No. 131 THE TUCSON SELENODETIC TRIANGULATION

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ABSTRACT

The Tucson selenodetic triangulation makes use of measures from four sources and provides 1355 coordinated points. The control is derived from a network of 48 points measured on 25 Yerkes star-trailed plates. This work is largely independent of the Franz-Schrutka-Rechtenstamm secondary work which is the basis of all other selenodetic coordinate schemes.

1. Introduction

Almost all selenodetic triangulations derive their scale and orientation from the eight-point secondary triangulation observed by Franz (1899) in 1890–94 using the Königsberg Heliometer. Franz did not reduce his own measures strictly and the rigorous reductions were performed half a century later by Schrutka-Rechtenstamm (1956). Franz (1901) measured 150 points at Breslau on five Lick plates and these measures have been reduced also by Schrutka-Rechtenstamm (1958) to yield the Breslau selenodetic triangulation. This triangulation can be regarded as a smoothed and amplified version of the Königsberg scheme and has been preferred over the latter in almost every case as the control for modern selenodetic triangulations. Thus the Baldwin (1963), ACIC (Meyer and Ruffin, 1965), Kiev (Gavrilov 1967) and Manchester (Mills 1968) triangulations are all linear descendants of the Königsberg scheme in that they derive their scale and orientation from it via the Breslau triangulation. The AMS 1964 triangulation (Breece, Hardy and Marchant) would be completely independent of Franz's work, if performed according to the scheme outlined in AMS Tech. Report No. 29, Part I, but it was not so derived and its real nature is not clear. The Tucson triangulation, treated here, depends on the secondary network of 48 points described in *LPL Comm.* No. 130, and thus takes its orientation from 25 Yerkes star-trailed photographs (see *LPL Comm.* No. 129). The scale is still dependent on the pioneer measures of Franz (1899).

The Tucson triangulation differs from most others in that it combines measures from several different sources. In this respect it resembles the DOD 1966 triangulation (Hathaway, Eigen, and Marchant, 1967) but is computed much more sim-

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ply. We used the measures by ACIC, by the Kiev group on plates taken at Pulkovo and Golosseyevo, by LPL on plates taken at Yerkes and of the U.S. Naval Observatory, Flagstaff, and by Saunder and his associates on four Paris and two Yerkes plates. We decided against the use of the AMS and Baldwin measures because of certain obscurities in the presentation of the measures. This is not to suggest that there is anything basically unsound about these measures, but merely that time did not allow the investigation of matters which could not be understood at once from the authors' presentations.

Something should be said of the nature of the coordinates determined by a triangulation of the kind described here. Mills (1968) uses the title "absolute lunar coordinates" but without real justification. In the rotation theory it is made quite clear that the xyz axes of that theory are the principal axes of inertia of the moon considered as a rigid body. The origin is the moon's center of mass. In practice this point is not accessible to differential geometric measures and hence the origin is shifted to the so-called center of figure. More important is the consideration that the real origin of the selenodetic rectangular coordinates is the adopted fundamental point, and that the quantities which are really determined are the coordinate steps from this point. All available selenodetic coordinates are thus relative in character.

The degree of correlation in direction between the principal axes of inertia and the actual axes of triangulation depends on the precision of the measures at each stage of the measures, that is, on the precision of I and f in the primary work, on the precision of the secondary measures, and on the precision of the tertiary (photographic) measures of the secondary control points. It must not be assumed of course that the coordinate axes of a triangulation, which have only a statistical existence, coincide absolutely in direction with the principal axes, though the differences cannot exceed one minute of arc and may be much smaller.

The differences of origin are probably much more important as there is now evidence to suggest that the center of figure deviates from the center of mass by amounts of the order of a kilometer in each coordinate direction.

2. *The Recovery of the Saunder Measures*

The dispersion in the catalogs of Saunder (1904 and 1910) show that the measures are very precise despite their earliness. However, Saunder did not give the actual photographic coordinates (x, y). Instead each plate was reduced separately on the assumption that the lunar surface point is at unit distance from the origin of coordinates. For each set of measures Saunder gave the pair (ξ, η), corresponding to the central projection of the observed point on a lunar sphere of unit radius. In the second catalog he added the third direction-cosine ζ, computed from the mean ξ and η using the condition

$$\zeta = +\sqrt{(1 - \xi^2 - \eta^2)}.$$

Saunder also gave the topocentric librations (l', b') used by him, but not the augmented semidiameter s'. This must be recovered from the ephemeris. In these recovery calculations it is essential to use the Saunder values for l', b', s', whether these are right or not.

Fortunately it is not really necessary to recover the measured coordinates so long as we can rely on Saunder's refraction corrections. Instead we can limit ourselves to the simpler calculations of the refraction-free coordinates. For these we have the instantaneous direction-cosines (x, y, z) where

$$\begin{pmatrix} x \\ y \\ z \end{pmatrix} = \begin{pmatrix} a, b, c \\ e, f, g \\ i, j, k \end{pmatrix} \cdot \begin{pmatrix} \xi \\ \eta \\ \zeta \end{pmatrix}. \tag{1}$$

The matrix elements $a, b, \ldots k$ are defined in *LPL Comm.* No. 62. The refraction-free coordinates in units of the moon's radius are then

$$\left.\begin{aligned} x' &= x \,/\, (1 - z \sin s') \\ y' &= y \,/\, (1 - z \sin s') \end{aligned}\right\}. \tag{2}$$

These last are rigorous and differ from the approximate forms used by Saunder, and by Schrutka-Rechtenstamm (1966) in his equations (5). The Schrutka scheme is

$$\begin{aligned} x' &= x + xz \sin s', \\ y' &= y + yz \sin s', \end{aligned}$$

and these are truncations of the developments

$$\begin{aligned} x' &= x + xz \sin s' + xz^2 \sin^2 s' + \ldots, \\ y' &= y + yz \sin s' + yz^2 \sin^2 s' + \ldots, \end{aligned}$$

of (2). The terms in $\sin^2 s'$ cannot be as large as 0.00002 of the radius and are usually much smaller. Thus the Schrutka-Rechtenstamm approximations are justified, and what is more important here, we are relieved of the necessity of duplicating the exact

steps of Saunder in dealing with the finite distance effects. Hence we adhere to (2) which is covered by a standard subroutine in the *LPL* selenodetic computations.

Some care is required in the case of the two Yerkes photographs. Saunder initially computed s' for the dates and times provisionally assigned to these photographs by Ritchey. These were found to be wrong subsequently, but were nevertheless used by Saunder in the computations of ξ and η. The incorrect values of s' must be used by us in the recovery of the refraction-free coordinates (x', y'). The correct values are then used in the ensuing calculations of the rectangular coordinates (E, F, G).

3. *The Standardization of the Measures*

The *LPL*, ACIC, and Kiev measures were available as uncorrected plate coordinates (x, y) and were processed as in *Comm. LPL* No. 60, using the *LPL* 48-point secondary net as control to obtain the refraction-free plate coordinates (x'', y'') in millimeters. These were then converted to the same coordinates expressed in units of the moon's radius, and denoted by (x', y').

In the case of the Saunder measures we already had the data in the form of refraction-free values (x', y'), in units of the moon's radius, but these were not properly connected to the *LPL* secondary net, and therefore were not quite in the same systems as the other plates. To bring them into sympathy with the other plate measures they were fastened to our secondary values as follows. For each plate the secondary positions (E, F, G) were processed by

$$\begin{pmatrix} X \\ Y \\ Z \end{pmatrix} = \begin{pmatrix} a, b, c \\ e, f, g \\ i, j, k \end{pmatrix} \cdot \begin{pmatrix} E \\ F \\ G \end{pmatrix} \qquad (1a)$$

and

$$\left.\begin{aligned} X' &= X / (1 - Z \sin s') \\ Y' &= Y / (1 - Z \sin s') \end{aligned}\right\} \qquad (2a)$$

using now the correct value of $\sin s'$. The pairs (X', Y') may be regarded as refraction-free photographic coordinates consistent with the secondary control. It was assumed that these related to the values found from the Saunder measures in (2) by

$$\left.\begin{aligned} X' &= Px' - Qy' + R \\ Y' &= Py' + Qx' + S \end{aligned}\right\} \qquad (3)$$

The plate constants P, Q, R, S were found for the Yerkes plates using the LPL secondary points as controls in least squares solutions. Note that P approximates to unity while Q, R and S are almost zero. The transformation (3) was then applied to each Yerkes plate to derive the values (X', Y'), that is, refraction-free coordinates in the required system. However since these are denoted by (x', y') for all other plates, they will be hereafter be denoted by (x', y'). Thus at this point, for all plates, we have the refraction-free coordinates (x', y') in units of the moon's radius. The origin is at the center of face and the y'-axis is directed northwards along the apparent first lunar meridian.

4. *The Calculation of the Selenodetic Coordinates (E, F, G)*

Let (x_o, y_o) be the *observed* values of (x', y') derived as above, and let (x_c, y_c) be the computed value, found as follows. Let (E, F, G) be the provisional selenodetic position of the point. Then using (1a) and (2a) we can compute the instantaneous values (X, Y, Z), and then from (2a)

$$x_c = X' = X / (1 - Z \sin s'),$$
$$y_c = Y' = Y / (1 - Z \sin s').$$

In general the computed set (x_c, y_c) does not agree with the observed set (x_o, y_o) because of errors in the assumed values (E, F, G). Let $(\delta E, \delta F, \delta G)$ be the set of corrections which must be imposed on (E, F, G) in order to make (x_c, y_c) agree with (x_o, y_o). Then clearly, to the first order,

$$\frac{\delta x'}{\delta E}\delta E + \frac{\delta x'}{\delta F}\delta F + \frac{\delta x'}{\delta G}\delta G = x_o - x_c,$$
$$\frac{\delta y'}{\delta E}\delta E + \frac{\delta y'}{\delta F}\delta F + \frac{\delta y'}{\delta G}\delta G = y_o - y_c.$$

But to this same order,

$$x_c = X' \approx aE + bF + cG,$$
$$y_c = Y' \approx eE + fF + gG,$$

so that we have as our first-order observation equations,

$$\left.\begin{aligned} a\delta E + b\delta F + c\delta G &= x_o - x_c \\ e\delta E + f\delta F + g\delta G &= y_o - y_c \end{aligned}\right\} \qquad (4)$$

Because $P \approx 1$, $Q \approx R \approx S \approx O$, (4) holds also for the Saunder plates. Thus there are two observation equations for each plate on which a point is measured. Using all equations for the same point, as measured on m plates, we have $2m$ observation equations leading to a 3 x 3 normal matrix for each point. The opening values (E, F, G) were identified

with the direction-cosines (ξ, η, ζ) on any *LPL* plate on which the point was measured.

The measures were not weighted because of the difficulties of assessing relative precisions of measures from different sources.

The first values of δE, δF, δG were applied to the provisional values E, F, G and the entire computation repeated. The second values of δE and δF were less than 0.00001 in every case so that a third iteration was not really necessary. Nevertheless this was performed to derive residuals for the evaluation of the precisions of the coordinates.

5. *The Precision of the Coordinates*

The set $(\delta E, \delta F, \delta G)$ for each point was calculated by inversion of the 3 x 3 normal matrices. The elements r_{ik} of the 3 x 3 inverse normal matrices were punched out and used subsequently for the calculation of the standard errors of the rectangular selenodetic coordinates. In the iterative calculations, the first two sets δE, δF, δG were calculated and applied, but in the third iteration the process was arrested and diverted with the calculation of the differences

$$\delta x = x_o - x_c,$$
$$\delta y = y_o - y_c.$$

Since these now lead to corrections $\delta E, \delta F, \delta G$ which were virtually zero, they were to be regarded as residuals. Let σ be the standard error of x and y in units of the moon's radius, then

$$\sigma^2 = \frac{\Sigma(\delta x^2 + \delta y^2)}{2m - 3} \tag{5}$$

In this m is the number of plates on which the point is measured and each summation is for one point over all plates. The standard errors of the rectangular selenodetic coordinates E, F, G are

$$\left.\begin{aligned} \sigma_E &= \sigma\sqrt{r_{11}} \\ \sigma_F &= \sigma\sqrt{r_{22}} \\ \sigma_G &= \sigma\sqrt{r_{33}} \end{aligned}\right\} \tag{6}$$

It may be stated at once that the overall precision of the Tucson Triangulation is a little disappointing considering the precision of Saunder's and the ACIC measures. Frequently points with many measures were poorly determined. This indicates that the various observers did not always measure the same point within a crater.

More serious is the tendency of the dispersion σ to increase towards the limb. This is interpreted as a systematic trend towards skewing of the perspective rays and can hardly be representative of random errors. Effects of this kind can be introduced by faulty scales and orientation of the plates.

It would be interesting to know whether other triangulations show this effect, but the AMS and DOD triangulations are not computed with independent scales for the plates, so the principal suspect is not present. The ACIC and Manchester triangulations do not evaluate precisions in terms of distances in the photoplanes, nor in terms of the rectangulars E, F, G, which are easily converted to the former, so these cannot be investigated by us for this effect. We suspect however, from the behavior of the heights, that the Manchester triangulation is virtually free of this kind of systematic error. The various major triangulations are still being analyzed for systematic errors by the first author.

6. *The Spherical Coordinates*

The rectangular coordinates (E, F, G) are connected to the longitude, latitude, and absolute altitude h, by

$$\left.\begin{aligned} E &= (1 + h)\cos\beta\sin\lambda \\ F &= (1 + h)\sin\beta \\ G &= (1 + h)\cos\beta\cos\lambda \end{aligned}\right\} \tag{7}$$

where h is in units of the moon's radius. In this case, given the rectangulars, h is found from

$$h = +\sqrt{(E^2 + F^2 + G^2)} - 1 \tag{8}$$

and hence the absolute altitude *in kilometers* from

$$H = 1738 \cdot 1\, h \tag{9}$$

The longitude λ is computed from

$$\tan\lambda = E / G \tag{10}$$

and the latitude β from

$$\sin\beta = F / (1 + h) \tag{11}$$

7. *The Arrangement of the Catalog*

To place the points in a unique sequence they were assigned seven-figure reference numbers derived from their positions on the disk. Each reference has the structure

$$Q\, E_1\, F_1\, E_2\, F_2\, E_3\, F_3,$$

where Q is the number of the quadrant (one to four inclusive) and E_i, F_i are the ith digits of the coordi-

nates E and F respectively. The points are listed in order of increasing reference.

Since the seven-figure reference is derived from the coordinates, it is itself redundant and is not given in the catalog. Instead the first column lists the catalog number running from 1 to 1355. It will be noticed that each item occupies two consecutive lines in the catalog.

The first column gives the catalog number, as already noted. The second gives the five-figure reference used in the *System of Lunar Craters* (Arthur *et al*, 1963–66). This same numbering system is used with minor changes in the DOD (1966) triangulation, and an asterisk is added to indicate that the point occurs in this triangulation. In the second line, under the five-figure reference, is given the number of the point in *Named Lunar Formations* (Blagg and Müller, 1935).

The Tucson triangulation was compared also with the Manchester triangulation (Mills, 1968) but common points are so few that it has been preferred to list these separately in Appendix 1. Some of the correlations are doubtful, but a discussion of this is deferred.

The third column gives the designation taken from the *System*. The fourth, fifth and sixth columns, with headings E, F, G, give the values of the rectangular selenodetic coordinates to five places in units of the moon's mean radius. Underneath each coordinate is given the standard error in units of the fifth place. The seventh and eighth columns give the longitude and latitude respectively in degrees and decimals of a degree. The precisions of these coordinates are not given. The next column gives the absolute altitude H of the point in kilometers above a mean sphere of 1738.1 km radius. Beneath this is a rather rough estimate of the standard height error.

This last requires some explanation. The computer programs were not written to give the standard errors of the spherical coordinates, as these are virtually meaningless unless accompanied by estimates of the very strong covariances. However the standard height error is of some interest to some workers in this field so a rather rough estimate was derived with desk machines using

$$\sigma_H = 1738{\cdot}1\, G\, \sigma_G, \qquad (12)$$

on the assumption that σ_G is much greater than σ_E and σ_F. The estimate in (12) is rather rough but is good enough for purposes of comparison.

The last column gives the number of photographs on which the point was measured. Strictly speaking this is the number of epochs on which photographs were obtained and used to derive the present triangulation.

8. *The Adjusted Secondary Net*

For the secondary points used as controls in the Tucson (tertiary) triangulation there are both secondary and tertiary positions. For optimum estimates of the selenodetic positions of these points both sets of data must be used. The adjusted positions in terms of rectangular coordinates (E, F, G) are derived as weighted means in Appendix 2. Rows (2) and (3) are the secondary and tertiary positions respectively. The next row gives the differences and the last row gives the weighted means. The weights used in the calculations are taken to be the reciprocals of the error-variances. Normal error propagation formulas for linear functions are used to compute the standard errors of the weighted means.

These adjusted values are somewhat more reliable than either the secondary or tertiary coordinates of the secondary points of *LPL Comm.* No. 130.

9. *The Data for the Photographs*

Appendix 3 lists the dates, times and libration data for the 37 epochs used in the triangulation. Each epoch corresponds to either a single photograph, or to the mean time for a sequence of photographs. In the latter case the separate measures on the individual photographs are meaned to represent measures on a fictitious photograph at mean epoch. The number of photographs in each sequence is stated in the last column under the heading "Ply."

The times for all mean photographs are given as UT, except for the older material measured by Saunder. The times of the four Paris photographs are given as Paris Sideral Time. Those for the two Ritchey photographs are given as Central Standard Time.

The two photographs obtained with the astrographic reflector of the U.S. Naval Observatory, Flagstaff, Arizona, are long exposure plates and are approximately equivalent to the mean of five Pic du Midi exposures in precision.

