

OBSERVATIONS OF COMETS AT THE SKALNATÉ PLESO  
OBSERVATORY, 1946—1963

*Abstract:* 586 accurate positions of 62 comets obtained at the Skalnaté Pleso Observatory in 1946—1963 are given, together with a list of reference stars and dependences. The methods of observation, measurement and reduction are briefly explained.

### 1. *Methods of Observation and Measurement*

Since the foundation of the Skalnaté Pleso Observatory, photographic observations of comets have been one of the regular programs of its 60 cm Zeiss parabolic reflector. During the period 1946—1963 altogether 62 comets were photographed in the Newtonian focus of the telescope ( $f = 329$  cm) to obtain accurate positions. Occasionally, smaller instruments were used for photographing the comets as well.

The difficulties of guiding the diffuse cometary images accurately enough during longer exposures have been removed since 1948 by the construction of an auxiliary device for independent motion of the plate holder. This device permits guiding on a star in the neighbourhood of the comet, and following the comet's proper motion—as far as an ephemeris is available—by the orientation of the plate holder in the direction required and operation of a switch at regular time intervals. Each push displaces the plate holder by  $0.016$  mm =  $1''$ ; the appropriate frequency of the pushes is either controlled acoustically, using a metronome, or an assistant observer is in charge of the operation of the device. This method of guiding substantially improved the quality of the images to be measured, and extended the magnitude limit accessible to the telescope. Making use of it, A. Mrkos succeeded in recovering three periodic comets at about  $18^m$ .

Until 1953 no special apparatus for measuring the positions was available at the observatory and the measurements were carried out either with the Prin's measuring engine at the Astronomical Institute of the Czechoslovak Academy of Sciences in Prague or directly at the observatory by improvised means. The improvisation consisted in measuring the distances between individual reference stars and between the reference stars and the comet, either using a small Zeiss microscope with one micrometric screw or directly on a screen, in projection by a magnifying apparatus. Such measurements were rather troublesome and lengthy because of many repetitions (usually 10 for each distance) necessary in order to avoid too large random errors in reading. As close reference stars as possible were needed for this procedure. In 1953 a precise apparatus for measuring rectangular co-ordinates (Zeiss Koordinatenmessgerät 1) was acquired by the observatory and the measurements became much quicker and also more accurate.

Due to the comparatively small usable field of view of the parabolic mirror the application of the star catalogues of highest precision, with proper motions included, was usually impossible, and the positions had mostly to be referred to the Astrophysical Zone Catalogues of CdC. In order to reduce the random errors due to the inaccuracy of the positions of the reference stars—in particular due to the unknown proper motions accumulated over several decades—it was customary to select as faint

reference stars as possible and to determine the position from six stars combined into two independent triangles. In those cases where the discrepancy between the two results was considerable (about 3" or more) efforts were made to identify and discard the stars with rapid proper motions by forming other combinations of stars into reference triangles and comparing the results. In some cases the proper motions according to special catalogues (Yale, EBL, Boss G.C., Geschichte des Fixsternhimmels) were applied to the positions from Astrographic Catalogues.

The reductions of the measurements were carried out by Schlesinger's method of dependences. The dependences were computed from rectangular co-ordinates using Prin's or Zeiss measuring apparatus; during the earlier work—in those cases where only distance measurements were available—they were computed from the triangle areas obtained by applying the Heron formula. From the comparison of some of the positions with accurate ephemerides it may be inferred that the probable error of position is generally not greater than  $\pm 1''$  in each co-ordinate. For especially ill-defined objects without marked central condensation or nucleus it may reach  $\pm 2''$  and even more.

Some of the positions have already been printed in the I.A.U. Circulars and used for the determinations of preliminary orbits, others have not yet been published anywhere. Nevertheless, as the wider use of electronic computers will be likely to lead to the re-determination and improvement of many orbits, it was felt desirable to repeat in the present list also the positions published earlier, with an accuracy increased from  $0^s.1, 1''$  to  $0^s.01, 0''.1$  and supplemented with the data on the reference stars and dependences.

## 2. Results of Computations

The positions of comets, arranged according to their definitive designations, are given in Table I. The first column of the table gives the serial number of observation of each comet, the next columns the middle of exposure in U.T., right ascension and declination for the equinox of 1950.0, the duration of the exposure ( $t$ ), and the

abbreviations of the observers and computers respectively (Obs. = observation, M+R = measurement and reduction). Under the same serial number, Table II lists the reference catalogue, zone and plate number together with the reference star numbers and their dependences. In a few cases, where the original records were not available, these data are missing, but the plates are in the files of the observatory and may be remeasured if required. To provide information on the internal consistency of the measurements and the probable accuracy of the results, the differences between the two position determinations (from two independent triangles)  $\Delta\alpha \cos \delta$  and  $\Delta\delta$  are tabulated in the last two columns. In those cases where three or four triangles have been used, the averages of all mutual differences are given instead. In the remarks appended to the table some additional particulars are noted, e.g. the use of another telescope than the 60 cm reflector, the application of proper motions from another source than the reference catalogue etc.

