334-335	Innes, R., Wood, H.	28		
CK 1734	Philos. Trans. Abridg.	6(1): 241	Carbone, J.	19	RC 1926	Union Obs. Circ.	72: 400-404	Innes, R., Wood, H.	25		
CL 1734	Philos. Trans. Abridg.	6(1): 244	Carbone, J.	2	PE 1974	Personal Commun.		Millis, R., Lockwood, G.	11		
CM 1734	Philos. Trans. Abridg.	6(1): 246	Koegler, I.	161	PV 1975	Personal Commun.		Hasegawa, I.	53		
CN 1747	Philos. Trans. Abridg.	6(1): 179	Manfredi, E.	10	EU 1981	Personal Commun.		Brettones, P.	15		
CP 1747	Philos. Trans. Abridg.	6(1): 180	DeLisle, J.	10	EV 1981	Personal Commun.		Loader, B.	39		
CQ 1756	Philos. Trans. Abridg.	6(1): 183	'Jesuita'	47	EW 1981	Personal Commun.		Debarbat, S.	9		
CR 1756	Philos. Trans. Abridg.	10(1): 121	Sarmiento, J. deC.	24	EX 1981	Personal Commun.		Wieth-Knudsen, N.	143		
BG 1809	Philos. Trans. Abridg.	6: 92	Bianchini,	5	FJ 1982	Personal Commun.		Correa, O.	7		
BH 1809	Philos. Trans. Abridg.	7: 55	Carbone, J.	11	FK 1982	Personal Commun.		Owen, W.	4		
BJ 1809	Philos. Trans. Abridg.	7: 143	Carbone, J.	10	FN 1982	Personal Commun.		Debarbat, S.	16		
BK 1809	Philos. Trans. Abridg.	7: 165	Bianchini,	7	FP 1982	Personal Commun.		Loader, B.	47		
BL 1809	Philos. Trans. Abridg.	7: 265	Manfredi, E.	11	FR 1982	Personal Commun.		Wieth-Knudsen, N.	15		
BM 1809	Philos. Trans. Abridg.	7: 273	Koegler, I.	21	FU 1984	Personal Commun.		Loader, B.	80		
BN 1809	Philos. Trans. Abridg.	7: 274	'Jesuita'	16							
BP 1809	Philos. Trans. Abridg.	7: 335	DeLisle, J.	40							
BQ 1809	Philos. Trans. Abridg.	7: 418	'Missionaries'	47							
BR 1809	Philos. Trans. Abridg.	10: 3	Gaubil, A.	6							
BS 1809	Philos. Trans. Abridg.	10: 947	Chevalier, J.	3							
BT 1809	Philos. Trans. Abridg.	11: 158	Chevalier, J.	7							
BU 1809	Philos. Trans. Abridg.	13: 352	Wargentin, P.	46							
BV 1809	Philos. Trans. Abridg.	13: 670	Wilson,	12							
BW 1809	Philos. Trans. Abridg.	13: 671	Maslyne, N.	15							
BX 1809	Philos. Trans. Abridg.	18: 526	Holland, S.	28							
BY 1809	Philos. Trans. Abrid										

TABLE IIa. — *Observation sites (sorted by index).*

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
AA	76.75 W	Upper Marlboro, Md.	USA		3	CE	25.67 E	Lahti	Finland		13
AB	?	Oiteville, Pa.	USA		4	CF	?	E Galliera	Italy		12
AC	146.80 E	Townesville	Australia		7	CG	87.93 W	Milwaukee, Wisc.	USA		1
AD	122.25 W	Oakland, Ca.	USA		1	CH	1.50 W	Sheffield	England		1
AE	77.27 W	Gettysburg, Pa.	USA		1	CI	4.50 E	Zoetermeer	Netherlands		14
AF	?	Parlin, N. J.	USA		11	CJ	98.72 W	Helotes, Tex.	USA		3
AG	74.20 W	Keyport, N. J.	USA		15	CK	47.95 W	Uberaba	Brazil		7
AH	105.10 W	Longmont, Colo.	USA		14	CL	138.60 E	Edwardstown, S. Aust.	Australia		27
AI	100.33 W	Monterrey	Mexico		33	CM	149.13 E	Woden, A.C.T.	Australia		4
AJ	117.17 W	San Diego, Ca.	USA		6	CN	117.60 E	Tambellup, W. Aust.	Australia		4
AK	97.02 W	Victoria, Tex.	USA		10	CP	153.00 E	Brisbane, Queensland	Australia		14
AL	121.70 W	Gridley, Ca.	USA		23	CQ	148.05 E	Cootamundra, N.S.W.	Australia		15
AM	117.02 W	Barstow, Ca.	USA		13	CR	5.17 E	Herk-de-Stad	Belgium		7
AN	10.13 E	Brabrand	Denmark		7	CS	90.50 W	Pleasant Valley, Ia.	USA		2
AP	93.42 W	Green Forest, Ark.	USA		24	CT	113.50 W	Leduc, Alberta	Canada		2
AQ	?	Belvidere, Tenn.	USA		4	CU	3.53 E	Kruihonten	Belgium		1
AR	79.83 W	Greensboro, N. C.	USA		3	CV	81.40 W	Altamonte Spr., Fla.	USA		13
AS	71.08 W	Winchester, Mass.	USA	near Boston	11	CW	105.95 W	Alamogordo, N. Mex.	USA		16
AT	1.83 W	Birmingham	England		3	CX	4.42 E	Antwerpen	Belgium		1
AU	82.47 W	Port Huron, Mich.	USA		12	CY	12.12 E	Ratisbon	Germany	[Regensburg]	1
AV	78.80 W	Tonawanda, N. Y.	USA		4	CZ	148.08 E	Gundagai, N.S.W.	Australia		3
AW	83.05 W	Columbus, Ohio	USA		1	DA	149.17 E	Mackay, Queensland	Australia		11
AX	13.10 E	Falkensee	Germany	-Finkenkrug	26	DB	152. E	Gyeme, N.S.W.	Australia		2
AY	3.88 E	Wetteren	Belgium		12	DC	153. E	Bardon, Queensland	Australia		13
AZ	1.58 W	Leeds	England		8	DD	152. E	Cahranatta, N.S.W.	Australia		4
BA	46.37 W	Santos	Brazil		6	DE	153. E	Ms. Gravatt, Q'land	Australia		2
BB	91.43 W	Ms. Varnon, Iowa	USA		3	DF	152.35 E	Bundaberg, Q'land	Australia		42
BC	80.67 W	Youngstown, Ohio	USA		9	DG	172.67 E	Christchurch	New Zealand		9
BD	122.40 W	San Bruno, Ca.	USA		32	DH	175.75 E	Kuotunu	New Zealand		13
BE	82.30 W	Clyde, Ohio	USA		2	DI	175.10 E	Upper Hutt	New Zealand		7
BF	95.78 W	Broken Arrow, Okla.	USA		11	DJ	175.0 E	Trentham	New Zealand		3
BG	81.87 W	Clinton, S. C.	USA		1	DK	172.18 E	Oxford	New Zealand		5
BH	25.00 E	Helsinki	Finland		12						
BI	51.17 W	Pôrto Alegre	Brazil		45	LA	71.13 W	Cambridge, Mass.	USA	Harvard Obs.	885
BJ	76.17 W	Syracuse, N. Y.	USA		2	LB	104.02 W	Fort Davis, Tex.	USA	McDonald Obs.	8
BK	82.40 W	Vidalia, Georgia	USA		1	LC	116.86 W	Palomar Mtn., Ca.	USA	Mt. Palomar Obs.	5
BL	111.92 W	Salt Lake City, Utah	USA		27	LD	165.47 W	Maunaloa, Hawaii	USA	Lovell Obs.	17
BM	31.08 E	Salisbury	Rhodesia		1	LE	111.66 W	Flagstaff, Ariz.	USA		1
BN	1.03 E	Whitstable	England		4	LF	116.14 E	Perth	Australia		7
BP	11.42 E	Muris	Italy	(?Murci long.?)	18	LG	70.81 W	La Serena	Chile	(Cerro Tololo Obs.)	6
BQ	113.42 W	Edmonton, Alberta	Canada		6	LH	11.19 E	Sonneberg	Germany		116
BR	3.52 W	Exeter	England		3	LI	20.12 E	Szolnok	Hungary		27
BS	81.85 W	Callahan, Fla.	USA		3	LJ	20.34 E	Spíšák Nová Ves	Czechoslovakia		49
BT	4.45 E	Marcinelle	Belgium		1	LK	10.03 E	Randers	Denmark		6
BU	97.33 W	Fort Worth, Tex.	USA		1	LL	?	Stenbro	Norway		6
BV	94.03 W	Adel, Iowa	USA		3	LM	12.10 E	Langenwetsendorf	Germany		17
BW	95.98 W	Bartlesville, Okla.	USA		4	LN	12.56 E	Copenhagen	Denmark	(Hatniensi, Haunia)	229
BX	?	Stansbury Park, Ut.	USA		1	LO	72.92 W	New Haven, Conn.	USA	Yale Univ. Obs.	54
BY	119.13 W	Kennewick, Wash.	USA		7	LQ	151.20 E	Sydney, N.S.W.	Australia		4
BZ	86.97 W	Hartselle, Ala.	USA		2	LR	4.51 E	Lyon	France		161
CA	87.42 W	Newburgh, Ind.	USA		2	LS	77.05 W	Washington, D. C.	USA	U. S. Naval Obs.	160
CB	80.80 W	Troy, W. Va.	USA		2	LT	139.67 E	Tokyo	Japan	Tanakami Obs., etc.	130
CC	11.88 E	Padua	Italy	[Padova]	1	LU	135.79 E	Kyoto	Japan	Kwasan Obs.	82
CD	3.68 E	Sleidinge	Belgium		13	LW	16.38 E	Vienna	Austria		514

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
LX	43.19 W	Rio de Janeiro	Brazil	Obs. do Valongo	54	PB	0.34 W	Bushey Heath	England	near Stanmore	172
LY	28.08 E	Johannesburg	South Africa		498	PC	10.93 E	Modena	Italy		20
LZ	0.53 W	Bordeaux	France		11	PD	6.21 W	San Fernando	Spain		224
MA	7.30 E	Nice	France		28	PE	12.39 E	Leipzig	Germany		18
MB	30.50 E	Kiev	USSR	[Kiyev] Ukrainian SSR	2	PF	5.39 E	Marseilles	France		337
MC	88.56 W	Williams Bay, Wisc.	USA	Yerkes Obs.	8	PG	14.02 E	Senftenberg	Germany		4
MD	5.13 E	Utrecht	Netherlands		93	PH	14.42 E	Neustadt	Czechoslovakia	bei Prag	47
ME	7.70 E	Turin	Italy	Pino Torinese Obs.	29	PI	6.01 E	Kent	England		10
MF	107.38 E	Lembang	Indonesia		13	PJ	64.69 W	St. Croix	Virgin Islands		18
MG	7.77 E	Mixter	USA		81	PK	9.94 E	Altona	Germany		176
MH		Mixter	USA	Union Obs. Circ. 55	84	PL	2.54 W	Ormskirk	England		14
MI	36.23 E	Khar'kov	USSR	Ukrainian SSR	8	PM	0.17 W	Biggleswade	England		26
MJ	69.29 E	Tashkent	USSR	Usbek SSR	46	PN	0.29 W	Bedford	England		15
MK	2.34 E	Aoste, Obs. d'	Italy		9	PP	0.09 E	Saville Row	England	(Cambridge)	4
ML	6.30 W	Cádiz	Spain		28	PQ	0.09 E	Cambridge	England		6
MM	7.10 E	Bonn	Germany		6	PR	26.29 E	Wilna	(USSR)	[Vilnius, Lithuania]	111
MN	0.00	Greenwich	England		980	PS	18.47 E	Cape of Good Hope	South Africa		59
MP	1.46 E	Toulouse	France		58	PT	3.16 W	Edinburgh	Scotland		8
MQ	72.52 W	Amherst, Mass.	USA		98	PV	76.51 W	Port Royal	Jamaica		13
MR	48.82 E	Kasan, RSFSR	USSR	Engelhardt Obs.	81	PW	151.00 E	Paramatta, N.S.W.	Australia		5
MS	13.42 E	Berlin	Germany	[Wm. Förster]	507	PX	2.34 E	Paris	Austria		50
MT	20.50 E	Königsberg	(Prussia)	[Kaliningrad, USSR]	73	PY	22.28 E	Åbo	Finland	[Turku]	1693
MU	4.48 E	Leiden	Netherlands		124	PZ	4.89 E	Amsterdam	Netherlands		22
MV	77.05 W	Willeta Point, N. Y.	USA		5	QA	59.62 W	Barbados	Barbados		18
MW	13.84 E	Pola	Italy		10	QB	11.35 E	Bologna	Italy		172
MX	63.35 W	Halifax	Nova Scotia	(Bermerside Obs.)	172	QC	17.04 E	Breslau	(Poland)	[Wroclaw, Poland]	55
MY	122.43 W	San Francisco, Ca.	USA		69	QD	19.05 E	Buda	Hungary	[Budapest]	111
MZ	8.45 W	Markree	Ireland	County Sligo	13	QE	88.37 E	Chandernager	India	[Chandannagar]	9
NA	114.17 E	Hong Kong	Hong Kong		97	QF	19.96 E	Krakow	Poland		113
NB	75.38 W	S. Bethlehem, Pa.	USA		18	QG	18.67 E	Dansig	(Poland)		19
NC	10.72 E	Christiania	Norway	[Oslo]	172	QH	13.74 E	Dresden	Germany	[Gdańsk, Poland]	25
ND	30.30 E	St. Petersburg	(USSR)	[Leningrad]	172	QI	10.71 E	Gotha	Germany		1
NE	1.58 W	Durham	Scotland		9	QJ	51.58 W	Gotha	Greenland		17
NF	10.24 E	Hamburg	Germany	Bergedorf	11	QK	11.42 E	Ingolstadt	Germany	(Bibourg)	100
NG	2.23 W	Gloucester	England	(Abbenhall Rectory)	13	QL	21.98 W	Lambhus	Iceland		36
NH	2.46 W	Bridgeport	England		12	QM	8.91 E	Lilienthal	Germany		21
NI	3.07 W	Liverpool	England		13	QN	13.19 E	Lund	Sweden		23
NJ	18.96 E	Budapest	Hungary		5	QP	6.55 E	Lund	Norway		2
NK	1.26 W	Oxford	England	Radcliffe Obs.	85	QR		Unknown		Sampson-d'Alembre	515
NL	6.15 E	Geneva	Switzerland		22	QS	3.69 W	Madrid	Spain		38
NM	9.94 E	Göttingen	Germany		13	QT	9.19 E	Milan	Italy		17
NN	4.36 E	Brussels	Belgium		47	QU	23.73 E	Mitau	(USSR)	[Jelgava, Latvia]	64
NP	2.47 W	Stonyhurst	England		103	QV	1.35 E	Montauban	France		3
NQ	80.25 E	Madras	India		228	QW	3.53 E	Montpellier	France		22
NR	8.40 E	Karlruhe	Germany		2	QX	116.25 E	Pekin	China	[Beijing]	541
NS	17.28 E	Olmütz	Czechoslovakia	[Olomouc]	20	QY	7.67 E	Perinaldo	Italy		47
NT	8.77 E	Marburg, a.d. Lahn	Germany		12	QZ	10.40 E	Pisa	Italy		17
NU	89.03 W	Beloit, Wisc.	USA		14	RA	12.48 E	Rome	Italy		203
NV	150.84 E	Windsor, N.S.W.	Australia		377	RB	57.25 W	St. Cosmo	Paraguay	(S. Ignacio?)	54
NW	138.58 E	Adelaide, S. Aust.	Australia		771	RC	18.06 E	Stockholm	Sweden		149
NX	14.40 E	Prague	Czechoslovakia		638	RD	79.85 E	Traneubar	India	near Pondicherry	4
NY	12.37 E	Gohlis	Germany	bei Leipzig	38	RE	10.37 E	Tromsø	Norway	[Tromsheim]	4
NZ	11.59 E	Jena	Germany		50						
PA	63.12 W	Charlotte Town	Prince Edward Isl.		11						

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TABLE IIa (continued).