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	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	+	+	+	+		
1	10002*	Bruce	.00680	.02081	1.00057	0.389	1.191	+1.41	35
	857		3	3	25			.43	
2	10022	Blagg	.02582	.02166	.99996	1.479	1.240	+0.92	14
	855		5	5	36			.62	
3	10016*	Chladni	.01970	.06999	.99838	1.130	4.009	+1.78	17
	865		5	5	39			.68	
4	10045*	Triesnecker J	.04287	.05717	.99818	2.459	3.274	+1.28	12
	-		5	5	37			.64	
5	10049	Triesnecker E	.04344	.09699	.99526	2.499	5.560	+1.59	13
	852A		4	4	33			.57	
6	10067	Triesnecker	.06309	.07329	.99484	3.628	4.204	-0.82	13
	846		11	11	99			1.71	
7	10087	Triesnecker F	.08383	.07200	.99483	4.816	4.124	+1.65	6
	852B		7	8	54			.93	
8	10093*	Rhaeticus A	.09044	.03072	.99626	5.187	1.758	+1.44	16
	834		9	9	80			1.38	
9	10102	Pallas N	.00867	.12249	.99319	0.500	7.030	+1.31	12
	1229		5	5	37			.64	
10	10105	Ukert E	.00721	.15608	.98809	0.418	8.976	+0.64	12
	882		6	6	45			.77	
11	10107*	Ukert Y	.00572	.17599	.98374	0.333	10.142	-1.09	9
	-		17	17	127			2.17	
12	10123	Ukert	.02428	.13482	.99106	1.403	7.744	+0.84	7
	879		19	20	169			2.90	
13	10125	Ukert A	.02340	.15195	.98937	1.354	8.729	+2.16	4
	880		9	9	77			1.32	
14	10161	Ukert K	.06526	.11292	.99217	3.763	6.479	+1.22	5
	-		5	5	35			.60	
15	10179*	Hyginus D	.07425	.19790	.97776	4.342	11.410	+0.60	8
	871		5	5	42			.71	
16	10183*	Hyginus B	.08777	.13273	.98831	5.075	7.619	+1.80	18
	869		3	3	26			.45	
17	10191*	Hyginus A	.09833	.11046	.98938	5.675	6.339	+0.64	5
	867		4	4	39			.67	
18	10336*	Conon	.03209	.36945	.92959	1.977	21.662	+1.44	8
	891		8	7	66			1.06	
19	10338	-	.03704	.38488	.92409	2.295	22.595	+2.99	8
	-		8	8	63			1.01	
20	10373*	Conon A	.07257	.33667	.93769	4.425	19.695	-1.85	15
	892		15	15	116			1.89	
21	10387	Aratus A	.08057	.37421	.92580	4.973	21.933	+3.15	6
	896		6	5	49			.79	
22	-	(bright spot)	.01627	.48814	.87217	1.068	29.230	-0.67	11
	-		8	8	64			.97	
23	10442	Hadley C	.04410	.42997	.90217	2.798	25.455	+0.63	8
	-		6	6	47			.74	
24	10470*	Aratus	.07238	.40069	.91493	4.523	23.585	+2.51	34
	895		6	6	47			.75	
25	10476*	Hadley B	.07351	.46607	.88285	4.759	27.748	+1.78	5
	897A		6	7	64			.98	
26	10480	Aratus B	.08644	.40974	.90972	5.427	24.150	+2.56	8
	-		6	6	48			.76	
27	10565*	Aristill. A	.06593	.55343	.83008	4.541	33.609	-0.29	7
	917A		7	7	51			.74	
28	10581	Autolycus K	.08731	.51355	.85387	5.838	30.892	+0.39	4
	-		5	5	35			.52	
29	10626	Cassini Y	.02802	.66795	.74369	2.157	41.908	+0.01	5
	-		8	8	61			.79	
30	10646*	Cassini M	.04924	.66022	.74870	3.762	41.345	-0.98	24
	936		4	4	32			.42	
31	10654	Cassini B	.05182	.64243	.76462	3.877	39.972	+0.04	8
	931		7	7	58			.77	
32	10657	Cassini W	.05511	.06728	.73693	4.276	42.318	-0.99	12
	-		6	6	48			.62	
33	10659	Cassini L	.05552	.69386	.71670	4.429	43.986	-1.58	5
	935A		13	11	102			1.27	
34	10664*	Cassini A	.06334	.64936	.75580	4.790	40.569	-2.68	14
	930		11	11	95			1.25	
35	10680*	Theaetetus	.08430	.60165	.79240	6.072	37.053	-2.62	5
	923		11	10	119			1.64	
36	10695*	Cassini F	.09579	.65421	.75010	7.277	40.864	-0.16	13
	934		7	7	53			.69	
37	10698*	Cassini E	.09340	.68101	.72716	7.319	42.889	+1.09	6
	933		13	15	140			1.77	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	+	+	+	+		
38	10706	Protagoras E	.00628	.75992	.65000	0.553	49.456	+0.01	10
	985B		10	9	69			.78	
39	10750	Cassini K	.05026	.70865	.70329	4.087	45.144	-0.58	5
	936B		10	11	105			1.29	
40	10756	Trouvelot H	.05074	.76436	.64301	4.511	49.840	+0.24	6
	968D		13	12	104			1.16	
41	10765*	Trouvelot	.06584	.75785	.64848	5.797	49.301	-0.70	12
	968		6	6	45			.50	
42	10778*	Egede G	.07412	.78685	.61335	6.890	51.861	+0.72	8
	968A		10	10	75			.80	
43	10797*	Egede B	.09840	.77143	.62779	8.908	50.520	-0.95	14
	966		6	6	50			.54	
44	10802	Archytas L	.00865	.82972	.55647	0.890	56.148	-1.59	4
	-		5	5	38			.36	
45	10829	W. Bond D	.02511	.89487	.44556	3.225	63.494	-0.05	10
	987B		13	13	97			.75	
46	10845*	Archytas	.04526	.85522	.51732	5.000	58.733	+0.93	6
	971		10	9	81			.73	
47	10847	Archytas W	.04372	.87596	.47992	5.205	61.182	-0.40	6
	-		16	16	113			.94	
48	10853	Protagoras B	.05506	.83225	.55024	5.714	56.397	-1.36	7
	985A		24	25	198			1.89	
49	10872*	Protagoras	.07132	.82797	.55734	7.292	55.838	+1.08	6
	985		16	15	124			1.20	
50	10878	Archytas U	.07343	.88928	.45079	9.251	62.815	-0.50	4
	-		30	28	224			1.76	
51	10924*	Barrow A	.02236	.94300	.33194	3.853	70.567	-0.06	4
	1006		9	9	75			.43	
52	10950*	W. Bond B	.05552	.90638	.41787	7.568	65.057	-0.68	19
	987		10	10	85			.62	
53	10951	W. Bond C	.05934	.91072	.40930	8.249	65.576	+0.40	7
	987A		19	17	147			1.04	
54	10957*	Scoresby	.05223	.97749	.20744	14.132	77.655	+1.08	6
	1013		20	20	179			.64	
55	11001	Rhaeticus D	.10767	.01511	.99534	6.173	0.864	+2.19	9
	835A		7	7	55			.95	
56	11006*	Triesnecker D	.10363	.06113	.99375	5.953	3.501	+1.75	18
	856		4	4	30			.52	
57	11012*	Rhaeticus B	.11876	.02851	.99362	6.815	1.631	+1.91	30
	835		4	4	30			.52	
58	11015	Dembowski A	.11275	.05296	.99340	6.475	3.032	+2.05	11
	825A		5	5	36			.62	
59	11041	Godin D	.14354	.01734	.99039	8.246	0.992	+1.54	11
	831A		6	6	41			.71	
60	11064*	Godin A	.16776	.04714	.98613	9.654	2.698	+2.45	13
	829		5	5	39			.67	
61	11071	Godin B	.17046	.01319	.98685	9.800	0.754	+2.69	8
	830		6	6	52			.89	
62	11120	Hyginus H	.12156	.10390	.98785	7.015	5.959	+1.23	7
	870C		5	5	41			.70	
63	11143	Hyginus C	.14344	.13405	.98151	8.314	7.696	+1.65	9
	870		5	5	35			.60	
64	11143A	Hyginus F	.14829	.13930	.98077	8.597	7.994	+2.87	4
	870A		8	10	100			1.70	
65	11145	Hyginus E	.14653	.15242	.97753	8.525	8.766	+0.23	4
	868		7	6	54			.92	
66	11157	Boscovich B	.15806	.17034	.97305	9.226	9.803	+0.72	8
	810B		4	4	29			.49	
67	11160	Agrippa B	.16340	.10833	.98176	9.449	6.211	+1.99	6
	826		5	6	44			.75	
68	11193	Silberschl. D	.19285	.13059	.97357	11.204	7.495	+1.81	5
	820		6	6	47			.80	
69	11212*	Manilius D	.11850	.22924	.96724	6.984	13.237	+1.86	21
	798		7	7	54			.91	
70	11228	Manilius B	.12154	.28606	.95109	7.282	16.612	+1.02	7
	796		6	6	42			.69	
71	11266*	Manilius G	.16347	.26679	.94943	9.769	15.478	-0.59	8
	801A		7	6	49			.81	
72	11270*	Manilius C	.17552	.20951	.96248	10.335	12.087	+0.93	11
	797		7	7	48			.80	
73	11303*	Sul. Gall. G	.10356	.33879	.93595	6.313	19.787	+1.31	18
	-		4	4	30			.49	
74	11340	Manilius H	.14292	.30598	.94079	8.638	17.825	-0.75	4
	801B		9	10	106			1.73	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	+	+	+	+		
75	-	(bright spot)	.14462	.36725	.91986	8.934	21.524	+1.68	4
	-		15	15	157			2.51	
76	11347*	Sul. Gall. A	.14410	.37591	.91580	8.942	22.071	+0.66	11
	606A		7	7	53			.84	
77	11350*	Manilius A	.15073	.30292	.94229	9.088	17.611	+2.07	6
	795		10	9	88			1.44	
78	-	(bright spot)	.18248	.34942	.91961	11.223	20.440	+0.93	7
	-		16	17	151			2.41	
79	11393*	Sulp. Gallus	.19027	.33573	.92354	11.641	19.598	+1.60	6
	606		10	10	90			1.44	
80	11402*	Hadley A	.10416	.42295	.90051	6.597	25.012	+0.57	14
	897		10	10	85			1.33	
81	11431	Aratus D	.13622	.41240	.90096	8.597	24.351	+0.31	8
	-		5	6	46			.72	
82	11450	Aratus C	.15000	.40773	.90058	9.456	24.065	-0.18	8
	899		8	8	66			1.03	
83	11486	Linné	.18088	.46510	.86588	11.799	27.735	-0.06	14
	629		10	10	92			1.38	
84	11548	Calippus B	.14142	.58852	.79661	10.066	36.032	+0.82	8
	750		5	5	39			.54	
85	11559	Calippus D	.15773	.59234	.79052	11.283	36.309	+0.58	10
	750A		5	5	36			.51	
86	11588	Linné G	.18616	.58568	.78866	13.281	35.858	-0.29	13
	635B		6	6	37			.51	
87	11595	Linné H	.19765	.55530	.80750	13.753	33.741	-0.45	7
	635A		7	7	56			.79	
88	11606	Cassini C	.10115	.66554	.73880	7.795	41.749	-0.87	14
	932		9	9	82			1.05	
89	11600	Calippus A	.10965	.60211	.79096	7.892	37.017	+0.15	4
	749		9	9	73			1.00	
90	11635	Calippus F	.13169	.65047	.75051	9.952	40.486	+3.23	4
	-		18	19	127			1.66	
91	11667	Lamèch	.16703	.67929	.71622	13.127	42.727	+2.00	6
	729		8	7	62			0.77	
92	11668	Eudoxus D	.16625	.68636	.70948	13.187	43.286	+1.81	17
	730		6	6	43			.53	
93	11718*	Egede A	.11313	.78254	.61144	10.482	51.528	-0.85	29
	965		6	6	44			.47	
94	11746*	Egede C	.14393	.76739	.62440	12.980	50.137	-0.45	13
	967		7	7	54			.59	
95	11773	Aristot. D	.17159	.73656	.65413	14.698	47.443	-0.13	7
	724A		8	8	62			.70	
96	11837	C. Mayer E	.13332	.87612	.46498	15.998	61.096	+1.36	5
	697A		19	15	144			1.16	
97	11845	Sheepshanks	.14939	.85876	.49018	16.949	59.174	+0.05	6
	698		11	10	89			.76	
98	11858*	C. Mayer F	.15716	.88301	.44278	19.541	61.982	+0.40	13
	699B		9	9	65			.50	
99	11863*	Sheepsh. C	.16883	.83815	.51655	18.099	57.041	-1.89	19
	700		12	12	92			.83	
100	11866*	Sheepsh. A	.16261	.86528	.47301	18.971	59.969	-0.96	9
	698A		13	12	92			.76	
101	11872	Galle B	.17026	.82349	.54071	17.478	55.456	-0.44	5
	725B		14	11	108			1.02	
102	11872A	-	.17174	.82052	.54355	17.534	55.211	-1.57	4
	-		7	6	55			.52	
103	11876	Sheepsh. B	.17802	.86792	.46212	21.067	60.291	-1.28	4
	698B		9	8	72			.58	
104	11896	Kane F	.19915	.86217	.46573	23.151	59.565	-0.08	10
	696A		9	9	69			.56	
105	11904*	Meton B	.09955	.94694	.30694	17.969	71.182	+0.71	5
	991		24	20	179			.96	
106	11956*	Baillaud E	.15852	.96241	.21875	35.929	74.320	-0.68	4
	999A		8	8	67			.25	
107	12012	Godin E	.21430	.02949	.97677	12.374	1.689	+0.76	8
	831B		9	8	62			1.05	
108	12033	d'Arrest A	.23585	.03419	.97101	13.652	1.959	-0.30	4
	562A		7	7	69			1.17	
109	12037	Whewell	.23686	.07294	.96965	13.727	4.179	+1.43	7
	560		8	8	64			1.08	
110	12040	Theon Sr. B	.24395	.00342	.97116	14.100	0.195	+2.32	18
	3650		4	4	27			.46	
111	12048	Whewell A	.24349	.08242	.96696	14.133	4.725	+0.95	5
	560A		7	6	50			.84	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	+	+	+	+		
112	12055	de Morgan	.25677	.05819	.96504	14.899	3.334	+0.54	7
	559		8	8	58			.97	
113	12058	Ariadaeus B	.25888	.08568	.96437	15.026	4.904	+3.79	4
	565		8	7	62			1.04	
114	12066*	Cayley	.26006	.06922	.96270	15.116	3.970	-0.68	15
	561		8	8	73			1.22	
115	12094*	Dionysius	.29725	.04889	.95384	17.308	2.801	+0.48	14
	553		9	9	83			1.38	
116	12098	Ariadaeus D	.29175	.08561	.95370	17.009	4.906	+1.73	6
	565A		9	8	63			1.05	
117	12097	Ariadaeus	.29673	.08034	.95050	17.337	4.612	-1.78	8
	563		15	15	130			2.15	
118	12110*	Silberschlag	.21593	.10845	.97065	12.541	6.224	+0.48	15
	816		8	8	66			1.11	
119	12116*	Boscovich A	.21581	.16480	.96312	12.629	9.479	+1.16	15
	810A		5	5	37			.62	
120	12122*	Silberschlag A	.22706	.12116	.96696	13.214	6.954	+1.08	36
	819		4	4	31			.52	
121	12136*	Jul. Caes. B	.23777	.17006	.95808	13.937	9.774	+2.93	10
	579A		6	6	45			.75	
122	12162	Jul. Caes. C	.26250	.12730	.95694	15.339	7.310	+0.73	8
	579B		7	6	51			.85	
123	12182	Jul. Caes. D	.28204	.12543	.95140	16.512	7.203	+0.38	8
	579C		7	6	47			.78	
124	12229	Menelaus A	.22132	.29367	.93032	13.381	17.071	+0.62	13
	604		4	4	30			.48	
125	12245	Menelaus C	.24178	.25593	.93535	14.493	14.837	-1.01	6
	595A		10	9	75			1.22	
126	12263	Menelaus E	.26666	.22620	.93704	15.885	13.071	+0.28	6
	-		11	11	107			1.74	
127	12268	Menelaus	.26354	.28019	.92224	15.947	16.284	-1.32	6
	591		8	8	72			1.15	
128	12310	Sul. Gall. B	.21354	.30909	.92700	12.972	18.000	+0.40	9
	605		5	5	40			.64	
129	12320	-	.22539	.30960	.92368	13.712	18.036	-0.14	4
	-		14	17	173			2.78	
130	-	Bessel F	.22252	.36240	.90610	13.797	21.226	+1.62	4
	-		13	15	159			2.50	
131	-	Bessel G	.23676	.36070	.90323	14.688	21.121	+1.72	5
	-		12	12	112			1.76	
132	12353*	Bessel E	.25076	.33607	.90713	15.452	19.650	-1.12	22
	627		9	9	75			1.18	
133	12387*	Bessel	.28533	.37017	.88189	17.928	21.769	-3.33	14
	619		19	19	171			2.62	
134	12418	Linné A	.21697	.48401	.84791	14.353	28.942	+0.25	12
	631		6	6	42			0.62	
135	12454*	Linné E	.25267	.44705	.85820	16.405	26.551	+0.18	16
	628		4	4	31			0.46	
136	12458	Linné D	.25766	.48024	.83789	17.093	28.715	-0.80	9
	634		8	8	60			0.87	
137	12503	Linné F	.20344	.53436	.82049	13.925	32.298	+0.11	17
	635		5	5	36			0.51	
138	12510*	Linné B	.21074	.50770	.83464	14.170	30.531	-1.05	25
	632		7	7	56			0.81	
139	11694	Alexander B	.19991	.64596	.73414	15.232	40.330	-3.31	9
	746B		18	19	181			2.31	
140	12659	Eudoxus E	.25792	.69909	.66727	21.133	44.340	+0.43	9
	730A		10	10	67			.78	
141	12701*	Eudoxus B	.20865	.71491	.66679	17.375	45.658	-0.66	7
	728		10	10	87			1.01	
142	12721*	Eudoxus G	.22589	.71167	.66542	18.750	45.362	+0.25	22
	732		5	5	35			.40	
143	12731*	Eudoxus A	.23943	.71717	.65384	20.112	45.845	-0.72	15
	727		8	8	74			.84	
144	12743*	Mitchell E	.24894	.73894	.62620	21.679	47.637	+0.11	13
	723		7	7	49			.53	
145	12779	Aristot. N	.27198	.79670	.53824	26.808	52.876	-1.38	5
	723A		7	6	59			.55	
146	12815*	Kane G	.21873	.85862	.46257	25.307	59.208	-0.83	10
	(679)		10	10	78			.63	
147	12820	Galle A	.22257	.80790	.54515	22.208	53.913	-0.50	11
	725A		8	8	54			.51	
148	12824	Galle C	.22075	.84542	.48522	24.463	57.766	-0.95	15
	722		9	9	75			.63	
149	12836	Democr. B	.23899	.86616	.43701	28.673	60.098	-1.45	16
	678		13	13	101			.77	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	+	+	+	+		
150	12857*	Democr. A	.25524	.87916	.40161	32.437	61.575	-0.56	19
	677		7	7	54			.38	
151	12870*	Aristot. M	.27216	.80280	.53031	27.167	53.406	-0.18	13
	724		7	7	51			.47	
152	12874*	Gärtner F	.27038	.84273	.46508	30.172	57.447	-0.35	6
	672B		10	10	77			.62	
153	12895	Gärtner D	.29156	.85184	.43388	33.900	58.464	-0.96	11
	672A		10	10	70			.53	
154	12902	Arnold G	.20079	.92295	.32921	31.379	67.324	+0.46	10
	689A		13	13	114			.65	
155	12910*	Moigno A	.21114	.90473	.36977	29.726	64.796	-0.13	8
	685A		9	9	76			.49	
156	12912*	Arnold F	.22011	.92340	.31154	35.242	67.554	-1.59	5
	689B		11	11	94			.51	
157	12970	Schwabe G	.27796	.90950	.30734	42.126	65.504	-0.95	11
	681		18	18	136			.73	
158	13021*	Schmidt	.32183	.01710	.94704	18.769	0.979	+0.65	14
	552		3	3	25			.41	
159	13026	Ritter D	.32086	.06418	.94529	18.748	3.678	+0.56	9
	545		7	7	53			.87	
160	13047*	Manners	.34107	.08009	.93621	20.017	4.595	-0.67	15
	537		8	8	71			1.15	
161	13056*	Arago B	.35446	.06037	.93358	20.790	3.459	+0.74	16
	536A		5	5	42			.68	
162	13066	Arago C	.36514	.06810	.92848	21.468	3.904	+0.03	4
	536B		7	9	92			1.48	
163	12195	Sosigenes	.29891	.15159	.94326	17.582	8.710	+1.79	5
	572		10	9	73			1.20	
164	13113	Sosigenes A	.31403	.13547	.93926	18.486	7.789	-0.72	14
	573		10	11	92			1.50	
165	13122	Sosigenes C	.32240	.12597	.93842	18.960	7.235	+0.38	10
	573B		6	6	41			.67	
166	13138*	Maclear	.33799	.18264	.92434	20.085	10.512	+1.74	6
	535		10	9	97			1.56	
167	13139	Ross B	.33787	.19753	.92030	20.159	11.391	+0.11	12
	533		5	5	38			.61	
168	13160*	Arago	.36281	.10764	.92433	21.430	6.186	-2.08	4
	536		9	9	89			1.43	
169	13172	Arago D	.37794	.12053	.91802	22.376	6.922	+0.11	4
	536C		9	11	111			1.77	
170	13184	Arago E	.38147	.14832	.91214	22.695	8.531	-0.42	10
	536D		7	7	49			.78	
171	13203	Auwers A	.30505	.23838	.92254	18.297	13.784	+0.83	12
	594A		6	6	43			.69	
172	13210	Ross C	.31780	.20152	.92606	18.940	11.630	-0.70	10
	534		6	6	46			.74	
173	13218*	Tacquet	.31478	.28627	.90467	19.185	16.639	-0.46	25
	587		6	6	46			.72	
174	13234	Tacquet A	.33518	.24778	.91005	20.219	14.332	+1.68	5
	592		7	7	67			1.06	
175	13243*	Tacquet C	.34955	.23298	.90747	21.066	13.472	-0.03	17
	593A		4	4	27			.43	
176	13281*	Ross D	.38620	.21793	.89598	23.317	12.591	-0.50	12
	534A		5	5	34			.53	
177	13292	Plinius A	.39855	.22482	.88885	24.150	12.995	-0.49	4
	520A		11	14	138			2.13	
178	13326	Deseilligny	.32768	.36041	.87252	20.583	21.141	-1.25	19
	623		7	7	54			.82	
179	13405	Bessel D	.30155	.45894	.83452	19.867	27.348	-1.75	16
	625		8	8	63			.91	
180	13419	Posidonius N	.31144	.49505	.81105	21.006	29.675	-0.11	13
	488		6	5	39			.55	
181	13421*	Bessel A	.32507	.41847	.84784	20.977	24.743	-0.33	33
	622		3	3	22			.32	
182	13483	Le Monnier B	.38545	.43210	.81542	25.300	25.598	+0.17	7
	509B		7	7	53			.75	
183	13518*	Luther H	.31300	.58808	.74560	22.772	36.026	-0.24	16
	(490C)		4	4	36			.47	
184	13544*	Luther	.34206	.54730	.76320	24.141	33.200	-0.86	20
	491		9	9	69			.92	
185	13577	Posidonius G	.37522	.56993	.73038	27.191	34.763	-0.81	10
	490B		7	7	50			.63	
186	13584*	Posidonius F	.38274	.54138	.74827	27.089	32.787	-0.44	16
	490A		5	5	46			.60	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	+	+	+	+		
187	13585*	Posidonius P	.38536	.55292	.73607	27.633	33.643	-3.46	12
	490		11	11	107			1.37	
188	13603	Plana G	.30211	.62971	.71539	22.894	39.038	-0.36	4
	-		9	9	61			.76	
189	13604	Plana E	.30386	.64994	.69661	23.566	40.536	+0.01	15
	645B		11	11	85			1.03	
190	13614	Plana F	.31214	.64013	.70076	24.009	39.843	-1.51	6
	645C		7	7	63			.77	
191	13626*	Plana D	.32887	.66584	.67029	26.134	41.726	+0.68	21
	645A		4	4	33			.38	
192	13637*	Plana C	.33482	.67893	.65148	27.200	42.827	-2.19	12
	645		17	17	149			1.69	
193	13640	Daniell D	.34774	.60214	.71859	25.823	37.026	-0.11	19
	467		9	9	67			.84	
194	13666	Mason B	.36862	.66683	.64675	29.681	41.852	-1.02	6
	639A		6	6	46			.52	
195	13676	-	.37395	.66571	.64628	35.054	41.719	+0.60	4
	-		7	6	56			.64	
196	13718*	Baily K	.31578	.78176	.53649	30.481	51.469	-1.14	11
	-		7	7	57			.53	
197	13745	Baily A	.34385	.75092	.56163	31.476	48.750	-2.14	12
	660		14	14	124			1.21	
198	13767	Baily B	.36219	.77625	.51507	35.114	50.952	-0.83	11
	661		9	9	61			.55	
199	13772	Bürg A	.37260	.72931	.57342	33.015	46.842	-0.40	13
	648		6	6	45			.45	
200	13842	Gärtner M	.34071	.82350	.45213	37.000	55.492	-1.16	9
	(432E)		12	12	78			.61	
201	13845*	Thales A	.34126	.85262	.39479	40.840	58.531	-0.63	7
	429		15	14	105			.72	
202	14044*	Maskelyne G	.44846	.04054	.89244	26.679	2.324	-0.69	14
	248A		5	5	37			.57	
203	14073	Maskelyne Y	.47133	.03052	.88062	28.156	1.750	-1.24	4
	-		12	14	145			2.22	
204	14081	Maskelyne W	.48742	.01453	.87180	29.209	0.833	-1.89	5
	-		9	9	59			.89	
205	14083*	Maskelyne B	.48339	.03485	.87467	28.927	1.997	-0.06	19
	244A		9	9	69			1.05	
206	14095	Maskelyne K	.49423	.05675	.86752	29.670	3.253	+0.06	11
	248C		6	6	45			.68	
207	14118*	Ross G	.41278	.18565	.89186	24.836	10.697	+0.23	13
	534D		6	6	51			.79	
208	14136	Jansen G	.43252	.16185	.88680	25.999	9.315	-0.27	13
	259A		5	5	37			.57	
209	14148*	Jansen B	.44102	.18570	.87719	26.691	10.710	-1.35	10
	259		15	15	133			2.03	
210	14163*	Maskelyne M	.46295	.13614	.87585	27.859	7.824	-0.03	12
	249		6	6	41			.62	
211	14229*	Dawes	.42356	.29609	.85569	26.335	17.229	-0.63	14
	519		8	9	76			1.13	
212	14254*	Jansen E	.45165	.25016	.85693	27.791	14.480	+0.78	20
	255B		6	6	49			.73	
213	14257	Jansen D	.45812	.27085	.84676	28.414	15.712	+0.20	11
	255C		5	5	36			.53	
214	14267	Jansen C	.46785	.27963	.83839	29.162	16.238	-0.02	15
	271		5	5	38			.55	
215	14189	Jansen K	.48483	.19965	.85233	29.632	11.508	+1.20	7
	259C		7	7	49			.73	
216	14285	Jansen L	.48463	.25380	.83736	30.060	14.699	+0.39	14
	259D		6	6	42			.61	
217	14318	Le Monnier C	.41092	.38037	.82819	26.389	22.363	-0.49	11
	509C		5	5	34			.49	
218	14361	Vitruvius E	.46277	.31991	.82677	29.237	18.657	+0.04	11
	270A		6	6	41			.59	
219	14366*	Littrow B	.46131	.36960	.80530	29.805	21.714	-1.81	11
	280		9	9	76			1.06	
220	14442	Le Monnier H	.44733	.42195	.78796	29.583	24.970	-0.85	6
	-		6	6	46			.63	
221	14446	Le Monnier K	.44506	.46533	.76429	30.213	27.750	-1.09	10
	-		14	14	107			1.42	
222	14459	Chacornac A	.45390	.49723	.73981	31.530	29.807	+0.50	10
	505		9	9	59			.76	
223	14490*	Littrow D	.49604	.40183	.76968	32.800	23.693	-0.06	19
	281		5	5	35			.48	
224	14494	Le Monnier U	.48938	.44235	.75193	33.057	26.245	+0.49	4
	-		8	8	55			.72	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	+	+	+	+		
225	14512*	Posidonius A	.41854	.52515	.74089	29.462	31.680	-0.11	25
	482		8	8	66			.85	
226	14516	Posidonius M	.41256	.56419	.71480	29.992	34.356	-0.47	18
	487		9	9	66			.82	
227	14529	Daniell X	.42261	.59572	.68326	31.737	36.557	+0.28	6
	-		6	6	46			.55	
228	14534	Posidonius B	.43130	.54684	.71734	31.016	33.157	-0.32	8
	483		5	5	45			.56	
229	14558*	Hall K	.45743	.58127	.67217	34.236	35.561	-0.93	13
	(498)		5	5	38			.44	
230	14561	Chacornac C	.46233	.51175	.72283	32.603	30.812	-1.63	8
	-		19	20	176			2.21	
231	14586	Hall C	.48141	.56967	.66507	35.898	34.755	-1.22	9
	497A		20	20	164			1.90	
232	14588	Hall J	.48867	.58029	.65157	36.869	35.469	+0.07	16
	497		9	9	68			.77	
233	14595	-	.48976	.55782	.66943	36.189	33.921	-0.73	4
	-		12	12	79			.92	
234	14608	Mason C	.40803	.68052	.60592	33.956	42.971	-2.84	16
	640		11	11	90			.95	
235	14614*	Grove	.41470	.64691	.63866	32.996	40.349	-1.43	5
	463		14	14	107			1.19	
236	14627	Hercules C	.42475	.67854	.59807	35.382	42.768	-1.29	18
	456		9	9	66			.69	
237	14629	Hercules J	.42600	.69574	.57744	36.417	44.114	-0.90	11
	454B		8	8	55			.55	
238	14632	-	.43571	.62476	.64773	33.927	38.670	-0.24	4
			11	11	72			.81	
239	14681	Maury D	.48070	.61905	.62110	37.738	38.245	+0.05	9
	385A		8	8	54			.58	
240	14704	Hercules B	.40035	.74087	.53879	36.614	47.822	-0.47	7
	454		13	13	100			.94	
241	14732A*	Hercules G	.43507	.72412	.53175	39.289	46.504	-3.14	11
	458		15	15	118			1.09	
242	14737*	Hercules A	.43207	.77923	.45377	43.596	51.197	-0.18	4
	453		16	14	122			.96	
243	14750*	Hercules D	.45326	.70440	.54603	39.696	44.787	-0.20	18
	457		8	8	65			.62	
244	14815*	de la Rue J	.41059	.85680	.31161	52.803	58.969	-0.18	6
	417A		21	19	142			.77	
245	14853*	Endymion G	.45645	.83290	.31177	55.665	56.429	-0.63	6
	409		23	24	228			1.24	
246	15003*	Maskelyne	.49983	.03799	.86440	30.038	2.178	-1.34	5
	242		11	10	92			1.38	
247	15009	Maskelyne N	.50304	.09359	.85983	30.329	8.367	+0.97	6
	-		6	7	47			.70	
248	15038	Maskelyne H	.53169	.08584	.84328	32.231	4.921	+1.03	16
	248B		6	6	44			.64	
249	15106*	Sinas E	.50759	.16794	.84558	30.975	9.663	+0.74	13
	261		6	6	41			.60	
250	15115*	Sinas	.51758	.15443	.84272	31.557	8.875	+1.66	20
	260		7	7	50			.73	
251	15147	Sinas H	.54407	.17433	.82156	33.514	10.032	+1.18	4
	-		7	8	79			1.13	
252	15147A	Sinas J	.54566	.17948	.81917	33.668	10.334	+0.87	12
	-		4	4	34			.48	
253	15201*	Jansen F	.50361	.21849	.83544	31.081	12.624	-0.59	16
	255A		9	9	69			1.00	
254	15228	Vitruvius K	.52774	.28174	.80259	33.326	16.346	+1.77	4
	-		11	11	72			1.00	
255	15254	Vitruvius G	.55089	.24043	.79958	34.565	13.907	+0.53	6
	-		7	8	54			.75	
256	15284*	Maraldi B	.57984	.24806	.77684	36.737	14.353	+1.07	29
	275A		5	5	35			.47	
257	15329	Römer L	.52248	.39555	.75530	34.673	23.301	-0.07	18
	309		11	11	81			1.06	
258	15330*	Vitruvius A	.52970	.30513	.79201	33.774	17.757	+0.84	17
	267		9	9	70			.96	
259	15338*	Römer K	.53647	.38415	.75140	35.525	22.591	-0.02	12
	308		6	6	40			.52	
260	15338A	Römer KA	.53705	.38938	.74815	35.672	22.918	-0.20	4
	-		11	10	85			1.10	
261	15354	Maraldi A	.55575	.34247	.75791	36.251	20.021	+0.49	7
	273A		6	6	47			.62	
262	15368	Römer J	.56820	.38085	.72992	37.898	22.378	+0.59	9
	307		7	7	50			.63	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	+	+	+	+		
263	15412	Römer M	.51330	.42732	.74518	34.560	25.279	+1.19	7
	-		9	9	60			.78	
264	15438	-	.53076	.48966	.69369	37.420	29.275	+2.33	4
	-		11	10	71			.86	
265	15503	G. Bond	.50019	.53600	.67880	36.385	32.443	-1.52	7
	492		9	9	80			.94	
266	15512	G. Bond A	.51111	.52417	.68242	36.831	31.582	+1.46	11
	495A		7	7	47			.56	
267	15547	Maury B	.54776	.57523	.60613	42.104	35.149	-1.46	8
	384		10	9	74			.78	
268	15548*	Maury A	.54019	.58761	.60157	41.922	36.008	-0.89	4
	383		14	13	118			1.23	
269	15610	Maury	.50941	.60369	.61338	39.709	37.130	+0.15	13
	385		11	11	94			1.00	
270	15645A*	Cepheus A	.54674	.65645	.51911	46.484	41.046	-0.58	24
	391		12	12	90			.81	
271	15785	Mercurius H	.58461	.75729	.28969	63.640	49.253	-0.71	8
	397F		26	26	243			1.22	
272	16046*	Taruntius F	.64795	.06871	.75865	40.500	3.939	+0.09	8
	221		14	14	107			1.41	
273	16049*	Taruntius E	.64227	.09668	.76133	40.151	5.543	+1.29	13
	219		16	16	132			1.75	
274	16066*	Secchi B	.66108	.06441	.74725	41.498	3.693	-0.38	13
	237B		5	5	43			.56	
275	16116*	Cauchy	.61553	.16689	.77069	38.613	9.603	+0.60	14
	262		15	15	118			1.58	
276	16137	Cauchy D	.63653	.17449	.75128	40.273	10.048	+0.03	4
	263		10	9	79			1.03	
277	16294	Proclus F	.69703	.24588	.67418	45.954	14.277	+0.72	10
	206		6	6	50			.59	
278	16300	Maraldi M	.60073	.30028	.74106	39.029	17.472	+0.19	7
	274		6	6	46			.59	
279	16313*	Macrobius A	.61007	.33503	.71749	40.373	19.582	-0.68	14
	182		10	10	88			1.10	
280	16315*	Macrobius B	.61054	.35749	.70747	40.793	20.934	+0.93	22
	183		6	6	48			.59	
281	16446*	Tralles A	.64902	.46125	.60461	47.028	27.474	-0.41	10
	177		16	16	139			1.46	
282	16476	Tralles C	.67118	.46670	.57578	49.374	27.823	-0.16	4
	178A		18	17	146			1.46	
283	16485*	Tralles B	.68734	.45840	.56357	50.650	27.281	+0.15	20
	178		8	8	62			.61	
284	16504*	Berzelius F	.60439	.54220	.58361	46.002	32.835	-0.11	10
	312		11	11	89			.90	
285	16541	Geminus G	.64367	.51235	.56689	48.629	30.851	-1.58	7
	325A		14	13	98			.97	
286	16625	Hooke D	.62680	.65212	.42358	55.949	40.761	-2.12	6
	362		19	20	194			1.43	
287	17050*	Taruntius G	.75922	.03285	.64871	49.487	1.884	-1.46	10
	224		12	12	110			1.24	
288	17060*	Taruntius H	.76393	.00627	.64424	49.858	0.359	-1.15	17
	225		7	7	54			.60	
289	17152*	Taruntius A	.75823	.12662	.63864	49.893	7.278	-1.04	25
	216		7	8	59			.65	
290	17207*	Proclus	.70147	.27790	.65820	46.822	16.114	+2.18	11
	198		15	15	132			1.51	
291	17285*	Picard	.78809	.25168	.55682	54.757	14.618	-4.81	6
	106		26	26	214			2.07	
292	17361	Peirce	.76042	.31300	.56267	53.500	18.308	-6.26	6
	115		23	21	229			2.24	
293	17378A	Cleomedes FA	.77933	.38129	.49463	57.597	22.444	-2.26	11
	-		8	8	62			.53	
294	17435	Cleomedes B	.73539	.45616	.49791	55.899	27.186	-2.79	5
	122		17	16	158			1.37	
295	17530	Burkhardt A	.73785	.50876	.44712	58.785	30.527	+2.76	4
	168		21	22	226			1.76	
296	18004*	Taruntius N	.80351	.04196	.59322	53.562	2.405	-0.61	5
	227		16	13	126			1.30	
297	18013*	Taruntius O	.81067	.03920	.58166	54.340	2.249	-2.56	12
	226A		8	8	61			.62	
298	18035*	Apollonius C	.83652	.05769	.54288	57.017	3.310	-1.90	5
	69		17	18	177			1.41	
299	18252A*	Picard X	.85566	.22715	.46028	61.723	13.158	-3.82	10
	(40)		10	10	76			.61	
300	18419	Hahn A	.81458	.49565	.29759	69.931	29.749	-1.94	6
	142		28	29	303			1.57	
301	19233	Hansen A	.93791	.23143	.26373	74.294	13.362	+2.42	5
	12		21	22	247			1.13	