The reduction constants of the Skalnaté Pleso Observatory are as follows:

$$\begin{aligned}\lambda &= 1^h 20^m 58^s 77 E, \\ \varphi &= 49^\circ 11' 20'' 0 N, \\ h &= 1783 \text{ m above sea-level,} \\ \rho &= 0.99836 \text{ earth equatorial radii.}\end{aligned}$$

The observatory Lomnický Štít, where some of the plates were taken by A. Mrkos, lies at a distance of less than 2 km from Skalnaté Pleso; hence the differences are generally immaterial for computing the parallax factors.

Table III presents an index of comets the positions of which are listed in Table I. For each comet under observation it gives the definitive and provisional designation, the name, and the total number of positions measured.

It must be emphasized that the present paper summarizes the results of a collective work of the Skalnaté Pleso Observatory staff. The share of individual collaborators, who took part in the comet programme during the past 18 years, is seen from Table IV. Our sincere thanks are due to all of them; the able assistance of Mrs. L. Ďurkovičová was helpful in preparing the tables for the manuscript.

Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
1946 I Timmers						
1	1946 Apr. 5.09722	6 29 39.66	+77 59 07.7	20	M	Al
2	Apr. 25.95799	6 32 20.54	+81 01 49.0	45	M, P	Al
3	1946 May 25.00174	10 01 43.53	+84 17 38.9	45	M	Al
1946 III P/Tempel (2)						
1	1946 July 5.01007	23 56 04.05	-6 15 07.0	15	M, P	Al
1946 IV P/Brooks (2)						
1	1946 Sep. 27.91250	3 20 30.46	+13 11 13.1	82	M	Al
2	Oct. 16.89236	3 22 01.60	+11 27 30.8	40	M	Al
3	Oct. 19.97174	3 21 09.26	+11 08 02.8	40	M	Al
4	Oct. 20.94306	3 20 49.48	+11 01 50.4	50	M	Al
5	Nov. 13.79395	3 07 50.90	+8 44 15.9	35.4	M	Al
6	Nov. 15.79236	3 06 37.92	+8 35 42.0	40	M	Al
7	Nov. 16.03420	3 06 28.69	+8 34 43.0	18.5	M	Al
8	Nov. 17.03472	3 05 53.76	+8 30 49.7	20	M	Al
9	Nov. 20.86493	3 03 46.08	+8 17 46.0	29	M	Al
10	Nov. 29.87292	2 59 44.67	+7 58 59.2	40	M	Al
11	1946 Dec. 13.73125	2 57 15.61	+8 03 46.3	30	M	Al
1946 V P/Giacobini—Zinner						
1	1946 Aug. 5.99590	21 10 31.51	+69 52 01.7	60	M	Al
2	Sep. 4.99548	5 02 53.75	+69 37 18.6	19	M	Al
3	Sep. 13.80799	6 05 46.68	+51 30 06.0	1	M	Al
4	Sep. 16.82465	6 18 07.43	+43 57 31.6	1	M	Al
5	1946 Sep. 26.04167	6 43 28.04	+19 59 44.8	20	M	Al
1947 I Bester						
1	1946 Dec. 13.77708	2 27 42.88	-28 18 55.8	30	M, P	Al
2	1946 Dec. 27.85208	1 54 26.90	-20 56 18.9	50	D, Ki	Al
3	1947 Jan. 24.76042	1 23 06.91	-7 26 08.6	10	M	Al
1947 III Bečvář						
1	1947 Mar. 27.93056	19 33 11.35	+81 59 20.5	20	M, P	Š
2	Mar. 28.89757	20 23 50.81	+84 35 47.0	3	M, P	Š
3	Mar. 30.09583	23 18 00.20	+86 46 48.2	4	M, P	Š
4	Apr. 1.11605	4 10 01.43	+83 24 51.8	18	M, P	Š
5	Apr. 12.82639	5 49 36.34	+51 26 53.8	10	M, P	Š
6	1947 Apr. 20.82222	5 56 45.52	+36 49 04.9	10	M, P	Š
1947 IV Rondanina—Bester						
1	1947 July 15.04167	4 00 01.99	+38 58 50.3	10	M	Bu
2	July 25.03548	4 18 57.07	+43 29 28.0	8	M, Bu	Bu
3	July 25.05316	4 18 58.91	+43 29 52.2	11	M, Bu	Bu
4	July 25.98633	4 20 40.04	+43 53 32.0	12	M, Bu	Bu
5	July 26.03171	4 20 45.10	+43 54 37.1	15	M, Bu	Bu
6	July 27.03380	4 22 32.84	+44 19 45.4	25	M, Bu	Bu
7	1947 July 29.03452	4 26 06.20	+45 09 08.6		M, Bu	Bu
1947 XI P/Encke						
1	1947 Oct. 14.08542	8 50 16.30	+45 51 32.2		M, P	K, V
2	Oct. 15.96319	9 19 43.37	+44 14 37.2	4	M, P	K, V
3	Oct. 15.98403	9 20 02.87	+44 13 20.4	4	M, P	K, V
4	Oct. 26.06458	11 35 01.48	+27 48 56.8	2	M, P	K, V
5	1947 Oct. 26.08542	11 35 15.25	+27 46 30.6	2	M, P	K, V