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
RF	0.25 E	Upminster	England		127	TL	74.00 W	New York, N. Y.	USA		0
RG	17.62 E	Uppsala	Sweden		62	TM	11.59 E	Bolsena	Italy		1
RI	4.68 E	Viviers	France		182	TN	12.67 E	Albano	Italy	(Lasiale)	12
RJ	0.04 W	Wanstead	England	(Wansted)	6	TP	4.15 W	Glasgow	Scotland		12
RK	1.07 W	York	England		6	TQ	0.11 W	Surry-street	England	(Mr. Short's house)	5
RL	13.46 E	Palme	Sicily	Palma di Monteciaro	39	TR	71.19 W	St. Lewis, Quebec	Canada		9
RM	12.72 E	Uranibourg	Denmark	(Uraniborg)	8	TS	64.30 W	Gaspee, Quebec	Canada	(Gaspé)	9
RN	1.29 W	Derby	England		2	TT	70.42 W	Kittery Point, Me.	USA		11
RP	4.25 E	Cette	France	(Celles (Aube))	8	TU	70.47 W	Portsmouth, N. H.	USA		9
RR	0.17 W	London	England		2	TV	63.36 W	Southwest Point	Canada		9
RS	4.49 E	Avignon	France		5	TW	79.38 E	Futty Ghur	India	Anticosti Island	19
RT	4.29 W	Brest	France		5	TX	96.01 E	Tounsemahn	Burma	[Fategarh]	9
RU	1.33 W	Nantes	France		2	TY	85.19 E	Katmandu	Nepal	[Kathmandu]	8
RV	0.05 W	La Flèche	France		3	TZ	90.23 E	Nuseerabad	E. Pakistan	[Nasirabad, Mymens.]	16
RW	1.29 W	Bayonne	France		4	UA	78.03 E	Dehrah	India	[Dehra Dun]	7
RX	1.01 W	Royan	France		1	UB	77.18 E	Nahun	India	[Nahan]	5
RY	2.22 E	Dunkirk	France		4	UC	77.33 E	Seharunpur	India	[Saharanpur]	7
RZ	1.05 E	Rouen	France		9	UD	78.12 E	Barkot	India	?	6
SA	2.01 W	Saint Malo	France		2	UE	77.29 E	Kotgarh	India		3
SB	1.08 E	Dieppe	France		3	UF	78.00 E	Agra	India		4
SC	16.40 E	Gorée	Chad		2	UG	78.75 E	Hisar	India	(Haryana)	6
SD	61.35 W	Gundeloupe	Gundeloupe		1	UH	77.14 E	Delhi	India		4
SE	7.07 E	Asiibe	France		2	UI	95.38 E	Suddeeah	India	(Sadiya)	6
SF	61.00 W	Martinique	Martinique		24	UJ	95.14 E	Prome	Burma		2
SG	5.56 E	Toulon	France		73	UK	88.21 E	Calcutta	India		31
SH	0.06 W	Islington	England		3	UL	88.38 E	Chouringhy	India	near Calcutta	64
SI	100.31 E	Louveau	Siam	[Bangkok, Thailand]	14	UM	0.63 W	Windsor	England		21
SJ	121.31 E	Ning-Po (Liang-Po)	China	[Ningbo, Che-Kiang]	1	UN	12.48 E	Otricoli	Italy		1
SK	118.47 E	Nanking	China	[Nanjing]	13	UP	12.62 E	Assisi	Italy		1
SL	111.27 E	Kiang-Chen	China	[Kiangshien]	9	UR	12.63 E	Urbino	Italy		1
SM	79.50 E	Pondichery	India	[Pondicherry]	4	US	13.03 E	Muceria	Italy	[Muccia?]	1
SN	108.36 E	Si-ngan-fu	China	[Qinxian]	4	UT	11.60 E	San Quirico d'Orcia	Italy		3
SP	121.25 E	Shanghai	China		27	UU	11.19 E	Sienna	Italy		1
SQ	119.11 E	Kong-Ngan	China	[Hwain (Kiangsu)]	4	UV	0.48 W	Southwick	England	near Oundle	22
SR	102.16 E	Malacca	Malaysia	"Malacca prison"	4	UW	57.00 W	St. Ignatius	Paraguay	[San Ignacio]	21
SS	113.16 E	Canton	China	[Guangzhou]	9	UX	16.92 W	Funchal	Madeira Isl.		18
ST	120.37 E	Su-cheu-fu	China	[Sushou]	1	UY	1.25 W	St. Michel-en-l'Herm	France		2
SU	39.43 E	Trebisonde	Turkey	[Trabson]	1	UZ	59.93 W	Louisburg	Nova Scotia	Cape Breton Island	9
SV	41.17 E	Eseroum	Turkey	[Erzurum]	0	VA	75.17 W	Philadelphia, Pa.	USA		12
SW	14.31 E	St. Elme	Malta	(Valletta)	5	VB	75.33 W	Norriton, Pa.	USA	(Norritown)	10
SX	29.54 E	Alexandria	Egypt		7	VC	149.57 W	Otahite	Tahiti	[Papeete, Tahiti]	7
SY	31.28 E	Cairo	Egypt	(LeCairé)	4	VD	108.67 W	S. Joseph	Mexico	[San José del Cabo]	4
SZ	28.58 E	Péra	Turkey	[Istanbul]	3	VE	0.05 E	Childhurst	England		12
TA	11.26 E	Florence	Italy	[Firenze]	18	VF	76.30 W	Lancaster, Pa.	USA		45
TB	0.41 E	Tours	France		5	VG	1.87 E	Calais	France		1
TC	2.11 E	Barcelona	Spain		5	VH	19.05 E	Ofen	Hungary	near Budapest	27
TD	9.13 W	Lisbon	Portugal		61	VI	10.92 E	Fredrikstad	Norway	(Frederikstein)	11
TE	11.04 E	Nürnberg	Germany		34	VJ	8.02 E	Oderoe	Norway	[Flekkerøy]	1
TF	2.02 E	Vousoir	France	(Orleans)	1	VK	6.13 E	Hyer	France	[Hyères]	8
TG	2.40 E	Bourges	France		3	VL	0.60 W	Slough	England		22
TH	2.22 E	Croc en Auvergne	France	[Crocq]	1	VM	5.33 E	Bergen	Norway		14
TI	27.09 E	Smyrne	Turkey	[İsmir]	1	VN	3.90 E	Aubenas	France	[Viverois]	19
TJ	9.08 E	Cagliari	Sardinia		1	VO	99.17 W	Mexico City	Mexico		8
TK	36.06 E	Alexandrette	Turkey	[İskenderun]	3	VQ	11.15 E	Quedlinburg	Germany		2

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Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
VR	82.42 W	Havana	Cuba		7	XV	47.04 W	Campinas	Brasil	Obs. Astr. Orion	18
VS	12.87 E	Stifte Tepl	Czechoslovakia	[Teplá]	19	XX	173.97 E	Blenheim	New Zealand		99
VT	12.20 E	Ravenna	Italy		1	XY	151.17 E	Allawah, N.S.W.	Australia	near Sydney	48
VU	26.73 E	Dorpat	(USSR)	[Tartu, Estonia]	13	XZ	151.03 E	Engadine, N.S.W.	Australia	SW of Sydney	17
VV	16.67 E	Brünn	Czechoslovakia	[Brno]	3	YA	175.65 E	Palmerston North	New Zealand		8
VW	14.71 E	Buchholz	Germany	?bei Drossen?	14	YB	12.97 E	Karl-Marx-Stadt	Germany		1
VX	3.28 E	Flunoy	France		32	YC	4.12 E	Monistrol-sur-Loire	France		6
VY	77.05 W	Lima	Peru		10	YD	6.15 E	Mets	France		18
VZ	38.96 W	Feira de Santana	Brazil	Obs. Astr. Antares	51	YE	4.49 E	La Barbanche	France	(St. Étienne)	1
WA	58.50 W	Buenos Aires	Argentina		2	YF	12.10 E	Tiavdeleje	Denmark		246
WB	14.50 E	Budweis	Czechoslovakia	[České Budějovice]	2	YG	?	Pfaffstätten	Austria		13
WC	5.58 E	Lige	Belgium		3	YH	119.30 W	Visalia, Ca.	USA		6
WD	0.70 W	Bayeux	France		8	YI	63.68 W	Bedford	Nova Scotia		3
WE	15.85 E	Uttersberg	Sweden		4	YJ	124.17 W	Eureka, Ca.	USA		1
WF	22.97 E	Thessaloniki	Greece		1	YK	121.77 W	Livermore, Ca.	USA	(Fremont, Dublin)	13
WG	24.42 E	Milos	Greece		2	YL	80.50 W	Merritt Island, Fla.	USA		2
WH	24.05 E	Casas	Cuba		2	YM	77.17 W	Rockville, Md.	USA		25
WI	13.20 E	Tripoli	Libya	[Khania]	1	YN	76.77 W	Bowie, Md.	USA		12
WJ	0.37 W	Pau	France		18	YP	75.50 W	Allentown, Pa.	USA		12
WK	4.77 E	St. Paul-Trois-Chât.	France		3	YQ	76.30 W	Norfolk, Va.	USA		6
WL	78.75 W	Cayo de Ana Maria	Cuba		2	YR	105.00 W	Denver, Colo.	USA	Louisville, Lakewood	16
WM	57.60 W	San Miguel	Argentina		2	YS	77.18 W	Arlington, Va.	USA		22
WN	25.13 E	Candia	Crete	[Iráklion]	1	YT	96.62 W	Garland, Tex.	USA		20
WP	9.50 E	Kassel	Germany		36	YU	103.73 W	Rocky Ford, Colo.	USA		33
WQ	8.93 E	Genes	Italy	[Genova]	16	YV	8.43 E	Birnenstorf	Switzerland		55
WR	12.60 E	Coriano	Italy		3	YW	77.10 W	Alexandria, Va.	USA		3
WS	13.52 E	Ancona	Italy		1	YX	82.10 W	Athens, Ohio	USA		2
WT	1.18 E	Louviers	France		1	YY	114.42 W	Shoshone, Idaho	USA		5
WU	28.58 E	Constantinople	Turkey	[Istanbul]	2	YZ	87.75 W	Chicago, Ill.	USA	(Palos Hills, Worth)	38
WV	40.67 E	Archangel	USSR	[Arkhangel'sk]	2	ZA	122.50 W	Tacoma, Wash.	USA		7
WW	143.25 E	Okhotsk	USSR		1	ZB	8.25 E	Wiesbaden	Germany		1
WX	156.50 E	Osernovskiy	USSR		10	ZC	14.72 E	Rønne	Denmark	Bornholm	2
WY	11.42 E	Innsbruck	Austria		7	ZD	114.88 W	Ely, Nevada	USA		1
WZ	75.55 W	Cartagena	Colombia		22	ZE	63.58 W	Avonport	Nova Scotia	?near Halifax?	1
XA	74.17 W	Santa Marta	Colombia		2	ZF	122.52 W	Quessel, B. C.	Canada		2
XB	16.88 E	Záhřeb	Czechoslovakia		7	ZG	82.63 W	Tampa, Fla.	USA		8
XC	12.65 E	Wittenberg	Germany		8	ZH	112.05 W	Phoenix, Ariz.	USA		1
XD	16.53 W	Loratava	Canary Islands	La Orotava, Tenerife	2	ZI	74.05 W	Bergenfield, N.J.	USA		2
XE	73.77 W	Les Cayes	Haiti		7	ZJ	75.98 W	Virginia Beach, Va.	USA		1
XF	72.65 W	Petit-Goave	Haiti		7	ZK	? W	Wadesville, Ind.	USA		1
XG	78.50 W	Quito	Ecuador		8	ZL	115.17 W	Las Vegas, Nev.	USA		4
XH	12.00 E	Göteborg	Sweden	(Gothenburg)	1	ZM	74.67 W	Princeton, N. J.	USA		7
XI	12.13 E	Bäckefors	Sweden		1	ZN	89.37 W	Madison, Wisc.	USA		9
XJ	38.18 E	Onega	USSR		3	ZP	81.55 W	Univ. Heights, Ohio	USA	near Euclid	1
XK	55.53 W	San Ignacio	Argentina	Cf. RA in Paraguay	25	ZQ	78.90 W	Durham, N. C.	USA		7
XL	13.35 E	Palermo	Sicily		1	ZR	122.33 W	Mt. Shasta, Ca.	USA		1
XM	16.32 W	La Laguna, Tenerife	Canary Islands		4	ZS	95.58 W	Des Moines, Iowa	USA		5
XN	5.70 E	St. Pilon	France	St. Paul-Ms-Durance	1	ZT	82.38 W	Wayne, Mich.	USA		2
XP	69.90 W	Cape Francis	Dominican Rep.	[Cabrerá]	2	ZU	118.25 W	Los Angeles, Ca.	USA	Van Nuys, Northridge	102
XQ	88.17 W	Dauphin Isl., Ala.	USA		1	ZV	72.52 W	Manchester, Conn.	USA		3
XR	48.55 W	Pêto Belo	Brazil		1	ZW	83.28 W	Bainbridge, Ohio	USA		3
XS	71.67 W	Valparaiso	Chile		1	ZX	86.92 W	Birmingham, Ala.	USA		3
XT	73.05 W	Coquepaica	Chile		9	ZY	85.82 W	McMinnville, Tenn.	USA		9
XU	71.42 W	Couquimbo	Chile		3	ZZ	1.80 W	Sutton Coldfield	England		1