End of Quadrant I

	B & M	Designation	E -	F +	G +	Long -	Lat +	H	Pl.
302	20017 1229B	Pallas C	.01900 8	.07853 7	.99771 63	1.090	4.499	+1.70 1.09	4
303	20028 -	Pallas H	.02726 8	.08131 8	.99783 56	1.564	4.656	+2.62 .97	7
304	20044* 1229A	Pallas D	.04571 9	.04172 10	.99927 69	2.619	2.388	+2.06 1.20	6
305	20047 1227	Pallas B	.04556 6	.07356 7	.99676 50	2.617	4.216	+0.88 .87	10
306	20069 1218A	Bode L	.06593 7	.09831 7	.99377 51	3.795	5.637	+1.38 .88	6
307	- -	(bright spot)	.08027 12	.09852 11	.99257 115	4.623	5.650	+1.17 1.98	6
308	20115* 1214	Bode A	.01995 5	.15682 5	.98835 42	1.156	9.014	+1.58 .72	14
309	20136 1217A	Bode K	.03908 6	.16192 6	.98701 43	2.267	9.309	+1.68 .74	10
310	20140 1226	Pallas A	.04042 8	.10428 8	.99513 64	2.325	5.977	+2.42 1.11	11
311	20141* 1212	Bode	.04209 6	.11740 6	.99318 54	2.426	6.735	+1.70 .93	12
312	20155* 1215	Bode B	.05295 4	.15235 4	.98749 34	3.069	8.758	+1.00 .58	30
313	20161* 1213	Bode G	.06145 5	.11079 5	.99297 36	3.541	6.354	+1.77 .62	17
314	20235* 1202	M. Polo A	.03281 5	.25728 5	.96609 40	1.945	14.904	+0.52 .67	13
315	20239* 1203	M. Polo B	.03097 5	.29580 5	.95596 43	1.855	17.184	+2.01 .71	20
316	20251 1219A	Bode E	.05817 9	.21548 8	.97524 62	3.413	12.437	+0.79 1.05	4
317	20265 1204A	M. Polo D	.06343 6	.25784 6	.96441 49	3.762	14.937	+0.51 .83	11
318	20281* 1217	Bode C	.08086 5	.21202 5	.97397 38	4.745	12.240	+0.09 .64	12
319	20284* 1204	M. Polo C	.08442 8	.24249 9	.96547 69	4.997	14.047	-1.69 1.16	25
320	20320 1203B	M. Polo H	.02772 9	.30625 7	.95292 68	1.666	17.809	+2.27 1.13	4
321	20374* 1294B	Wallace B	.07401 5	.34514 5	.93559 36	4.522	20.191	-0.06 .59	11
322	20442* -	Archimedes L	.04107 14	.42319 14	.90493 140	2.598	25.040	-0.28 2.20	4
323	20490 -	Archimedes W	.09933 5	.40329 5	.91062 43	6.225	23.762	+1.51 .68	4
324	20497* 1145	Archimedes A	.09834 4	.47023 4	.87728 35	6.395	28.043	+0.35 .53	31
325	20522* 1147	Archimedes C	.02225 8	.52400 8	.85024 66	1.499	31.636	-1.76 .97	21
326	20527* 1146	Aristillus B	.02733 5	.57011 5	.82051 38	1.907	34.777	-0.86 .54	14
327	20533 1148	Archimedes D	.03948 5	.53246 5	.84495 43	2.675	32.189	-0.86 .63	14
328	20599* 1143A	Kirch E	.09684 6	.59436 6	.79802 48	6.919	36.478	-0.45 .67	13
329	20603* 1131A	Piton B	.00199 5	.63343 5	.77310 38	0.147	39.328	-0.94 .51	18
330	20613* 1131	Piton A	.01253 6	.63977 6	.76793 48	0.934	39.794	-0.71 .64	12
331	20644 1127B	P. Smyth B	.04453 9	.64898 10	.75947 75	3.355	40.465	-0.04 .99	6
332	20646* 1125	P. Smyth	.04187 8	.66746 8	.74342 68	3.223	41.873	-0.06 .88	15
333	20647 -	P. Smyth Y	.04383 8	.67912 8	.73306 61	3.421	42.761	+0.43 .78	5
334	20673* 1132	Kirch	.07564 7	.63232 8	.77091 67	5.603	39.224	-0.13 .90	8
335	20681 1143B	Kirch F	.08287 8	.61490 9	.78421 66	6.032	37.945	-0.04 .90	6
336	20708* 1065	Alps A	.00297 10	.78061 10	.62562 89	0.271	51.289	+0.66 .97	9
337	20711* 1065A	Alps B	.01097 7	.71614 8	.69708 58	0.901	45.769	-0.96 .70	6
338	20732* 1076	Plato K	.03857 10	.72835 10	.68244 81	3.234	46.818	-1.99 .96	18

	B & M	Designation	E -	F +	G +	Long -	Lat +	H	Pl.
339	20742	Plato KA	.04284	.72791	.68320	3.557	46.759	-1.37	6
	-		11	11	96			1.14	
340	20755*	Plato J	.05215	.75445	.65328	4.564	49.020	-1.14	15
	1075		7	7	55			.62	
341	20768*	Plato G	.06686	.78937	.61030	6.251	52.125	+0.03	12
	1072		8	8	71			.75	
342	20773*	Pico C	.07833	.73329	.67475	6.621	47.189	-0.75	10
	1124		8	8	60			.70	
343	20786*	Plato U	.08299	.76071	.64372	7.346	49.528	-0.05	10
	1077G		9	9	70			.78	
344	20808*	Timaeus	.00442	.88952	.45499	0.556	62.909	-1.49	5
	1051		10	10	89			.70	
345	20800	Plato HA	.00975	.80762	.58968	0.947	53.861	+0.06	6
	-		10	10	76			.78	
346	20822*	Plato H	.01996	.82016	.57054	2.003	55.159	-1.24	30
	1073		10	10	77			.76	
347	20841*	Plato Q	.04868	.81433	.57786	4.815	54.544	-0.50	11
	1077E		10	10	71			.71	
348	20902*	Epigenes A	.00223	.92067	.38980	0.327	67.052	-0.36	11
	1041		17	17	156			1.06	
349	20935*	Anaxagor. A	.03719	.95226	.30219	7.016	72.269	-0.43	7
	1027		10	10	89			.47	
350	20955*	Anaxagoras	.05009	.95901	.28208	10.069	73.367	+1.54	7
	1026		17	17	144			.71	
351	20990	Birming. K	.09641	.90558	.41055	13.215	65.029	-1.81	4
	-		9	9	63			.45	
352	20993	Fontenelle K	.09443	.93726	.33571	15.710	69.590	+0.06	5
	1328D		14	14	112			.65	
353	21038	Schröter A	.13496	.08411	.98775	7.780	4.822	+0.81	4
	1250		5	5	39			.67	
354	21065	Schröter G	.16339	.05551	.98527	9.415	3.181	+0.46	10
	1253B		5	5	41			.70	
355	21067*	Schröter D	.16467	.07867	.98353	9.504	4.510	+0.55	11
	1253		7	7	52			.89	
356	21073	Gambart BA	.17880	.03760	.98436	10.295	2.152	+2.04	6
	-		9	10	69			1.18	
357	21085	Gambart H	.18363	.05627	.98139	10.598	3.225	+0.01	9
	1502A		6	6	46			.78	
358	21104*	Schröter J	.10505	.14840	.98397	6.093	8.528	+1.09	22
	1253A		8	8	61			1.04	
359	21211	Bode H	.11069	.21169	.97084	6.504	12.223	-0.35	5
	1219B		10	10	97			1.64	
360	21252*	Eratosth. K	.15629	.22259	.96209	9.227	12.863	-0.35	6
	1283B		7	7	55			.92	
361	21289	Eratosth. D	.18016	.29953	.93742	10.878	17.420	+0.81	4
	1283D		12	12	113			1.84	
362	21331*	Eratosth. A	.13704	.31461	.93912	8.302	18.340	-0.25	6
	1283		7	7	64			1.04	
363	21342*	Eratosth. B	.14289	.32066	.93632	8.676	18.703	-0.06	21
	1283A		4	4	30			.49	
364	21360	Eratosth. F	.16354	.30377	.93908	9.878	17.676	+0.77	4
	1283F		12	12	108			1.76	
365	21370	Eratosth. E	.17918	.30791	.93335	10.867	17.951	-1.69	4
	1283E		10	10	87			1.41	
366	21420*	Archimedes F	.12390	.40984	.90346	7.808	24.200	-0.38	15
	1150		12	12	95			1.49	
367	21428*	Archimedes G	.12352	.48642	.86518	8.125	29.099	+0.34	4
	1150A		12	14	143			2.15	
368	21435	Beer	.14046	.45499	.87883	9.080	27.077	-0.79	11
	1185A		6	6	53			.81	
369	21445A	Feuillée	.14537	.45955	.87525	9.430	27.382	-1.41	18
	1186		6	6	54			.82	
370	21486*	Timocharis B	.18603	.46715	.86402	12.150	27.859	-0.55	12
	1298		6	6	47			.71	
371	21503*	Spitzberg. A	.10360	.53996	.83504	7.072	32.688	-0.36	12
	1141		6	6	49			.71	
372	21524A	Spitzberg. D	.12685	.54853	.82577	8.733	33.287	-0.98	4
	1143		13	15	151			2.16	
373	21524	Spitzberg. C	.12829	.54236	.82995	8.786	32.854	-0.49	17
	1142		4	4	31			.45	
374	21610	Kirch G	.11163	.60660	.78596	8.083	37.384	-1.60	5
	-		7	8	57			.78	
375	21638*	Pico E	.13053	.68151	.72110	10.260	42.922	+1.28	7
	1123		7	7	69			.86	

	B & M	Designation	E -	F +	G +	Long -	Lat +	H	Pl.
376	21648* 1122	Pico D	.14193 6	.68693 6	.71180 46	11.276	43.423	-1.15 .57	17
377	21663* 1302	Le Verrier D	.16409 12	.63890 12	.74833 120	12.367	39.826	-4.25 1.56	12
378	21664 1304C	Le Verrier B	.16968 7	.64448 7	.74496 54	12.831	40.148	-0.77 .70	10
379	21680* -	Le Verrier U	.18104 14	.60473 15	.77602 97	13.131	37.194	+0.59 1.30	4
380	21705A -	-	.10822 12	.75820 12	.64293 88	9.554	49.307	-0.05 .98	8
381	21762 -	Pico BA	.16717 4	.72881 4	.66235 35	14.165	46.853	-1.90 .40	6
382	21766* 1069	Plato D	.16220 9	.76158 9	.62739 79	14.495	49.605	-0.06 .86	10
383	21768* 1074A	Plato P	.16276 9	.78185 9	.60065 70	15.161	51.481	-1.28 .73	11
384	21769 1074	Plato M	.16028 9	.79891 9	.57857 69	15.484	53.076	-1.14 .69	10
385	21776* 1070	Plato E	.17957 7	.76234 7	.62065 56	16.136	49.717	-1.20 .60	11
386	21779* 1066	Plato B	.17808 9	.79883 9	.57521 89	17.202	52.991	+0.61 .89	6
387	21782* 1121	Pico B	.18222 7	.72471 7	.66447 66	15.335	46.446	-0.06 .76	8
388	21811* 1077D	Plato T	.11298 7	.81420 7	.56953 59	11.220	54.506	+0.04 .58	12
389	21849* 1323	Fontenelle	.14509 21	.89331 21	.42574 187	18.818	63.274	+0.27 1.38	5
390	21863 1077B	Plato W	.16472 20	.83938 20	.51240 170	17.280	57.345	-4.35 1.51	10
391	21888* 1326	Fontenelle B	.18370 6	.88099 6	.43339 66	22.970	61.884	-1.99 .50	4
392	21890 1067	Plato C	.19850 14	.80050 14	.56436 109	19.378	53.227	-1.13 1.07	8
393	21902* 1324	Fontenelle A	.10587 19	.92399 19	.36742 179	16.074	67.519	-0.03 1.14	5
394	21911 1328E	Fontenelle L	.11352 7	.91638 7	.38176 55	16.560	66.509	-1.41 .37	5
395	21912 1347	Philolaus F	.11731 5	.92683 5	.35404 40	18.332	68.079	-1.62 .25	6
396	21990* 1328	Fontenelle C	.19687 7	.90180 6	.38318 55	27.193	64.465	-1.02 .37	10
397	22003 1499	Gambart B	.20015 10	.03762 11	.97931 97	11.550	2.155	+0.45 1.65	12
398	22003A* 1502	Gambart G	.20812 4	.03435 4	.97764 30	12.017	1.968	+0.24 .51	26
399	22005* 1500	Gambart C	.20430 10	.05842 10	.97715 91	11.809	3.349	-0.02 1.54	14
400	22009 1502E	Gambart M	.20165 16	.09394 12	.97444 118	11.691	5.392	-0.85 2.00	4
401	22046 1502D	Gambart K	.24458 7	.06845 7	.96723 53	14.190	3.924	+0.03 .89	5
402	22061* 1497	Gambart	.26222 3	.01656 3	.96483 37	15.204	0.948	-0.06 .62	4
403	22065* 1502C	Gambart L	.26263 4	.05732 4	.96357 34	15.246	3.284	+0.63 .57	10
404	22090 1501A	Gambart F	.29092 5	.00205 5	.95660 40	16.915	0.117	-0.24 .67	6
405	22102 -	Schröter M	.20041 5	.12102 5	.97223 36	11.647	6.950	+0.03 .61	9
406	22136 1467N	Stadius K	.23193 12	.16807 11	.95765 87	13.614	9.679	-0.75 1.45	5
407	22162* 1485	Copernicus C	.26357 7	.12424 6	.95675 49	15.402	7.135	+0.24 .82	10
408	22166 1467L	Stadius N	.26564 14	.16378 13	.94916 105	15.635	9.434	-1.48 1.73	6
409	22184 -	Copernicus R	.28589 7	.14033 6	.94733 51	16.793	8.071	-0.99 .84	4
410	22209* 1283C	Eratosth. C	.20476 5	.29047 5	.93439 38	12.360	16.891	-0.53 .62	10
411	22220* 1467	Stadius B	.22993 4	.20541 4	.95105 34	13.591	11.856	-0.38 .56	11
412	22441* 1297	Timochar. A	.23983 7	.41989 7	.87460 60	15.334	24.844	-1.08 .91	19

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			-	+	+	-	+		
413	22461	Timochar. E	.26730	.41663	.86848	17.107	24.631	-0.62	6
	1298C		9	9	77			1.16	
414	22511*	Timochar. F	.21759	.51907	.82610	14.756	31.283	-0.68	20
	1298D		4	4	29			.42	
415	22534*	Carlini D	.23093	.54412	.80568	15.993	32.992	-1.29	21
	1394		7	7	58			.81	
416	22617*	Le Verrier E	.21538	.67366	.70601	16.965	42.385	-1.17	14
	1303		5	5	41			.50	
417	22631*	Le Verrier A	.23365	.61740	.75105	17.280	38.129	-0.13	15
	1304B		5	5	39			.50	
418	22664*	Le Verrier	.26768	.64685	.71325	20.570	40.333	-1.05	6
	1304		9	9	87			1.08	
419	22681	Helicon B	.28556	.61463	.73363	21.268	37.980	-2.15	14
	1300		13	13	105			1.34	
420	22694	Helicon	.29794	.64782	.70148	23.012	40.364	+0.44	5
	1299		11	11	106			1.29	
421	22728	Laplace L	.22204	.78417	.57803	21.013	51.704	-1.44	8
	1319C		10	10	79			.79	
422	22731*	Laplace F	.23742	.71284	.65858	19.824	45.517	-1.53	16
	1321		5	5	42			.48	
423	22749A	Condamine Q	.24594	.79398	.55498	23.900	52.600	-0.96	8
	-		8	8	66			.64	
424	22767*	Maupertuis A	.26484	.77311	.57393	24.770	50.730	-2.40	11
	1381		16	16	143			1.43	
425	22793	Laplace D	.29241	.73388	.61242	25.522	47.239	-0.75	13
	1318		9	9	73			.78	
426	22801*	Condamine R	.20798	.81822	.53504	21.242	54.947	-0.86	6
	1368M		10	10	78			.72	
427	22819A*	Fontenelle N	.21682	.89813	.37963	29.732	64.044	-1.94	7
	1328G		6	5	46			.30	
428	22826	Fontenelle X	.22908	.86966	.43524	27.759	60.509	-1.55	6
	-		6	6	46			.35	
429	22838	J. Herschel R	.23488	.88622	.39679	30.623	62.512	-1.74	5
	1682H		11	10	112			.77	
430	22855	Condamine T	.25295	.85864	.44453	29.641	59.219	-1.00	6
	-		8	8	64			.49	
431	22861	Condamine M	.26215	.81001	.52186	26.672	54.209	-2.45	6
	1368I		4	4	38			.34	
432	22874	Condamine F	.27763	.84119	.45984	31.121	57.439	-3.36	14
	1368E		13	12	107			.86	
433	22875*	Condamine B	.27103	.85518	.43893	31.696	58.900	-2.22	4
	1367		9	9	98			.75	
434	22891*	Condamine A	.29229	.81302	.50011	30.304	54.530	-3.00	10
	1366		17	17	160			1.39	
435	22895	J. Herschel F	.29976	.85501	.41648	35.744	59.029	-4.91	5
	1682		16	16	181			1.31	
436	22898	J. Herschel C	.29843	.88498	.35552	40.010	62.323	-1.18	6
	1679		13	13	126			.78	
437	22900*	Fontenelle F	.20379	.90100	.38128	28.124	64.366	-1.12	5
	1328A		11	11	120			.80	
438	22901*	Anaximenes E	.20754	.91680	.33947	31.440	66.539	-1.01	9
	1359C		10	10	81			.48	
439	23021*	Gambart A	.32091	.01715	.94676	18.724	0.982	-0.32	29
	1498		3	3	27			.44	
440	23065*	Reinhold F	.36414	.05901	.92887	21.406	3.384	-0.97	6
	1512E		10	10	82			1.32	
441	23112*	Copernic. H	.31096	.12024	.94297	18.250	6.904	+0.30	19
	1486D		4	4	28			.46	
442	23140	Fauth	.34151	.10932	.93347	20.095	6.276	-0.05	4
	1482		5	5	51			.83	
443	23176	Copernic. JD	.37313	.16767	.91131	22.266	9.662	-1.89	6
	-		12	12	110			1.74	
444	23213	Gay-Lussac G	.31350	.23948	.91815	18.852	13.865	-1.19	5
	1439D		7	6	49			.78	
445	23224	Gay-Lussac F	.32562	.24234	.91354	19.617	14.029	-0.60	5
	1439C		7	7	68			1.08	
446	23249*	Draper C	.34981	.29354	.88940	21.470	17.073	-0.38	18
	1412		4	4	30			.46	
447	23310	Pytheas B	.31589	.30065	.89867	19.366	17.516	-1.93	6
	1408		9	9	71			1.11	
448	23325*	Pytheas	.32890	.35140	.87662	20.565	20.571	+0.10	7
	1406		9	9	90			1.37	
449	23344	Pytheas A	.34627	.34954	.87002	21.702	20.469	-0.85	11
	1407		6	6	48			.73	

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450	23350	Draper	.35277	.30202	.86636	21.702	17.567	+1.13	6
	1411		5	5	49			.74	
451	23446	La Hire B	.34579	.46459	.81382	23.020	27.718	-1.98	4
	1399A		15	15	132			1.87	
452	23447*	La Hire A	.34902	.47734	.80679	23.393	28.502	+0.50	19
	1399		7	7	57			.80	
453	23500*	Carlini B	.30682	.50554	.80636	20.831	30.368	-0.06	10
	1392		6	6	47			.66	
454	23535*	Carlini	.33890	.55517	.75909	24.058	33.736	-0.62	28
	1390		5	5	36			.48	
455	23567*	Carlini A	.36470	.57832	.72823	26.601	35.377	-1.93	19
	1391		8	8	69			.87	
456	23629*	Laplace A	.32637	.69077	.64358	26.890	43.749	-1.85	20
	1315		10	10	79			.88	
457	23708*	Maupertuis L	.30496	.78018	.54461	29.247	51.338	-1.49	10
	-		8	8	66			.63	
458	23709	Condamine C	.30737	.79175	.52716	30.245	52.377	-0.66	4
	1368B		14	14	158			1.45	
459	23739	Bouguer A	.33797	.79325	.50666	33.705	52.483	+0.15	6
	1672		8	8	79			.70	
460	23759	Bouguer	.35758	.79081	.49232	35.991	52.424	-3.81	10
	1671		17	17	162			1.39	
461	23800	Condamine D	.30464	.80315	.51122	30.790	53.463	-0.70	6
			11	11	106			.94	
462	23855	Horrebow B	.35320	.85444	.38194	42.761	58.665	+0.60	5
	1678		6	6	59			.39	
463	23874	South B	.37914	.84304	.37927	44.990	57.538	-1.47	10
	1706B		14	14	128			.84	
464	24140*	Hortensius C	.44674	.10361	.88846	26.694	5.948	-0.28	14
	1522		4	4	35			.54	
465	24161*	Hortensius	.46593	.11308	.87833	27.944	6.488	+1.16	8
	1519		7	7	62			.95	
466	24197*	Milichius	.49501	.17407	.85149	30.171	10.022	+0.32	27
	1529		2	2	20			.30	
467	24221	T. Mayer C	.42803	.21199	.87946	25.952	12.229	+1.39	6
	1418		4	4	41			.63	
468	24224	T. Mayer Z	.42672	.24533	.87111	26.098	14.193	+0.96	4
	1421		6	6	41			.62	
469	24227	T. Mayer E	.42353	.27668	.86308	26.138	16.055	+0.73	4
	1420		14	13	117			1.75	
470	24241*	T. Mayer D	.44009	.21208	.87260	26.763	12.243	+0.08	10
	1419		4	4	37			.56	
471	24256	T. Mayer A	.45709	.26359	.84953	28.282	15.282	+0.10	10
	1416		14	14	128			1.89	
472	24272	T. Mayer F	.47108	.22318	.85322	28.903	12.897	-0.25	5
	1420A		10	10	89			1.32	
473	24296	T. Mayer B	.49492	.26489	.82663	30.909	15.372	-1.36	4
	1417		7	6	94			1.35	
474	-	(bright spot)	.41741	.38905	.81939	26.994	22.931	-2.62	4
	-		14	14	139			1.98	
475	24349*	Euler	.44716	.39524	.80090	29.175	23.310	-2.08	5
	1583		9	9	105			1.46	
476	24468*	Diophantus B	.46917	.48569	.73697	32.481	29.071	-0.75	15
	1591		5	5	39			.50	
477	24496	Diophantus	.49852	.46379	.73206	34.254	27.638	-0.40	9
	1589		14	14	149			1.90	
478	24526*	C. Herschel	.42706	.56587	.70360	31.256	34.509	-2.05	5
	1602		10	10	121			1.48	
479	24532*	Heis D	.43894	.52446	.72790	31.090	31.674	-2.12	7
	1600		11	12	116			1.47	
480	24620	C. Herschel C	.42840	.60426	.66952	32.613	37.242	-2.68	7
	1604		8	8	80			.93	
481	24671*	Mairan E	.47718	.61244	.62870	37.198	37.809	-1.70	23
	1614		5	5	38			.42	
482	24753*	Sharp A	.45612	.73814	.49477	42.672	47.645	-2.00	21
	1635		9	9	71			.61	
483	24783*	Sharp B	.48501	.73084	.47433	45.637	47.131	-4.92	9
	1636		22	22	209			1.72	
484	24802	Harpalus C	.40051	.82406	.39945	45.075	55.333	-0.83	5
	1666		13	13	116			.80	
485	25007*	Hortensius A	.50894	.07643	.85707	30.702	4.384	-0.49	19
	1520		5	5	44			.66	
486	25010*	Lansberg A	.51640	.00340	.85610	31.098	0.194	-0.36	26
	2481		3	3	26			.39	