Continuation Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
1948 I Bester						
1	1948 Mar. 31.04497	19 27 04.44	+32 50 46.0	0,5	M, K	Al
2	1948 Apr. 3.96910	19 09 28.83	+42 40 46.4	1	M, P	Al
1948 II Mrkos						
1	1948 Jan. 18.19792	16 42 02.81	+9 46 02.6	10	M	Š
2	Jan. 18.21007	16 42 05.23	+9 47 15.9	15	M, P	Al
3	Jan. 19.09028	16 45 07.72	+10 15 36.2	12	M, P	Al
4	Jan. 19.14931	16 45 19.89	+10 16 43.2	10	M, P	Š
5	Jan. 23.17782	16 59 36.21	+12 31 00.9	10	M, P	Al
6	Jan. 23.19102	16 59 39.09	+12 31 28.0	10	M, P	Al
7	Jan. 23.20005	16 59 41.00	+12 31 46.8	10	M, P	Al
8	Jan. 23.20907	16 59 43.07	+12 32 06.6	10	M, P	Š
9	Jan. 26.20312	17 10 42.25	+14 16 13.8	5	M, P	Š
10	Jan. 30.12361	17 25 35.47	+16 37 10.2	10	M, P	Al
11	Jan. 30.16458	17 25 44.97	+16 38 40.4	10	M, P	Al
12	Jan. 30.17292	17 25 46.94	+16 38 58.5	10	M, P	Š
13	Feb. 11 12708	18 14 34.70	+24 06 51.6	8	M, P	Š
14	Feb. 15.08335	18 31 44.90	+26 33 02.8	10	M, P	Al
15	Feb. 22.15973	19 03 26.20	+30 44 57.5	8	M, P	Al
16	Feb. 28.13767	19 30 53.31	+34 00 02.7	8	M, P	Al
17	Feb. 28.16059	19 30 59.50	+34 00 45.7	6	M, P	Al
18	Feb. 29.13622	19 35 30.24	+34 30 38.4	10	M, P	Al
19	Feb. 29.17441	19 35 40.84	+34 31 48.2	6	M, P	Al
20	Mar. 1.13903	19 40 08.91	+35 00 47.2	10	M, P	Al
21	Mar. 1.15639	19 40 13.57	+35 01 17.4	10	M, P	Al
22	Mar. 2.15086	19 44 49.95	+35 30 32.9	10	M, P	Al
23	Mar. 2.17100	19 44 55.43	+35 31 08.8	6	M, P	Al
24	Mar. 3.13791	19 49 24.25	+35 58 59.7	5	M, P	Al
25	Mar. 4.13726	19 54 02.05	+36 27 08.1	5	M, P	Al
26	Mar. 7.10355	20 07 44.61	+37 46 46.3	10	M	Al
27	Mar. 7.11015	20 07 46.26	+37 46 56.2	5	M	Al
28	Mar. 13.10764	20 35 11.18	+40 10 02.4	8	M, P	Al
29	Mar. 15.11670	20 44 13.57	+40 52 40.9	6	M, P	A, Al
30	Mar. 16.10039	20 48 34.59	+41 12 42.0	7	M, P	Al
31	Mar. 29.98024	21 47 20.92	+44 52 43.3	15	M	Al
32	Mar. 31.00000	21 51 22.84	+45 04 49.1	12	M	Al
33	Mar. 31.01944	21 51 27.36	+45 05 03.1	5	M	Al
34	Apr. 5.04031	22 10 41.08	+45 58 36.5	14	M, P	Al
35	Sep. 4.07653	0 34 38.06	+44 15 29.2	40	M, P	Al
36	Sep. 9.04583	0 27 57.20	+42 57 44.8	30	M	Al
37	Sep. 13.11676	0 22 27.63	+41 47 26.3	30	M	Al
38	Sep. 29.05903	0 02 17.70	+36 24 13.4	60	M	Al
39	1948 Oct. 8.89826	23 52 03.18	+32 40 55.3	45	M	Al
1948 IV Honda—Bernasconi						
1	1948 June 10.97118	1 28 00.31	+51 40 16.2	1	B, P	Š
2	June 14.97153	0 33 34.25	+54 24 33.2	8	P	Al
3	June 15.95314	0 19 29.42	+54 50 03.4	1	P	Al
4	June 15.95921	0 19 24.48	+54 50 13.9	1.5	P	Al
5	June 27.89688	21 39 19.24	+52 15 46.3	5	P	Al
6	1948 June 29.99208	21 17 44.65	+50 42 05.9	2	P	Al
1948 V Pajdušáková—Mrkos						
1	1948 Mar. 13.09323	18 25 15.30	+15 42 24.4	10	M, P	Š
2	Mar. 13.12726	18 25 16.95	+15 43 27.4	10	M, P	Al
3	Mar. 15.04236	18 27 15.03	+17 01 22.8	8	M, P	Š
4	Mar. 15.07778	18 27 17.05	+17 02 49.6	30	M, P	Al
5	Apr. 13.01076	18 52 14.95	+40 30 00.6	5	M, P	Al
6	Apr. 13.09242	18 52 18.01	+40 34 27.8	5	M, P	Š
7	Apr. 17.08505	18 54 43.08	+44 11 47.9	5	M, P	Al
8	Apr. 24.86285	18 58 15.73	+51 15 37.3	5	M, P	Al
9	May 15.02917	18 58 27.70	+68 13 08.8	4	P	Al
10	1948 May 26.94236	18 30 49.53	+76 21 10.2	8	P	Al
11	1949 Mar. 24.79271	3 05 51.02	+41 18 47.5	45	M	Al