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TABLE IIb. — *Observation sites (sorted by location).*

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
PY	22.28 E	Åbo	Finland	[Turku]	3	AN	10.13 E	Brabrand	Denmark		7
BV	94.03 W	Adel, Iowa	USA		3	QC	17.04 E	Breslau	(Poland)	[Wroclaw, Poland]	55
NW	138.58 E	Adelaide, S. Aust.	Australia		71	RT	4.29 W	Brest	France		5
UP	78.00 E	Agra	India		4	NH	2.46 W	Bridgeport	Australia		12
CW	105.95 W	Alamogordo, N. Mex.	USA		16	CP	153.00 E	Brisbane, Queensland	Australia		14
TN	12.67 E	Albano	Italy	[Lasiata]	12	BF	95.78 W	Broken Arrow, Okla.	USA		11
TK	36.08 E	Alexandrette	Turkey	[Iskenderun]	3	VV	16.67 E	Brinn	Czechoslovakia	[Brno]	3
SX	29.54 E	Alexandria	Egypt		7	NN	4.36 E	Brussels	Belgium		57
YW	77.10 W	Alexandria, Va.	USA		3	VW	14.71 E	Buchholz	Germany	[bei Drossen?]	14
XY	151.17 E	Allawah, N.S.W.	Australia	near Sydney	48	QD	19.05 E	Buda	Hungary	[Budapest]	111
YP	75.50 W	Allentown, Pa.	USA		12	NJ	18.96 E	Budapest	Hungary		5
CV	81.40 W	Altamonte Spr., Fla.	USA		13	WB	14.50 E	Budweis	Czechoslovakia	[České Budějovice]	2
PK	9.94 E	Altona	Germany		176	WA	58.50 W	Buenos Aires	Argentina		2
MQ	72.52 W	Amherst, Mass.	USA		93	DF	152.35 E	Bundaberg, Q'land	Australia		42
PZ	4.89 E	Amsterdam	Netherlands		22	PB	0.34 W	Bushy Heath	England	near Stanmore	172
WS	13.52 E	Ancona	Italy		1	DI	152.2	Cabramatta, N.S.W.	Australia		4
SE	7.07 E	Antibes	France		2	ML	6.30 W	Cádiz	Spain		28
CX	4.42 E	Antwerpen	Belgium		1	TJ	9.08 E	Cagliari	Sardinia		1
MK	2.34 E	Aoste, Obs. d'	Italy		9	SY	31.28 E	Cairo	Egypt	[LeCairé]	4
WV	40.67 E	Archangel	USSR	[Arkhangel'sk]	2	VG	1.87 E	Calais	France		1
YS	77.18 W	Arlington, Va.	USA		22	UK	88.21 E	Calcutta	India		31
UP	12.62 E	Assisi	Italy		1	BS	81.85 W	Callahan, Fla.	USA		3
YX	82.10 W	Athens, Ohio	USA		2	PQ	0.09 E	Cambridge	England		6
VN	3.90 E	Aubenas	France	[Viverois]	19	LA	71.13 W	Cambridge, Mass.	USA	Harvard Obs.	885
RS	4.49 E	Avignon	France		2	XV	47.04 W	Campinas	Brazil	Obs. Astr. Orion	18
ZE	63.58 W	Avonport	Nova Scotia	?near Halifax?	1	WN	25.13 E	Candia	Crete	[Iraklion]	1
XI	12.13 E	Bäckefors	Sweden		1	WH	24.02 E	Cannes	Crete	[Khanid]	2
ZW	83.28 W	Bainbridge, Ohio	USA		3	SS	113.16 E	Canton	China	[Guangzhou]	9
QA	59.62 W	Barbados	Barbados		18	SP	09.90 W	Cape Francis	Dominican Rep.	[Cabrera]	2
TC	2.11 E	Barcelona	Spain		5	PS	18.47 E	Cape of Good Hope	South Africa		59
DC	153. E	Bardon, Queensland	Australia		13	WZ	75.55 W	Cartagena	Colombia		22
UD	78.12 E	Barkot	India	?	6	WL	78.75 W	Cayos de Ana Maria	Cuba		2
AM	117.02 W	Barstow, Ca.	USA		13	RP	4.25 E	Cette	France	[Celles (Aube)]	3
BW	95.98 W	Bartlesville, Okla.	USA		4	QE	88.37 E	Chandernager	India	[Chandannagar]	9
WD	0.70 W	Bayeux	France		8	PA	63.12 W	Charlotte Town	Prince Edward Isl.		11
RN	1.29 W	Bayonne	France		4	YZ	87.75 W	Chicago, Ill.	USA	[Palos Hills, Worth]	38
PW	0.29 W	Bedford	England		15	VE	0.05 E	Chislehurst	England		64
YI	63.68 W	Bedford	Nova Scotia		14	UL	88.38 E	Chouringhy	India	near Calcutta	12
NU	89.03 W	Beloit, Wisc.	USA		3	DG	172.87 E	Christchurch	New Zealand		19
AQ	?	Beldiviere, Tenn.	USA	?	4	NC	10.72 E	Christiania	Norway	[Oslo]	8
VM	5.33 E	Bergen	Norway		14	BG	81.87 W	Clinton, S. C.	USA		1
ZI	74.02 W	Bergenfeld, N.J.	USA		2	BE	82.30 W	Clyde, Ohio	USA		2
MS	13.42 E	Berlin	Germany	[Wm. Förster]	507	AW	83.05 W	Columbus, Ohio	USA		1
PM	0.17 W	Biggleswade	England		26	XT	73.05 W	Concepción	Chile		9
YV	8.43 E	Birmenstorf	Switzerland		55	WU	28.58 E	Constantinople	Turkey	[İstanbul]	2
AT	1.83 W	Birmingham	England		5	CQ	148.05 E	Cootamundra, N.S.W.	Australia		15
ZX	86.92 W	Birmingham, Ala.	USA		3	LN	12.56 E	Copenhagen	Denmark	[Hatniensi, Haunias]	229
XX	173.97 E	Blenheim	New Zealand		99	XU	71.42 W	Coquimbo	Chile		3
QB	11.35 E	Bologna	Italy		172	WR	12.60 E	Coriano	Italy		1
TM	11.59 E	Bolsena	Italy		1	TH	2.22 E	Croc en Auvergne	France	[Crocq]	1
MM	7.10 E	Bonn	Germany		6	QC	18.67 E	Croc en Auvergne	(Poland)	[Gdańsk, Poland]	14
LZ	0.53 W	Bordeaux	France		11	XQ	88.17 W	Dauphin Isl., Ala.	USA		7
TG	2.40 E	Bourges	France		3	UA	78.03 E	Dehradun	India	[Dehra Dun]	7
YN	76.77 W	Bowie, Md.	USA		12	UH	77.14 E	Delhi	India		4
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Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
YR	105.00 W	Denver, Colo.	USA	Louisville, Lakewood	16	UG	75.75 E	Hisar	India	[Haryana]	6
RN	1.29 W	Derby	England		2	SQ	119.11 E	Hoai-Ngan	China	[Hwaiian (Kiangsu)]	27
ZS	95.58 W	Des Moines, Iowa	USA		5	NA	114.17 E	Hong Kong	Hong Kong		8
SB	1.08 E	Dieppe	France		3	VK	6.13 E	Hyer	France	[Hyères]	8
VU	26.73 E	Dorpat	(USSR)	[Tartu, Estonia]	13	QK	11.42 E	Ingolstadt	Germany	[Bibourg]	100
QH	13.74 E	Dresden	Germany		25	WY	11.42 E	Innsbruck	Austria		7
RY	2.22 E	Dunkirk	France		4	SH	0.06 W	Islington	England		3
NE	1.58 W	Durham	Scotland		9	NZ	11.59 E	Jena	Germany		50
ZQ	78.90 W	Durham, N. C.	USA		26	LY	28.08 E	Johannesburg	South Africa		498
PT	3.18 W	Edinburgh	Scotland		18	YB	12.92 E	Karl-Marx-Stadt	Germany		4
BQ	113.42 W	Edmonton, Alberta	Canada		12	NR	8.40 E	Karlsruhe	Germany		2
CL	138.60 E	Edwardstown, S.Aust.	Australia		27	WP	9.50 E	Kassel	Germany		36
ZD	114.88 W	Ely, Nevada	USA		1	TY	85.19 E	Katmandu	Nepal	[Kathmandu]	8
XZ	151.03 E	Engadine, N.S.W.	Australia	SW of Sydney	17	MR	48.82 E	Kazan, RSFSR	USSR	[Engelhardt Obs.]	81
SV	41.17 E	Erserum	Turkey	[Ersurum]	0	BY	119.13 W	Kennecook, Wash.	USA		7
YJ	124.17 W	Eureka, Ca.	USA		1	PI	0.01 E	Kent	England		10
BR	3.52 W	Exeter	England		3	AG	74.20 W	Keyport, N. J.	USA		15
AX	13.10 E	Falkensee	Germany		26	MI	36.23 E	Khar'kov	USSR	Ukrainian SSR	8
VZ	38.96 W	Feira de Santana	Brazil	-Finkenkrug	51	SL	111.27 E	Kiang-Chen	China	[Kianghsien]	9
LE	111.66 W	Flagstaff, Ariz.	USA	Lowell Obs.	14	MB	30.50 E	Kiev	USSR	[Kijev] Ukrainian SSR	2
TA	11.26 E	Florence	Italy	[Firenze]	6	TT	70.42 W	Kittery Point, Me.	USA		3
LB	104.02 W	Fort Davis, Tex.	USA	McDonald Obs.	8	MT	20.50 E	Königsberg	(Prussia)	[Kaliningrad, USSR]	73
BU	97.33 W	Fort Worth, Tex.	USA		1	UE	77.29 E	Kotgarh	India		3
VI	10.92 E	Frederikstad	Norway	[Frederiksteia]	11	QF	19.96 E	Kraków	Poland		113
UX	16.92 W	Funchal	Madeira Isl.		18	PW	14.13 E	Kremsmünster	Austria		50
TW	79.38 E	Futty Ghur	India	[Fatehgarh]	19	CU	3.53 E	Kruishouten	Belgium		1
CF	?	Galliera	Italy		12	DH	175.75 E	Kuatoonu	New Zealand		82
YT	96.62 W	Garland, Tex.	USA		20	LU	135.79 E	Kyoto	Japan	Kwasan Obs.	13
TS	64.30 W	Gaspée, Quebec	Canada		9	YE	4.49 E	La Barbanche	France	[St. Étienne]	1
WQ	8.93 E	Genes	Italy	[Gaspé]	16	RV	0.05 W	La Fleche	France		3
NL	6.15 E	Geneva	Switzerland	[Genova]	22	LM	16.32 W	La Laguna, Tenerife	Canary Islands		4
AE	77.27 W	Gettysburg, Pa.	USA		1	CG	70.81 E	La Serena	Chile	[Cerro Tololo Obs.]	7
TP	4.15 W	Glasgow	Scotland		980	CE	25.67 E	Laksh	Finland		13
NG	2.23 W	Gloucester	England	[Abbenhall Rectory]	13	QL	21.98 W	Lambhus	Iceland		36
XH	12.00 E	Göteborg	Sweden	[Gothenburg]	1	VF	76.30 W	Lancaster, Pa.	USA		45
NM	9.94 E	Göttingen	Germany		13	LM	12.10 E	Langenwiesendorf	Germany		17
NY	12.37 E	Gohlis	Germany	bei Leipzig	38	ZL	115.17 W	Las Vegas, Nev.	USA		4
SC	16.40 E	Gorée	Chad		2	CT	113.50 W	Leduc, Alberta	Canada		2
QI	10.71 E	Gotha	Germany		1	AZ	1.58 W	Leeds	England		8
QJ	51.58 W	Gotha	Greenland		17	MU	4.48 E	Leiden	Netherlands		124
AP	93.42 W	Green Forest, Ark.	USA		24	PE	12.39 E	Leipzig	Germany		18
MR	79.83 W	Greensboro, N. C.	USA		3	MF	107.38 E	Lembang	Indonesia		13
AN	0.90	Greenwich	England		980	WE	73.77 W	Les Cayes	Haiti		7
AL	121.70 W	Gridley, Ca.	USA		23	WG	5.58 E	Lige	Belgium		3
SJ	61.35 W	Guadeloupe	Guadeloupe		1	QM	8.91 E	Lilienthal	Germany		21
CZ	148.08 E	Gundagai, N.S.W.	Australia		3	VY	77.05 W	Lima	Peru		10
DB	152. E	Gymca, N.S.W.	Australia		2	YK	9.13 W	Liobon	Portugal		61
MX	63.35 W	Halifax	Nova Scotia	[Bermerside Obs.]	172	TD	121.77 W	Livermore, Ca.	USA	[Fremont, Dublin]	13
NF	10.24 E	Hamburg	Germany	[Bergedorf]	11	NI	3.07 W	Liverpool	England		13
BZ	86.97 W	Hartselle, Ala.	USA		2	RR	0.17 W	London	England		8
VR	82.42 W	Havana	Cuba		7	AH	105.10 W	Longmont, Colo.	USA		14
CJ	98.72 W	Helotes, Tex.	USA		3	XD	16.53 W	Lorstav	Canary Islands	La Orotava, Tenerife	2
BH	25.00 E	Helinki	Finland		12	ZU	118.25 W	Los Angeles, Ca.	USA	Van Nuys, Northridge	102
CR	5.17 E	Herk-de-Stad	Belgium		7	UZ	59.93 W	Louisburg	Nova Scotia	Cape Breton Island	9
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TABLE Iib (continued).