	B & M	Designation	E -	F +	G +	Long -	Lat +	H	Pl.
487	25091*	Encke C	.59285	.01197	.80498	36.372	0.686	-0.41	12
	1542D		7	7	67			.94	
488	25094	Encke B	.59753	.04144	.79872	36.800	2.378	-2.86	12
	1539		9	9	88			1.22	
489	25126*	Milichius A	.52303	.16119	.83749	31.985	9.271	+0.81	12
	1530		8	8	75			1.09	
490	25182*	Kepler A	.58407	.12453	.80199	36.064	7.154	-0.14	12
	1555		8	8	70			.98	
491	25285	Bessarion	.58528	.25616	.76811	37.306	14.856	-1.60	10
	1572		11	11	104			1.39	
492	25304*	Brayley D	.50921	.34251	.78954	32.819	20.030	-0.02	11
	1581		4	4	38			.52	
493	25325*	Brayley B	.52633	.35386	.77026	34.345	20.772	-3.88	11
	1579		12	12	120			1.60	
494	25365*	Brayley	.56046	.35679	.74575	36.926	20.929	-2.12	12
	1578		9	9	85			1.10	
495	25396A	Brayley C	.59098	.36475	.71978	39.387	21.387	+0.33	6
	1580		7	7	64			.80	
496	25401	Euler E	.50809	.41773	.75219	34.038	24.711	-1.35	4
	1584		8	8	69			.90	
497	25426	Diophantus A	.52780	.46330	.71222	36.540	27.593	+0.41	4
	1590		7	7	61			.75	
498	25479	Angström	.57521	.49792	.64658	41.656	29.914	-2.73	8
	1737		14	14	127			1.43	
499	25508	Gruithuis. B	.50769	.58236	.63339	38.713	35.656	-1.67	6
	1606		8	8	73			.80	
500	25534*	Gruithuisen	.53616	.54269	.64256	39.842	32.962	-4.47	8
	1605		18	18	170			1.90	
501	25635	Mairan D	.53791	.65536	.52778	45.544	41.011	-2.26	4
	1613		15	15	128			1.17	
502	25685*	Mairan G	.58495	.65385	.47749	50.775	40.889	-2.01	9
	1613B		5	5	40			.33	
503	26040*	Encke E	.64417	.00636	.76380	40.143	0.364	-1.40	18
	1540		7	7	64			.85	
504	26048*	Maestlin	.64876	.08565	.75561	40.649	4.915	-0.72	10
	1542B		11	12	102			1.34	
505	26088*	Maestlin H	.68582	.08110	.72224	43.518	4.655	-1.25	9
	1542A		7	7	54			.68	
506	26157*	Kepler C	.65591	.17428	.73269	41.835	10.049	-2.24	16
	1557		8	8	70			.89	
507	26199*	Marius D	.69262	.19779	.69184	45.032	11.422	-2.18	8
	1817		9	9	85			1.02	
508	26219*	Bessarion A	.61131	.29352	.73177	39.874	17.109	-4.05	12
	1573		13	13	132			1.68	
509	26257*	Bessarion C	.64977	.27610	.70687	42.589	16.043	-1.65	11
	1575		5	5	39			.48	
510	26323	Bessarion D	.62531	.33847	.70204	41.691	19.799	-1.36	7
	1576		15	15	131			1.60	
511	26520*	Wollaston	.62789	.50847	.58656	46.949	30.615	-2.75	13
	1736		12	12	100			1.02	
512	26562*	Wollaston C	.66604	.52661	.52481	51.763	31.841	-3.17	8
	1739		13	13	112			1.02	
513	26652*	Rümker E	.65445	.62381	.42343	57.097	38.669	-2.84	6
	1880A		23	22	203			1.49	
514	26690	Naumann B	.69064	.60738	.38637	60.775	37.506	-4.20	6
	1877		17	17	148			.99	
515	27002*	Suess F	.70227	.02046	.71097	44.647	1.172	-0.80	5
	1837		6	6	57			.70	
516	27028	Suess D	.72291	.08151	.68556	46.519	4.677	-0.66	4
	1836		8	8	68			.81	
517	27037*	Suess	.73637	.07613	.67074	47.670	4.370	-1.80	9
	1835A		15	15	132			1.54	
518	27039	Suess B	.73136	.09880	.67407	47.334	5.672	-0.85	4
	1834		11	11	94			1.10	
519	27063*	Reiner E	.76016	.03335	.64798	49.554	1.912	-1.01	9
	1838		5	5	41			.46	
520	27086	Reiner C	.77984	.06139	.62070	51.482	3.524	-2.44	10
	1835		11	11	103			1.11	
521	27078	Reiner A	.77810	.08977	.62018	51.443	5.155	-1.63	22
	1833		7	7	53			.57	
522	27137	Marius V	.73459	.17150	.65512	48.272	9.883	-1.55	4
	-		14	14	126			1.43	
523	27208	Marius B	.70429	.28125	.64991	47.299	16.355	-2.17	10
	1815		14	14	124			1.40	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			-	+	+	-	+		
524	27213	Marius CB	.71045	.23882	.66034	47.093	13.832	-1.89	4
	-		4	4	36			.41	
525	27214	Marius C	.71599	.24185	.65254	47.654	14.017	-2.66	4
	1816		4	4	44			.50	
526	27270*	Marius E	.77666	.21032	.59279	52.647	12.148	-1.01	14
	1818		12	12	100			1.03	
527	27289*	Marius M	.78006	.29862	.54617	55.001	17.410	-3.51	15
	-		13	13	108			1.02	
528	27336*	Herodotus A	.73299	.36673	.56997	52.131	21.552	-2.93	15
	1806		12	12	99			.98	
529	27358	Herodotus B	.75901	.38364	.52387	55.386	22.586	-1.99	7
	1807		21	21	193			1.76	
530	27534	Lichtenb. B	.73233	.54776	.39497	61.660	33.357	-6.66	4
	1869		25	24	221			1.52	
531	28103	Reiner L	.80666	.13884	.57221	54.649	7.991	-2.26	4
	-		10	11	92			.91	
532	28112*	Reiner	.81211	.12130	.56622	55.114	6.985	-4.49	7
	1832		21	21	209			2.06	
533	28178*	Galilaei	.87351	.18187	.44989	62.749	10.486	-1.31	4
	1843		17	20	229			1.79	
534	28194	Cavalerius F	.89884	.14083	.41233	65.357	8.105	-1.94	4
	-		20	21	178			1.28	
535	28254	Galilaei E	.85473	.24087	.45852	61.788	13.946	-1.02	6
	1846B		27	27	230			1.83	
536	28270*	Galilaei A	.87148	.20276	.44363	63.021	11.713	-2.26	20
	1844		6	6	51			.39	
537	28319	Schiapar. A	.81239	.38992	.43069	62.069	22.979	-2.17	4
	1812		14	14	124			.93	
538	29024*	Hevelius A	.92646	.04975	.37049	68.203	2.854	-1.68	5
	1959		6	6	55			.35	
539	29061*	Riccioli H	.96567	.01996	.25751	75.068	1.144	-0.67	4
	1966		16	17	149			.67	
540	29109*	Galilaei B	.90487	.19833	.37253	67.623	11.457	-2.69	6
	1845		16	16	142			.92	
541	29151*	Olbers B	.95492	.11928	.26994	74.215	6.854	-0.90	4
	1929		25	26	271			1.27	

End of Quadrant II

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			-	-	+	-	-		
542	30000	Oppolzer A	.00577	.00802	1.00062	0.330	0.459	+1.16	6
	2951A		5	6	41			.71	
543	30015*	Réaumur X	.01097	.05027	.99921	0.629	2.879	+0.93	16
	-		5	5	37			.64	
544	30035	Spörer A	.03579	.05938	.99788	2.054	3.403	+0.50	8
	2945A		5	5	41			.71	
545	30043	Flammar. A	.04326	.03367	.99934	2.478	1.927	+1.46	12
	2950A		7	8	63			1.09	
546	30051	Mösting L	.05959	.01149	.99855	3.415	0.658	+0.68	5
	-		5	5	36			.63	
547	30058*	Herschel C	.05495	.08675	.99579	3.158	4.971	+1.86	23
	2947		5	5	40			.69	
548	30063	Flammar. C	.06509	.03468	.99783	3.732	1.986	+0.96	11
	2950C		4	4	29			.50	
549	30077	Flammar. B	.07908	.06997	.99455	4.546	4.011	+0.24	14
	2950B		4	4	34			.59	
550	30080*	Mösting D	.08893	.00600	.99619	5.101	0.343	+0.29	7
	2936A		6	6	45			.78	
551	30095*	Mösting A	.09000	.05548	.99463	5.170	3.179	+0.40	35
	2933		3	3	20			.35	
552	30099A	Lalande NA	.09893	.09272	.99060	5.703	5.320	-0.28	6
	-		8	7	60			1.03	
553	30099	Lalande N	.09921	.09665	.99105	5.716	5.542	+1.18	11
	2920A		4	4	27			.46	
554	30108	Ptolemaeus S	.00877	.18250	.98398	0.510	10.506	+1.39	6
	2970G		6	7	49			.84	
555	30114*	Ptolemaeus A	.01392	.14756	.98928	0.806	8.482	+0.56	32
	2963		3	3	22			.38	
556	30144	Ptolemaeus D	.04442	.14319	.98865	2.572	8.232	-0.08	6
	2966		5	4	37			.64	
557	30162	Ptolemaeus O	.06202	.12567	.99203	3.577	7.205	+3.27	7
	2966A		8	8	59			1.02	
558	30165	Ptolemaeus L	.06877	.15323	.98658	3.987	8.807	+1.34	11
	2970D		4	4	32			.55	
559	30171	Herschel J	.07396	.11126	.99242	4.262	6.379	+2.38	7
	2949B		8	8	62			1.07	
560	30184	Ptolemaeus K	.08049	.14270	.98796	4.657	8.192	+2.52	5
	2970C		11	12	113			1.94	
561	30186*	Ptolemaeus JA	.08657	.16596	.98256	5.035	9.550	+0.40	13
	-		7	7	58			.99	
562	30191	Ptolemaeus HA	.09028	.11865	.98921	5.214	6.811	+0.66	6
	-		6	6	51			.88	
563	30192A	Ptolemaeus HB	.09321	.12857	.98788	5.390	7.382	+0.98	9
	-		6	6	42			.72	
564	30196*	Ptolemaeus J	.09236	.16710	.98157	5.375	9.619	-0.06	11
	2970B		5	5	36			.61	
565	30206*	Alphonsus H	.00843	.26858	.96346	0.501	15.576	+0.40	13
	2992A		4	4	29			.49	
566	30235	Alphonsus A	.03787	.25581	.96569	2.245	14.825	-0.49	4
	2987		9	9	87			1.46	
567	30249*	Arzachel B	.04938	.29279	.95553	2.958	17.014	+1.04	7
	3042		8	7	64			1.06	
568	30251	Alphonsus G	.05743	.21317	.97543	3.369	12.306	+0.18	10
	2987A		5	5	35			.59	
569	30320	Arzachel A	.02458	.30903	.94967	1.482	18.019	-1.76	9
	3041		5	5	38			.63	
570	30321	Arzachel K	.02656	.31425	.94884	1.603	18.317	-0.21	5
	3042B		9	8	72			1.19	
571	30328	Purbach D	.02486	.38822	.92201	1.544	22.826	+1.25	9
	3086		5	5	42			.67	
572	30360	Arzachel C	.06127	.29993	.95270	3.679	17.441	+1.17	4
	3043		6	6	55			.91	
573	30366	Thebit C	.06648	.36196	.92972	4.089	21.222	-0.16	7
	3070A		5	5	44			.71	
574	30376*	Thebit A	.07928	.36719	.92794	4.883	21.517	+1.90	14
	3071		9	9	82			1.32	
575	30379	Thebit E	.07416	.39189	.91715	4.622	23.069	+0.21	11
	3073		4	4	34			.54	
576	30401	Purbach F	.00009	.41577	.91000	0.006	24.554	+0.84	12
	3089		6	6	54			.85	
577	30411	Purbach T	.01411	.41666	.90875	0.889	24.628	-0.32	12
	3089A		5	5	43			.68	
578	30412	Purbach X	.01821	.42811	.90178	1.156	25.390	-2.77	4
	-		5	5	54			.85	
579	30416*	Regiomont. A	.01026	.46930	.88239	0.666	28.004	-0.90	5
	3101		4	4	37			.57	

	B & M	Designation	E -	F -	G +	Long -	Lat -	H	Pl.
580	30424*	Purbach A	.02985	.43995	.89705	1.905	26.112	-0.74	14
	3083		5	5	35			.55	
581	30440	Purbach GA	.04411	.40915	.91094	2.772	24.162	-0.73	4
	-		11	11	109			1.72	
582	30454A	Purbach P	.05751	.44543	.89322	3.683	26.457	-0.38	4
	3091B		9	9	90			1.40	
583	30458	Regiomont. B	.05672	.48518	.87295	3.717	29.013	+0.57	4
	3102		9	9	86			1.31	
584	30461	Purbach O	.06085	.41901	.90780	3.834	24.727	+2.93	8
	3090A		5	5	37			.58	
585	30465*	Purbach B	.06572	.45290	.88908	4.227	26.931	-0.09	9
	3084		6	6	54			.83	
586	30472	Purbach K	.07169	.42511	.90225	4.453	25.158	-0.07	5
	3092		8	8	70			1.10	
587	30484	Purbach N	.08385	.44194	.89306	5.363	26.229	-0.09	4
	3091A		10	10	88			1.37	
588	30478*	Regiomont. C	.07962	.48042	.87402	5.205	28.696	+0.91	5
	3088		6	6	56			.85	
589	30497*	Regiomont. E	.09545	.47260	.87591	6.219	28.208	-0.28	21
	3103		3	3	25			.38	
590	30505	Walter N	.00279	.55399	.83166	0.192	33.668	-1.24	12
	3466B		5	5	36			.52	
591	30562	Hell QA	.06476	.54346	.83614	4.428	32.944	-1.15	4
	(3473A)		5	4	45			.64	
592	30569	Lexell H	.06765	.59488	.80027	4.831	36.527	-0.96	5
	3123E		8	7	65			.90	
593	30575	Hell K	.07609	.55944	.82515	5.268	34.024	-0.32	4
	3112A		9	9	85			1.22	
594	30579	Lexell F	.07483	.59488	.80116	5.336	36.475	+1.16	7
	3123C		7	7	59			.82	
595	30586*	Hell E	.08834	.56704	.81875	6.158	34.550	-0.27	13
	3116		4	4	32			.46	
596	30589	Sasserides D	.08962	.59797	.79642	6.420	36.727	-0.10	4
	3142		8	8	73			1.01	
597	30609*	Saussure A	.00636	.69114	.72012	0.506	43.822	-3.23	6
	3165		8	8	64			.80	
598	30610	Lexell A	.01873	.59981	.79869	1.343	36.898	-1.71	4
	3124		9	9	86			1.19	
599	30633	Orontius A	.03461	.62962	.77579	2.554	39.034	-0.46	12
	3152A		5	5	35			.47	
600	30643	-	.04601	.63897	.76662	3.434	39.760	-1.65	10
	-		7	7	53			.71	
601	30683*	Orontius D	.08281	.63421	.76749	6.158	39.405	-1.63	8
	3154		8	8	75			1.00	
602	30684	Sasserides L	.08769	.64279	.76126	6.570	39.990	+0.33	9
	3146		8	8	56			.74	
603	30691	Sasserides M	.09658	.61437	.78294	7.032	37.911	-0.20	5
	3144B		9	8	81			1.10	
604	30692A	Sasserides N	.09522	.62472	.77531	7.001	38.651	+0.39	4
	3144C		7	7	57			.77	
605	30732	-	.03489	.72357	.69108	2.890	46.279	+2.05	4
	-		12	14	131			1.57	
606	30734	-	.03409	.74275	.66933	2.915	47.939	+0.73	4
	-		13	13	126			1.46	
607	30745	-	.04230	.75827	.64965	3.725	49.351	-1.04	18
	-		10	10	81			.92	
608	30755*	Maginus A	.05028	.75111	.65551	4.386	48.804	-3.14	5
	3204		6	6	55			.63	
609	30771	Proctor D	.07272	.71966	.69027	6.013	46.036	-0.28	4
	3213D		17	14	135			1.62	
610	30772*	Proctor B	.07990	.72471	.68637	6.639	46.363	+2.33	4
	3213B		23	21	163			1.94	
611	30779	Maginus T	.07515	.79112	.60612	7.067	52.331	-0.96	4
	3211A		16	16	157			1.65	
612	30785	Maginus V	.08337	.75705	.64483	7.336	49.342	-3.58	4
	3214B		11	11	99			1.11	
613	30798*	Maginus Y	.09774	.78586	.60968	9.107	51.842	-1.01	10
	3212A		9	9	70			.74	
614	30817	Deluc W	.01517	.87925	.47477	1.830	61.619	-1.11	8
	3225A		14	14	101			.83	
615	30821A	Deluc H	.02079	.80998	.58413	2.038	54.184	-1.99	6
	3226		11	11	97			.98	
616	30823*	Deluc D	.02296	.83193	.55275	2.378	56.376	-1.59	8
	3222		10	10	93			.89	
617	30822	Deluc T	.03008	.82729	.56108	3.068	55.816	+0.11	5
	3222A		10	10	92			.90	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			-	-	+	-	-		
618	30836	Deluc E	.03731	.86835	.49327	4.325	60.330	-1.10	5
	3223		10	10	88			.75	
619	-	-	.03787	.85916	.50982	4.248	59.246	-0.43	4
	-		16	16	159			1.41	
620	30881	Clavius BB	.08671	.81322	.57538	8.570	54.415	-0.08	5
	3234B		9	9	79			.79	
621	30898*	Rutherfurd A	.09579	.88515	.45679	11.843	62.198	+1.15	8
	3233A		17	17	143			1.14	
622	30900*	Cysatus A	.00621	.90043	.43534	0.817	64.194	+0.29	13
	3268		20	20	177			1.34	
623	30941	Cysatus	.04338	.91359	.40144	6.167	66.156	-2.01	4
	3267		9	9	86			.60	
624	31001	Mösting	.10173	.01160	.99386	5.844	0.665	-1.53	11
	2932		9	9	86			1.49	
625	31019*	Lalande C	.11923	.09696	.98849	6.877	5.562	+0.63	21
	2920		5	5	41			.70	
626	31024	Mösting B	.12808	.04700	.99021	7.367	2.695	-0.76	9
	2934		5	4	40			.69	
627	31025	Mösting BA	.12773	.05159	.99079	7.345	2.956	+0.56	9
	-		6	6	41			.71	
628	31043*	Mösting C	.14040	.03107	.98981	8.073	1.780	+0.35	23
	2935		6	6	49			.84	
629	31047	Lalande	.14905	.07700	.98629	8.593	4.414	+0.79	11
	2917		8	8	73			1.25	
630	31055*	Lalande B	.15618	.05410	.98578	9.002	3.102	-0.80	12
	2919		4	4	39			.67	
631	31081	Turner B	.18370	.01646	.98241	10.591	0.943	-0.74	6
	-		6	5	47			.80	
632	31115A	Palisa A	.11545	.15691	.98160	6.707	9.020	+1.29	10
	3006A		4	4	31			.53	
633	31115*	Palisa D	.11834	.15045	.98134	6.876	8.654	-0.29	6
	3008A		7	7	68			1.16	
634	31120	Lalande D	.12878	.10729	.98511	7.447	6.163	-1.27	11
	2921		11	11	89			1.52	
635	31126*	Palisa P	.12589	.16733	.97791	7.335	9.631	+0.13	15
	3011		3	3	24			.41	
636	31158	Davy B	.15209	.18831	.97064	8.905	10.850	+0.64	13
	3005		6	6	46			.78	
637	31161*	Lalande A	.16867	.11506	.97825	9.782	6.611	-1.16	18
	2918		8	8	70			1.19	
638	31216*	Alpetrag. B	.11495	.26022	.95850	6.838	15.085	-0.30	23
	3028		4	4	34			.57	
639	31227	Lassell B	.12804	.27846	.95170	7.662	16.171	-0.29	4
	3025		10	10	104			1.72	
640	31231*	Davy A	.13137	.21140	.96724	7.734	12.219	-2.17	14
	3004		12	13	114			1.92	
641	31255*	Lassell C	.15689	.25252	.95501	9.329	14.623	+0.37	6
	3029		9	9	85			1.41	
642	31290*	Guerike C	.19583	.19975	.96007	11.528	11.522	-0.01	31
	2856		3	3	21			.35	
643	31300*	Alpetrag. H	.10047	.30821	.94534	6.066	17.962	-1.08	19
	3031A		4	4	28			.46	
644	31333	Thebit D	.13462	.33754	.93104	8.227	19.738	-0.96	11
	3072		4	4	30			.49	
645	31338	Birt	.13735	.37951	.91402	8.545	22.323	-1.46	15
	3063		9	9	80			1.27	
646	31338A	Birt A	.13145	.38160	.91335	8.189	22.467	-2.52	4
	3064		10	10	87			1.38	
647	31361*	Lassell E	.16780	.31200	.93489	10.175	18.184	-0.42	19
	3022		5	5	44			.72	
648	31367	Birt B	.16418	.37821	.91006	10.226	22.243	-1.56	12
	3065		5	5	37			.59	
649	31454	Lippershey R	.15718	.44836	.87875	10.141	26.668	-1.80	5
	3066B		6	7	61			.93	
650	31463*	Lippershey	.16122	.43645	.88338	10.342	25.921	-2.75	6
	3066A		2	3	24			.37	
651	31472*	Lippershey T	.17385	.42609	.88690	11.090	25.241	-1.42	22
	3066C		8	8	68			1.05	
652	31513	Hell	.11387	.53482	.83545	7.761	32.386	-2.63	5
	3109		6	6	58			.84	
653	31567*	Gauricus D	.16204	.57509	.80331	11.404	35.059	+1.99	9
	2748		5	5	42			.57	
654	31583	Gauricus N	.18571	.53574	.82438	12.695	32.373	+0.96	9
	2744D		6	6	43			.62	
655	31587	Gauricus R	.18850	.57106	.80002	13.258	34.790	+1.45	4
	2745A		9	9	79			1.10	