Continuation Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
1948 XI Eclipse Comet						
1	1948 Nov. 16.18726	12 20 19.80	—27 26 34.9	5	M, P	Al
2	Nov. 18.19093	12 04 01.88	—28 46 05.3	5	M	Al
3	Nov. 29.19931	10 31 56.10	—33 59 28.6	6	M, P	Al
4	Nov. 30.20451	10 23 21.69	—34 15 20.4	6	M, P	Al
5	Dec. 3.20067	9 57 52.59	—34 48 08.0	6	M, P	Al
6	Dec. 4.19373	9 49 29.05	—34 54 05.9	7	M, P	Al
7	1948 Dec. 6.17583	9 32 55.20	—34 58 36.1	6	M, P	Al
1948 XII P/Honda—Mrkos—Pajdušáková						
1	1948 Dec. 7.19824	13 45 49.39	—24 35 51.9	12	M, P	Š
2	Dec. 7.20588	13 45 48.65	—24 35 59.9	6	M, P	K
3	Dec. 8.18756	13 44 23.10	—24 44 41.9	20	M	K
4	Dec. 8.20145	13 44 21.97	—24 44 49.2	10	M	K
5	Dec. 9.17951	13 43 08.16	—24 53 26.4	15	M, P	K
6	Dec. 9.19687	13 43 07.35	—24 53 37.2	15	M, P	K
7	Dec. 10.18160	13 42 04.60	—25 02 18.9	45	M, P	K
8	Dec. 10.20347	13 42 03.65	—25 02 28.1	14	M, P	K
9	1948 Dec. 12.20347	13 40 25.75	—25 19 55.3	14	M, P	K
1949 IV Bappu—Bok—Newkirk						
1	1949 Sep. 24.82608	15 37 14.20	+38 18 36.9	15	M	Al
2	Sep. 25.78073	15 36 37.26	+38 10 13.2	12.5	M	Al
3	Sep. 26.77087	15 36 00.85	+38 01 40.3	10	M	Al
4	Sep. 27.78304	15 35 25.50	+37 53 08.8	15	M	Al
5	Oct. 16.74340	15 29 05.45	+35 54 09.7	15	M	Al
6	1949 Oct. 18.75185	15 28 50.04	+35 46 19.6	15	M	Al
1949 V P/Vaisälä						
1	1949 Dec. 19.16759	14 49 50.90	—8 12 29.8	30	M	Š
1950 I P/Johnson						
1	1950 Mar. 20.96597	13 37 09.83	+57 20 30.1	20	M	Al
2	1950 Apr. 8.90799	11 56 41.11	+65 04 47.0	25	M	Al
1950 II P/D'Arrest						
1	1950 July 19.03646	2 15 49.82	+3 17 08.0	15	M	Al
2	1950 July 20.03715	2 18 24.22	+3 12 43.6	15	M	Al
1950 IV P/Reinmuth						
1	1949 Nov. 19.90312	3 45 54.90	+7 36 41.5	120	M	Š
2	Nov. 20.90729	3 45 03.40	+7 34 35.0	147	M, P	Š
3	1949 Dec. 13.80556	3 26 35.49	+7 19 24.4	90	M	A, Al
1950 VII P/Arend—Rigaux						
1	1951 Feb. 8.86192	7 25 41.39	+25 04 08.5	28	J	Al
1951 I Minkowski						
1	1950 June 20.91667	17 01 14.61	+11 44 48.9	10	M	Al
2	June 20.95833	17 01 08.11	+11 44 35.8	10	M	Al
3	July 3.86597	16 28 42.46	+10 09 36.4	6	M	Al
4	July 10.92153	16 12 23.39	+9 00 16.1	6	M	Al
5	July 17.95347	15 57 37.03	+7 42 31.6	6	M	Al
6	1950 July 20.94583	15 51 54.03	+7 07 58.2	15	M	Al