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
SI	100.31	E Louvean	Siam	[Bangkok, Thailand]	14	XJ	38.18	E Onega	USSR		3
WT	1.18	E Louviers	France		23	PL	2.84	W Ormakirk	England		14
QN	13.19	E Lund	Sweden		2	VC	149.57	W Otakeite	Tahiti	[Papeete, Tahiti]	7
QP	6.55	E Lund	Norway		2	UN	12.48	E Otricoli	Italy		1
LR	4.51	E Lyon	France		161	AB	?	W Otsville, Pa.	USA		4
DA	149.17	E Mackay, Queensland	Australia		11	NK	1.26	W Oxford	England	Radcliffe Obs.	85
ZN	89.37	W Madison, Wisc.	USA		9	DK	172.18	E Oxford	New Zealand		5
NQ	80.25	E Madras	India		228	WX	166.50	E Osernovakiy	USSR		10
QR	3.69	W Madrid	Spain		38	CC	11.88	E Padua	Italy	[Padova]	1
SR	102.16	E Malacca	Malaysia	"Malacca prison"	4	XL	13.35	E Palermo	Sicily		1
ZV	72.52	W Manchester, Conn.	USA		4	RL	13.46	E Palme	Sicily	Palma di Montechiaro	39
NT	8.77	E Marburg, a.d. Lahn	Germany		12	YA	175.65	E Palmerston North	New Zealand		1
BT	4.45	E Marcinelle	Belgium		1	LC	116.86	W Palomar Mtn., Ca.	USA	Mt. Palomar Obs.	5
MZ	8.45	W Markree	Ireland	County Sligo	1	PV	151.00	E Paramatta, N.S.W.	Australia		5
PF	5.39	E Marzelles	France		337	PX	2.34	E Paris	France		1693
SF	61.00	W Martinique	Martinique		24	AF	?	W Parlin, N. J.	USA		11
LD	155.47	W Mauna Kea, Hawaii	USA		19	WJ	0.37	W Pau	France		18
ZY	85.82	W McMinnville, Tenn.	USA		9	QW	116.25	E Pekin	China	[Beijing]	541
YL	80.50	W Merritt Island, Fla.	USA		2	SZ	28.58	E Péra	Turkey	[Istanbul]	3
YD	6.15	E Metz	France		18	QX	7.67	E Perinaldo	Italy		47
VP	99.17	W Mexico City	Mexico		8	LF	116.14	E Perth	Australia		7
QS	9.19	E Milan	Italy		17	XF	72.85	W Petit-Goave	Haiti		7
WG	24.42	E Milos	Greece		1	YG	?	E Pfaffstätten	Austria		13
CG	87.93	W Milwaukee, Wisc.	USA		1	VA	75.17	W Philadelphia, Pa.	USA		12
QT	23.73	E Mittau	(USSR)		64	ZH	112.05	W Phoenix, Ariz.	USA		17
MH		E Mitzew		[Jelgava, Latvia]	20	QY	10.40	E Pisa	Italy		17
PC	10.93	E Modena	Italy	Union Obs. Circ. 55	84	CS	90.50	W Pleasant Valley, Ia.	USA		2
YC	4.17	E Montrol-sur-Loire	France		6	MW	13.84	E Poia	Italy		10
QU	1.35	E Montauban	France		3	SM	79.50	E Pondicherry	India	[Pondicherry]	4
AI	100.33	W Monterrey	Mexico		33	AU	82.47	W Port Huron, Mich.	USA		12
QV	3.53	E Montpellier	France		22	PU	76.51	W Port Royal	Jamaica		3
DE	153.	E Mt. Gravatt, Q'land	Australia		1	BI	51.17	W Porto Alegre	Brazil		45
ZR	122.33	W Mt. Shasta, Ca.	USA		2	XR	48.55	W Porto Belo	Brazil		1
BB	91.43	W Mt. Vernon, Iowa	USA		3	TU	70.47	W Portsmouth, N. H.	USA		11
US	13.03	E Muceria	Italy	[Muccia?]	1	NX	14.40	E Prague	Czechoslovakia		638
BP	11.42	E Muris	Italy	[Murel long.?)	18	ZM	74.67	W Princeton, N. J.	USA		7
UB	77.18	E Nahau	India		5	UJ	95.14	E Promé	Burma		2
SK	118.47	E Nanjing	China	[Nanjing]	13	VQ	115.57	E Quedlinburg	Germany		2
RU	1.33	W Nantes	France		2	ZF	122.52	W Queenel, B. C.	Canada		2
PH	14.42	E Neustadt	Czechoslovakia	bei Prag	47	XG	78.50	W Quito	Ecuador		8
LP	72.92	W New Haven, Conn.	USA	Yale Univ. Obs.	54	LK	10.03	E Randers	Denmark		6
TL	74.00	W New York, N. Y.	USA		0	CY	12.12	E Ratisbon	Germany	[Regensburg]	1
CA	87.42	W Newburgh, Ind.	USA		2	VT	12.20	E Ravenna	Italy		1
MA	7.30	E Nice	France		28	LX	43.19	W Rio de Janeiro	Brazil	Obs. do Valongo	54
SJ	121.31	E Ning-Po (Liang-Po)	China	[Ningbo, Che-Kiang]	1	YM	77.17	W Rockville, Md.	USA		25
YQ	76.30	W Norfolk, Va.	USA		6	YU	103.73	W Rocky Ford, Colo.	USA		33
VZ	75.33	W Norrison, Pa.	USA	(Norrstown)	10	ZC	14.72	E Rønne	Denmark	Bornholm	2
TE	11.04	E Nürnberg	Germany		34	QC	12.48	E Rome	Italy		203
TE	90.23	E Nusserabad	E. Pakistan	[Nasirabad, Mymens.]	16	RZ	1.03	E Rousen	France		1
AD	122.25	W Oakland, Ca.	USA		1	RX	1.01	W Royan	France		1
VJ	8.02	E Oderos	Norway	[Flekkerøy]	1	NB	75.38	W S. Bethlehem, Pa.	USA		97
VH	19.05	E Ofen	Hungary	near Budapest	27	VD	109.67	W S. Joseph	Mexico	[San José del Cabo]	4
WW	143.25	E Okhotak	USSR		1	SA	2.01	W Saint Malo	France		2
NS	17.28	E Olmüts	Czechoslovakia	[Olomouc]	20	RA	57.25	W St. Coemo	Paraguay	[?S. Ignacio?]	54

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
PJ	64.69	W St. Croix	Virgin Islands		18	LT	139.67	E Tokyo	Japan	Tanakami Obs., etc.	130
SW	14.31	E St. Elme	Malta	(Valletta)	5	AV	78.80	W Tonawanda, N. Y.	USA		4
UW	57.00	W St. Ignatius	Paraguay	[San Ignacio]	21	SG	5.56	E Toulon	France		73
TR	71.19	W St. Lewis, Quebec	Canada		9	MP	1.46	E Toulouse	France		58
UY	1.25	W St. Michel-en-l'Herm	France		2	TX	96.01	E Tounsemahn	Burma	[Amarapura]	9
WK	4.77	E St. Paul-Trois-Chat.	France		3	TB	0.41	E Tours	France		18
ND	30.30	E St. Petersburg	(USSR)	[Leningrad]	172	AC	146.80	E Townesville	Australia		7
XN	5.70	E St. Pilon	France	St. Paul- <sup>de</sup> -Durance	1	RC	79.85	E Tranquebar	India	near Pondicherry	4
BM	31.03	E Salisbury	Rhodesia		1	SI	39.43	E Tridionde	Turkey	[Trabson]	1
BD	111.92	W Salt Lake City, Ut.	USA		37	DJ	175.0	E Treatham	New Zealand		3
BD	122.40	W San Bruno, Ca.	USA		2	WI	13.20	E Tripoli	Libya		1
AJ	117.17	W San Diego, Ca.	USA		6	RD	10.37	E Trondjem	Norway	[Trondheim]	13
PD	6.21	W San Fernando	Spain		224	CB	80.80	W Troy, W. Va.	USA		2
MY	122.43	W San Francisco, Ca.	USA		69	ME	7.70	E Turin	Italy	Pino Torinese Obs.	29
XK	55.53	W San Ignacio	Argentina	Cf. RA in Paraguay	25	RE	17.59	E Tyrnau	(Czechoslovakia)	[Tnava]	84
WM	57.60	W San Miguel	Argentina		2	CK	47.95	W Uberaba	Brazil		1
UT	11.60	E San Quirico d'Orcia	Italy		3	ZP	81.55	W Univ. Heights, Ohio	USA	near Euclid	7
XA	74.17	W Santa Marta	Colombia		2	QQ		E Unknown		Sampson-d'Alembe	515
BA	46.37	W Santos	Brazil		6	RF	0.25	E Upminster	England		127
PP	0.09	W Saville Row	England	[Cambridge]	4	DI	175.10	E Upper Hutt	New Zealand		7
UC	77.33	E Saharanpur	India	[Saharanpur]	7	AA	76.75	W Upper Marlboro, Md.	USA		7
PG	14.02	E Sanktbenberg	Germany		4	RG	17.62	E Uppsala	Sweden		62
SP	121.25	E Shanghai	China		4	RM	12.72	E Uranibourg	Denmark	[Uraniborg]	8
CH	1.50	W Sheffield	England		1	UR	12.63	E Urbino	Italy		93
YY	114.42	W Shoshone, Idaho	USA		5	MD	5.13	E Utrecht	Netherlands		4
SN	108.36	E Si-ngan-fu	China	[Qinxian]	8	WE	16.65	E Uttersberg	Sweden		98
UU	11.19	E Sienna	Italy		1	XS	71.67	W Valparaiso	Chile		1
CD	3.68	E Sleidinge	Belgium		-13	AK	97.02	W Victoria, Tex.	USA		10
VL	0.60	W Slough	England		22	BK	82.40	W Vidalia, Georgia	USA		1
TI	27.09	E Smyrne	Turkey	[Ismir]	1	LW	16.38	E Vienna	Austria		514
LH	11.19	E Sonneberg	Germany		116	ZJ	75.98	W Virginia Beach, Va.	USA		1
TV	63.36	W Southwest Point	Canada	Anticosti Island	9	YH	119.30	W Visalia, Ca.	USA		6
UV	0.48	W Southwick	England	near Oundle	22	RI	4.68	E Viviers	France		182
LJ	20.34	E Spisaká Nová Ves	Czechoslovakia		49	TF	2.02	E Vouso	France	[Orleans]	1
BK	?	W Staunbury Park, Ut.	USA		1	ZK	?	W Wadesville, Ind.	USA		1
LL	?	E Stenbro	Norway		6	RJ	0.04	W Wanstead	England	[Wansted]	6
VS	12.87	E Stifte Tepl	Czechoslovakia	[Teplá]	19	LS	77.05	W Washington, D. C.	USA	U. S. Naval Obs.	160
RB	18.06	E Stockholm	Sweden		149	ZT	82.38	W Wayne, Mich.	USA		2
NP	2.47	W Stosyburst	England		103	AY	3.88	E Wetteren	Belgium		12
MG	7.77	E Strasbourg	France		81	BN	1.03	E Whitstable	England		4
ST	120.37	E Su-cheu-fu	China	[Sushou]	1	ZB	8.25	J Wiesbaden	Germany		1
UI	98.38	E Suddesah	India	[Sadiya]	6	MV	77.05	W Willels Point, N. Y.	USA		1
TQ	0.11	W Surry-street	England	(Mr. Short's house)	5	MC	88.56	W Williams Bay, Wisc.	USA	Yerkes Obs.	8
EZ	1.80	W Sutton Coldfield	England		1	PR	26.29	E Wilna	(USSR)	[Vilnius, Lithuania]	111
LQ	151.20	E Sydney, N.S.W.	Australia		4	AS	71.08	W Winchester, Mass.	USA	near Boston	11
BJ	76.17	W Syracuse, N. Y.	USA		2	UM	0.63	W Windsor	England		21
LI	20.12	E Seclak	Hungary		27	NV	150.84	E Windsor, N.S.W.	Australia		377
ZA	122.50	W Tacoma, Wash.	USA		7	XC	12.85	E Wittenberg	Germany		8
CN	117.60	E Tambellup, W. Aust.	Australia		4	OM	149.13	E Woden, A.C.T.	Australia		4
ZG	82.63	W Tampa, Fla.	USA		8	RK	1.07	W York	England		6
MJ	69.29	E Tashkeat	USSR	Uzbek SSR	46	BC	80.87	W Youngstown, Ohio	USA		9
WF	22.97	E Thessaloniki	Greece		1	XB	16.88	E Záhřeš	Czechoslovakia		7
VX	3.28	E Thury	France		32	CI	4.50	E Zoetermeer	Netherlands		14
YF	12.10	E Tivildekeje	Denmark		246						

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TABLE IIc. — *Observation sites (sorted by longitude).*