	B & M	Designation	E -	F -	G +	Long -	Lat -	H	Pl.
656	31592*	Pitatus A	.19457	.52078	.83095	13.178	31.392	-0.39	7
	2784A		7	7	59			.85	
657	31606	Picter N	.10643	.66269	.74076	8.176	41.525	-0.69	5
	3181		10	10	93			1.20	
658	31610	Ball F	.11751	.60056	.79273	8.431	36.847	+2.52	4
	3136A		10	10	92			1.27	
659	31643*	Sasserides B	.14956	.63589	.75871	11.151	39.430	+2.05	9
	3139A		10	10	75			.99	
660	31691*	Heinsius G	.19724	.61871	.76020	14.545	38.230	-0.34	11
	3190		6	6	43			.57	
661	31703	Street A	.10723	.73078	.67299	9.053	46.999	-1.34	4
	3196		13	13	119			1.39	
662	31705	Maginus L	.10111	.75620	.64436	8.917	49.221	-2.38	6
	3215		10	10	92			1.03	
663	31706	Maginus M	.10313	.76915	.62922	9.308	50.341	-1.61	6
	3215A		11	10	88			.96	
664	31707	Maginus CB	.10333	.77679	.62129	9.442	50.964	+0.07	5
	3206F		13	13	122			1.32	
665	31709	Maginus H	.10617	.79262	.60012	10.032	52.443	-0.29	8
	3212		7	7	71			.74	
666	31715A*	Maginus NA	.11234	.75051	.65312	9.759	48.555	+2.13	10
	3211B		8	8	61			.69	
667	31748	Clavius G	.14836	.78739	.59678	13.960	52.010	-1.62	7
	2713		6	7	62			.64	
668	31751*	Tycho P	.15790	.71177	.68623	12.958	45.307	+2.14	6
	3186C		11	11	92			1.10	
669	31755	Street J	.15569	.75102	.64174	13.636	48.675	+0.09	6
	3190D		6	7	48			.54	
670	31774*	Street C	.17604	.74749	.64051	15.367	48.373	-0.01	5
	3198		8	7	71			.79	
671	31790A*	Tycho H	.19229	.70944	.67791	15.836	45.193	-0.14	10
	3186A		9	9	72			.85	
672	31794	Brown A	.19953	.74460	.63769	17.374	48.096	+0.77	4
	2711A		9	9	80			.89	
673	31801*	Clavius MC	.10338	.81706	.56753	10.372	54.772	+0.41	12
	3251D		11	11	87			.86	
674	31815	Clavius D	.11055	.85338	.50389	12.374	58.846	-4.89	8
	3236		9	10	94			.82	
675	31813	Clavius CB	.11961	.83905	.52796	12.771	57.183	-2.81	10
	3235B		11	11	82			.75	
676	31834	Clavius C	.13052	.84318	.51677	14.174	57.701	-4.32	7
	3235		8	8	74			.66	
677	31850	Clavius R	.15861	.80039	.57855	15.331	53.148	+0.43	12
	3251A		9	9	74			.74	
678	31854	Clavius N	.15152	.84150	.51372	16.433	57.523	-4.36	7
	3241		11	11	111			.99	
679	31864*	Clavius J	.16368	.84696	.50135	18.080	58.089	-3.93	11
	3237		8	8	72			.63	
680	31866	Clavius K	.16685	.86883	.46382	19.785	60.432	-1.88	5
	3238		5	5	47			.38	
681	31867*	Blancanus W	.16827	.87345	.45681	20.221	60.866	-0.08	4
	-		10	10	92			.73	
682	31890*	Longomont. C	.19417	.80294	.56265	19.039	53.450	-0.88	5
	2709		5	5	51			.50	
683	31901*	Gruemberg. C	.10804	.91163	.39350	15.352	65.885	-2.10	6
	3263A		10	9	77			.53	
684	31955*	Casatus C	.15319	.95024	.26464	30.064	72.162	-3.08	8
	3292		8	8	79			.36	
685	31990*	Blancanus F	.19315	.90630	.37240	27.414	65.161	-2.29	4
	3257A		13	14	148			.96	
686	32015	Turner L	.21740	.05950	.97462	12.574	3.409	+0.60	10
	2922A		6	6	42			.71	
687	32022*	Turner	.22847	.02402	.97183	13.229	1.378	-2.41	14
	2922		13	13	120			2.03	
688	32024	Turner H	.22381	.04865	.97289	12.955	2.789	-0.89	5
	2921A		9	8	65			1.10	
689	32036	Turner K	.23108	.06685	.96996	13.400	3.835	-1.14	5
	2923A		7	7	54			.91	
690	32042*	Turner F	.24353	.02711	.96970	14.097	1.587	+0.34	15
	2923		5	5	43			.72	
691	32050	Gambart N	.25727	.00910	.96588	14.914	0.521	-0.70	6
	1502F		6	6	44			.74	
692	32082	Fra Mauro W	.28890	.02269	.95666	16.803	1.300	-0.72	6
	-		6	6	46			.76	
693	32083	Fra Mauro G	.28047	.03819	.95986	16.288	2.187	+1.26	9
	-		11	11	94			1.56	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			-	-	+	-	-		
694	32089	Fra Mauro P	.28267	.09437	.95345	16.513	5.420	-1.85	4
	-		7	6	47			.78	
695	32107*	Guerike E	.20527	.17330	.96366	12.024	9.975	+0.70	20
	2858A		6	6	48			.80	
696	32153	Parry F	.25178	.13261	.95815	14.723	7.624	-0.84	6
	2882B		7	6	54			.80	
697	-	(bright spot)	.26797	.14886	.95305	15.704	8.551	+1.97	6
	-		13	13	116			1.92	
698	32174	Parry E	.27784	.14537	.94928	16.313	8.360	-0.47	5
	2882A		4	4	32			.53	
699	32176*	Parry A	.27093	.16475	.94798	15.949	9.486	-0.68	8
	2880		5	5	50			.82	
700	32180	Fra Mauro E	.28717	.10388	.95120	16.799	5.968	-1.70	7
	2900		6	6	49			.81	
701	32181	Fra Mauro F	.28920	.11650	.94929	16.943	6.695	-1.42	4
	2900A		5	5	41			.68	
702	32197	Bonpland C	.29511	.17696	.93990	17.431	10.183	+1.58	9
	2873		11	11	99			1.62	
703	32199	Guerike A	.29089	.19256	.93625	17.259	11.112	-1.51	6
	2854		8	9	80			1.30	
704	32209	Lassell F	.20581	.29386	.93243	12.446	17.105	-1.62	8
	3023		5	5	45			.73	
705	32240*	Guerike D	.24636	.20706	.94612	14.595	11.957	-1.12	15
	2858		3	3	28			.46	
706	32241	Guerike H	.24042	.21483	.94616	14.257	12.410	-0.72	12
	2858B		4	4	30			.49	
707	32254	Guerike G	.25069	.24140	.93694	14.979	13.976	-0.89	10
	2855A		5	5	38			.62	
708	32283*	Opelt K	.28492	.23457	.92890	17.052	13.572	-0.82	13
	2839		3	3	28			.45	
709	32299*	Opelt E	.29314	.29227	.91005	17.854	16.997	-0.40	20
	2818		5	5	41			.65	
710	32307*	Nicollet	.19997	.37267	.90491	12.461	21.906	-1.97	27
	3055		4	4	35			.55	
711	32372A*	Gould P	.27023	.32206	.90649	16.599	18.802	-1.33	11
	2819B		4	4	34			.54	
712	32372*	Gould A	.27596	.32827	.90307	16.992	19.169	-0.48	10
	2819C		4	4	31			.49	
713	32397	Wolf A	.29246	.37814	.87741	18.434	22.237	-1.42	8
	3058A		6	6	49			.75	
714	32404	Pitatus J	.20924	.44550	.86966	13.528	26.475	-1.25	10
	2792A		5	5	39			.59	
715	32448	Hesiodus D	.24558	.48944	.83592	16.371	29.325	-1.20	11
	2780A		6	6	47			.68	
716	32465*	Hesiodus B	.26749	.45533	.84879	17.491	27.096	-0.59	13
	2778		8	8	73			1.08	
717	32482*	Kies D	.28765	.42047	.85981	18.497	24.880	-1.03	26
	2806		4	4	31			.46	
718	32517	Wurzelb. C	.21254	.57340	.79237	15.015	34.951	+1.57	6
	2756B		8	8	72			.99	
719	32518*	Wurzelb. A	.21527	.58357	.78287	15.374	35.706	-0.19	5
	2754		6	6	60			.82	
720	32514	Wurzelb. W	.22000	.54033	.81282	15.144	32.687	+0.90	4
	-		8	8	70			.99	
721	32548	Wurzelb. E	.24029	.58280	.77583	17.208	35.661	-0.60	4
	2756A		6	6	55			.74	
722	32570	Weiss A	.27519	.50864	.81784	18.597	30.517	+2.87	4
	2766A		11	13	117			1.66	
723	32574*	Cichus B	.27687	.54663	.78905	19.335	33.172	-1.68	4
	2762		13	13	112			1.54	
724	32579	Cichus K	.27434	.59557	.75469	19.976	36.563	-0.41	13
	2760A		5	5	41			.54	
725	32581	Weiss E	.28125	.51607	.80754	19.202	31.111	-2.13	5
	2766		7	7	66			.93	
726	32618	Wilhelm O	.21578	.68321	.69614	17.221	43.150	-1.78	5
	2726A		8	8	78			.94	
727	32629*	Wilhelm E	.22131	.69649	.68328	17.946	44.119	+0.82	9
	2726		8	8	74			.88	
728	32629A	Wilhelm N	.22958	.69145	.68604	18.502	43.704	+1.26	10
	2732E		7	7	56			.67	
729	32638	Wilhelm Q	.23018	.68392	.69122	18.418	43.190	-1.29	4
	2732D		12	12	110			1.32	
730	32650	Heinsius H	.25207	.60803	.75346	18.497	37.426	+0.82	4
	2740D		11	11	100			1.31	
731	32656	Wilhelm C	.25050	.66321	.70655	19.521	41.499	+1.57	4
	2724		7	7	67			.82	

	B & M	Designation	E -	F -	G +	Long -	Lat -	H	Pl.
732	32657	Wilhelm W	.25540	.67514	.69099	20.285	42.504	-1.29	6
	2727B		13	12	95			1.14	
733	32663	Heinsius J	.26973	.63268	.72603	20.380	39.244	+0.14	11
	-		7	7	57			.72	
734	32688*	Wilhelm B	.28073	.68774	.66852	22.778	43.486	-1.12	6
	2723		8	8	78			.91	
735	32687	Wilhelm F	.28997	.67351	.67995	23.096	42.337	+0.03	4
	-		12	12	99			1.17	
736	32705	Longomont. G	.20893	.75048	.62495	18.485	48.715	-2.23	4
	2716B		9	9	91			.99	
737	32710	Montanari W	.21991	.70404	.67512	18.042	44.757	-0.16	5
	-		4	4	31			.36	
738	32749*	Longomont. A	.24591	.79746	.55110	24.047	52.883	+0.11	7
	2707		7	7	68			.65	
739	32764	Longomont. M	.26016	.74797	.60725	23.191	48.547	-3.57	5
	2716A		11	11	103			1.09	
740	32760	Wilhelm A	.26686	.70264	.65963	22.026	44.638	+0.02	6
	2722		11	11	105			1.20	
741	32765	Longomont. L	.26219	.75358	.59909	23.636	49.048	-3.88	5
	2716		11	11	104			1.08	
742	32769*	Longomont. R	.26941	.79167	.54800	26.179	52.355	-0.32	18
	2716D		8	8	62			.59	
743	32790	Lagalla P	.29105	.70880	.64245	24.372	45.141	-0.13	8
	2727A		6	6	59			.66	
744	32818*	Scheiner G	.21827	.88709	.40610	28.257	62.538	-0.44	16
	2699A		7	7	60			.42	
745	32836*	Scheiner A	.23279	.86796	.43320	28.252	60.464	-4.17	13
	2693		12	12	105			.79	
746	32931A	Scheiner L	.23516	.91123	.34478	35.085	65.821	-1.98	8
	2698A		12	12	98			.59	
747	32980	Kircher B	.28820	.90606	.30700	43.190	65.073	-1.52	4
	2677		7	7	78			.42	
748	33008	Fra Mauro D	.30089	.08340	.94915	17.589	4.787	-1.41	8
	2901		6	6	47			.78	
749	33051	Gambart R	.35518	.01063	.93502	20.799	0.608	+0.46	5
	-		9	9	80			1.30	
750	33059*	Fra Mauro A	.35551	.09483	.92981	20.924	5.441	-0.06	12
	2898		6	6	56			.90	
751	33067*	Fra Mauro B	.36783	.06968	.92686	21.645	3.997	-0.67	19
	2899		4	4	36			.58	
752	33069	Fra Mauro C	.36721	.09433	.92533	21.645	5.412	-0.02	10
	2898A		10	10	77			1.24	
753	33107*	Bonpland D	.30798	.17573	.93467	18.237	10.124	-0.57	15
	2874		4	4	31			.50	
754	33176*	Bonpland E	.37895	.16914	.90914	22.628	9.744	-1.15	15
	2874A		3	3	30			.47	
755	33210	Bonpland G	.31494	.20056	.92687	18.767	11.578	-1.30	7
	2874C		5	5	41			.66	
756	33249	Lubiniezky H	.34495	.29160	.89123	21.158	16.968	-1.47	12
	2837		12	12	100			1.55	
757	33254*	Darney J	.35330	.24717	.90250	21.378	14.307	+0.36	20
	2838		6	6	51			.80	
758	33285*	Darney	.38597	.25146	.88669	23.523	14.575	-1.37	13
	2831		7	7	63			.97	
759	33288	Lubiniezky D	.38103	.28354	.87926	23.429	16.482	-1.15	8
	2833		5	5	46			.70	
760	33351*	Lubiniezky F	.35237	.31371	.88119	21.795	18.291	-0.80	15
	2835		4	4	33			.51	
761	33428*	Kies B	.32652	.48027	.81308	21.879	28.728	-1.41	7
	2804		10	9	76			1.07	
762	33447	Kies A	.33967	.47361	.81230	22.692	28.276	-0.42	5
	2803		10	10	96			1.35	
763	33438	Kies E	.33941	.48025	.80882	22.764	28.701	+0.02	14
	2806A		5	5	40			.56	
764	33507	Cichus A	.30025	.57025	.76392	21.456	34.789	-0.95	4
	2761		10	10	101			1.34	
765	33510	Cichus N	.31798	.50759	.79877	21.706	30.557	-2.79	4
	2769		13	12	107			1.49	
766	33505*	Cichus C	.31005	.55274	.77558	21.789	33.494	+2.76	21
	2763		7	7	65			.88	
767	33524	Cichus H	.32090	.54074	.77659	22.451	32.762	-1.33	8
	2763A		8	8	70			.94	
768	33556*	Capuanus A	.35602	.56861	.74272	25.610	34.619	+1.48	9
	2554		12	12	109			1.41	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			-	-	+	-	-		
769	33621	Haidinger J	.32538	.61432	.71768	24.388	37.939	-1.45	7
	2559A		8	8	82			1.02	
770	33622	Haidinger A	.32496	.62401	.71025	24.585	38.662	-0.48	4
	2560A		9	8	96			1.18	
771	33623A	Haidinger B	.32020	.63183	.70576	24.403	39.189	-0.14	8
	2560B		7	7	60			.74	
772	33640	Capuanus M	.34281	.60762	.71538	25.603	37.450	-1.31	4
	2558E		10	10	88			1.09	
773	33642	Capuanus L	.34848	.61955	.70314	26.363	38.290	-0.27	6
	2558D		7	7	71			.87	
774	33650	Capuanus F	.35838	.60028	.71527	26.612	36.881	+0.33	4
	2558A		8	8	65			.81	
775	33668	Epimenides A	.36529	.68407	.63009	30.102	43.205	-1.39	6
	(2589)		7	7	82			.90	
776	33703	Lagalla T	.30265	.73499	.60756	26.479	47.277	+0.81	8
	-		12	12	89			.94	
777	33718	Bayer A	.31568	.77996	.53876	30.367	51.319	-1.52	5
	2604A		5	5	60			.56	
778	33731	Mee C	.33784	.70997	.61807	28.661	45.226	+0.18	11
	(2592C)		16	16	149			1.60	
779	33756	Bayer K	.35732	.76839	.53012	33.981	50.239	-0.76	5
	2614		13	13	150			1.38	
780	33773	Bayer L	.37432	.73660	.56446	33.550	47.401	+1.14	11
	2614A		14	14	133			1.30	
781	33781	Mee D	.38205	.71141	.59038	32.907	45.331	+0.53	5
	(2592A)		6	6	55			.56	
782	33815*	Weigel A	.31933	.85288	.40907	37.976	58.680	-2.86	9
	2627		24	24	229			1.63	
783	33836	Weigel C	.33822	.86080	.37474	42.067	59.611	-3.65	4
	2629		11	12	143			.93	
784	34017*	Euclides K	.41628	.07309	.90595	24.678	4.192	-0.54	8
	2464C		5	5	45			.71	
785	34074*	Lansberg B	.47032	.04305	.88142	28.084	2.467	-0.04	17
	2482		6	6	52			.90	
786	34126*	Euclides D	.42844	.16272	.88832	25.747	9.368	-0.72	16
	2464		9	9	76			1.17	
787	34168	Euclides M	.46443	.18049	.86553	28.217	10.411	-2.25	9
	2464D		12	12	113			1.70	
788	34182*	Euclides	.48803	.12836	.86384	29.464	7.371	+0.75	14
	2461		12	12	105			1.58	
789	34211*	Darney E	.41849	.21442	.88202	25.382	12.387	-0.81	11
	2832B		4	4	34			.52	
790	34235	Darney D	.43948	.24989	.86145	27.028	14.488	-2.01	5
	2832A		9	9	79			1.18	
791	34282	Euclides C	.48669	.22920	.84285	30.003	13.251	-0.18	12
	2463		7	7	64			.94	
792	34290*	Euclides B	.49343	.20360	.84547	30.268	11.748	-0.22	11
	2462		12	12	112			1.65	
793	34339*	Agatharch. A	.43669	.39429	.80947	28.345	23.204	+1.22	13
	2491		12	12	114			1.57	
794	34386	Agatharch. B	.48801	.36606	.79244	31.626	21.471	+0.10	4
	2491A		12	12	101			1.39	
795	34428	Campanus B	.42494	.48847	.76167	29.157	29.250	-0.59	4
	2527		7	7	75			.99	
796	34433	Campanus A	.43029	.43716	.78844	28.623	25.952	-1.83	6
	2526		5	5	50			.69	
797	34490	Hippalus A	.49501	.40293	.76800	32.803	23.796	-2.42	6
	2521		9	9	84			1.12	
798	34500*	Mercator A	.40068	.50871	.76091	27.770	30.606	-1.46	5
	2537		11	11	126			1.67	
799	34511	Marth	.41873	.51625	.74551	29.321	31.121	-2.06	5
	2565		8	8	89			1.15	
800	34527	Ramsden G	.42767	.57756	.69478	31.614	35.295	-0.70	9
	2566		14	14	135			1.63	
801	34535*	Ramsden A	.43406	.55097	.71278	31.361	33.449	-0.72	10
	-		6	6	45			.56	
802	34550	Dunthorne	.45412	.50150	.73688	31.644	30.087	+0.62	10
	2562		16	16	148			1.90	
803	34591	Vitello B	.49559	.51729	.69840	35.359	31.134	+0.83	4
	2355		18	18	174			2.11	
804	-	(bright spot)	.40180	.68859	.60530	33.576	43.464	+1.73	5
	-		16	16	138			1.45	
805	34620	Hainzel K	.42361	.60931	.67049	32.284	37.533	+0.23	7
	2588B		16	16	156			1.82	
806	34695	Drebbel M	.49775	.65920	.56373	41.443	41.236	+0.08	5
	2337A		11	11	97			.95	

	B & M	Designation	E -	F -	G +	Long -	Lat -	H	Pl.
807	34713* 2598	Schiller A	.41447 6	.73260 6	.53952 50	37.532	47.118	-0.37 .47	22
808	34784 2281A	Nöggerath F	.48807 6	.74330 6	.45719 59	46.871	48.021	-0.23 .47	6
809	34794* 2282	Nöggerath J	.49229 9	.74809 9	.44401 91	47.951	48.453	-0.76 .70	4
810	35005 2483	Lansberg D	.50824 6	.05197 6	.85901 55	30.611	2.980	-0.95 .82	6
811	35151* 2464B	Euclides F	.55076 4	.11037 4	.82685 34	33.667	6.339	-0.70 .49	10
812	35216 -	Herigonius G	.51696 8	.26264 8	.81393 70	32.421	15.236	-1.12 .99	4
813	35243* 2425	Herigonius	.54325 12	.23019 12	.80547 122	33.997	13.329	-2.70 1.71	10
814	35263 2426	Herigonius E	.56490 12	.23803 11	.78752 120	35.652	13.798	-3.52 1.64	5
815	35326 -	Gassendi OA	.52603 12	.36174 12	.76994 100	34.341	21.202	+0.32 1.34	9
816	35356* 2419	Gassendi J	.55935 3	.36756 3	.74176 22	37.019	21.585	-1.58 .28	29
817	35385 2424	Gassendi Y	.58003 8	.35610 9	.73378 79	38.325	20.842	+1.45 1.01	11
818	35408* 2358	Vitello E	.50969 6	.48651 6	.70844 59	35.733	29.137	-1.42 .73	7
819	35433* 2383	Puiseux D	.53092 7	.43347 7	.72718 63	36.133	25.707	-1.25 .80	18
820	35491* 2380A	Doppelmay. J	.59782 4	.41399 4	.68471 30	41.124	24.486	-2.08 .36	10
821	35595 -	Doppelmay. W	.59629 7	.55275 7	.58316 58	45.637	33.533	+1.02 .59	4
822	35675 2330	Drebbel	.56994 20	.65430 21	.49449 198	49.054	40.929	-2.21 1.70	6
823	35691 2338	Drebbel D	.59783 5	.61445 5	.51476 42	49.269	37.913	-0.06 .38	4
824	35694 2342C	Drebbel L	.59146 10	.64623 10	.48149 88	50.851	40.275	-0.63 .74	5
825	35056 -	Flamsteed FA	.65164 14	.06003 14	.75375 119	40.844	3.447	-3.15 1.56	9
826	36058* 2448	Flamsteed F	.65459 9	.08223 9	.75023 75	41.105	4.721	-1.66 .98	16
827	36085 -	Flamsteed K	.68892 13	.05386 13	.72126 118	43.686	3.090	-1.98 1.48	5
828	36097* 2443	Flamsteed	.69549 10	.07781 9	.71298 93	44.288	4.466	-1.65 1.15	10
829	36106 -	Letronne D	.60419 5	.16360 5	.77890 41	37.800	9.423	-1.31 .56	4
830	36113* 2457	Wichmann	.61064 11	.13056 11	.77961 102	38.070	7.510	-1.98 1.38	13
831	36122* -	Wichmann B	.62607 4	.12372 4	.76866 32	39.162	7.113	-1.64 .43	12
832	36173* 2444	Flamsteed A	.67401 8	.13663 8	.72576 77	42.882	7.854	-0.27 .97	13
833	36180 2445	Flamsteed B	.68718 9	.10294 9	.71779 81	43.751	5.914	-1.71 1.01	9
834	36211* 2432	Letronne A	.61556 6	.20988 6	.75987 55	39.010	12.113	+0.32 .73	4
835	- 2396	Gassendi Z	.65164 12	.28270 12	.70494 118	42.750	16.408	+1.30 1.45	10
836	36278* 2417	Gassendi G	.67185 7	.28752 7	.68136 59	44.597	16.724	-1.48 .70	25
837	36285 2416	Gassendi F	.68210 4	.25868 4	.68337 37	44.946	14.998	-0.72 .44	5
838	36294* 2137	Billy A	.69944 3	.24683 3	.66912 28	46.269	14.305	-1.86 .33	11
839	36324 2420	Gassendi L	.62319 8	.34750 8	.69844 66	41.741	20.367	-2.66 .80	4
840	36368 2153	Mersenius E	.66479 11	.38213 11	.64023 103	46.078	22.491	-1.86 1.15	12
841	36373 2151	Mersenius C	.67588 12	.33758 12	.65393 119	45.945	19.745	-1.39 1.35	9
842	36441 -	Liebig FA	.64132 16	.41900 16	.64027 141	45.046	24.813	-2.78 1.57	7
843	36451 2154	Liebig F	.65009 13	.41641 13	.63542 112	45.653	24.611	-0.20 1.24	9

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			-	-	+	-	-		
844	36458	Palmieri E	.65445	.48808	.57785	48.556	29.207	+0.38	5
	2205A		10	10	90			.90	
845	36497	Fourier C	.69212	.47779	.54249	51.910	28.516	+1.40	9
	2203		6	6	49			.46	
846	36528*	Lehmann C	.62423	.58111	.52044	50.180	35.565	-1.56	9
	2318		11	11	107			.97	
847	36602	Drebbel A	.60436	.62824	.49241	50.828	38.864	+2.09	6
	-		19	19	173			1.48	
848	36645	Lehmann H	.64445	.65587	.39560	58.456	40.936	+1.72	9
	2318E		14	14	128			.88	
849	36648*	Schickard H	.64187	.68832	.33729	62.278	43.509	-0.39	6
	2306A		22	22	211			1.24	
850	36662	Lacroix H	.66059	.62392	.41615	57.790	38.629	-1.01	8
	2325A		10	10	89			.64	
851	37005*	Flamsteed D	.70378	.05512	.70686	44.874	3.162	-1.74	11
	2447		6	6	50			.61	
852	-	Flamsteed E	.71768	.06410	.69233	46.029	3.677	-1.31	5
	2447a		4	4	43			.52	
853	37019*	Flamsteed C	.71841	.09562	.68699	46.280	5.494	-2.42	10
	2446		8	9	78			.93	
854	37066*	Flamsteed GB	.76654	.06239	.63868	50.201	3.578	-0.59	7
	-		13	13	109			1.21	
855	37116*	Letronne F	.71004	.15974	.68446	46.050	9.200	-1.60	9
	2435		14	14	122			1.45	
856	37151*	Flamsteed CA	.75170	.11540	.64777	49.247	6.633	-1.76	16
	-		9	9	74			.84	
857	37225	Billy D	.72127	.25559	.64217	48.320	14.824	-1.79	5
	2138A		4	4	39			.44	
858	37262	Hansteen A	.77000	.21995	.59669	52.227	12.723	-2.33	4
	2118		8	8	71			.73	
859	37269*	Zupus A	.76742	.29555	.56825	53.481	17.197	-0.70	10
	-		5	5	38			.37	
860	37332	Zupus RA	.73742	.32610	.59211	51.237	19.025	+0.63	7
	-		11	11	103			1.06	
861	37359	Cavendish B	.75340	.39448	.52531	55.113	23.243	-0.71	4
	-		10	10	88			.80	
862	37394	De Vico K	.79910	.34274	.49298	58.328	20.053	-0.82	5
	-		8	8	76			.65	
863	37405*	de Gaspar. B	.70722	.45418	.54164	52.552	27.014	-0.16	11
	-		5	5	40			.38	
864	37499	Lagrange H	.79676	.49233	.35002	66.283	29.498	-0.23	6
	2222B		22	22	177			1.08	
865	37518	Piazzi F	.71090	.58292	.39280	61.077	35.677	-0.46	9
	2235		9	9	80			.55	
866	37524	-	.72188	.54704	.42231	59.671	33.188	-1.12	4
	-		14	14	122			.89	
867	38049*	Damoiseau E	.84697	.09058	.52162	58.372	5.203	-2.04	19
	1992		5	5	38			.34	
868	38074*	Grimaldi C	.87708	.04545	.47568	61.527	2.608	-2.08	10
	2005		18	18	159			1.31	
869	38081*	Lohrmann A	.88777	.01286	.45745	62.738	0.737	-2.12	16
	1977		10	10	81			.64	
870	38181	Damoiseau D	.88684	.11168	.44727	63.236	6.415	-0.86	5
	1991		5	5	42			.33	
871	38243	Sirsalis F	.84259	.23442	.48500	60.074	13.556	+0.12	10
	2088		12	12	116			.98	
872	38249	Crüger C	.84478	.28967	.44816	62.053	16.852	-1.38	4
	2072A		11	11	94			.73	
873	38313	de Vico	.81740	.33720	.46535	60.346	19.722	-1.39	6
	2059		16	16	187			1.51	
874	38325	de Vico C	.82961	.35208	.43565	62.294	20.593	+1.74	5
	2062		4	4	38			.29	
875	38411*	Byrgius A	.81651	.41573	.40458	63.641	24.523	+2.78	4
	2047		12	14	123			.87	
876	39006*	Grimaldi E	.90008	.06377	.42979	64.475	3.658	-0.93	4
	2007		15	15	127			.95	
877	39006A	Grimaldi D	.90906	.06533	.40896	65.778	3.749	-1.82	4
	2006		31	29	251			1.78	
878	39035*	Grimaldi B	.93314	.05041	.35344	69.255	2.892	-1.55	6
	2004		23	23	210			1.29	
879	39129A	-	.92066	.19483	.34081	69.686	11.224	+1.49	4
	-		27	26	222			1.32	
880	39202A	(bright spot)	.90850	.21974	.35265	68.785	12.706	-1.72	14
			9	9	73			.45	