Continuation Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
1951 II Pajdušáková						
1	1951 Feb. 9.20104	20 46 48.54	+20 44 58.0	1	P	PI
2	Feb. 10.15733	20 49 42.34	+21 56 03.8	1	P	AI
3	Feb. 10.17469	20 49 45.41	+21 57 23.5	1	P	AI
4	Feb. 10.18314	20 49 46.87	+21 58 01.9	0.5	P	AI
5	Feb. 10.20299	20 49 50.66	+21 59 30.3	0.7	P	AI
6	Feb. 11.13681	20 52 48.10	+23 10 07.2	4	M, P	AI
7	Feb. 11.19167	20 52 59.08	+23 14 17.7	4	M, P	PI
8	Feb. 12.18751	20 56 18.46	+24 31 00.7	4	M, P	PI
9	Feb. 13.14099	20 59 39.79	+25 45 43.5	4	M, P	AI
10	Feb. 13.19236	20 59 50.88	+25 49 39.8	2	M, P	PI
11	Feb. 28.16040	22 28 35.70	+47 12 33.0	4	J, P	PI
12	Feb. 28.16422	22 28 37.92	+47 12 51.4	5	J, P	AI
13	Mar. 3.16109	22 59 30.04	+51 15 43.4	4	J, P	PI
14	1951 Mar. 11.14447	0 51 15.08	+58 36 47.0	9	P	PI
1951 IV P/Tuttle—Giacobini—Kresák						
1	1951 Apr. 25.83368	8 43 55.49	+30 49 01.7	31	B, J	K
2	Apr. 25.84062	8 43 56.79	+30 49 06.9	15	B	K
3	Apr. 25.87847	8 44 05.27	+30 49 47.0	10	J	K
4	Apr. 29.84340	9 00 12.66	+31 59 04.4	31	B, J	K
5	Apr. 29.86979	9 00 20.07	+31 59 31.8	23	J	K
6	Apr. 30.90417	9 04 45.21	+32 15 58.9	23	B, J	K
7	Apr. 30.92014	9 04 49.02	+32 16 13.3	20	B	K
8	Apr. 30.92361	9 04 50.05	+32 16 16.2	20	J	K
9	May 1.92240	9 09 11.37	+32 31 29.3	21.5	J	K
10	May 1.94132	9 09 16.68	+32 31 49.5	19	J	K
11	May 12.88750	10 01 58.14	+34 26 58.5	10	B	K
12	May 22.85556	10 55 50.31	+34 29 19.6	20	B	K, PI
13	June 1.91007	11 51 50.80	+32 35 58.5	29	J	K, PI
14	June 1.95399	11 52 05.29	+32 35 13.0	32.5	J	K, PI
15	June 15.87500	13 04 41.87	+27 04 17.1	26	K	K, PI
16	June 15.93958	13 05 01.28	+27 02 25.2	60	K	K, PI
17	June 17.86667	13 14 15.12	+26 04 42.5	20	K	PI
18	June 17.90833	13 14 26.79	+26 03 30.4	30	K	PI
19	June 17.93542	13 14 34.53	+26 02 38.2	30	K	PI
20	June 18.89583	13 19 03.55	+25 33 10.3	20	K	K, PI
21	June 18.91319	13 19 09.06	+25 32 35.1	20	K	K, PI
22	June 22.88727	13 37 11.38	+23 26 16.7	27	K	K, PI
23	June 22.91111	13 37 17.62	+23 25 30.3	20	K	K, PI
24	June 25.87500	13 50 05.92	+21 47 44.8	20	K	K, PI
25	June 25.89722	13 50 11.19	+21 47 04.1	20	K	K, PI
26	June 30.93611	14 10 44.16	+18 56 59.2	60	K	K
27	July 4.89375	14 25 51.93	+16 42 34.2	30	K	K
28	July 5.90278	14 29 35.44	+16 08 21.4	30	K	K
29	July 6.92012	14 33 17.60	+15 33 59.8	30	K	K
30	July 7.90972	14 36 50.60	+15 00 44.2	30	K	K
31	July 8.92500	14 40 26.28	+14 26 44.2	30	K	K
32	July 10.91389	14 47 20.55	+13 20 39.4	30	K	K
33	July 11.90347	14 50 42.33	+12 48 06.0	40	K	K
34	July 14.92986	15 00 44.53	+11 10 01.8	30	K	K
35	1951 July 29.88542	15 45 22.30	+ 3 48 05.4	30	K	K
1952 II P/ Wolf—Harrington						
1	1951 Dec. 19.76944	0 58 23.02	+18 19 34.8	30	K	K
2	1951 Dec. 20.73854	0 59 57.84	+18 07 28.3	15	K	K
3	1952 Jan. 22.89167	2 08 11.74	+13 51 20.2	20	K	AI
1952 III P/Schauvasse						
1	1951 Dec. 19.81944	6 45 35.60	+26 19 10.9	30	K	K
2	1951 Dec. 20.75556	6 46 29.97	+26 50 54.9	10	K	K
3	1952 Jan. 5.05243	7 04 54.74	+37 42 27.6	1	K	AI
4	1952 Jan. 9.96701	7 13 43.25	+41 53 20.8	5	K	K4