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
MH		Mixture		Union Obs. Circ. 55	84	MM	7.10 E	Bonn	Germany		6
QQ		Unknown		Sampson-d'Alembre	515	MA	7.30 E	Nice	France		28
MN		Greenwich	England		980	QX	7.67 E	Perinaldo	Italy		29
PI	0.01 E	Kent	England		10	ME	7.70 E	Turin	Italy	Pino Torinese Obs.	47
VE	0.05 E	Chislehurst	England		12	MG	7.77 E	Strasbourg	France		81
PQ	0.09 E	Cambridge	England		6	VJ	8.02 E	Odersee	Norway	[Flekkesy]	1
PP	0.09 E	Saville Row	England	(Cambridge)	4	ZB	8.25 E	Wiesbaden	Germany		1
RF	0.25 E	Upminster	England		127	NR	8.40 E	Karlsruhe	Germany		2
TB	0.41 E	Tours	France		18	YV	8.43 E	Birmenstorf	Switzerland		55
BN	1.03 E	Whitstable	England		4	NT	8.77 E	Marburg, a.d. Lahn	Germany		12
RZ	1.05 E	Rouen	France		9	QM	8.91 E	Lilienthal	Germany		21
SB	1.08 E	Dieppe	France		3	WQ	8.93 E	Genes	Italy	[Genova]	16
WT	1.18 E	Louviers	France		1	TJ	9.08 E	Cagliari	Sardinia		1
QU	1.35 E	Montauban	France		3	QS	9.19 E	Milan	Italy		17
MP	1.46 E	Toulouse	France		58	WP	9.50 E	Kassel	Germany		36
VG	1.87 E	Claris	France		1	PK	9.94 E	Altona	Germany		176
TF	2.02 E	Vouzon	France	(Orleans)	1	NM	9.94 E	Göttingen	Germany		13
TC	2.11 E	Barcelona	Spain		5	LK	10.03 E	Randers	Denmark		6
TH	2.22 E	Croc en Auvergne	France	[Croca]	1	AN	10.13 E	Brabrand	Denmark		7
RY	2.22 E	Dunkirk	France		4	NF	10.24 E	Hamburg	Germany	Bergedorf	11
MK	2.34 E	Aoste, Obs. d'	Italy		9	RD	10.37 E	Trondjem	Norway	[Trondheim]	13
PX	2.34 E	Paris	France		1693	QY	10.40 E	Pisa	Italy		17
TG	2.40 E	Bourges	France		3	QI	10.71 E	Gotha	Germany		1
VX	3.28 E	Thury	France		32	NC	10.72 E	Christiania	Norway	[Oslo]	18
QV	3.53 E	Montpellier	France		22	VI	10.92 E	Fredrikstad	Norway	[Fredrikstein]	11
CU	3.88 E	Kriukhouten	Belgium		1	WD	10.93 E	Modena	Italy		34
CD	3.88 E	Stielinge	Belgium		13	TE	11.04 E	Nürnberg	Germany		34
AY	3.88 E	Wetteren	Belgium		12	VQ	11.15 E	Quedlinburg	Germany		2
VN	3.90 E	Aubenas	France	[Viverois]	19	UU	11.19 E	Sienna	Italy		1
YC	4.17 E	Monistrol-sur-Loire	France		6	LH	11.19 E	Sonneberg	Germany		116
RP	4.25 E	Cette	France	[Celles (Aube)]	3	TA	11.26 E	Florence	Italy	[Firenze]	6
NN	4.36 E	Brussels	Belgium		57	QB	11.35 E	Bologna	Italy		172
CX	4.42 E	Aatwerpen	Belgium		1	QK	11.42 E	Ingolstadt	Germany	(Bibourg)	100
BT	4.45 E	Marcinelle	Belgium		1	WY	11.42 E	Innsbruck	Austria	(?Murci long.?)	7
MU	4.48 E	Leiden	Netherlands		124	BP	11.42 E	Muris	Italy		18
RS	4.49 E	Avignon	France		2	TM	11.59 E	Bolsena	Italy		50
YE	4.49 E	La Barbanche	France	(St. Étienne)	1	NZ	11.59 E	Jena	Germany		3
CI	4.50 E	Zoetermeer	Netherlands		14	CC	11.88 E	Padua	Italy	[Padova]	1
LR	4.51 E	Lyon	France		161	XH	12.00 E	Göteborg	Sweden	(Gotthenburg)	1
RI	4.68 E	Vievers	France		182	LM	12.10 E	Langenwetsendorf	Germany		17
WK	4.77 E	St. Paul-Trois-Chât.	France		3	YF	12.10 E	Tisvildeleje	Denmark		246
PZ	4.89 E	Amsterdam	Netherlands		22	CY	12.12 E	Ratisbon	Germany	[Regensburg]	1
MD	5.13 E	Utrecht	Netherlands		93	XI	12.13 E	Bäckefors	Sweden		1
CR	5.17 E	Herk-de-Stad	Belgium		7	VT	12.20 E	Ravenna	Italy		1
VM	5.33 E	Bergen	Norway		14	NY	12.37 E	Gohlis	Germany	bei Leipsig	38
PF	5.39 E	Marseilles	France		337	PE	12.39 E	Leipsig	Germany		18
SG	5.56 E	Toulon	France		73	UN	12.48 E	Otricoli	Italy		1
WC	5.58 E	Liège	Belgium		3	QZ	12.48 E	Rome	Italy		203
XN	5.70 E	St. Pilon	France	St. Paul-lès-Durance	1	LN	12.56 E	Copenhagen	Denmark	(Hatsniensi, Haunia)	229
WK	6.13 E	Hyères	France	[Hyères]	8	WR	12.60 E	Coriano	Italy		3
NL	6.15 E	Geneva	Switzerland		22	UP	12.62 E	Assisi	Italy		1
YD	6.15 E	Mets	France		18	UR	12.63 E	Urbino	Italy		1
QP	6.55 E	Lund	Norway		2	XC	12.65 E	Wittenberg	Germany		8
SE	7.07 E	Antibes	France		2						

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
TN	12.67 E	Albano	Italy	[Lasiata]	12	SZ	28.58 E	Péra	Turkey	[İstanbul]	3
RM	12.72 E	Uranibourg	Denmark	(Uraniborg)	8	SX	29.54 E	Alexandria	Egypt		7
YS	12.87 E	Stifte Tepl	Czechoslovakia	[Teplá]	19	ND	30.30 E	St. Petersburg	(USSR)	[Leningrad]	172
YB	12.92 E	Karl-Marx-Stadt	Germany		4	MB	30.50 E	Kiev	USSR	[Kijev] Ukrainian SSR	2
US	13.03 E	Muceria	Italy	[Muccia?]	1	BM	31.08 E	Salisbury	Rhodesia		1
AX	13.10 E	Falkensee	Germany		26	SY	31.28 E	Cairo	Egypt	(LeCairé)	1
QN	13.19 E	Lund	Sweden	-Finkenkrug	23	TK	36.08 E	Alexandrette	Turkey	[İskenderun]	3
WI	13.20 E	Tripoli	Libya		1	MI	36.23 E	Khar'kov	USSR	Ukrainian SSR	8
XL	13.36 E	Palermo	Sicily		1	XJ	38.18 E	Onega	USSR		3
MS	13.42 E	Berlin	Germany	[Wm. Förster]	507	SU	39.43 E	Trébissonde	Turkey	[Trabson]	1
RL	13.46 E	Palme	Sicily	Palma di Monteciaro	39	WV	40.67 E	Archangel	USSR	Archangel'sk	1
WS	13.52 E	Ancona	Italy		1	SV	41.17 E	Ereououm	Turkey	[Ersurum]	0
QH	13.74 E	Dresden	Germany		25	MR	48.82 E	Kasan, RSFSR	USSR	Engelhardt Obs.	81
MW	13.84 E	Pola	Italy		10	MJ	69.29 E	Tashkent	USSR	Uzbek SSR	6
PG	14.02 E	Senftenberg	Germany		4	UG	75.75 E	Hisar	India	(Haryana)	6
PW	14.13 E	Kremsmünster	Austria		50	UH	77.14 E	Delhi	India		4
SW	14.31 E	St. Elme	Malta	(Valletta)	5	UB	77.18 E	Nahan	India	[Nahan]	5
NX	14.40 E	Prague	Czechoslovakia		638	UE	77.29 E	Kotgarh	India		3
PH	14.42 E	Neustadt	Czechoslovakia	bei Prag	47	UC	77.33 E	Seharunpur	India	[Saharanpur]	7
WB	14.50 E	Budweis	Czechoslovakia	[České Budejovice]	14	UF	78.00 E	Agra	India		4
VW	14.71 E	Buchholz	Germany	?bei Drossen?	2	UA	78.03 E	Dehrah	India	[Dehra Dun]	7
ZC	14.72 E	Bispe	Denmark	Bornholm	2	UD	78.12 E	Baroko	India		6
WE	15.65 E	Uttersberg	Sweden		4	TW	79.38 E	Patty Ghur	India	[Fatehgarh]	19
LW	16.38 E	Vienna	Austria		514	SM	79.50 E	Pondichery	India	[Pondicherry]	4
SC	16.40 E	Gorée	Chad		2	RC	79.85 E	Tranquebar	India	near Pondicherry	4
VV	16.67 E	Brünn	Czechoslovakia	[Brno]	3	NQ	80.25 E	Madras	India		228
XB	16.88 E	Zábřeh	Czechoslovakia		7	TY	85.19 E	Katmandu	Nepal	[Katmandu]	8
QC	17.04 E	Breslau	(Poland)	[Wrocław, Poland]	55	UK	88.21 E	Calcutta	India		31
NS	17.28 E	Olmütz	Czechoslovakia	[Olomouc]	20	QE	88.37 E	Chandernager	India	[Chandannagar]	9
RE	17.59 E	Tyrnau	(Czechoslovakia)	[Tnava]	84	UL	88.38 E	Chouringhy	India	near Calcutta	64
RG	17.62 E	Uppsala	Sweden		142	TZ	90.23 E	Nusseerabad	E. Pakistan	[Nasirabad, Mymens.]	16
RB	18.06 E	Stockholm	Sweden		69	UJ	95.14 E	Prome	Burma		6
PS	18.47 E	Cape of Good Hope	South Africa		59	UT	95.38 E	Suddesh	India	[Sadya]	2
QJ	18.67 E	Danisj	(Poland)	[Gdansk, Poland]	14	TX	96.01 E	Toussamahn	Burma	[Amazapura]	6
NJ	18.96 E	Budapest	Hungary		5	SI	100.31 E	Louvean	Siam	[Bangkok, Thailand]	14
QD	19.05 E	Buda	Hungary	[Budapest]	111	SR	102.16 E	Malacca	Malaysia	*Malacca prison*	4
VH	19.05 E	Ofen	Hungary	near Budapest	27	MF	107.38 E	Lembang	Indonesia		13
QF	19.96 E	Kraków	Poland		113	SN	108.36 E	Si-gan-fu	China	[Qinxian]	8
LI	20.12 E	Sokolnik	Hungary		27	SL	111.27 E	Kiang-Chen	China	[Kianghsien]	9
LJ	20.34 E	Spiláká Nová Ves	Czechoslovakia		49	SS	113.16 E	Canton	China	[Guangzhou]	8
MT	20.50 E	Königsberg	(Prussia)	[Kaliningrad, USSR]	73	NA	114.17 E	Hong Kong	Hong Kong		9
PF	22.28 E	Abo	Finland	[Turku]	3	LF	116.14 E	Perth	Australia		7
WY	22.97 E	Thessalon	Greece		1	QW	116.25 E	Pekin	China	[Beijing]	541
QT	23.73 E	Mittan	(USSR)	[Jelgava, Latvia]	64	CN	117.60 E	Tambellup, W. Aust.	Australia		4
WH	24.02 E	Casas	Crete	[Khanid]	2	SK	118.47 E	Nanking	China		13
WG	24.42 E	Mifos	Greece		1	SC	119.11 E	Hokai-Nean	China	[Hwaiian (Kiangsu)]	27
BH	25.00 E	Helsinki	Finland		12	ST	120.37 E	Su-chen-fu	China	[Sushou]	1
WN	25.13 E	Candia	Crete	[Iraklion]	1	SP	121.25 E	Shanghai	China		4
PR	25.29 E	Wilna	(USSR)	[Vilnius, Lithuania]	111	SJ	121.31 E	Ning-Po (Liang-Po)	China	[Ningbo, Che-Kiang]	1
CE	25.87 E	Lahti	Finland		13	LU	135.79 E	Kyoto	Japan	Kwasan Obs.	82
VU	26.73 E	Dorpat	(USSR)	[Tartu, Estonia]	13	NW	138.58 E	Adelaide, S. Aust.	Australia		71
TI	27.09 E	Smyrne	Turkey		1	CL	138.60 E	Edwardstown, S.Aust.	Australia		27
LY	28.08 E	Johannesburg	South Africa		498	LT	139.67 E	Tokyo	Japan	Tanakami Obs., etc.	130
WU	28.58 E	Constantinople	Turkey	[İstanbul]	2	WW	143.25 E	Okhotek	USSR		1

TABLE IIc (continued).

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
AC	146.80	E Townsville	Australia		7	SA	2.01	W Saint Malo	France		2
CQ	148.05	E Cootamundra, N.S.W.	Australia		15	NG	2.23	W Gloucester	England	(Abbenhall Rectory)	13
CZ	148.08	E Gundagai, N.S.W.	Australia		3	NH	2.46	W Bridgeport	England		12
CA	149.13	E Woden, A.C.T.	Australia		4	NP	2.47	W Stonyhurst	England		103
DA	149.17	E Mackay, Queensland	Australia		11	PD	2.54	W Ormskirk	England		14
NV	150.84	E Windsor, N.S.W.	Australia		377	NI	3.07	W Liverpool	England		13
PS	151.00	E Paramatta, N.S.W.	Australia		5	PT	3.18	W Edinburgh	Scotland		18
XZ	151.03	E Engadine, N.S.W.	Australia	SW of Sydney	17	BR	3.52	W Exeter	England		3
XY	151.17	E Allawah, N.S.W.	Australia	near Sydney	48	QR	3.69	W Madrid	Spain		38
LQ	151.20	E Sydney, N.S.W.	Australia		4	TP	4.15	W Glasgow	Scotland		12
DB	152.	E Gyms, N.S.W.	Australia		2	RT	4.29	W Brest	France		5
DD	152.	E Cabramatta, N.S.W.	Australia		4	PD	6.21	W San Fernando	Spain		224
DF	152.35	E Bundaberg, Q'land	Australia		42	ML	6.30	W Cádiz	Spain		28
DC	153.	E Bardon, Queensland	Australia		13	MZ	8.45	W Markree	Ireland	County Sligo	13
DE	153.	E Mt. Gravatt, Q'land	Australia		14	BI	51.17	W Porto Alegre	Portugal		61
CP	153.00	E Brisbane, Queensland	Australia		2	TD	9.13	W Lisbon	Portugal		17
WX	156.50	E Osernovskiy	USSR		13	XM	16.32	W La Laguna, Tenerife	Canary Islands		4
DK	172.18	E Oxford	New Zealand		5	XD	16.53	W Lorstava	Canary Islands	Ia Orotava, Tenerife	2
DG	172.67	E Christchurch	New Zealand		9	UX	16.92	W Funchal	Madeira Isl.		18
XX	173.97	E Blenheim	New Zealand		99	QZ	21.98	W Lambhus	Iceland		36
DJ	175.0	E Trentham	New Zealand		3	VL	38.96	W Feira de Santana	Brazil	Obs. Astr. Antares	51
DI	175.10	E Upper Hutt	New Zealand		7	LX	43.19	W Rio de Janeiro	Brazil	Obs. do Valongo	54
YA	175.65	E Palmerston North	New Zealand		1	BA	46.37	W Santos	Brazil		6
DH	175.75	E Kuaotunu	New Zealand		13	XV	47.04	W Campinas	Brazil	Obs. Astr. Orion	18
CF	?	E Galliera	Italy		1	CK	47.95	W Uberaba	Brazil		7
YG	?	E Pfaffstätten	Austria		6	KR	48.55	W Porto Belo	Brazil		1
LL	?	E Stenbro	Norway		13	BI	51.17	W Porto Alegre	Brazil		45
RJ	0.04	W Wanstead	England	(Wansted)	6	QJ	51.58	W Goshal	Greenland		17
RV	0.05	W La Fleche	France		3	UK	55.53	W San Ignacio	Argentina	Cf. RA in Paraguay	25
SH	0.06	W Islington	France		3	WW	57.00	W St. Ignatius	Paraguay	[San Ignacio]	21
TQ	0.11	W Surry-street	England	(Mr. Short's house)	5	RA	57.25	W St. Cosmo	Paraguay	(?S. Ignacio?)	54
PM	0.17	W Biggleswade	England		26	WM	57.60	W San Miguel	Argentina		2
RR	0.17	W London	England		8	WA	58.50	W Buenos Aires	Argentina		2
PN	0.29	W Bedford	England		5	QA	59.62	W Barbados	Barbados		18
PB	0.34	W Bushey Heath	England	near Stanmore	172	UF	59.93	W Louisburg	Nova Scotia	Cape Breton Island	9
WJ	0.37	W Pa	France		18	SF	61.00	W Martinique	Martinique		24
UV	0.48	W Southwick	England	near Oundle	22	SD	61.35	W Guadeloupe	Guadeloupe		1
LZ	0.53	W Bordeaux	France		11	PA	63.12	W Charlotte Town	Nova Scotia	Prince Edward Isl.	11
VL	0.60	W Slough	England		22	MX	63.35	W Halifax	Nova Scotia	(Bernerside Obs.)	172
UM	0.63	W Windsor	England		21	TV	63.36	W Southwest Point	Canada	Anticosti Island	9
WD	0.70	W Bayeux	France		8	ZE	63.58	W Avonport	Nova Scotia	?near Halifax?	1
RX	1.01	W Royan	France		1	YI	63.68	W Bedford	Nova Scotia		3
RK	1.07	W York	England		6	TS	64.30	W Gaspee, Quebec	Canada	[Gaspé]	9
UY	1.25	W St. Michel-en-l'Herm	France		2	PJ	64.69	W St. Croix	Virgin Islands		18
NK	1.26	W Oxford	England	Radcliffe Obs.	85	XP	69.90	W Cape Francis	Dominican Rep.	[Cabrera]	2
RW	1.29	W Bayonne	France		4	TU	70.42	W Kittery Point, Me.	USA		3
RN	1.29	W Derby	England		2	TT	70.47	W Portsmouth, N. H.	USA		11
RU	1.33	W Nantes	France		2	LG	70.81	W La Serena	Chile	(Cerro Tololo Obs.)	6
CH	1.50	W Sheffield	England		1	AS	71.08	W Winchester, Mass.	USA	near Boston	11
NE	1.58	W Durham	Scotland		9	LA	71.13	W Cambridge, Mass.	USA	Harvard Obs.	885
AZ	1.58	W Leeds	England		8	TR	71.19	W St. Lewin, Quebec	Canada		9
ZZ	1.80	W Sutton Coldfield	England		1	XU	71.42	W Coquimbo	Chile		3
AT	1.83	W Birmingham	England		3	XS	71.67	W Valparaiso	Chile		1
						MQ	72.52	W Amherst, Mass.	USA		93
						ZV	72.52	W Manchester, Conn.	USA		3