End of Quadrant III

	B & M	Designation	E +	F -	G +	Long +	Lat -	H	Pl.
881	40006 3639A	Réaumur C	.00369 7	.06042 7	.99883 54	0.211	3.461	+1.15 .94	4
882	40012 -	Réaumur Y	.00956 6	.02200 6	1.00023 42	0.547	1.259	+0.90 .73	5
883	40017 3461	Réaumur B	.01451 5	.07377 5	.99860 38	0.832	4.224	+2.48 .66	7
884	40033 -	Seeliger S	.03664 6	.03696 6	.99985 44	2.098	2.115	+2.09 .76	4
885	40040 3639B	Réaumur D	.04832 7	.00372 8	.99959 57	2.767	0.212	+1.33 .99	6
886	40047 3608	Hipparchus F	.04337 9	.07254 9	.99706 75	2.490	4.157	+1.10 1.30	7
887	40049 3608C	Hipparchus H	.03977 8	.09498 8	.99595 61	2.286	5.443	+2.19 1.06	8
888	40053* 3610	Seeliger	.05242 4	.03815 4	.99868 31	3.004	2.184	+1.36 .54	26
889	40053A 3610A	Seeliger A	.05330 5	.03219 5	.99867 39	3.055	1.843	+1.06 .68	7
890	40088 3616	Hipparchus N	.08689 5	.08387 4	.99390 33	4.996	4.805	+2.10 .57	12
891	40109 2970K	Ptolemaeus X	.00518 6	.19046 6	.98331 46	0.301	10.961	+2.78 .79	7
892	40110 3642	Gylden C	.01762 8	.10221 8	.99648 63	1.013	5.855	+3.24 1.09	17
893	40116 2970L	Ptolemaeus Y	.01229 4	.16219 4	.98717 28	0.713	9.329	+0.83 .48	12
894	40123B (3583)	Müller F	.02582 11	.13632 10	.99125 79	1.492	7.827	+1.59 1.36	4
895	40132A 3612A	Hipparchus B	.03019 7	.12131 7	.99381 56	1.739	6.956	+2.85 .97	6
896	40132 3612	Hipparchus K	.03770 6	.12085 6	.99311 56	2.173	6.933	+1.99 .97	10
897	40136 3584	Albategn. G	.03275 11	.16396 10	.98754 89	1.899	9.421	+2.77 1.38	5
898	40143 3618B	Müller O	.04217 8	.13714 8	.99022 75	2.438	7.877	+0.97 1.29	5
899	40153* 3611	Hipparchus J	.05562 8	.13150 8	.99095 68	3.212	7.547	+2.06 1.17	10
900	40161 3611C	Hipparchus U	.06177 5	.11737 5	.99239 36	3.561	6.732	+2.11 .62	11
901	40167A 3579A	Albategn. C	.06390 5	.17859 5	.98194 41	3.723	10.286	+0.16 .70	13
902	40175 3579B	Albategn. M	.07186 4	.15469 4	.98763 33	4.161	8.878	+3.91 .57	12
903	40177 3579C	Albategn. N	.07815 6	.17122 5	.98247 49	4.547	9.855	+0.58 .84	7
904	40203 3576A	Parrot N	.00774 13	.23769 13	.97148 106	0.456	13.747	+0.29 1.79	5
905	40216 3576B	Parrot Q	.01805 5	.26033 5	.96597 35	1.070	15.080	+1.04 .59	10
906	40222 3576C	Parrot W	.02504 7	.22751 7	.97429 51	1.472	13.139	+1.41 .86	6
907	40235 3576D	Parrot X	.03186 10	.25010 9	.96703 80	1.886	14.492	-1.12 1.34	4
908	40249 3575A	Parrot O	.04290 5	.29130 5	.95550 45	2.570	16.938	-0.28 .75	8
909	40308* 3533A	La Caille A	.00660 10	.38820 10	.92330 90	0.409	22.803	+2.80 1.44	13
910	40310* 3569A	Parrot L	.01549 4	.30938 4	.95217 29	0.932	17.997	+2.24 .48	13
911	40325 3535A	La Caille B	.02255 6	.35711 5	.93385 50	1.383	20.921	+0.10 .81	4
912	40330 3569B	Parrot M	.03251 9	.30853 7	.95071 69	1.958	17.969	+0.08 1.14	4
913	40337 3541A	Delaunay A	.03300 15	.37389 12	.92761 112	2.037	21.940	+1.17 1.85	4
914	40342 3569C	Parrot P	.04874 8	.32045 6	.94661 61	2.947	18.679	+0.98 1.00	4
915	40356* 3545A	Faye A	.05116 5	.36081 5	.93138 43	3.144	21.146	+0.23 .70	11
916	40370* 3570	Argelander D	.07428 4	.30241 4	.95083 31	4.466	17.592	+0.91 .51	33
917	40373* 3547A	Donati A	.07409 10	.33632 8	.93860 77	4.513	19.657	-0.37 1.26	5
918	40378 3545B	Faye B	.07274 11	.38445 9	.92030 83	4.519	22.609	+0.04 1.32	4

	B & M	Designation	E +	F -	G +	Long +	Lat -	H	Pl.
919	40411	La Caille H	.01250	.41874	.90934	0.787	24.723	+2.08	4
	3538		14	14	137			2.16	
920	40414*	Werner B	.01109	.44073	.89712	0.708	26.161	-0.70	4
	3484		12	12	94			1.46	
921	40430	La Caille D	.03520	.40042	.91587	2.200	23.599	+0.34	9
	3535		10	10	89			1.42	
922	40442	Blanchinus M	.04104	.42503	.90440	2.598	25.148	+0.24	12
	(3531)		4	4	33			.52	
923	-	(bright spot)	.05015	.45491	.88938	3.227	27.052	+0.39	16
	3485A		9	9	75			1.16	
924	40471*	Blanchinus K	.07953	.41871	.90474	5.023	24.750	+0.17	15
	(3532A)		5	5	39			.62	
925	40497	Apianus F	.09772	.47081	.87769	6.353	28.063	+1.35	8
	3514A		7	7	49			.75	
926	40509	Walter S	.00920	.59310	.80530	0.654	36.369	+0.31	9
	3466G		6	6	49			.68	
927	40513	Walter A	.01147	.53508	.84392	0.778	32.373	-1.18	5
	3467		8	7	62			.91	
928	40530*	Aliacensis E	.03548	.50574	.86215	2.356	30.374	+0.29	5
	3498A		7	6	56			.84	
929	40564	Aliacensis G	.06871	.54935	.83400	4.709	33.283	+1.79	12
	3492B		6	6	47			.68	
930	40577*	Nonius A	.07927	.57807	.81250	5.572	35.302	+0.52	9
	3460		7	7	57			.80	
931	40627*	Stöfler R	.02286	.67075	.74018	1.768	42.169	-1.48	5
	3445A		14	11	105			1.35	
932	40629	Licetus G	.02412	.69183	.72237	1.912	43.746	+0.89	9
	3420A		10	9	75			.94	
933	40653*	Stöfler K	.05641	.63499	.77010	4.189	39.432	-0.48	8
	3437		10	10	84			1.12	
934	40667*	Stöfler F	.06348	.67680	.73147	4.959	42.669	-2.49	7
	3434		11	10	86			1.09	
935	40681A	-	.08731	.61599	.78281	6.364	38.027	-0.12	4
	-		10	10	96			1.31	
936	40701	Licetus K	.00030	.71313	.70094	0.024	45.493	-0.11	4
	3419A		7	7	69			.84	
937	40703	Saussure D	.00248	.73027	.68367	0.207	46.887	+0.61	4
	3168		6	5	45			.53	
938	40715A	Licetus F	.01180	.71887	.69485	0.972	45.969	-0.23	4
	3400		10	10	79			.95	
939	40718	Deluc C	.00996	.78087	.62350	0.915	51.390	-1.21	5
	3221		7	7	58			.63	
940	40720	-	.02063	.70624	.70660	1.672	44.973	-1.32	6
	-		6	5	45			.55	
941	40721	Licetus N	.02737	.71272	.70034	2.238	45.480	-0.70	13
	3418A		6	6	48			.58	
942	40722	Licetus M	.02252	.72797	.68447	1.884	46.748	-0.91	5
	3419C		3	3	28			.33	
943	40731*	Licetus H	.03821	.11800	.69357	3.153	45.948	-1.72	18
	3421		6	6	53			.64	
944	40734*	Licetus A	.03798	.74005	.67065	3.241	47.770	-0.97	6
	3414A		5	5	40			.47	
945	40749	Lilius B	.04020	.79807	.60005	3.832	52.999	-1.22	5
	3396		5	5	47			.49	
946	40769	Lilius S	.06183	.79537	.60143	5.869	52.759	-1.60	4
	3394A		15	15	115			1.20	
947	40775A	-	.07403	.75827	.64765	6.520	49.315	-0.08	4
	-		9	9	89			1.00	
948	40782	Licetus U	.08842	.72942	.67635	7.448	46.919	-2.33	10
	3414F		8	8	61			.72	
949	40787*	Cuvier G	.08270	.77461	.62670	7.517	50.783	-0.34	5
	3408A		10	8	81			.88	
950	40795*	Cuvier H	.09767	.75050	.65445	8.488	48.598	+0.95	9
	3404A		7	6	47			.54	
951	40807A*	Deluc G	.00601	.87764	.47530	0.724	61.559	-3.31	7
	3225		13	13	120			.99	
952	40813	Lilius J	.01702	.83155	.55450	1.758	56.291	-0.66	11
	3397A		10	10	77			.74	
953	40820*	Lilius K	.02266	.80385	.59341	2.186	53.544	-1.02	6
	3397B		8	8	72			.74	
954	40825	Zach H	.02614	.85781	.51361	2.913	59.056	+0.27	4
	3386A		13	12	123			1.10	
955	40839	Curtius B	.03629	.89557	.44055	4.709	63.729	-2.22	5
	3357		12	12	106			.81	
956	40840	-	.04458	.80311	.59508	4.284	53.385	+0.95	4
	-		12	12	115			1.19	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	-	+	+	-		
957	40841	Lilius R	.04408	.81519	.57766	4.363	54.599	+0.15	4
	3397G		10	8	76			.76	
958	40844*	Zach J	.04442	.84132	.53731	4.725	57.347	-1.31	16
	3386B		7	7	60			.56	
959	40864	Zach L	.06317	.84730	.52499	6.861	58.032	-2.15	5
	3389B		16	17	149			1.36	
960	40868*	Zach D	.06428	.88308	.46426	7.882	62.043	-0.43	6
	3388		10	10	82			.66	
961	40874	-	.06988	.84385	.53119	7.494	57.588	-0.76	4
	-		14	14	137			1.26	
962	40880	Lilius W	.08596	.80598	.58692	8.332	53.647	+1.27	4
	3394D		11	10	104			1.06	
963	40882*	Lilius A	.08695	.82224	.56024	8.281	55.413	-2.17	5
	3395		10	10	81			.79	
964	40894	Jacobi J	.09530	.84664	.52103	10.365	57.969	-2.30	6
	3381A		10	9	80			.72	
965	40896*	Jacobi C	.09163	.86350	.49355	10.517	59.829	-2.07	4
	3378		14	14	110			.94	
966	40898*	Pentland F	.09223	.88307	.45935	11.353	62.051	-0.59	11
	3366A		9	9	72			.57	
967	40913*	Curtius A	.01680	.92993	.36617	2.626	68.486	-0.75	5
	3356		16	17	149			.95	
968	40923	Curtius C	.02739	.93566	.35389	4.425	69.225	+1.26	4
	3357A		16	16	161			.99	
969	40937	Schomberg. G	.02997	.97479	.22083	7.728	77.122	-0.10	5
	3338B		17	19	170			.65	
970	40962	Curtius L	.06113	.92900	.36698	9.457	68.175	+1.26	4
	3356E		20	20	199			1.27	
971	40988	Schomberger A	.08004	.98043	.17579	24.480	78.854	-1.26	6
	3334		24	26	250			.76	
972	40982*	Pentland E	.08672	.92722	.36566	13.341	67.937	+0.84	9
	3363A		18	16	137			.87	
973	41002	Pickering C	.10710	.02634	.99475	6.145	1.508	+1.47	4
	-		8	8	54			.93	
974	41008	Hipparchus NA	.10362	.08737	.99212	5.962	5.005	+2.32	5
	-		6	6	44			.76	
975	41022	Pickering A	.12278	.02716	.99307	7.048	1.554	+1.74	7
	3607A		6	6	42			.72	
976	41023*	Pickering B	.12875	.03624	.99220	7.393	2.074	+2.04	18
	3607B		4	4	27			.47	
977	41025*	Pickering	.12183	.04966	.99218	7.000	2.844	+1.50	15
	3607		8	8	67			1.15	
978	41028	Hipparchus G	.12884	.08720	.98797	7.429	5.001	+0.25	16
	3609		9	9	82			1.41	
979	41037*	Horrocks M	.13247	.07035	.98990	7.622	4.029	+2.08	22
	3615		3	3	24			.41	
980	41064	Saunder S	.16922	.04096	.98578	9.740	2.345	+1.80	5
	-		8	8	63			1.08	
981	40176	Saunder B	.17018	.06797	.98477	9.804	3.890	+2.91	8
	3621B		5	4	34			.59	
982	41084	Saunder C	.18252	.04776	.98326	10.515	2.734	+2.08	8
	3621C		7	7	52			.89	
983	41093	Lade X	.19130	.02945	.98234	11.019	1.685	+2.13	4
	-		7	7	50			.85	
984	41123	Hind	.12656	.13745	.98373	7.331	7.889	+2.29	4
	3601		6	6	55			.94	
985	41125	Hind C	.12831	.15099	.98230	7.441	8.666	+3.62	8
	3603		6	6	46			.79	
986	41138	Ritchey F	.13117	.18200	.97578	7.656	10.473	+2.15	6
	-		8	8	59			1.00	
987	41139	Ritchey A	.13234	.19616	.97372	7.739	11.288	+3.58	4
	3580A		11	11	107			1.81	
988	41142	Hipparchus C	.14203	.12834	.98350	8.217	7.359	+3.40	15
	3606		6	6	52			.89	
989	41151*	Hipparchus L	.15561	.11883	.98179	9.006	6.816	+1.95	15
	3613		5	5	36			.61	
990	41154	Hipparchus Z	.15609	.14841	.97782	9.069	8.523	+2.19	4
	3606A		9	7	69			1.17	
991	41157*	Ritchey D	.15787	.17752	.97284	9.217	10.210	+2.48	18
	3580D		5	5	40			.68	
992	41158*	Ritchey C	.15707	.18952	.97020	9.196	10.914	+1.63	13
	3580C		4	4	32			.54	
993	41191	Andel H	.19520	.11550	.97487	11.322	6.626	+1.58	9
	3725A		6	6	46			.78	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	-	+	+	-		
994	41193	Andel J	.19651	.13075	.97287	11.419	7.504	+1.90	11
	3725B		5	5	37			.62	
995	41194*	Andel F	.19038	.14448	.97259	11.075	8.294	+2.65	16
	3728		4	4	30			.51	
996	41202*	Albategn. E	.10881	.22363	.96967	6.402	12.908	+1.83	4
	3582		6	6	48			.80	
997	41203	Albategn. S	.10282	.23021	.96895	6.057	13.292	+2.11	10
	3582B		6	6	47			.79	
998	41218*	Argelander A	.11296	.28393	.95319	6.758	16.478	+1.69	13
	3559A		5	5	38			.63	
999	41229*	Airy A	.12762	.29249	.94871	7.661	16.990	+1.64	15
	3550		7	7	62			1.02	
1000	41247	Airy P	.14010	.27325	.95207	8.371	15.851	+0.63	6
	3550B		6	5	44			.72	
1001	41238	Airy O	.13936	.28778	.94933	8.351	16.695	+3.01	4
	3550A		6	5	54			.89	
1002	41250	Ritchey B	.15231	.20711	.96619	8.958	11.955	-0.33	4
	3580B		6	5	45			.76	
1003	41259	Airy S	.15621	.29639	.94349	9.400	17.219	+2.10	9
	3551B		8	7	55			.91	
1004	41268	Abulfeda E	.16891	.28773	.94299	10.155	16.717	+0.48	15
	3741		8	8	67			1.10	
1005	41278*	Abulfeda A	.17941	.28239	.94229	10.779	16.404	-0.14	20
	3736		8	8	62			1.08	
1006	41286	Abulfeda O	.18705	.26594	.94691	11.174	15.404	+2.04	7
	3743B		9	8	61			1.00	
1007	41296	Abulfeda P	.19341	.26673	.94647	11.549	15.435	+3.78	5
	3743C		9	7	70			1.15	
1008	41302	Airy J	.10047	.32571	.94063	6.096	18.999	+0.84	4
	3549A		7	5	51			.83	
1009	41321	Airy F	.12029	.31185	.94330	7.267	18.156	+1.33	11
	3554A		5	5	35			.57	
1010	41324	Airy L	.12329	.34896	.92973	7.553	20.409	+1.19	12
	3553A		5	5	35			.56	
1011	41329	Playfair B	.12180	.39362	.91170	7.609	23.168	+0.84	4
	3524A		9	9	87			1.37	
1012	41343	Airy R	.14419	.33488	.93171	8.797	19.554	+0.88	5
	3554C		8	7	65			1.05	
1013	41347	Playfair E	.14386	.37048	.91790	8.907	21.738	+0.43	4
	3524D		10	9	80			1.28	
1014	41365*	Abenezra B	.16372	.35482	.92079	10.080	20.772	+0.77	17
	3780		6	6	52			.83	
1015	41366	Abenezra F	.16747	.36705	.91545	10.366	21.524	+0.71	6
	3780E		13	12	112			1.78	
1016	41370	Geber K	.17480	.30239	.93859	10.549	17.574	+2.56	6
	-		6	5	40			.65	
1017	41375	Abenezra G	.17924	.35007	.91931	11.032	20.493	-0.17	6
	3780F		9	8	78			1.25	
1018	41428*	Apianus E	.12525	.48175	.86769	8.213	28.789	+0.57	6
	3518		10	9	69			1.04	
1019	41436	Apianus B	.13918	.45973	.87819	9.005	27.340	+1.68	11
	3515		7	7	55			.84	
1020	41439	Poisson A	.13834	.49537	.85660	9.173	29.722	-1.48	4
	3502		5	5	42			.63	
1021	41458	Apianus N	.15110	.48246	.86408	9.918	28.811	+1.94	5
	-		8	8	59			.89	
1022	41461	Apianus M	.16247	.41845	.89491	10.289	24.705	+2.05	8
	3517A		9	8	61			.95	
1023	41467*	Apianus C	.16066	.47104	.86720	10.495	28.106	-0.24	6
	3516		8	8	69			1.04	
1024	41468	Apianus L	.16491	.48606	.85834	10.875	29.078	+0.17	6
	3516A		12	11	104			1.55	
1025	41479	Poisson S	.17196	.49963	.85090	11.425	29.922	+2.80	6
	3501C		12	10	80			1.18	
1026	41493*	Pontanus K	.19780	.43415	.88000	12.667	25.703	+1.75	13
	3813A		4	4	27			.41	
1027	41504	Aliacensis D	.10001	.54643	.83216	6.853	33.102	+0.94	21
	3499		4	4	33			.47	
1028	41515	Poisson M	.11039	.55776	.82244	7.644	33.906	-0.27	4
	3507A		6	5	43			.62	
1029	41532	Poisson P	.13063	.52796	.83921	8.847	31.866	+0.07	5
	3501B		13	11	102			1.48	
1030	41537	Poisson O	.13029	.57341	.80877	9.151	34.990	-0.10	4
	3506A		5	5	52			.73	
1031	41539*	Kaiser C	.13473	.59517	.79321	9.639	36.491	+1.36	22
	3463		9	9	69			.95	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	-	+	+	-		
1032	41548	Gem. Fris. F	.14536	.58465	.79793	10.324	35.785	-0.31	5
	3823A		8	7	63			.87	
1033	41569	Gem. Fris. EA	.16687	.59726	.78600	11.986	36.623	+2.05	5
	3824B		11	9	87			1.19	
1034	41576	Gem. Fris. M	.17831	.56237	.80547	12.482	34.281	-2.75	5
	3819B		8	7	66			.93	
1035	41590*	Pontanus J	.19661	.50104	.84427	13.109	30.027	+2.16	8
	3809A		7	6	49			.71	
1036	41629*	Faraday D	.12104	.69090	.71383	9.623	43.659	+1.34	10
	3432		9	9	72			.89	
1037	41637	Faraday K	.13217	.67738	.72502	10.331	42.587	+1.71	8
	3451A		10	9	71			.89	
1038	41641	Maurolycus H	.14177	.61848	.77396	10.380	36.168	+1.42	5
	3849A		8	7	54			.73	
1039	41642	Maurolycus C	.14597	.62446	.76766	10.766	38.629	+0.48	5
	3849		8	6	61			.81	
1040	41650	Gem. Fris. K	.15076	.60788	.78036	10.934	37.409	+1.05	12
	3824A		6	6	52			.70	
1041	41654*	Maurolycus B	.15535	.64612	.74839	11.726	40.208	+1.47	10
	3848		13	13	99			1.29	
1042	41672A	-	.17603	.62424	.76112	13.022	38.627	-0.03	4
	-		9	8	84			1.11	
1043	41677*	Maurolycus J	.17754	.67434	.71448	13.954	42.488	-2.84	11
	3852		5	5	35			.44	
1044	41680*	Gem. Fris. EB	.18440	.60070	.77904	13.316	36.882	+1.52	14
	3824C		4	4	30			.41	
1045	41686	Maurolycus L	.18505	.66826	.71667	14.478	42.076	-4.85	4
	3854C		15	15	145			1.81	
1046	41713	Licetus Q	.11441	.73332	.66935	9.699	47.200	-0.98	4
	3414I		12	12	115			1.34	
1047	41720	Faraday H	.12618	.70720	.69588	10.277	44.998	+0.26	6
	3435A		8	7	54			.65	
1048	41721*	Faraday G	.12189	.71749	.68555	10.081	45.858	-0.32	7
	3435		8	7	66			.79	
1049	41731	-	.13812	.71489	.68760	11.357	45.548	+2.55	5
	-		11	10	74			.89	
1050	41735	Clairaut H	.13772	.75530	.64297	12.089	48.957	+2.48	5
	3880A		5	5	36			.40	
1051	41736*	Cuvier C	.13129	.76507	.63035	11.765	49.916	-0.08	17
	3407		7	7	55			.60	
1052	41739	Cuvier E	.13639	.79100	.59515	12.907	52.335	-1.31	8
	3409		7	6	56			.58	
1053	41748*	Cuvier B	.14843	.78326	.60115	13.869	51.671	-2.69	8
	3406		8	8	68			.71	
1054	41754*	Clairaut C	.15467	.74301	.64832	13.418	48.106	-3.21	8
	3881		8	8	69			.78	
1055	41762	Clairaut M	.16484	.72175	.67444	13.734	46.110	+2.57	7
	3877A		11	9	76			.89	
1056	41790	-	.19644	.70120	.68415	16.020	44.570	-1.45	6
	-		16	14	108			1.29	
1057	41795A	-	.19834	.75721	.62419	17.627	49.142	+2.01	5
	-		12	11	83			.90	
1058	41807	Kinau G	.10496	.87838	.46544	12.708	61.489	-0.69	5
	3374A		10	10	82			.66	
1059	41810	Cuvier M	.11256	.80169	.58761	10.843	53.266	+0.57	8
	3405A		10	8	68			.69	
1060	41832A	Jacobi Q	.13639	.82607	.54530	14.042	55.766	-1.44	5
	-		10	11	104			.99	
1061	41824	Jacobi P	.12948	.84134	.52375	13.886	57.329	-0.93	7
	3375E		10	10	83			.75	
1062	41841*	Jacobi B	.14015	.81321	.56444	13.944	54.428	-0.39	11
	3377		8	8	63			.61	
1063	41845	Jacobi A	.14420	.85208	.50122	16.050	58.529	-1.69	4
	3376		17	16	130			1.13	
1064	41849	Pentland O	.14308	.89183	.43150	18.344	62.990	+1.76	6
	3366C		12	11	87			.65	
1065	41857	Kinau B	.15636	.87893	.44872	19.211	61.602	-1.46	7
	3371A		6	6	47			.37	
1066	41859*	Manzinus K	.15588	.89232	.42094	20.320	63.295	-1.98	4
	3910B		7	7	70			.51	
1067	41864A	Tannerus A	.16813	.84255	.51026	18.236	57.476	-1.28	4
	3894A		14	14	140			1.24	
1068	41865*	Kinau K	.16242	.85265	.49528	18.156	58.562	-1.13	8
	3374D		6	6	43			.43	
1069	41865A	Kinau L	.16444	.85873	.48321	18.793	59.272	-1.78	4
	3374E		14	10	101			.85	

	B & M	Designation	E +	F -	G +	Long +	Lat -	H	Pl.
1070	41871	Baco G	.17189	.81241	.55527	17.200	54.416	-1.84	4
	3890A		11	11	111			1.07	
1071	41872	Tannerus D	.17299	.82690	.53404	17.948	55.828	-0.97	5
	3896		10	10	89			.83	
1072	41876A	Kinau E	.17137	.86710	.46865	20.085	60.080	+0.75	4
	3373A		16	15	153			1.25	
1073	41879	Manzinus M	.17276	.89435	.41173	22.762	63.469	-0.67	6
	3910D		7	7	50			.36	
1074	41883*	Tannerus E	.18733	.82970	.52590	19.606	56.065	+0.06	6
	3897		9	9	77			.70	
1075	41884	Tannerus B	.18036	.84471	.50442	19.674	57.618	+0.44	5
	3894B		18	16	125			1.09	
1076	41894	Mutus K	.19516	.84570	.49578	21.486	57.788	-0.79	8
	3903A		10	10	76			.65	
1077	41898*	Mutus L	.19860	.88085	.42756	24.914	61.844	-1.61	7
	3902A		11	11	90			.67	
1078	41900	Pentland J	.10903	.90234	.41912	14.581	64.361	+1.53	4
	3365A		20	20	195			1.42	
1079	41920	Pentland M	.12667	.90197	.41136	17.115	64.489	-1.03	4
	3365D		18	18	179			1.28	
1080	41921	Pentland K	.12049	.91905	.37659	17.742	66.721	+0.86	7
	3365B		15	14	111			.73	
1081	41945*	Boguslaws. H	.14424	.95565	.25885	29.128	72.772	+0.93	5
	3919A		14	15	138			.62	
1082	41951	Manzinus J	.15967	.91574	.36808	23.450	66.339	-0.38	8
	3908B		4	4	31			.20	
1083	41970	Manzinus O	.17933	.90537	.38438	25.011	64.897	-0.34	4
	3908D		10	10	98			.65	
1084	41984*	Boguslaws. G	.17992	.94834	.26167	34.511	71.486	+0.16	4
	3917A		27	27	269			1.22	
1085	42016*	Saunder A	.21227	.06951	.97565	12.274	3.982	+1.55	8
	3687		10	8	66			1.12	
1086	42023	Theon Jr. B	.22974	.03747	.97322	13.282	2.145	+1.16	6
	3651A		9	9	66			1.12	
1087	42052	Theon Sr. C	.25065	.02417	.96800	14.517	1.384	+0.38	10
	3650A		6	5	43			1.26	
1088	42060	Theon Sr. A	.26564	.00286	.96479	15.394	0.163	+1.21	14
	3649		5	5	39			.65	
1089	42061*	Theon Sr.	.26614	.01359	.96468	15.423	0.778	+1.41	15
	3648		7	7	63			1.05	
1090	42074	Theon Jr.	.27253	.04140	.96229	15.812	2.370	+1.73	14
	3651		8	8	68			1.14	
1091	42069*	Taylor D	.26979	.09266	.95990	15.698	5.309	+2.41	12
	3688C		4	4	26			.43	
1092	41190	Andel K	.19957	.10108	.97636	16.887	2.651	+4.23	6
	3725C		6	6	49			.83	
1093	42108	Andel D	.19969	.18662	.96488	11.692	10.724	+4.94	6
	3729B		7	7	67			1.12	
1094	42114	Dollond D	.21472	.14211	.96806	12.505	8.155	+2.99	14
	3726		5	5	38			.64	
1095	42115	Dollond L	.21489	.15228	.96620	12.538	8.746	+2.53	5
	3725D		8	7	64			1.07	
1096	42148*	Dollond	.24536	.18138	.95343	14.431	10.438	+1.85	19
	3722		6	6	48			.79	
1097	42167	Dollond E	.26657	.17744	.94822	15.702	10.212	+1.45	18
	3727		4	4	28			.46	
1098	42187*	Dollond M	.28687	.17511	.94178	16.940	10.085	-0.08	5
	3730		7	5	52			.85	
1099	42198	Kant P	.29364	.18711	.93842	17.375	10.773	+1.62	13
	3699B		5	5	34			.55	
1100	42202*	Abulfeda Q	.20672	.22189	.95349	12.232	12.812	+0.96	14
	3735A		4	4	34			.56	
1101	42218	Abulfeda F	.21755	.27858	.93753	13.064	16.143	+3.38	10
	3744		9	9	77			1.26	
1102	42221	Abulfeda S	.22524	.21213	.95252	13.304	12.228	+2.63	4
	3735C		12	11	85			1.41	
1103	42212	Abulfeda R	.21945	.22080	.95069	12.998	12.751	+0.63	8
	3735B		7	7	65			1.07	
1104	42235	Abulfeda T	.22979	.25589	.93990	13.738	14.813	+1.47	4
	3735D		12	9	90			1.47	
1105	42237	Almanon F	.23742	.27374	.93248	14.284	15.880	+0.71	4
	3751B		6	5	47			.76	
1106	42250*	Descartes A	.25671	.20890	.94407	15.211	12.052	+0.70	9
	3717		5	5	46			.76	
1107	42255	Abulfeda Z	.25416	.25378	.93455	15.214	14.683	+2.07	10
	3735I		7	7	48			.78	