Continuation Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
1952 V Mrkos						
1	1952 May 14.98542	23 57 42.49	+40 41 07.2	20	K, M	K
2	May 15.03819	23 57 42.46	+40 40 43.4	20	K, M	K
3	May 19.02083	23 57 32.74	+40 05 46.1	10	K, M	K
4	May 19.04167	23 57 32.33	+40 05 40.5	16	K, M	K
5	May 20.99306	23 57 18.90	+39 47 38.2	20	K, M	K
6	May 21.03958	23 57 18.67	+39 47 11.0	20	K, M	K
7	May 31.00208	23 54 34.11	+38 00 34.4	12	K	Al
8	June 1.00243	23 54 02.35	+37 47 29.5	15	K	K
9	June 1.01354	23 54 02.18	+37 47 25.7	15	K	K
10	June 16.00000	23 41 13.98	+33 20 35.0	16	K	Al
11	June 17.91667	23 38 29.78	+32 29 55.1	30	K	Al
12	June 28.97361	23 14 18.64	+25 01 46.4	20	K	Al
13	July 3.03750	23 00 06.12	+20 23 20.9	10	K	Al
14	July 17.94236	21 20 00.11	-15 40 22.6	10	K	Al
15	July 17.95139	21 19 54.71	-15 42 10.1	10	K	Al
16	July 21.00139	20 46 48.49	-25 52 25.7	10	K	Al
17	July 21.96528	20 35 32.81	-28 53 42.6	10	K	Al
18	1952 July 21.97535	20 35 25.57	-28 55 40.0	15	K	Al
1952 VI Peltier						
1	1952 July 2.03264	15 00 45.11	+70 23 05.4	16	K	Al
2	July 2.91875	15 03 16.31	+70 34 45.4	20	K	Al
3	1952 July 30.99653	17 25 44.45	+72 29 21.3	30	K	Al
1952 VII P/Comas Sola						
1	1952 Oct. 18.10347	10 19 33.81	+20 45 13.5	30	K	K
2	1952 Nov. 26.12847	11 47 43.54	+15 26 34.1	60	K	K, K $\acute{a}$
3	1953 Jan. 18.13403	13 00 32.60	+12 39 59.5	30	K	K, K $\acute{a}$
4	1953 Mar. 16.96944	12 47 06.92	+16 25 06.1	30	K	Al
1953 I Harrington						
1	1952 Oct. 18.04861	22 59 59.34	+52 57 51.2	30	K	K, K $\acute{a}$
2	Nov. 11.99653	23 20 25.20	+32 45 05.9	20	K	K $\acute{a}$
3	1952 Nov. 12.93819	23 21 36.08	+31 51 19.9	30	K	Al
4	1953 Feb. 17.73576	2 25 35.96	-16 03 11.8	20	K, K $\acute{a}$	Al
1953 II Mrkos						
1	1952 Dec. 10.21389	13 28 45.74	-12 47 28.2	10	K	K
2	Dec. 11.19514	13 30 24.87	-13 45 28.8	10	K	Al
3	Dec. 11.20451	13 30 25.86	-13 45 59.5	10	K	K
4	Dec. 11.21389	13 30 26.58	-13 46 30.0	10	K	Al
5	Dec. 12.17917	13 32 07.88	-14 45 25.8	10	K	Al
6	Dec. 12.19514	13 32 09.54	-14 46 29.8	10	K	K
7	1952 Dec. 12.20104	13 32 10.13	-14 46 47.3	3	K	Al
1953 III Mrkos —Honda						
1	1953 Apr. 13.10000	21 12 26.87	+17 13 44.9	10	M	K
2	Apr. 14.08494	21 15 01.14	+18 29 00.4	14.5	M	K
3	Apr. 15.09133	21 17 43.99	+19 47 45.9	15	Pk	K
4	Apr. 16.05104	21 20 23.68	+21 04 17.4	17	M	Al
5	Apr. 21.06771	21 35 53.14	+28 08 52.3	15	K	K
6	Apr. 21.08681	21 35 56.96	+28 10 39.6	10	K	K
7	May 2.03889	22 24 05.42	+45 06 46.6	6	K	Al
8	May 2.05208	22 24 10.04	+45 08 00.6	10	K	K
9	May 16.05729	0 27 59.74	+63 28 32.3	5	K	Al
10	May 18.93576	1 06 44.85	+65 40 04.3	3	K	Al
11	June 17.98681	6 10 35.44	+57 25 17.0	10	K	Al
12	1953 June 17.99931	6 10 38.82	+57 24 51.0	20	K	Al