Index	Longitude	Location	Country	Comments	No. Obs.	Index	Longitude	Location	Country	Comments	No. Obs.
XF	72.85	W Petit-Goave	Haiti		7	CG	87.93	W Milwaukee, Wisc.	USA		1
LP	72.92	W New Haven, Conn.	USA	Yale Univ. Obs.	54	XQ	88.17	W Dauphin Isl., Ala.	USA		1
XT	73.05	W Concepción	Chile		9	MC	88.56	W Williams Bay, Wisc.	USA	Yerkes Obs.	8
XE	73.77	W Les Cayes	Haiti		7	NU	89.03	W Beloit, Wisc.	USA		14
TL	74.00	W New York, N. Y.	USA		0	ZN	89.37	W Madison, Wisc.	USA		9
ZI	74.02	W Bergenfield, N. J.	USA		2	CS	90.50	W Pleasant Valley, Ia.	USA		2
XA	74.17	W Santa Marta	Colombia		2	BB	91.43	W Mt. Vernon, Iowa	USA		3
AG	74.20	W Keyport, N. J.	USA		15	AP	93.42	W Green Forest, Ark.	USA		24
ZM	74.67	W Princeton, N. J.	USA		7	BV	94.03	W Adel, Iowa	USA		3
VA	75.17	W Philadelphia, Pa.	USA		12	ZS	95.58	W Des Moines, Iowa	USA		5
VB	75.53	W Norristown, Pa.	USA	(Norristown)	10	BF	95.78	W Broken Arrow, Okla.	USA		11
NB	75.38	W S. Bethlehem, Pa.	USA		97	BW	95.98	W Bartlesville, Okla.	USA		4
YP	75.50	W Allentown, Pa.	USA		12	YT	96.62	W Garland, Tex.	USA		20
WZ	75.55	W Cartagena	Colombia		22	AK	97.02	W Victoria, Tex.	USA		10
ZJ	75.98	W Virginia Beach, Va.	USA		1	BU	97.33	W Fort Worth, Tex.	USA		1
BJ	76.17	W Syracuse, N. Y.	USA		2	CJ	98.72	W Helotes, Tex.	USA		3
VF	76.30	W Lancaster, Pa.	USA		45	VP	99.17	W Mexico City	Mexico		8
YQ	76.30	W Norfolk, Va.	USA		6	AI	100.33	W Monterrey	Mexico		33
PU	76.51	W Port Royal	Jamaica		3	YU	103.73	W Rocky Ford, Colo.	USA		33
AA	76.75	W Upper Marlboro, Md.	USA		3	LB	104.02	W Fort Davis, Tex.	USA	McDonald Obs.	8
YN	76.77	W Bowie, Md.	USA		12	YR	105.00	W Denver, Colo.	USA	Louisville, Lakewood	16
VY	77.05	W Lima	Peru		10	LH	105.10	W Longmont, Colo.	USA		14
LS	77.05	W Washington, D. C.	USA	U. S. Naval Obs.	160	CW	105.95	W Alamogordo, N. Mex.	USA		16
MV	77.05	W Willets Point, N. Y.	USA		5	VD	109.67	W S. Joseph	Mexico	[San José del Cabo]	4
YW	77.10	W Alexandria, Va.	USA		3	LE	111.66	W Flagstaff, Ariz.	USA	Lowell Obs.	14
YM	77.17	W Rockville, Md.	USA		25	BL	111.92	W Salt Lake City, Ut.	USA		27
YS	77.18	W Arlington, Va.	USA		22	ZH	112.05	W Phoenix, Ariz.	USA		1
AE	77.27	W Gettysburg, Pa.	USA		1	BQ	113.42	W Edmonton, Alberta	Canada		6
XG	78.50	W Quito	Ecuador		8	CT	113.50	W Leduc, Alberta	Canada		2
WL	78.75	W Cayos de Ana Maria	Cuba		2	YY	114.42	W Shoshone, Idaho	USA		5
AV	78.80	W Tonawanda, N. Y.	USA		4	ZD	114.88	W Ely, Nevada	USA		1
QQ	78.90	W Durham, N. C.	USA		7	ZL	115.17	W Las Vegas, Nev.	USA		4
AR	79.83	W Greensboro, N. C.	USA		7	LC	116.86	W Palomar Mtn., Ca.	USA	Mt. Palomar Obs.	5
YL	80.50	W Merritt Island, Fla.	USA		2	AM	117.02	W Bartow, Ca.	USA		6
BC	80.67	W Youngstown, Ohio	USA		9	AJ	117.17	W San Diego, Ca.	USA		13
CB	80.80	W Troy, W. Va.	USA		2	ZU	118.25	W Los Angeles, Ca.	USA	Van Nuys, Northridge	102
CV	81.40	W Alkamonte Spr., Fla.	USA		13	BY	119.13	W Kennewick, Wash.	USA		7
ZP	81.55	W Univ. Heights, Ohio	USA	near Euclid	1	YH	119.30	W Visalia, Ca.	USA		6
BS	81.85	W Callahan, Fla.	USA		3	AL	121.70	W Gridley, Ca.	USA		23
BG	81.87	W Clinton, S. C.	USA		1	YK	121.77	W Livermore, Ca.	USA	(Fremont, Dublin)	13
YX	82.10	W Athens, Ohio	USA		2	AD	122.25	W Oakland, Ca.	USA		1
BE	82.30	W Clyde, Ohio	USA		2	ZR	122.33	W Mt. Shasta, Ca.	USA		1
ZT	82.38	W Wayne, Mich.	USA		2	BR	122.40	W San Bruno, Ca.	USA		32
BK	82.40	W Vidalia, Georgia	USA		1	MY	122.45	W San Francisco, Ca.	USA		69
VR	82.42	W Havana	Cuba		1	ZA	122.50	W Tacoma, Wash.	USA		7
AU	82.47	W Port Huron, Mich.	USA		12	ZF	122.52	W Quesnel, B. C.	Canada		2
ZG	82.63	W Tampa, Fla.	USA		8	YJ	124.17	W Eureka, Ca.	USA		1
AW	83.05	W Columbus, Ohio	USA		1	VC	149.57	W Otaheite	Tahiti	[Papeete, Tahiti]	7
ZW	83.28	W Bainbridge, Ohio	USA		3	LD	155.47	W Mauna Kea, Hawaii	USA		19
ZY	85.82	W McMinnville, Tenn.	USA		9	AQ	?	W Belvidere, Tenn.	USA		4
ZX	86.92	W Birmingham, Ala.	USA		3	AB	?	W Otseville, Pa.	USA		4
BZ	86.97	W Hartselle, Ala.	USA		2	AF	?	W Parlin, N. J.	USA		11
CA	87.42	W Newburgh, Ind.	USA		2	BX	?	W Stansbury Park, Ut.	USA		1
YZ	87.75	W Chicago, Ill.	USA	(Palos Hills, Worth)	38	ZK	?	W Wadesville, Ind.	USA		1

TABLE III. — Galilean satellite data and residuals for ephemerides E2 (Lieske), G5 (Arlot) and E2+.

Table with columns for NUMBER, YEAR, MONTH, DAY, SIEVA, SAT, PUB, NOTES, TO, E2, G5, E2+, and repeated for E2, G5, E2+.

TABLE III (continued).

Table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, E18, E19, E20, E21, E22, E23, E24, E25, E26, E27, E28, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, E39, E40, E41, E42, E43, E44, E45, E46, E47, E48, E49, E50, E51, E52, E53, E54, E55, E56, E57, E58, E59, E60, E61, E62, E63, E64, E65, E66, E67, E68, E69, E70, E71, E72, E73, E74, E75, E76, E77, E78, E79, E80, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93, E94, E95, E96, E97, E98, E99, E100. The table contains multiple columns of numerical data and codes, organized in a grid-like structure.

TABLE III (continued).

Main data table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, TO, E2, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, E18, E19, E20, E21, E22, E23, E24, E25, E26, E27, E28, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, E39, E40, E41, E42, E43, E44, E45, E46, E47, E48, E49, E50, E51, E52, E53, E54, E55, E56, E57, E58, E59, E60, E61, E62, E63, E64, E65, E66, E67, E68, E69, E70, E71, E72, E73, E74, E75, E76, E77, E78, E79, E80, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93, E94, E95, E96, E97, E98, E99, E100. The table contains multiple rows of numerical data and codes.

TABLE III (continued).

Main data table with columns for YEAR, MONTH, DAY, SIGMA, SUB, LOC, E2, E5, E2\*, E5\*, E2\*\*, E5\*\* and multiple rows of numerical data.

TABLE III (continued).

Main data table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, E2, E5, E2\*, E5\*. It contains multiple columns of numerical data and text notes for various astronomical observations.

TABLE III (continued).

Main data table with columns for YEAR, MONTH, DAY, SIGMA, SAT, LOC, NOTES, E2, E5, E2+, E5+, E2, E5, E2+, E5+.





TABLE III (continued).