	B & M	Designation	E +	F -	G +	Long +	Lat -	H	Pl.
1108	42267*	Almanon C	.26481	.27793	.92561	15.965	16.102	+3.58	6
	3754		5	5	41			66	
1109	42275	Abulfeda B	.27393	.25013	.92996	16.412	14.467	+2.11	4
	3737		8	8	63			1.01	
1110	42285	Abulfeda BA	.28057	.25343	.92802	16.821	14.649	+3.62	6
	3738		10	10	74			1.20	
1111	42315	Geber E	.21039	.35030	.91360	12.968	20.488	+1.42	9
	3774B		7	6	50			.79	
1112	42327	Azophi F	.22184	.37897	.90032	13.842	22.230	+2.96	7
	3784E		9	8	67			1.04	
1113	42338	Sacrobosco K	.23414	.38873	.89196	14.708	22.857	+1.32	5
	3788B		12	10	92			1.43	
1114	42340	Almanon G	.24043	.30735	.92259	14.606	17.867	+2.99	4
	3751C		9	9	68			1.09	
1115	42356	Sacrobosco O	.25836	.36118	.89815	16.048	21.129	+3.36	4
	3794A		14	14	103			1.61	
1116	42359*	Sacrobosco C	.25136	.38992	.88574	15.843	22.952	-0.21	32
	3791		4	4	33			.50	
1117	42372	Almanon L	.27033	.32508	.90797	16.579	18.939	+2.75	10
	3751F		5	5	33			.52	
1118	42375	Sacrobosco P	.27912	.35318	.89506	17.319	20.641	+3.28	5
	3794B		4	4	32			.50	
1119	42403	Pontanus D	.20608	.43673	.87660	13.229	25.872	+1.41	6
	3813		11	11	100			1.52	
1120	42407	Pontanus L	.20422	.47893	.85509	13.432	28.580	+1.96	5
	3809B		15	14	107			1.59	
1121	42411	Pontanus N	.21743	.41712	.88391	13.819	24.619	+2.22	11
	3814A		8	8	57			.88	
1122	42413	Pontanus O	.21916	.43912	.87154	14.115	26.041	+0.38	6
	3813B		8	7	68			1.03	
1123	42433	Sacrobosco L	.23562	.43166	.87158	15.127	25.552	+1.30	14
	3788C		5	5	36			.55	
1124	42450*	Sacrobosco A	.25361	.40741	.87731	16.123	24.042	-0.02	8
	3789		5	5	41			.62	
1125	42455	Sacrobosco N	.25440	.45504	.85461	16.577	27.036	+1.86	8
	3788E		9	7	60			.89	
1126	42460	Sacrobosco B	.26549	.40648	.87480	16.882	23.971	+0.86	7
	3790		8	8	65			.99	
1127	42468	Pontanus W	.26389	.48662	.83449	17.548	29.073	+2.44	6
	3809H		12	10	82			1.18	
1128	42512	Goodacre F	.21355	.52962	.82256	14.553	31.931	+2.35	8
	-		6	6	41			.59	
1129	42517	Gem. Fris. S	.21250	.57668	.79135	15.030	35.137	+3.43	4
	3820C		13	13	96			1.32	
1130	42524	Goodacre E	.22459	.54425	.81005	15.496	32.921	+2.46	7
	3825E		9	8	66			.93	
1131	42537	Gem. Fris. T	.23216	.57200	.78892	16.397	34.820	+3.02	4
	3820D		11	9	84			1.15	
1132	42542	Pontanus S	.24660	.52229	.81867	16.763	31.419	+3.31	6
	3817A		9	8	64			.91	
1133	42553	Zagut P	.25275	.53588	.80467	17.437	32.430	-1.27	7
	4048B		7	6	55			.77	
1134	42559*	Büsching E	.25330	.59732	.76208	18.385	36.641	+1.49	15
	3845		10	11	93			1.23	
1135	42560	Zagut F	.26021	.50448	.82519	17.501	30.244	+2.73	12
	4051A		6	6	44			.63	
1136	42585	Celsius H	.28610	.55642	.78108	20.117	33.779	+1.34	10
	4041		5	5	36			.49	
1137	42613	Buch D	.21870	.63769	.73955	16.474	39.586	+1.23	7
	3834B		10	9	69			.89	
1138	42615	Maurolycus R	.21158	.65448	.72857	16.193	40.783	+3.41	6
	3846B		8	7	59			.75	
1139	42616	Maurolycus S	.21753	.66943	.71038	17.025	42.020	+0.08	4
	3846C		6	6	59			.73	
1140	42631*	Buch B	.23054	.61382	.75610	16.956	37.830	+1.40	16
	3836		5	5	43			.56	
1141	42636	-	.23016	.66044	.71620	17.815	41.280	+1.82	6
	-		6	7	42			.52	
1142	42648	Barocius N	.24691	.68351	.68734	19.759	43.102	+0.51	5
	3863B		8	7	57			.68	
1143	42660	Büsching C	.26666	.60506	.75251	19.512	37.157	+3.02	4
	3843		9	9	68			.89	
1144	42671	Büsching A	.27397	.61950	.73609	20.415	38.264	+0.58	7
	3840A		9	8	62			.79	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	-	+	+	-		
1145	42678	Nicolai G	.27851	.67979	.67823	22.325	42.835	-0.28	5
	4010		14	15	132			1.55	
1146	42697*	Nicolai A	.29560	.67441	.67709	23.584	42.391	+0.57	33
	4004		6	6	43			.51	
1147	42708A*	Baco O	.20935	.78817	.57814	19.905	52.041	-0.62	9
	3888E		6	6	43			.43	
1148	42715	Breislak C	.21226	.75309	.62327	18.806	48.836	+0.58	4
	3861C		8	8	77			.83	
1149	42722	Barocius DA	.22662	.72207	.65386	19.115	46.217	+0.24	7
	-		9	8	75			.85	
1150	42735	Baco R	.23366	.75599	.60966	20.969	49.184	-1.91	5
	3890C		12	12	106			1.12	
1151	42747A	Ideler C	.24666	.77916	.57503	23.216	51.233	-1.22	10
	3864C		6	6	44			.44	
1152	42752*	Barocius EB	.25320	.72665	.63792	21.648	46.634	-0.81	16
	3865B		5	5	39			.43	
1153	42754	Barocius EC	.25531	.74430	.61633	22.501	48.130	-0.84	8
	3865C		9	9	79			.84	
1154	42773*	Barocius EE	.26966	.73693	.61969	23.516	47.476	-0.17	12
	3865E		6	6	44			.47	
1155	42779	-	.27665	.79741	.53493	27.346	52.938	-1.26	5
	-		9	9	69			.64	
1156	42783	Pitiscus G	.28696	.73843	.60946	25.213	47.627	-0.81	8
	3997A		9	9	79			.83	
1157	42792	Spallanz. A	.29913	.72223	.62361	25.625	46.239	-0.01	10
	4008B		6	6	43			.47	
1158	42800	Baco T	.19973	.80647	.55674	19.735	53.742	+0.21	4
	3889A		9	9	87			.84	
1159	42803	Tannerus	.20689	.83172	.51294	21.966	56.376	-2.03	4
	3894		12	12	98			.87	
1160	42810	Baco W	.21502	.80117	.55793	21.076	53.265	-0.53	4
	3889C		13	13	130			1.26	
1161	42819*	Mutus B	.21636	.89721	.38230	29.507	63.913	-1.78	12
	3901		10	10	68			.45	
1162	42822	Tannerus N	.22923	.82655	.51162	24.134	55.852	-2.19	6
	3898E		6	6	45			.40	
1163	42825	Mutus P	.22159	.85712	.46248	25.600	59.107	-2.05	6
	3903D		10	10	90			.72	
1164	42836	Hommel M	.23160	.86359	.44564	27.460	59.819	-1.72	7
	3988A		6	6	43			.33	
1165	42838	Mutus Q	.23567	.88516	.40180	30.393	62.244	+0.43	4
	3899B		8	7	74			.52	
1166	42845*	Hommel N	.24572	.85948	.44817	28.734	59.261	-0.05	6
	3988B		12	11	81			.63	
1167	42852*	Hommel K	.25659	.82349	.50383	26.988	55.526	-1.90	12
	3985B		7	7	56			.49	
1168	42857	Hommel X	.25934	.87234	.41117	32.241	60.870	-2.35	4
	-		15	14	143			1.02	
1169	42862*	Hommel L	.26057	.82944	.49168	27.921	56.142	-2.07	7
	3985C		7	7	59			.50	
1170	42865	Hommel E	.26512	.85665	.44079	31.025	59.017	-1.36	8
	3986F		8	8	69			.53	
1171	42867	Nearch E	.26702	.87811	.39772	33.876	61.385	+0.48	10
	3954A		9	9	60			.41	
1172	42870	Hommel J	.27830	.80272	.52617	27.875	53.442	-1.16	11
	3985A		9	9	71			.65	
1173	42915*	Boguslaws. D	.21773	.95519	.20118	47.262	72.758	+0.23	4
	3919C		12	11	95			.33	
1174	43001	Delambre D	.30159	.01912	.95401	17.543	1.094	+1.26	10
	3656B		6	6	44			.73	
1175	43029*	Alfraganus	.32393	.09411	.94293	18.959	5.392	+2.52	12
	3680		8	9	75			1.22	
1176	43021	Delambre F	.32964	.01805	.94406	19.247	1.034	+0.21	4
	3659		8	7	68			1.11	
1177	43040	Hypatia E	.34883	.00548	.93779	20.403	0.313	+1.01	14
	3670		6	5	40			.65	
1178	43047	Alfraganus D	.34335	.07005	.93705	20.134	4.014	+0.86	11
	3684		6	6	46			.75	
1179	43056	Alfraganus F	.35541	.06110	.93274	20.858	3.502	+0.05	7
	3681B		7	7	60			.97	
1180	43064	Alfraganus G	.36172	.04607	.93078	21.237	2.641	-0.59	11
	3681C		6	6	43			.70	
1181	43085	Hypatia D	.38542	.05449	.92211	22.683	3.120	+1.57	8
	(3669)		7	7	50			.80	
1182	43100*	Alfraganus C	.30913	.10606	.94619	18.092	6.081	+1.81	32
	3683		4	4	31			.51	
1183	43137	Kant N	.33308	.17204	.92929	19.718	9.885	+3.58	9
	3707		7	7	46			.74	
1184	43151	Zöllner K	.35354	.11315	.92933	20.828	6.492	+1.26	12
	3704A		5	5	37			.59	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	-	+	+	-		
1185	43219	Tacitus N	.31900	.29142	.90430	19.430	16.904	+3.86	13
	3765		5	5	32			.50	
1186	43223*	Tacitus C	.32944	.23622	.91591	19.782	13.641	+2.80	16
	3763		4	4	34			.54	
1187	43234A	Tacitus E	.33448	.24069	.91287	20.123	13.905	+2.73	5
	3762		6	6	49			.78	
1188	43234	Tacitus B	.33936	.24232	.91008	20.449	14.008	+1.85	7
	3761		4	4	37			.58	
1189	-	(bright spot)	.35190	.21666	.91248	21.089	12.491	+2.95	5
	-		8	8	74			1.18	
1190	43295	-	.39238	.25316	.88581	23.891	14.644	+2.35	8
	-		5	5	33			.51	
1191	43324	Fermat E	.32021	.34080	.88604	19.869	19.886	+3.25	6
	3805		7	7	59			.91	
1192	43330	Tacitus A	.33434	.29987	.89478	20.488	17.428	+2.03	7
	3760		7	7	48			.74	
1193	43333	Catharina M	.33500	.32951	.88507	20.731	19.197	+3.60	4
	-		13	12	82			1.27	
1194	43339	Fermat B	.33192	.39185	.86019	21.100	23.025	+3.16	5
	3802		8	7	53			.79	
1195	- *	(bright spot)	.34823	.38224	.85761	22.099	22.438	+2.49	9
	-		5	5	42			.63	
1196	43354	Catharina A	.35625	.34508	.86966	22.276	20.162	+2.00	4
	4168		9	9	71			1.07	
1197	43366	Polybius H	.36043	.36149	.86197	22.692	21.152	+3.10	7
	4112B		6	5	43			.64	
1198	43368	Polybius J	.36788	.38690	.84789	23.454	22.714	+3.42	6
	4110B		7	7	51			.75	
1199	43418	Pons B	.31090	.48087	.82169	20.724	28.694	+2.66	10
	4098		6	6	48			.68	
1200	43435	Pons H	.33797	.45331	.82649	22.240	26.915	+2.43	7
	4102B		7	7	51			.73	
1201	43468*	Rothmann K	.36173	.48220	.79945	24.345	28.790	+2.16	22
	-		3	3	26			.35	
1202	43477	Rothmann C	.37157	.47863	.79643	25.011	28.573	+1.26	5
	4055		10	10	91			1.26	
1203	43478	Rothmann H	.37158	.48669	.79022	25.397	29.090	+1.80	4
	-		5	5	35			.48	
1204	43483	Polybius B	.38906	.43081	.81541	25.507	25.493	+1.61	11
			9	9	83			1.17	
1205	43495	Piccolom. N	.39337	.45885	.79767	26.250	27.289	+1.36	7
	4083D		12	11	79			1.09	
1206	43513*	Zagut A	.31307	.53004	.78930	21.635	31.973	+1.69	14
	4047		6	6	44			.60	
1207	43516	Rab. Lev. A	.31840	.56356	.76203	22.676	34.308	-0.29	6
	4033		9	9	70			.93	
1208	43517	Rab. Lev. D	.31621	.57917	.75076	22.840	35.411	-0.81	4
	4037		13	14	133			1.74	
1209	43520	Zagut L	.32458	.50453	.80116	22.050	30.270	+1.53	6
	4051C		13	14	126			.92	
1210	43522	Zagut K	.32139	.52586	.78818	22.183	31.707	+0.91	7
	4051D		10	9	71			.97	
1211	43525	Zagut S	.32237	.55038	.77234	22.655	33.330	+2.91	8
	4046A		8	6	52			.70	
1212	43526	Rab. Lev. L	.32136	.56893	.75787	22.978	34.649	+1.15	8
	4033A		10	10	88			1.16	
1213	43527	Rab. Lev. M	.32165	.57692	.75050	23.199	35.243	-0.39	5
	4037A		9	10	91			1.19	
1214	43541	Zagut N	.34127	.51918	.78618	23.465	31.206	+3.55	5
	4051F		11	10	74			1.01	
1215	43588	Riccius P	.38252	.58364	.71849	28.030	35.641	+2.76	6
	4026E		9	9	64			.80	
1216	43598	Riccius Y	.39485	.58517	.70907	29.111	35.792	+0.96	8
	4020A		9	9	70			.86	
1217	43619	Nicolai L	.31070	.69692	.64784	25.622	44.126	+1.67	4
	4006A		11	11	81			.91	
1218	43622	Riccius G	.32403	.62266	.71288	24.443	38.490	+0.78	11
	4024		5	5	33			.41	
1219	43626	Nicolai D	.32241	.66559	.67370	25.574	41.706	+0.72	11
	4003A		6	6	41			.48	
1220	43627	Nicolai	.32225	.67411	.66409	25.884	42.403	-0.62	5
	4003		8	8	65			.75	
1221	43635	Riccius J	.33249	.65216	.68128	26.014	40.704	+0.00	5
	4026A		12	12	109			1.29	
1222	43644	Riccius E	.34110	.64134	.68659	26.418	39.914	-0.81	5
	4022		8	9	81			.97	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	-	+	+	-		
1223	43645	Riccius N	.34865	.65780	.66756	27.576	41.134	-0.09	9
	4022A		7	7	52			.60	
1224	43651	Riccius M	.35213	.61341	.70793	26.446	37.804	+1.24	9
	4026		10	10	79			.97	
1225	43651A	-	.35712	.61684	.70294	26.932	38.037	+1.87	4
	-		5	5	31			.38	
1226	43657	Nicolai M	.35753	.67506	.64560	28.977	42.450	+0.29	6
	4006B		6	6	51			.57	
1227	43664	Riccius D	.36826	.64736	.66700	28.903	40.353	-0.36	6
	4021		12	11	95			1.10	
1228	43664A	Riccius DA	.36891	.64018	.67462	28.671	39.780	+0.90	9
	-		6	6	42			.49	
1229	43679	Lockyer A	.37008	.69499	.61612	30.991	44.038	-0.37	8
	4482A		10	10	79			.84	
1230	43718	Hommel HA	.31287	.78800	.53052	30.529	51.988	+0.24	6
	(3997B)		14	13	116			1.07	
1231	43726A	Pitiscus A	.32747	.76811	.54665	30.923	50.320	-3.43	13
	3992		9	8	60			.57	
1232	43729	Hommel R	.32837	.79374	.51170	32.684	52.544	-0.19	11
	3983B		8	8	52			.46	
1233	43732A	Spallanz. D	.33126	.72039	.60798	28.583	46.136	-1.45	5
	-		6	6	39			.41	
1234	43740	Dove Z	.34790	.70020	.62278	29.188	44.466	-0.72	4
	-		6	5	37			.40	
1235	43770*	Lockyer HA	.37683	.70644	.59740	32.243	45.004	-1.79	15
	(4480)		5	5	42			.44	
1236	43773	Dove A	.37660	.72990	.56897	33.500	46.929	-1.47	6
	4002A		9	9	64			.63	
1237	43777	Vlacq K	.37377	.77923	.50304	36.613	51.191	-0.04	11
	3972A		7	7	50			.44	
1238	43781*	Lockyer G	.38434	.71455	.58363	33.366	45.637	-0.94	7
	4482		13	13	109			.64	
1239	43784	Vlacq H	.38336	.74140	.55032	34.861	47.866	-0.44	11
	3972B		8	8	53			.51	
1240	43797*	Vlacq A	.39390	.77909	.48755	38.935	51.182	-0.14	4
	3968		14	13	107			.91	
1241	43819	Boussing't S	.31892	.89923	.29872	46.873	64.083	-0.38	4
	3936C		10	10	92			.48	
1242	43890	Rosenberg. G	.38974	.80806	.44212	41.396	53.893	+0.28	4
	3965A		16	16	148			1.14	
1243	43920*	Boussing't R	.32480	.90140	.28694	48.541	64.321	+0.30	4
	3936B		15	15	134			.67	
1244	43990	Helmholtz H	.39041	.90175	.18031	65.210	64.503	-1.66	4
	3930		14	15	139			.44	
1245	43990A	Helmholtz J	.39456	.90510	.16121	67.775	64.783	+0.76	4
	3930A		15	17	151			.42	
1246	44001*	Moltke	.40933	.00972	.91219	24.167	0.556	-0.23	26
	3667		4	4	28			.44	
1247	44025	Torricelli H	.42634	.05766	.90275	25.279	3.305	+0.04	11
	-		5	5	37			.58	
1248	44034*	Torricelli C	.43743	.04669	.89723	25.990	2.678	-1.26	16
	4227		8	8	61			.95	
1249	44067	Torricelli T	.46013	.07360	.88456	27.482	4.221	-0.36	6
	-		5	5	40			.62	
1250	44081	Censorinus K	.48197	.01745	.87600	28.819	0.999	-0.02	6
	-		4	4	32			.49	
1251	44084*	Torricelli B	.48642	.04504	.87211	29.150	2.582	-0.69	14
	4226		5	5	43			.65	
1252	44097*	Torricelli A	.49460	.07835	.86504	29.759	4.495	-0.81	14
	4225		8	8	56			.84	
1253	44217	Cyrillus E	.41159	.27336	.87012	25.315	15.854	+1.08	6
	4181		8	8	61			.92	
1254	44229	Beaumont D	.42192	.29313	.85927	26.152	17.025	+1.99	18
	4158		7	6	53			.79	
1255	44236	Cyrillus G	.43198	.26941	.86141	26.632	15.619	+1.05	12
	4183		6	6	41			.61	
1256	44249	Beaumont N	.44547	.29071	.84561	27 780	16.917	-1.73	5
	-		6	6	43			.63	
1257	44284	Beaumont L	.48407	.24866	.83820	30.006	14.407	-1.10	6
	4157D		4	4	28			.41	
1258	44321	Beaumont F	.42544	.31418	.85017	26.584	18.287	+2.17	8
	4158B		5	6	38			.56	
1259	44322*	Beaumont B	.42726	.32019	.84650	26.781	18.658	+1.42	7
	4156		9	9	80			1.18	
1260	44324*	Beaumont G	.42787	.34735	.83490	27.134	20.317	+0.68	18
	4157A		5	5	36			.52	

	B & M	Designation	E	F	G	Long	Lat	H	Pl.
			+	-	+	+	-		
1261	44337	Polybius L	.43828	.37410	.81787	28.186	21.957	+0.81	10
	4112D		8	8	53			.75	
1262	44344	Beaumont C	.43962	.34539	.82933	27.927	20.201	+0.30	5
	4156A		8	8	79			1.14	
1263	44370	Beaumont K	.47729	.30000	.82448	30.066	17.479	-2.11	6
	4157C		4	4	29			.42	
1264	44401	Polybius E	.40202	.41310	.81830	26.164	24.375	+1.64	9
	4112		7	6	50			.71	
1265	44415	Polybius D	.41778	.45165	.78937	27.890	26.825	+1.42	14
	4111		5	5	38			.52	
1266	44427A	Piccolom. T	.42704	.47733	.76901	29.043	28.486	+1.37	4
	-		4	4	27			.36	
1267	44432	Polybius V	.43932	.42527	.79017	29.073	25.191	-1.54	4
	-		10	10	103			1.41	
1268	44443*	Piccolom. K	.44682	.43314	.78308	29.708	25.660	+0.41	18
	4083A		4	5	38			.51	
1269	44494*	Piccolom. L	.49910	.43987	.74703	33.747	26.086	+0.56	29
	4083B		5	5	35			.46	
1270	44509	Wöhler C	.40812	.59787	.69092	30.569	36.688	+1.20	4
	4064C		9	11	110			1.31	
1271	44512	-	.41421	.52574	.74533	29.062	31.656	+3.03	4
	-		3	3	18			.23	
1272	44514	Rothmann E	.41024	.54381	.73430	29.191	32.883	+2.80	7
	4055B		5	5	34			.43	
1273	44538	Stiborius F	.43522	.58449	.68659	32.370	35.716	+2.13	9
	4064D		7	7	48			.57	
1274	44600	Wöhler B	.40788	.60501	.68598	30.735	37.165	+2.58	10
	4064B		7	7	49			.58	
1275	44618*	Janssen B	.41236	.68354	.60174	34.422	43.138	-0.56	6
	4489A		11	10	83			.87	
1276	44624	Wöhler F	.42575	.64405	.63557	33.816	40.094	+0.01	4
	-		6	6	37			.41	
1277	44627	Janssen MA	.42683	.67113	.60763	35.086	42.107	+1.57	4
	-		11	11	76			.80	
1278	44628	Janssen C	.41990	.67998	.60098	34.941	42.845	-0.12	6
	4488A		7	7	46			.48	
1279	44636	Janssen M	.43203	.66745	.60774	35.408	41.832	+1.29	9
	4487A		9	8	63			.67	
1280	44655	Brenner F	.45735	.65201	.60657	37.016	40.638	+1.92	10
	4465B		9	8	57			.60	
1281	44660A*	Stiborius G	.46518	.60592	.64683	35.722	37.253	+1.67	13
			12	12	88			.99	
1282	44725	Janssen E	.42240	.75196	.50445	39.941	48.814	-1.45	4
	4485		18	16	127			1.11	
1283	44761*	Janssen K	.46561	.71988	.51211	42.277	46.125	-2.37	28
	4488		7	7	53			.47	
1284	44766	Watt A	.46223	.76902	.44048	46.380	50.298	-0.81	4
	4499A		13	14	123			.94	
1285	44791	Fabricius J	.49386	.71655	.49139	45.143	45.805	-1.04	5
	4471A		16	14	115			.98	
1286	44811	Rosenberg. H	.41620	.81765	.39533	46.473	54.929	-1.69	4
	3965B		16	17	154			1.06	
1287	44861*	Biela C	.46916	.81093	.34740	53.481	54.250	-1.39	4
	4514		18	20	176			1.06	
1288	45021	Censorinus J	.51955	.01750	.85425	31.307	1.002	-0.02	5
	-		8	8	52			.77	
1289	45023	Censorinus B	.52097	.03458	.85251	31.429	1.982	-0.54	6
	4237		6	6	39			.58	
1290	45036	Isidorus H	.53768	.06826	.84048	32.608	3.913	+0.14	6
	4294B		5	5	36			.53	
1291	45039	Isidorus E	.53642	.09337	.83788	32.627	5.361	-1.30	6
	4295		11	11	90			1.31	
1292	45054	-	.55856	.04119	.82819	33.997	2.361	-0.36	5
	-		7	7	50			.72	
1293	45057*	Isidorus D	.55861	.07388	.82570	34.079	4.238	-0.62	16
	4286		6	6	51			.74	
1294	45059	-	.55603	.09648	.82559	33.960	5.536	+0.06	5
	-		5	5	36			.52	
1295	45083*	Censorinus D	.58539	.03325	.81055	35.837	1.904	+0.68	10
	4239		8	8	58			.82	
1296	45090	Maskelyne T	.59613	.00003	.80372	36.564	0.001	+1.16	4
	-		8	8	51			.71	
1297	45105	Isidorus V	.50571	.15384	.84860	30.792	8.851	-0.41	5
	-		5	5	34			.50	