Continuation Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
1954 II Pajdušáková						
1	1953 Dec. 3.85630	2 14 56.92	—16 23 35.2	55	Pk, Po	K
2	Dec. 4.83194	2 08 43.62	—16 52 41.1	30	Pk, Po	K
3	Dec. 7.75065	1 49 17.18	—18 16 18.3	20	K, Ká	K
4	Dec. 7.84028	1 48 40.03	—18 18 44.1	40	K, Ká	K
5	1953 Dec. 10.82083	1 27 55.31	—19 34 00.3	30	K, Ká	K
1954 VII P/Pons—Brooks						
1	1953 Sep. 15.89792	17 23 48.29	+45 56 20.8	30	K	K
2	1953 Oct. 3.84653	17 26 25.65	+42 51 24.6	30	K	Al
3	1954 Jan. 6.19653	19 31 43.55	+35 55 23.2	20	K, Ká	K
4	Feb. 6.18819	20 57 49.49	+38 30 31.0	20	K, Ká	Ká
5	Mar. 10.12812	23 03 38.16	+41 11 23.0	15	K	K, Ká
6	Mar. 10.13785	23 03 40.87	+41 11 23.0	5	K	Ká
7	1954 Mar. 10.14375	23 03 42.48	+41 11 24.1	10	K	K, Ká
1954 VIII Vozárová						
1	1954 July 28.92292	6 56 38.87	+65 52 59.3	15	K, Ká	K, Ká
2	Aug. 1.92292	7 05 05.87	+68 54 11.0	15	K, Ká	K, Ká
3	Aug. 2.02778	7 05 20.04	+68 59 02.0	10	K	K
4	Aug. 3.92292	7 10 08.98	+70 26 26.5	15	K, Ká	K
5	Aug. 20.85486	9 19 20.64	+83 36 06.7	30	K, Ká	K
6	Aug. 23.95243	10 57 51.31	+85 16 34.7	15	K, Ká	K
7	Sep. 1.93125	16 27 32.99	+82 23 03.4	30	K, Ká	K
8	Sep. 1.94757	16 27 49.35	+82 22 18.6	15	K, Ká	K
9	Sep. 4.85069	17 05 23.67	+80 00 07.0	30	K, Ká	K
10	Sep. 4.86701	17 05 33.18	+79 59 17.1	15	K, Ká	K
11	Sep. 8.00208	17 30 59.28	+77 16 22.1	30	K, Ká	K
12	1954 Sep. 8.01840	17 31 05.54	+77 15 30.8	15	K, Ká	K
1954 X Abell						
1	1953 Oct. 29.80347	6 27 46.82	+84 26 02.9	30	K, Ká	K
2	Oct. 29.83819	6 27 47.35	+84 26 34.6	30	K, Ká	K
3	Oct. 30.88403	6 27 49.81	+84 41 49.5	60	K, Ká	K
4	Oct. 31.94722	6 27 36.34	+84 57 16.1	40	K	K
5	1953 Nov. 7.91528	6 16 36.15	+86 38 19.2	44	K, Ká	Al
1954 XII Kresák—Peltier						
1	1954 Oct. 24.15208	8 19 24.64	—14 35 07.1	40	K, Ká	K
1955 III Mrkos						
1	1955 June 14.01385	4 51 47.35	+45 47 50.6	1	K, Ká	K, Ká
2	June 14.04476	4 51 59.13	+45 50 18.2	1	K, Ká	K, Ká
3	June 15.96944	5 05 03.37	+48 21 18.8	2	K, Ká	K, Ká
4	June 17.95737	5 20 36.44	+50 50 56.0	3	M, P	K, Ká
5	June 19.00312	5 29 42.42	+52 06 11.5	1	K, Ká	Al
6	June 19.02986	5 29 56.96	+52 08 03.7	2	K, Ká	Al
7	June 19.96389	5 37 26.65	+53 12 50.9	2	K, Ká	Al
8	June 20.02917	5 38 04.55	+53 17 16.1	2	K, Ká	Al
9	June 24.98681	6 35 44.71	+58 05 30.1	2	K, Ká	K, Ká
10	1955 July 15.88889	11 12 45.72	+52 04 24.9	10	K	Ká
1955 IV Bakharev—Macfarlane—Krienke						
1	1955 July 18.90903	22 42 20.43	+27 57 30.5	6	K, R	K
2	July 21.94201	22 36 30.90	+32 16 06.2	5	K, R	K
3	July 22.95312	22 34 23.38	+33 39 33.1	5	K, Ká	K, Ká
4	Aug. 22.05972	20 56 30.63	+59 05 01.6	6	K, Ká	Ká
5	Aug. 23.98750	20 49 44.78	+59 42 00.6	6	K	Ká
6	Aug. 26.95139	20 39 11.48	+60 27 12.6	6	K, Ká	Al
7	Sep. 9.95139	20 00 53.35	+61 54 30.7	10	K, Ká	Al
8	Sep. 12.88403	19 55 29.95	+61 54 19.4	12	K, Ká	Ká
9	1955 Sep. 25.93683	19 42 36.32	+61 14 37.5	60	Pk	Ká