NUMBER	YEAR	MONTH	DAY	SIGMA	SAT	PUB	LOC	NOTES	E2	E5	E2+	E5+
3261	1730	1	13	51498	30	W	CT	CM S	111	-12	-20	-12
3262	1730	2	2	65303	30	W	CT	CM S	106	47	57	40
3263	1730	2	11	52327	30	W	CT	CM S	106	47	57	40
3264	1730	2	15	46873	30	W	CT	CM S	106	47	57	40
3265	1730	2	17	60873	30	W	CT	CM S	106	47	57	40
3266	1730	2	18	51321	30	W	CT	CM S	106	47	57	40
3267	1730	2	19	56232	30	W	CT	CM S	106	47	57	40
3268	1730	2	20	51321	30	W	CT	CM S	106	47	57	40
3269	1730	2	21	56232	30	W	CT	CM S	106	47	57	40
3270	1730	2	22	51321	30	W	CT	CM S	106	47	57	40
3271	1730	2	23	56232	30	W	CT	CM S	106	47	57	40
3272	1730	2	24	51321	30	W	CT	CM S	106	47	57	40
3273	1730	2	25	56232	30	W	CT	CM S	106	47	57	40
3274	1730	2	26	51321	30	W	CT	CM S	106	47	57	40
3275	1730	2	27	56232	30	W	CT	CM S	106	47	57	40
3276	1730	2	28	51321	30	W	CT	CM S	106	47	57	40
3277	1730	2	29	56232	30	W	CT	CM S	106	47	57	40
3278	1730	2	30	51321	30	W	CT	CM S	106	47	57	40
3279	1730	2	31	56232	30	W	CT	CM S	106	47	57	40
3280	1730	3	1	51321	30	W	CT	CM S	106	47	57	40
3281	1730	3	2	56232	30	W	CT	CM S	106	47	57	40
3282	1730	3	3	51321	30	W	CT	CM S	106	47	57	40
3283	1730	3	4	56232	30	W	CT	CM S	106	47	57	40
3284	1730	3	5	51321	30	W	CT	CM S	106	47	57	40
3285	1730	3	6	56232	30	W	CT	CM S	106	47	57	40
3286	1730	3	7	51321	30	W	CT	CM S	106	47	57	40
3287	1730	3	8	56232	30	W	CT	CM S	106	47	57	40
3288	1730	3	9	51321	30	W	CT	CM S	106	47	57	40
3289	1730	3	10	56232	30	W	CT	CM S	106	47	57	40
3290	1730	3	11	51321	30	W	CT	CM S	106	47	57	40
3291	1730	3	12	56232	30	W	CT	CM S	106	47	57	40
3292	1730	3	13	51321	30	W	CT	CM S	106	47	57	40
3293	1730	3	14	56232	30	W	CT	CM S	106	47	57	40
3294	1730	3	15	51321	30	W	CT	CM S	106	47	57	40
3295	1730	3	16	56232	30	W	CT	CM S	106	47	57	40
3296	1730	3	17	51321	30	W	CT	CM S	106	47	57	40
3297	1730	3	18	56232	30	W	CT	CM S	106	47	57	40
3298	1730	3	19	51321	30	W	CT	CM S	106	47	57	40
3299	1730	3	20	56232	30	W	CT	CM S	106	47	57	40
3300	1730	3	21	51321	30	W	CT	CM S	106	47	57	40
3301	1730	3	22	56232	30	W	CT	CM S	106	47	57	40
3302	1730	3	23	51321	30	W	CT	CM S	106	47	57	40
3303	1730	3	24	56232	30	W	CT	CM S	106	47	57	40
3304	1730	3	25	51321	30	W	CT	CM S	106	47	57	40
3305	1730	3	26	56232	30	W	CT	CM S	106	47	57	40
3306	1730	3	27	51321	30	W	CT	CM S	106	47	57	40
3307	1730	3	28	56232	30	W	CT	CM S	106	47	57	40
3308	1730	3	29	51321	30	W	CT	CM S	106	47	57	40
3309	1730	3	30	56232	30	W	CT	CM S	106	47	57	40
3310	1730	3	31	51321	30	W	CT	CM S	106	47	57	40
3311	1731	1	1	56232	30	W	CT	CM S	106	47	57	40
3312	1731	1	2	51321	30	W	CT	CM S	106	47	57	40
3313	1731	1	3	56232	30	W	CT	CM S	106	47	57	40
3314	1731	1	4	51321	30	W	CT	CM S	106	47	57	40
3315	1731	1	5	56232	30	W	CT	CM S	106	47	57	40
3316	1731	1	6	51321	30	W	CT	CM S	106	47	57	40
3317	1731	1	7	56232	30	W	CT	CM S	106	47	57	40
3318	1731	1	8	51321	30	W	CT	CM S	106	47	57	40
3319	1731	1	9	56232	30	W	CT	CM S	106	47	57	40
3320	1731	1	10	51321	30	W	CT	CM S	106	47	57	40
3321	1731	1	11	56232	30	W	CT	CM S	106	47	57	40
3322	1731	1	12	51321	30	W	CT	CM S	106	47	57	40
3323	1731	1	13	56232	30	W	CT	CM S	106	47	57	40
3324	1731	1	14	51321	30	W	CT	CM S	106	47	57	40
3325	1731	1	15	56232	30	W	CT	CM S	106	47	57	40
3326	1731	1	16	51321	30	W	CT	CM S	106	47	57	40
3327	1731	1	17	56232	30	W	CT	CM S	106	47	57	40
3328	1731	1	18	51321	30	W	CT	CM S	106	47	57	40
3329	1731	1	19	56232	30	W	CT	CM S	106	47	57	40
3330	1731	1	20	51321	30	W	CT	CM S	106	47	57	40
3331	1731	1	21	56232	30	W	CT	CM S	106	47	57	40
3332	1731	1	22	51321	30	W	CT	CM S	106	47	57	40
3333	1731	1	23	56232	30	W	CT	CM S	106	47	57	40
3334	1731	1	24	51321	30	W	CT	CM S	106	47	57	40
3335	1731	1	25	56232	30	W	CT	CM S	106	47	57	40
3336	1731	1	26	51321	30	W	CT	CM S	106	47	57	40
3337	1731	1	27	56232	30	W	CT	CM S	106	47	57	40
3338	1731	1	28	51321	30	W	CT	CM S	106	47	57	40
3339	1731	1	29	56232	30	W	CT	CM S	106	47	57	40
3340	1731	1	30	51321	30	W	CT	CM S	106	47	57	40
3341	1731	1	31	56232	30	W	CT	CM S	106	47	57	40
3342	1731	2	1	51321	30	W	CT	CM S	106	47	57	40
3343	1731	2	2	56232	30	W	CT	CM S	106	47	57	40
3344	1731	2	3	51321	30	W	CT	CM S	106	47	57	40
3345	1731	2	4	56232	30	W	CT	CM S	106	47	57	40
3346	1731	2	5	51321	30	W	CT	CM S	106	47	57	40
3347	1731	2	6	56232	30	W	CT	CM S	106	47	57	40
3348	1731	2	7	51321	30	W	CT	CM S	106	47	57	40
3349	1731	2	8	56232	30	W	CT	CM S	106	47	57	40
3350	1731	2	9	51321	30	W	CT	CM S	106	47	57	40
3351	1731	2	10	56232	30	W	CT	CM S	106	47	57	40
3352	1731	2	11	51321	30	W	CT	CM S	106	47	57	40
3353	1731	2	12	56232	30	W	CT	CM S	106	47	57	40
3354	1731	2	13	51321	30	W	CT	CM S	106	47	57	40
3355	1731	2	14	56232	30	W	CT	CM S	106	47	57	40
3356	1731	2	15	51321	30	W	CT	CM S	106	47	57	40
3357	1731	2	16	56232	30	W	CT	CM S	106	47	57	40
3358	1731	2	17	51321	30	W	CT	CM S	106	47	57	40
3359	1731	2	18	56232	30	W	CT	CM S	106	47	57	40
3360	1731	2	19	51321	30	W	CT	CM S	106	47	57	40
3361	1731	2	20	56232	30	W	CT	CM S	106	47	57	40
3362	1731	2	21	51321	30	W	CT	CM S	106	47	57	40
3363	1731	2	22	56232	30	W	CT	CM S	106	47	57	40
3364	1731	2	23	51321	30	W	CT	CM S	106	47	57	40
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TABLE III (continued).

Table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, PUB, NOTES, E2, E5, E2\*, E5\*, E2\*\*, E5\*\*. Contains astronomical data for various eclipses.

Table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, PUB, NOTES, E2, E5, E2\*, E5\*, E2\*\*, E5\*\*. Contains astronomical data for various eclipses.

TABLE III (continued).

Main data table with columns for YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, TO, E2, E5, E2\*, E5\*, E2\*\*, E5\*\*, E2\*\*\*, E5\*\*\*. It contains multiple rows of astronomical data.

TABLE III (continued).

NUMBER	YEAR	MONTH	DAY	SIGMA	PUB	LOC	T2	E2	E5	E2+	NUMBER	YEAR	MONTH	DAY	SIGMA	PUB	LOC	T2	E2	E5	E2+	
4801	1773	6	22-12051	50	10	CK ML S	189	48	92	128	48	4851	1773	10	2-05949	50	19	CK ML S	110	-50	-5	-5
4802	1773	7	15-04596	50	10	CK ML S	189	48	92	128	48	4852	1773	10	2-05950	50	19	CK ML S	110	-50	-5	-5
4803	1773	7	15-04597	50	10	CK ML S	189	48	92	128	48	4853	1773	10	2-05951	50	19	CK ML S	110	-50	-5	-5
4804	1773	7	15-04598	50	10	CK ML S	189	48	92	128	48	4854	1773	10	2-05952	50	19	CK ML S	110	-50	-5	-5
4805	1773	7	15-04599	50	10	CK ML S	189	48	92	128	48	4855	1773	10	2-05953	50	19	CK ML S	110	-50	-5	-5
4806	1773	7	15-04600	50	10	CK ML S	189	48	92	128	48	4856	1773	10	2-05954	50	19	CK ML S	110	-50	-5	-5
4807	1773	7	15-04601	50	10	CK ML S	189	48	92	128	48	4857	1773	10	2-05955	50	19	CK ML S	110	-50	-5	-5
4808	1773	7	15-04602	50	10	CK ML S	189	48	92	128	48	4858	1773	10	2-05956	50	19	CK ML S	110	-50	-5	-5
4809	1773	7	15-04603	50	10	CK ML S	189	48	92	128	48	4859	1773	10	2-05957	50	19	CK ML S	110	-50	-5	-5
4810	1773	7	15-04604	50	10	CK ML S	189	48	92	128	48	4860	1773	10	2-05958	50	19	CK ML S	110	-50	-5	-5
4811	1773	7	31-00512	50	10	CK ML S	189	48	92	128	48	4861	1773	10	2-05959	50	19	CK ML S	110	-50	-5	-5
4812	1773	7	31-00513	50	10	CK ML S	189	48	92	128	48	4862	1773	10	2-05960	50	19	CK ML S	110	-50	-5	-5
4813	1773	7	31-00514	50	10	CK ML S	189	48	92	128	48	4863	1773	10	2-05961	50	19	CK ML S	110	-50	-5	-5
4814	1773	7	31-00515	50	10	CK ML S	189	48	92	128	48	4864	1773	10	2-05962	50	19	CK ML S	110	-50	-5	-5
4815	1773	7	31-00516	50	10	CK ML S	189	48	92	128	48	4865	1773	10	2-05963	50	19	CK ML S	110	-50	-5	-5
4816	1773	7	31-00517	50	10	CK ML S	189	48	92	128	48	4866	1773	10	2-05964	50	19	CK ML S	110	-50	-5	-5
4817	1773	7	31-00518	50	10	CK ML S	189	48	92	128	48	4867	1773	10	2-05965	50	19	CK ML S	110	-50	-5	-5
4818	1773	7	31-00519	50	10	CK ML S	189	48	92	128	48	4868	1773	10	2-05966	50	19	CK ML S	110	-50	-5	-5
4819	1773	7	31-00520	50	10	CK ML S	189	48	92	128	48	4869	1773	10	2-05967	50	19	CK ML S	110	-50	-5	-5
4820	1773	7	31-00521	50	10	CK ML S	189	48	92	128	48	4870	1773	10	2-05968	50	19	CK ML S	110	-50	-5	-5
4821	1773	7	31-00522	50	10	CK ML S	189	48	92	128	48	4871	1773	10	2-05969	50	19	CK ML S	110	-50	-5	-5
4822	1773	7	31-00523	50	10	CK ML S	189	48	92	128	48	4872	1773	10	2-05970	50	19	CK ML S	110	-50	-5	-5
4823	1773	7	31-00524	50	10	CK ML S	189	48	92	128	48	4873	1773	10	2-05971	50	19	CK ML S	110	-50	-5	-5
4824	1773	7	31-00525	50	10	CK ML S	189	48	92	128	48	4874	1773	10	2-05972	50	19	CK ML S	110	-50	-5	-5
4825	1773	7	31-00526	50	10	CK ML S	189	48	92	128	48	4875	1773	10	2-05973	50	19	CK ML S	110	-50	-5	-5
4826	1773	7	31-00527	50	10	CK ML S	189	48	92	128	48	4876	1773	10	2-05974	50	19	CK ML S	110	-50	-5	-5
4827	1773	7	31-00528	50	10	CK ML S	189	48	92	128	48	4877	1773	10	2-05975	50	19	CK ML S	110	-50	-5	-5
4828	1773	7	31-00529	50	10	CK ML S	189	48	92	128	48	4878	1773	10	2-05976	50	19	CK ML S	110	-50	-5	-5
4829	1773	7	31-00530	50	10	CK ML S	189	48	92	128	48	4879	1773	10	2-05977	50	19	CK ML S	110	-50	-5	-5
4830	1773	7	31-00531	50	10	CK ML S	189	48	92	128	48	4880	1773	10	2-05978	50	19	CK ML S	110	-50	-5	-5
4831	1773	7	31-00532	50	10	CK ML S	189	48	92	128	48	4881	1773	10	2-05979	50	19	CK ML S	110	-50	-5	-5
4832	1773	7	31-00533	50	10	CK ML S	189	48	92	128	48	4882	1773	10	2-05980	50	19	CK ML S	110	-50	-5	-5
4833	1773	7	31-00534	50	10	CK ML S	189	48	92	128	48	4883	1773	10	2-05981	50	19	CK ML S	110	-50	-5	-5
4834	1773	7	31-00535	50	10	CK ML S	189	48	92	128	48	4884	1773	10	2-05982	50	19	CK ML S	110	-50	-5	-5
4835	1773	7	31-00536	50	10	CK ML S	189	48	92	128	48	4885	1773	10	2-05983	50	19	CK ML S	110	-50	-5	-5
4836	1773	7	31-00537	50	10	CK ML S	189	48	92	128	48	4886	1773	10	2-05984	50	19	CK ML S	110	-50	-5	-5
4837	1773	7	31-00538	50	10	CK ML S	189	48	92	128	48	4887	1773	10	2-05985	50	19	CK ML S	110	-50	-5	-5
4838	1773	7	31-00539	50	10	CK ML S	189	48	92	128	48	4888	1773	10	2-05986	50	19	CK ML S	110	-50	-5	-5
4839	1773	7	31-00540	50	10	CK ML S	189	48	92	128	48	4889	1773	10	2-05987	50	19	CK ML S	110	-50	-5	-5
4840	1773	7	31-00541	50	10	CK ML S	189	48	92	128	48	4890	1773	10	2-05988	50	19	CK ML S	110	-50	-5	-5
4841	1773	7	31-00542	50	10	CK ML S	189	48	92	128	48	4891	1773	10	2-05989	50	19	CK ML S	110	-50	-5	-5
4842	1773	7	31-00543	50	10	CK ML S	189	48	92	128	48	4892	1773	10	2-05990	50	19	CK ML S	110	-50	-5	-5
4843	1773	7	31-00544	50	10	CK ML S	189	48	92	128	48	4893	1773	10	2-05991	50	19	CK ML S	110	-50	-5	-5
4844	1773	7	31-00545	50	10	CK ML S	189	48	92	128	48	4894	1773	10	2-05992	50	19	CK ML S	110	-50	-5	-5
4845	1773	7	31-00546	50	10	CK ML S	189	48	92	128	48	4895	1773	10	2-05993	50	19	CK ML S	110	-50	-5	-5
4846	1773	7	31-00547	50	10	CK ML S	189	48	92	128	48	4896	1773	10	2-05994	50	19	CK ML S	110	-50	-5	-5
4847	1773	7	31-00548	50	10	CK ML S	189	48	92	128	48	4897	1773	10	2-05995	50	19	CK ML S	110	-50	-5	-5
4848	1773	7	31-00549	50	10	CK ML S	189	48	92	128	48	4898	1773	10	2-05996	50	19	CK ML S	110	-50	-5	-5
4849	1773	7	31-00550	50	10	CK ML S	189	48	92	128	48	4899	1773	10	2-05997	50	19	CK ML S	110	-50	-5	-5
4850	1773	7	31-00551	50	10	CK ML S	189	48	92	128	48	4900	1773	10	2-05998	50	19	CK ML S	110	-50	-5	-5



TABLE III (continued).