	B & M	Designation	E +	F -	G +	Long +	Lat -	H	Pl.
1298	45113 -	Isidorus U	.51741 5	.13768 5	.84415 37	31.505	7.916	-0.64 .54	6
1299	45121 4294A	Isidorus G	.52110 4	.11102 4	.84646 32	31.617	6.372	+0.32 .48	5
1300	45126 -	Isidorus W	.52778 8	.16418 7	.83353 51	32.341	9.448	+0.24 .74	4
1301	45143* 4292	Isidorus A	.54165 4	.13931 4	.82805 34	33.189	8.014	-1.34 .49	17
1302	45145 4294C	Isidorus K	.54280 6	.15446 6	.82613 47	33.306	8.881	+0.85 .68	8
1303	45152 -	Capella T	.55765 7	.12013 7	.82160 49	34.166	6.898	+0.37 .70	5
1304	45186 4284A	Capella J	.58017 4	.16397 4	.79686 32	34.123	9.832	-1.33 .44	5
1305	45188 -	Gaudibert D	.58173 4	.18314 4	.79163 29	36.310	10.560	-1.19 .40	5
1306	45193 4283	Capella A	.59884 9	.13288 10	.78820 92	37.225	7.645	-2.15 1.26	4
1307	45196 4284	Capella B	.59122 6	.16383 6	.78883 40	36.851	9.435	-1.19 .55	5
1308	45201 -	Mädler D	.50426 7	.21844 7	.83401 49	31.158	12.633	-2.12 .71	5
1309	- * -	(bright spot)	.53414 6	.20319 6	.81950 45	33.095	11.734	-1.59 .64	10
1310	45307 4127A	Fracastor. M	.50432 7	.37026 7	.77915 50	32.913	21.748	-1.30 .68	5
1311	45315 4127	Fracastor. L	.51182 4	.35182 4	.78202 30	33.204	20.627	-2.35 .41	5
1312	45319 4127C	Fracastor. N	.51362 10	.39425 9	.76224 66	33.973	23.216	+0.21 .88	5
1313	- * -	(bright spot)	.52325 5	.34813 5	.77720 38	33.950	20.383	-0.85 .51	11
1314	45338A -	Fracastor W	.53839 3	.38516 3	.75037 19	35.659	22.638	+1.10 .25	4
1315	45340* 4143	Rosse	.54492 7	.30691 7	.77990 53	34.942	17.878	-0.54 .72	17
1316	45365 4126B	Fracastor. J	.56678 6	.35472 5	.74279 44	37.345	20.789	-1.04 .56	7
1317	- -	-	.57221 11	.33458 11	.74875 77	37.387	19.547	0.00 1.00	5
1318	45397A -	-	.59294 2	.37894 2	.71081 12	39.834	22.263	+0.37 .15	4
1319	45411· 4120	Fracastor C	.51562 16	.41581 16	.74832 129	34.568	24.586	-1.09 1.67	4
1320	45447 -	Weinek H	.54680 5	.47886 5	.68769 36	38.489	28.592	+1.05 .43	4
1321	45462 -	Weinek F	.55956 8	.42395 8	.71210 54	38.159	25.085	-0.06 .67	4
1322	45471 -	Santbech V	.57581 8	.41661 8	.70319 56	39.312	24.626	-0.35 .68	5
1323	45498* 4417A	Reichenbach K	.59088 5	.48261 5	.64811 41	42.355	28.822	+1.82 .46	15
1324	45500 4083F	Piccolom. P	.50559 10	.50717 10	.70012 68	35.834	30.424	+2.61 .83	16
1325	45516 -	Neander Y	.50920 7	.56727 7	.64762 52	38.176	34.550	+0.43 .58	6
1326	45509 -	Brenner D	.50378 3	.59091 3	.63049 22	38.625	36.211	+0.42 .24	4
1327	45524 4427E	Neander R	.52158 5	.54932 5	.65516 33	38.520	33.264	+2.59 .37	9
1328	45574 4425	Neander G	.57798 6	.54954 6	.60445 43	43.717	33.308	+1.23 .45	4
1329	45651* 4442A	Rheita P	.55267 6	.61440 6	.56427 48	44.404	37.878	+1.16 .47	17
1330	45657 4465	Metius D	.55071 15	.67667 16	.48932 146	48.378	42.568	+0.52 1.24	4
1331	45711* 4506	Steinheil H	.51016 15	.71601 14	.47807 102	46.859	45.682	+1.29 .85	6
1332	45731 4505	Steinheil G	.53508 10	.71479 9	.45018 81	49.925	45.628	-0.09 .63	5
1333	45775 4503A	Reimarus H	.57731 12	.75654 13	.30267 114	62.333	49.251	-2.39 .60	4
1334	46001 -	Censorinus W	.60883 8	.01724 8	.79508 54	37.442	0.986	+2.71 .75	4

	B & M	Designation	E +	F -	G +	Long +	Lat -	H	Pl.
1335	46005* 4241	Censorinus F	.60661 9	.05507 9	.79327 71	37.404	3.156	+0.25 .98	8
1336	46036 4264	Lubbock G	.63142 8	.06396 8	.77312 57	39.239	3.666	+0.43 .76	5
1337	46101* 4287	Capella D	.60461 5	.11743 5	.78726 38	37.523	6.746	-0.76 .52	12
1338	46104 4285C	Capella H	.60074 7	.14136 7	.78688 49	37.359	8.126	+0.04 .67	10
1339	46119* 4320	Gaudibert J	.61885 7	.19308 7	.76081 51	39.125	11.137	-0.79 .68	12
1340	46135* 4312	Gutenberg A	.63368 11	.15634 11	.75786 81	39.900	8.992	+0.30 1.07	15
1341	46215 4365	Bohnenberg. F	.61714 10	.23515 9	.74500 74	39.637	14.664	-0.02 .96	9
1342	46219* 4359	Bohnenberg. G	.61504 7	.29497 7	.72991 53	40.118	17.173	-1.69 .67	25
1343	46403 4388A	Santbech F	.60294 10	.43139 9	.67131 70	41.928	25.551	+0.25 .82	6
1344	46662 4567	Fraunhofer G	.66634 9	.62195 9	.41249 103	58.240	38.436	+0.85 .74	5
1345	47023* (4255)	Messier A	.72963 6	.03452 6	.68240 53	46.915	1.979	-0.68 63	19
1346	47033 4254	Messier	.73802 12	.03268 13	.67307 114	47.635	1.873	-1.07 1.33	9
1347	47175* -	Goclenius UA	.77116 8	.15264 8	.61743 62	51.317	8.783	-0.69 .66	8
1348	47249* 4377	Cook B	.74883 6	.29687 6	.59268 45	51.639	17.268	+0.13 .46	12
1349	47515* 4576	Furnerius A	.71527 8	.55216 8	.42932 66	59.026	33.500	+0.70 .49	11
1350	- * -	(bright spot)	.82510 6	.02152 6	.56285 51	55.699	1.234	-1.69 .50	9
1351	48061* 4656	Webb	.86512 15	.01606 15	.50026 139	59.961	0.920	-0.91 1.21	4
1352	48069* 4688	Langrenus C	.86209 14	.09739 14	.49400 119	60.186	5.598	-2.85 1.02	16
1353	48287* (4699B)	Lame M	.88194 29	.27203 29	.38032 277	66.672	15.813	-3.08 1.83	8
1354	48331* -	Holden V	.83753 13	.31646 13	.44359 99	62.092	18.464	-1.41 .76	8
1355	49106* 4690	Langrenus M	.90257 11	.16959 11	.39356 105	66.440	9.772	-1.49 .72	8

End of Quadrant IV

APPENDIX 1

Points Common to Tucson and Manchester Triangulations

Tucson	Manch.	Tucson	Manch.	Tucson	Manch.	Tucson	Manch.
2	454	252	676	457	241	852	134
15	469	266	693	464	265	857	90
16	475	274	730	502	103?	863	96
31	465?	282	789	513	68?	893	450
30	464	293	846	534	31	915	460
33	470	296	818	535	45	919	451
47	476	297	825	537	42	924	474
48	481	299	867?	543	440	958	472
50	505	307	412	549	413	1003	506
56	484	313	418	587	409?	1013	503
69	492	322	426	589	400	1024	514
94	529	327	424	596	397?	1028	491
100	574?	328	392	605	423	1040	516
110	535	329	444	611	391	1041	521?
119	528	331	420	626	390	1056	545
122	539?	341	398	649	374	1060	533
130	531	342	394	659	369	1069	570
131	538	343	388	671	341	1088	541
134	537	357	372	677	342	1100	523
135	549	378	358	691	346	1140	554
136	555	381	351	708	332	1144	584
141	560	388	367	712	333	1159	612
144	593?	391	289?	713	325	1211	598
145	622	396	258?	715	355	1216	638
153	682?	405	366	717	323	1219	613
154	657?	417	330	730	324	1230	649
159	572?	428	255?	742	268	1251	640
169	596	429	229?	779	207?	1273	663
170	600	440	300	781	217	1284	767
172	573	441	327	786	272	1302	674
180	589	445	315	789	274	1309	668
198	689?	446	299	811	210	1317	700
202	620	449	295	812	218	1325	706
206	642	451	291	827	148	1347	800
247	644	452	286	839	158	1354	868

APPENDIX 2

ADJUSTMENT OF SECONDARY POSITIONS

	Bruce			Blagg		
(2)	+.00685 ± 7	+.02096 ± 7	+1.00106 ± 61	+.02591 ± 7	+.02178 ± 7	+.99990 ± 57
(3)	+.00680 ± 3	+.02081 ± 3	+1.00057 ± 36	+.02582 ± 5	+.02166 ± 5	+.99996 ± 36
Diffs.	+.00005	+.00015	+.00049	+.00009	+.00012	-.00006
Means	+.00681 ± 3	+.02083 ± 3	+1.00075 ± 31	+.02585 ± 4	+.02170 ± 4	+.99994 ± 30
	Triesnecker J			W. Bond B		
(2)	+.04287 ± 9	+.05726 ± 9	+.99893 ± 78	+.05536 ± 9	+.90596 ± 9	+.41662 ± 79
(3)	+.04287 ± 5	+.05717 ± 5	+.99818 ± 37	+.05552 ±10	+.90638 ±10	+.41787 ± 85
Diffs.	+.00000	+.00009	+.00075	-.00016	-.00042	-.00125
Means	+.04287 ± 4	+.05719 ± 4	+.99832 ± 33	+.05544 ± 7	+.90617 ± 7	+.41725 ± 58
	Democritus A			Arago B		
(2)	+.25509 ± 9	+.87921 ± 9	+.39848 ± 79	+.35448 ± 7	+.06041 ± 7	+.93247 ± 63
(3)	+.25524 ± 7	+.87916 ± 7	+.40161 ± 54	+.35446 ± 5	+.06037 ± 5	+.93358 ± 42
Diffs.	-.00015	+.00005	-.00313	+.00002	+.00004	-.00111
Means	+.25518 ± 6	+.87918 ± 6	+.40061 ± 45	+.35447 ± 4	+.06039 ± 4	+.93324 ± 35
	Bessel A			Hall K		
(2)	+.32517 ± 7	+.41852 ± 7	+.84785 ± 61	+.45746 ± 8	+.58123 ± 8	+.67277 ± 73
(3)	+.32507 ± 3	+.41847 ± 3	+.84784 ± 22	+.45743 ± 5	+.58127 ± 5	+.67217 ± 38
Diffs.	+.00010	+.00005	+.00001	+.00003	-.00004	+.00010
Means	+.32509 ± 3	+.41849 ± 3	+.84784 ± 21	+.45744 ± 4	+.58126 ± 4	+.67230 ± 34
	Macrobius B			Tralles B		
(2)	+.61050 ± 6	+.35734 ± 6	+.70723 ± 73	+.68721 ± 8	+.45821 ± 8	+.56430 ± 73
(3)	+.61054 ± 6	+.35749 ± 6	+.70747 ± 48	+.68734 ± 8	+.45840 ± 8	+.56357 ± 62
Diffs.	-.00004	-.00015	-.00024	-.00013	-.00019	-.00073
Means	+.61052 ± 4	+.35741 ± 4	+.70740 ± 40	+.68728 ± 6	+.45830 ± 6	+.56388 ± 47
	Archimedes A			Gambart G		
(2)	-.09844 ± 8	+.47013 ± 8	+.87778 ± 70	-.20816 ± 6	+.03455 ± 7	+.97687 ± 57
(3)	-.09834 ± 4	+.47023 ± 4	+.87728 ± 35	-.20812 ± 4	+.03435 ± 4	+.97764 ± 30
Diffs.	-.00010	-.00010	+.00050	-.00004	-.00020	-.00077
Means	-.09836 ± 4	+.47021 ± 4	+.87738 ± 31	-.20813 ± 3	+.03440 ± 3	+.97747 ± 27
	Laplace A			Milichius		
(2)	-.32655 ± 9	+.69060 ± 9	+.64269 ± 81	-.49500 ±11	+.17398 ±11	+.85218 ± 97
(3)	-.32637 ±10	+.69077 ±10	+.64358 ± 79	-.49501 ± 2	+.17407 ± 2	+.85149 ± 20
Diffs.	-.00018	-.00017	-.00089	+.00001	-.00009	+.00069
Means	-.32646 ± 7	+.69068 ± 7	+.64314 ± 57	-.49501 ± 2	+.17407 ± 2	+.85151 ± 20
	Diophantus B			Mairan E		
(2)	-.46917 ± 8	+.48577 ± 9	+.73633 ± 74	-.47728 ±11	+.61223 ±11	+.62793 ±101
(3)	-.46917 ± 5	+.48569 ± 5	+.73697 ± 39	-.47718 ± 5	+.61244 ± 5	+.62870 ± 38
Diffs.	.00000	+.00008	-.00064	-.00010	-.00021	-.00077
Means	-.46917 ± 4	+.48571 ± 4	+.73683 ± 35	-.47720 ± 5	+.61240 ± 5	+.62860 ± 36
	Lansberg A			Wollaston		
(2)	-.51647 ± 7	+.00351 ± 7	+.85648 ± 66	-.62810 ±11	+.50831 ±12	+.58630 ±113
(3)	-.51640 ± 3	+.00340 ± 3	.85610 ± 26	-.62789 ±12	+.50847 ±12	+.58656 ±100
Diffs.	-.00007	+.00011	+.00038	-.00021	-.00016	-.00026
Means	-.51641 ± 3	+.00342 ± 3	+.85615 ± 24	-.62800 ± 8	+.50839 ± 8	+.58645 ± 75

		Rümker E			Reiner E	
(2)	-. 65485 +16	+. 62367 +18	+. 42405 +169	-. 76016 +12	+. 03360 +12	+. 64711 +108
(3)	-. 65445 ±23	+. 62381 ±22	+. 42343 ±203	-. 76016 ± 5	+. 03335 ± 5	+. 64798 ± 41
Diffs.	+. 00040	-. 00014	+. 00062	. 00000	+. 00025	-. 00087
Means	-. 65472 ±13	+. 62373 ±14	+. 42380 ±130	-. 76016 ± 5	. 03339 ± 5	+. 64787 ± 38
		Reiner A			Galilaei A	
(2)	-. 77819 +13	+. 08961 +12	+. 61883 +125	-. 87160 +10	+. 20277 +10	+. 44238 ± 91
(3)	-. 77810 ± 7	+. 08977 ± 7	+. 62018 ± 53	-. 87148 ± 6	+. 20276 ± 6	+. 44363 ± 51
Diffs.	-. 00009	-. 00016	-. 00135	-. 00012	+. 00001	-. 00125
Means	-. 77812 ± 6	+. 08973 ± 6	+. 61997 ± 49	-. 87151 ± 5	+. 20276 ± 5	+. 44333 ± 44
		Casatus C			Turner F	
(2)	-. 15333 +14	-. 95041 +14	+. 26301 +136	-. 24345 ± 7	-. 02762 ± 7	+. 96955 ± 64
(3)	-. 15319 ± 8	-. 95024 ± 8	+. 26464 ± 79	-. 24353 ± 5	-. 02711 ± 5	+. 96970 ± 43
Diffs.	-. 00014	-. 00017	-. 00168	+. 00008	-. 00051	-. 00015
Means	-. 15322 ± 7	-. 95028 ± 7	+. 26423 ± 68	-. 24350 ± 4	-. 02728 ± 4	+. 96965 ± 36
		Nicollet			Fra Mauro B	
(2)	-. 19986 +10	-. 37261 ± 9	+. 90600 ± 85	-. 36793 ± 8	-. 06949 ± 8	+. 92753 ± 69
(3)	-. 19997 ± 4	-. 37267 ± 4	+. 90491 ± 35	-. 36783 ± 4	-. 06968 ± 4	+. 92686 ± 36
Diffs.	+. 00011	+. 00006	+. 00109	-. 00010	+. 00019	+. 00067
Means	-. 19995 ± 4	-. 37266 ± 4	+. 90507 ± 32	-. 36785 ± 4	-. 06964 ± 4	+. 92700 ± 32
		Schiller A			Gassendi J	
(2)	-. 41447 ± 9	-. 73246 ± 9	+. 53853 ± 81	-. 55932 +10	-. 36748 +10	+. 74225 ± 91
(3)	-. 41447 ± 6	-. 73260 ± 6	+. 53952 ± 50	-. 55935 ± 3	-. 36756 ± 3	+. 74176 ± 22
Diffs.	. 00000	+. 00014	-. 00099	+. 00003	+. 00008	+. 00049
Means	-. 41447 ± 5	-. 73256 ± 5	+. 53925 ± 43	-. 55935 ± 3	-. 36755	+. 74179 ± 21
		Doppelmayer J			Gassendi G	
(2)	-. 59800 ± 9	-. 41390 ± 9	+. 68573 ± 81	-. 67178 ± 9	-. 28749 ± 9	+. 68217 ± 82
(3)	-. 59782 ± 4	-. 41399 ± 4	+. 68471 ± 30	-. 67185 ± 7	-. 28752 ± 7	+. 68136 ± 59
Diffs.	-. 00018	+. 00009	+. 00102	+. 00007	+. 00003	+. 00081
Means	-. 59785	-. 41397 ± 4	+. 68483 ± 28	-. 67182 ± 6	-. 28751 ± 6	+. 68164 ± 48
		Schickard H			Flamsteed D	
(2)	-. 64178 +17	-. 68812 +17	+. 33744 +158	-. 70381 ± 9	-. 05492 ± 9	+. 70749 ± 79
(3)	-. 64187 ±22	-. 68832 ±22	+. 33729 ±211	-. 70378 ± 6	-. 05512 ± 6	+. 70686 ± 50
Diffs.	+. 00009	+. 00020	+. 00015	-. 00003	+. 00020	+. 00063
Means	-. 64181 ±13	-. 68819 ±13	+. 33739 ±127	-. 70379 ± 5	-. 05506 ± 5	+. 70704 ± 42
		Zupus A			Damoiseau E	
(2)	-. 76755 +10	-. 29546 +10	+. 56759 ± 88	-. 84705 ± 8	-. 09081 ± 8	+. 52098 ± 72
(3)	-. 76742 ± 5	-. 29555 ± 5	+. 56825 ± 38	-. 84697 ± 5	-. 09058 ± 5	+. 52162 ± 38
Diffs.	-. 00013	+. 00009	-. 00066	-. 00008	-. 00023	-. 00064
Means	-. 76745 ± 4	-. 29553 ± 4	+. 56815 ± 35	-. 84699 ± 4	-. 09064 ± 4	+. 52148 ± 34
		Grimaldi B			Seeliger	
(2)	-. 93322 +29	-. 05055 +28	+. 35324 +263	+. 05249 ± 6	-. 03810 ± 6	+. 99885 ± 54
(3)	-. 93314 ±23	-. 05041 ±23	+. 35344 ±210	+. 05242 ± 4	-. 03815 ± 4	+. 99868 ± 31
Diffs.	-. 00008	-. 00014	-. 00020	+. 00007	+. 00005	+. 00017
Means	-. 93317 ±18	-. 05047 ±18	+. 35336 ±164	+. 05244 ± 3	-. 03813 ± 3	+. 99872 ± 27

		Schomberger A			Nicolai A	
(2)	+.07954 ±15	-.98099 ±17	+.18137 ±156	+.29565 ±10	-.67439 ±10	+.67611 ± 85
(3)	+.08004 ±24	-.98043 ±26	+.17579 ±250	+.29560 ± 6	-.67441 ± 6	+.67709 ± 43
Diffs.	-.00050	-.00056	+.00558	+.00015	+.00002	-.00098
Means	+.07969 ±13	-.98082 ±14	+.17981 ±132	+.29561 ± 5	-.67440 ± 5	+.67689 ± 38
		Alfraganus C			Rothmann K	
(2)	+.30917 ± 6	-.10606 ± 6	+.94620 ± 50	+.36170 ± 6	-.48218 ± 6	+.79986 ± 55
(3)	+.30913 ± 4	-.10606 ± 4	+.94619 ± 31	+.36173 ± 3	-.48220 ± 3	+.79945 ± 26
Diffs.	+.00004	.00000	+.00001	-.00003	+.00002	+.00041
Means	+.30914 ± 3	-.10606 ± 3	+.94619 ± 26	+.36172 ± 3	-.48220 ± 3	+.79952 ± 24
		Boussingault R			Moltke	
(2)	+.32472 ±11	-.90165 ±11	+.28445 ± 98	+.40933 ± 6	-.00973 ± 6	+.91198 ± 55
(3)	+.32480 ±15	-.90140 ±15	+.28694 ±134	+.40933 ± 4	-.00972 ± 4	+.91219 ± 28
Diffs.	-.00008	-.00025	-.00249	.00000	-.00001	-.00021
Means	+.32475 ± 9	-.90156 ± 9	+.28531 ± 79	+.40933 ± 3	-.00972 ± 3	+.91215 ± 25
		Reimarus H			Bohnenberger G	
(2)	+.57689 ±17	-.75690 ±16	+.30271 ±141	+.61496 ± 8	-.29493 ± 8	+.73056 ± 73
(3)	+.57731 ±12	-.75654 ±13	+.30267 ±114	+.61504 ± 7	-.29497 ± 7	+.72991 ± 53
Diffs.	+.00042	-.00036	+.00004	-.00008	+.00004	+.00065
Means	+.57717 ±10	-.75668 ±10	+.30268 ± 89	+.61500 ± 5	-.29495 ± 5	+.73015 ± 43
		Furnerius A			Langrenus C	
(2)	+.71498 ±18	-.55238 ±18	+.43027 ±159	+.86232 ±16	-.09731 ±16	+.49733 ±137
(3)	+.71527 ± 8	-.55216 ± 8	+.42932 ± 66	+.86209 ±14	-.09739 ±14	+.49400 ±119
Diffs.	-.00029	-.00022	+.00095	+.00023	+.00008	+.00333
Means	+.71522 ± 7	-.55220 ± 7	+.42946 ± 61	+.86219 ±11	-.09736 ±11	+.49543 ± 90

APPENDIX 3

DATA FOR PHOTOGRAPHS

Photo		Date	Time	l'	b'	sin s'	Obs.	Ply
Yerkes	1170	1960 July 8	05 49 32	-0.40	-5.28	.004908	LPL	1
Yerkes	1269	1960 Aug 1	01 53 --	-6.45	-4.92	.004681	LPL	1
Yerkes	482	1959 Sep 18	08 12 17	+3.90	+1.18	.004461	LPL	1
Paris	IV	1898 May 28	12 39 18*	-7.55	+5.87	.004483	Saunder	1
Paris	V	1899 Mar 22	08 01 06*	-0.54	+4.48	.004378	Saunder	1
Paris	VI	1899 Oct 22	04 43 39*	+6.34	+0.50	.004540	Saunder	1
Paris	VII	1899 Oct 25	07 00 03*	+3.73	+4.62	.004388	Saunder	1
Yerkes	VIII	1901 Sep 03	02 05 am**	+1.77	-0.06	.004810	Saunder	1
Yerkes	IX	1901 Nov 20	07 30 pm**	-7.26	-4.92	.004710	Saunder	1
Golosseyevo	A	1959 Mar 23	22 22 46	-4.39	+3.45	.004806	Gavrilov	1
Golosseyevo	B	1959 Jul 21	22 36 12	+5.88	-3.74	.004655	Gavrilov	2
Golosseyevo	C	1959 Jul 21	21 03 31	+3.84	-5.08	.004693	Gavrilov	2
Golosseyevo	D	1961 Apr 29	23 09 31	-5.43	-4.56	.004559	Gavrilov	2
Golosseyevo	E	1961 Oct 23	17 06 17	+4.28	+6.77	.004742	Gavrilov	2
Pulkovo	F	1962 Apr 17	20 51 44	-1.02	-4.22	.004332	Gavrilov	3
N-8 (USN)		1964 Oct 21	07 37 10	-3.91	+5.88	.004779	ACIC	1
Pic du Midi	41	1961 Mar 23	20 30 09	+4.01	+6.63	.004396	ACIC	5
Pic du Midi	72	1961 Aug 18	20 58 55	-7.76	-5.91	.004508	ACIC	5
Pic du Midi	89	1961 Dec 21	22 14 29	+5.20	+5.54	.004513	ACIC	5
Pic du Midi	98	1962 Jan 27	04 39 29	-4.73	-5.26	.004372	ACIC	5
Pic du Midi	118	1962 Apr 21	00 16 00	-4.16	-5.89	.004411	ACIC	5
Pic du Midi	128	1962 May 17	21 52 35	-3.41	-5.91	.004417	ACIC	5
Pic du Midi	139	1962 Aug 10	20 52 58	-6.88	-4.84	.004515	ACIC	5
Pic du Midi	148	1962 Aug 21	03 59 48	+5.49	+7.31	.004761	ACIC	5
Pic du Midi	174	1962 Oct 17	00 55 05	+7.46	+5.72	.004759	ACIC	5
Pic du Midi	183	1962 Nov 13	22 39 43	+6.64	+5.02	.004766	ACIC	5
Pic du Midi	195	1963 Feb 09	03 04 50	+3.79	-2.45	.004466	ACIC	5
Pic du Midi	199	1963 Mar 05	22 16 49	+5.71	+0.89	.004550	ACIC	5
Pic du Midi	279	1963 Dec 23	19 41 48	-6.96	+7.23	.004662	ACIC	5
Pic du Midi	281	1963 Dec 25	20 04 27	-4.82	+7.00	.004795	ACIC	5
Pic du Midi	291	1964 Jan 05	04 59 15	+6.75	-6.14	.004492	ACIC	5
Pic du Midi	323	1964 Mar 27	22 12 35	+4.89	-6.11	.004479	ACIC	5
Pic du Midi	358	1964 Aug 25	00 47 19	-5.06	+7.28	.004565	ACIC	5
Pic du Midi	359	1964 Aug 26	01 59 03	-4.88	+7.18	.004613	ACIC	5
Pic du Midi	426	1965 Feb 20	02 36 04	+7.38	-4.77	.004586	ACIC	5
USN	4027	1965 Apr 16	07 58 35	+5.20	-4.00	.004580	ACIC	5
USN	5401	1965 Sep 11	07 09 02	-3.58	+7.01	.004405	ACIC	5

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