Main data table with columns for YEAR, MONTH, DAY, SIGMA, SAT, LOC, E2, E5, E2+, E5+, and E2+5+ for various eclipse observations. The table is organized into two main sections, one on the left and one on the right, each containing a grid of observation data.

TABLE III (continued).

NUMBER	YEAR	MONTH	DAY	SIGMA	PUB	LOC	TO	E2	E5	E2*	E5*	SIGMA	PUB	LOC	TO	E2	E5	E2*	E5*				
6001	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6011	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6002	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6012	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6003	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6013	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6004	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6014	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6005	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6015	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6006	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6016	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6007	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6017	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6008	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6018	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6009	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6019	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6010	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6020	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6011	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6021	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6012	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6022	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6013	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6023	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6014	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6024	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6015	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6025	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6016	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6026	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6017	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6027	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6018	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6028	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6019	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6029	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6020	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6030	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6021	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6031	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6022	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6032	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6023	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6033	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6024	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6034	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6025	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6035	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6026	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6036	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6027	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6037	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6028	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6038	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6029	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6039	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6030	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6040	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6031	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6041	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6032	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6042	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6033	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6043	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6034	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6044	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6035	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6045	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6036	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6046	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6037	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6047	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6038	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6048	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6039	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6049	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31
6040	1790	4	4	9.1671	50V	2R	AT	PK	8	-114	-23	6050	1791	3	11	9.9191	50V	2D	AT	PK	8	-121	-31

TABLE III (continued).

Main data table with columns: YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, TO, E2, E5, E2\*, E5\*, E2\*, E5\*. Contains multiple rows of astronomical observation data.



TABLE III (continued).

Main data table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, E2, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, E18, E19, E20, E21, E22, E23, E24, E25, E26, E27, E28, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, E39, E40, E41, E42, E43, E44, E45, E46, E47, E48, E49, E50, E51, E52, E53, E54, E55, E56, E57, E58, E59, E60, E61, E62, E63, E64, E65, E66, E67, E68, E69, E70, E71, E72, E73, E74, E75, E76, E77, E78, E79, E80, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93, E94, E95, E96, E97, E98, E99, E100. The table contains multiple rows of numerical data and codes.

TABLE III (continued).

Main data table with columns for NUMBER, YEAR, MONTH, DAY, SIGMA, PUB, NOTES, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, E18, E19, E20, E21, E22, E23, E24, E25, E26, E27, E28, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, E39, E40, E41, E42, E43, E44, E45, E46, E47, E48, E49, E50, E51, E52, E53, E54, E55, E56, E57, E58, E59, E60, E61, E62, E63, E64, E65, E66, E67, E68, E69, E70, E71, E72, E73, E74, E75, E76, E77, E78, E79, E80, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93, E94, E95, E96, E97, E98, E99, E100.



TABLE III (continued).

Main data table with columns for YEAR, MONTH, DAY, SIGMA, SAT, PUP, NOTES, E2, E5, E2\*, E5\*, E2\*\*, E5\*\* and multiple rows of numerical data.



TABLE III (continued).

Main data table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, SAT, LUC, NOTES, E2, E5, E2\*, E5\*. Contains multiple rows of astronomical data.



TABLE III (continued).

Main data table with columns: YEAR, MONTH, DAY, SIGMA, SAT, LUC, NOTES, E2, E5, E2\*, E5\*, E2\*\*, E5\*\*, E2\*\*\*, E5\*\*\*. It contains multiple rows of astronomical data points.

TABLE III (continued)

Main data table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, E2, E3, E4, E5, E6, E7, E8, E9, E10, E11, E12, E13, E14, E15, E16, E17, E18, E19, E20, E21, E22, E23, E24, E25, E26, E27, E28, E29, E30, E31, E32, E33, E34, E35, E36, E37, E38, E39, E40, E41, E42, E43, E44, E45, E46, E47, E48, E49, E50, E51, E52, E53, E54, E55, E56, E57, E58, E59, E60, E61, E62, E63, E64, E65, E66, E67, E68, E69, E70, E71, E72, E73, E74, E75, E76, E77, E78, E79, E80, E81, E82, E83, E84, E85, E86, E87, E88, E89, E90, E91, E92, E93, E94, E95, E96, E97, E98, E99, E100. The table contains multiple columns of numerical data and text notes for various astronomical observations.

TABLE III (continued).

Main data table with columns for NUMBER, YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, E2, E5, E2+, E5+, SIGMA, SAT, PUB, NOTES, E2, E5, E2+, E5+.











TABLE III (continued)

Main data table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, E2, E5, E2\*, E5\*, E2\*\*, E5\*\*. It contains multiple rows of astronomical data.





TABLE III (continued).

Main data table with columns for NUMBER, YEAR, MONTH, DAY, SIGMA, SAT, PUB, NOTES, TO, E2, E5, E2\*, E5\*, E2\*\*, E5\*\*.





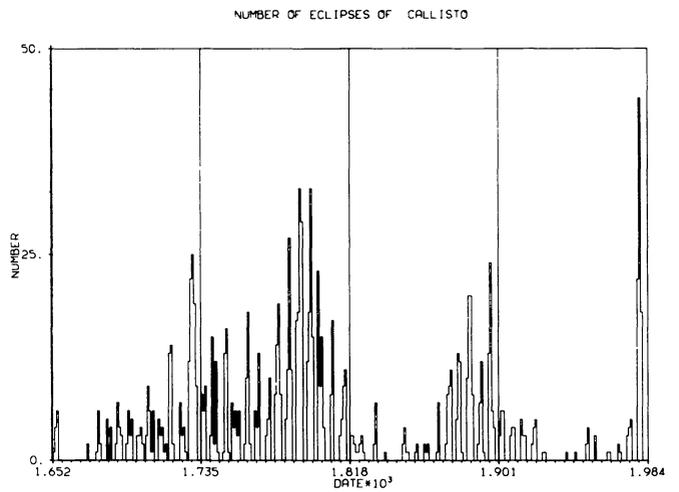
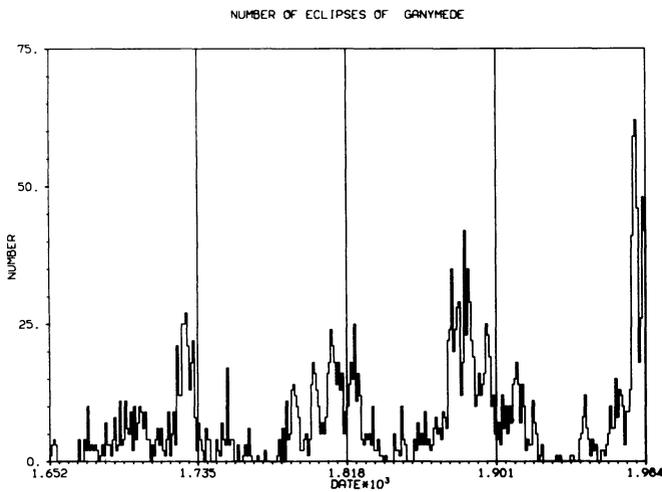
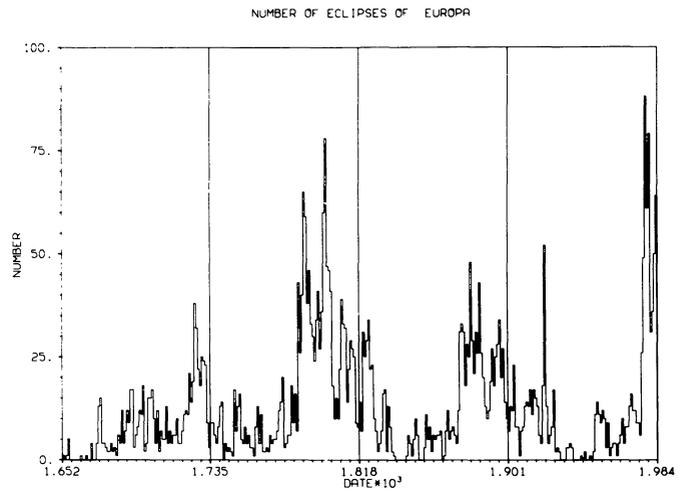
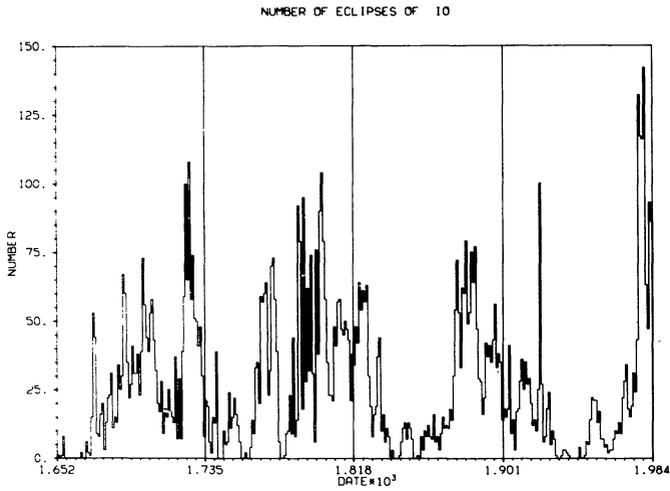
TABLE III (continued).

Main data table with columns for NUMBER, YEAR, MONTH, DAY, SIGMA, PUB, NOTES, E2, E5, E2\*, E5\*, and multiple SIGMA, PUB, NOTES columns.



TABLE III (continued).

Main data table with columns: NUMBER, YEAR, MONTH, DAY, SIGMA, SAI, LUC, NOTES, E2, E5, E2\*, E5\*. It contains multiple rows of astronomical data points.



FIGURES 1a-d. — Graphs for each satellite indicating the number of observations contained in the collection as a function of the year.

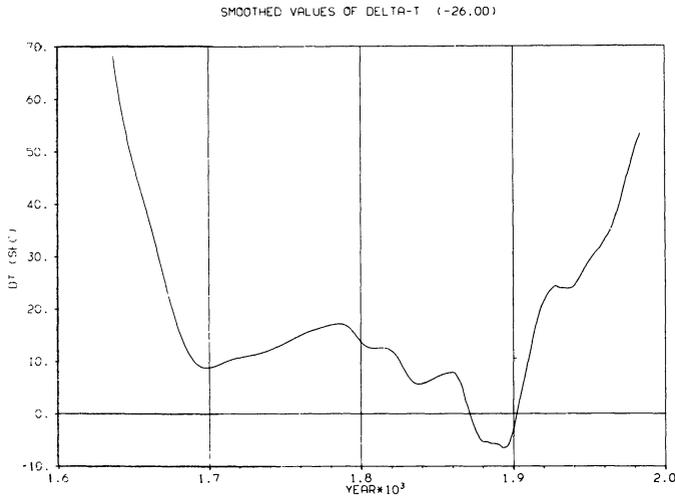


FIGURE 2. — Plot of  $\Delta T = ET - UT$  for Morrison and Ward's  $\dot{n}_{\text{Moon}} = -26 \text{ arcsec/cy}^2$  as a function of year. Data are courtesy of Morrison (1980).

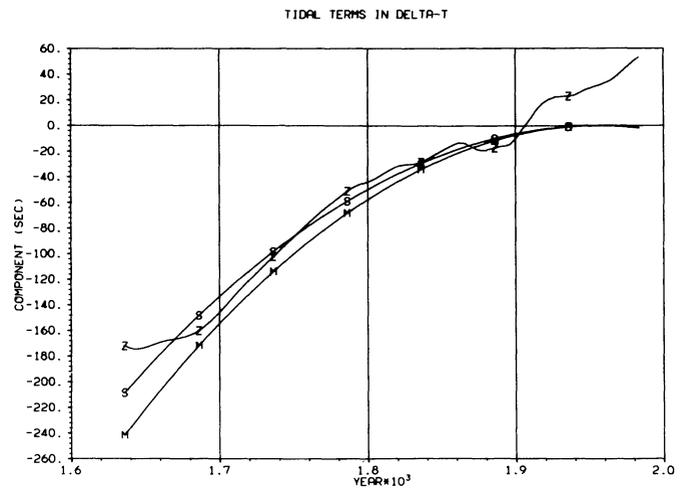


FIGURE 3. — Figure depicting effect of different values of  $\dot{n}_{\text{Moon}}$  on the determination of  $\Delta T$ .  $Z$  represents the value of  $\Delta T$  in the absence of lunar tidal dissipation (i.e.  $\dot{n}_{\text{Moon}} = 0$ ) while  $S$  represents the Spencer-Jones  $\dot{n}_{\text{Moon}} = -22.44 \text{ arcsec/cy}^2$  and  $M$  represents the Morrison  $\dot{n}_{\text{Moon}} = -26 \text{ arcsec/cy}^2$ . The derived values of  $\Delta T$  is obtained from  $\Delta T = Z - S$  for Spencer-Jones and by  $Z - M$  for Morrison's  $\dot{n}_{\text{Moon}}$ .

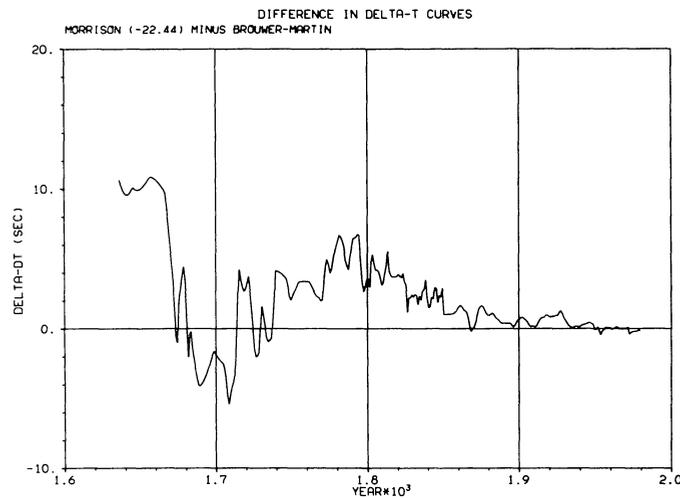


FIGURE 4. — Plot of Morrison  $\Delta T$  data reduced to the Spencer-Jones value of  $\dot{n}_{\text{Moon}} = -22.44 \text{ arcsec/cy}^2$  minus the Brouwer/Martin determination of  $\Delta T$ .