Continuation Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
1955 V Honda						
1	1955 Aug. 17.99167	5 56 37.43	+61 07 30.5	2	K, K $\acute{a}$	Al
2	Aug. 18.96250	6 22 22.71	+67 35 41.2	2	K, K $\acute{a}$	Al
3	Aug. 22.08472	11 01 30.52	+80 10 55.8	2	K, K $\acute{a}$	Al
4	Aug. 26.96319	15 15 59.51	+64 44 37.3	2	K, K $\acute{a}$	Al
5	Sep. 8.85868	16 04 45.76	+42 36 49.3	3	K, K $\acute{a}$	Al
6	1955 Sep. 12.86597	16 08 59.22	+39 31 28.7	6	K, K $\acute{a}$	Al
1955 VII P/Perrine—Mrkos						
1	1955 Oct. 20.09838	8 36 34.25	+14 34 38.8	5	M	P
2	Oct. 20.15359	8 36 43.38	+14 32 56.0	2	M	P
3	Oct. 21.15393	8 39 24.15	+14 00 45.0	7	M	P
4	Oct. 23.13328	8 44 34.06	+12 57 14.6	7	M	P
5	Oct. 24.15076	8 47 08.54	+12 24 49.0	10	M	P
6	Oct. 26.11389	8 51 57.91	+11 22 26.0	10	M	P
7	Nov. 9.14669	9 21 22.51	+4 13 37.6	16	M, P	K
8	Nov. 9.17586	9 21 25.87	+4 12 45.1	16	M, P	K
9	1955 Nov. 10.14458	9 23 08.00	+3 44 28.3	20	M, P	K
1956 III Mrkos						
1	1956 Mar. 16.10965	18 43 15.41	+19 13 57.4		M	P
2	Mar. 18.07327	19 00 42.3	+27 36 54		M	P
3	Mar. 27.79097	23 27 31.02	+66 08 41.1		M	P
4	Mar. 27.82222	23 28 56.06	+66 09 56.5		M	P
5	Mar. 28.77603	0 10 52.90	+66 25 28.5		M	P
6	Mar. 28.86978	0 14 50.55	+66 24 39.7		M	P
7	Mar. 29.78648	0 50 55.24	+65 59 41.5	5	M	P
8	Mar. 29.80255	0 51 30.91	+65 58 57.1	10	A	P
9	Mar. 29.93255	0 56 15.67	+65 53 05.7	5	A	P
10	Mar. 30.79486	1 25 01.40	+65 03 58.1		M	P
11	Mar. 30.85246	1 26 48.35	+65 00 09.3		M	P
12	1956 Apr. 2.86287	2 35 51.22	+60 56 18.3		M	P
1956 VI P/Crommelin						
1	1956 Sep. 30.12558	9 11 59.86	+38 13 16.4		M	P
2	Sep. 30.14016	9 12 05.06	+38 11 38.5		M	P
3	Oct. 1.11999	9 17 26.96	+36 33 04.0		M	P
4	Oct. 1.14325	9 17 34.08	+36 30 45.3	10	M	P
5	Oct. 2.12620	9 22 44.79	+34 51 13.3		M	P
6	Oct. 2.13732	9 22 48.18	+34 50 02.6		M	P
7	Oct. 8.14152	9 50 48.83	+24 39 39.3		M	P
8	Oct. 9.13934	9 54 59.19	+22 59 51.0		M	P
9	1956 Oct. 9.14663	9 55 01.00	+22 59 05.9		M	P
1957 III Arend—Roland						
1	1956 Nov. 20.71632	1 32 01.44	+25 00 37.0	5	A	P
2	Nov. 20.82882	1 31 45.24	+24 57 55.4	5	A	A
3	Nov. 21.72743	1 29 37.78	+24 35 36.1	5	A	A
4	Nov. 21.82882	1 29 23.21	+24 33 04.0	5	A	A
5	Nov. 22.73368	1 27 16.17	+24 10 22.7	5	A	A
6	Nov. 22.83819	1 27 01.46	+24 07 45.6	10	A	A
7	Nov. 23.73368	1 24 56.98	+23 45 11.9	5	A	A
8	Nov. 23.82882	1 24 43.67	+23 42 48.3	5	A	A
9	Nov. 24.82882	1 22 26.43	+23 17 03.9	5	A	A
10	Nov. 24.92326	1 22 13.33	+23 14 37.6	5	A	A
11	Dec. 9.69792	0 52 34.74	+16 45 31.8	8	A	A
12	Dec. 9.78229	0 52 26.04	+16 43 19.8	7	A	A
13	Dec. 16.70097	0 41 42.82	+13 47 28.0	5	M	A
14	Dec. 16.77882	0 41 36.22	+13 45 32.4	7	A	A
15	Dec. 16.92813	0 41 23.32	+13 41 50.0	5	A	A
16	Dec. 17.74271	0 40 16.57	+13 21 52.6	5	A	A
17	Dec. 19.71977	0 37 41.28	+12 34 08.6	10	M	P
18	Dec. 19.75657	0 37 38.71	+12 33 19.0	10	M	P
19	Dec. 19.80903	0 37 34.39	+12 32 02.9	4	A	P

Continuation Table I

No.	Date U. T	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
20	Dec. 20.71777	0 36 26.66	+12 10 29.7	10	M	P
21	Dec. 20.75730	0 36 23.71	+12 09 32.0	10	M	P
22	Dec. 27.74174	0 28 54.95	+9 33 01.4	15	M	P
23	Dec. 27.80007	0 28 51.67	+9 31 45.2	10	M	P
24	1956 Dec. 28.73065	0 28 00.75	+9 11 55.8	10	M	P
25	1957 Jan. 17.70349	0 17 09.10	+3 08 42.6	10	M	P
26	Jan. 17.71428	0 17 08.94	+3 08 34.6	5	M	P
27	Jan. 18.70980	0 16 55.90	+2 53 17.4	10	M	P
28	Jan. 18.71883	0 16 55.78	+2 53 08.7	10	M	P
29	Jan. 19.70572	0 16 44.52	+2 38 15.8	5	M	P
30	Jan. 19.72584	0 16 44.26	+2 37 58.1	5	M	P
31	Jan. 24.71215	0 16 04.39	+1 26 02.2		M	P
32	1957 Feb. 5.73211	0 17 00.77	-1 08 25.8	0.5	A	A
1957 V Mrkos						
1	1957 Aug. 23.79486	12 30 40.66	+27 22 01.3	2	A	A
2	Aug. 25.78831	12 46 11.23	+25 00 17.3	2	A	A
3	Aug. 25.79109	12 46 12.09	+25 00 06.5	2	A	A
4	Aug. 27.78932	13 00 06.30	+22 36 35.9	3	A	A
5	Aug. 27.79383	13 00 07.77	+22 36 15.0	4	A	A
6	Sep. 1.78685	13 28 57.05	+17 09 35.2	3	A	A
7	Sep. 1.79102	13 28 58.39	+17 09 16.9	3	A	A
8	Sep. 5.77816	13 47 23.92	+13 13 45.7	3.5	A	A
9	Sep. 6.77823	13 51 30.26	+12 18 59.3	3	A	A
10	Sep. 7.76216	13 55 25.00	+11 26 19.0	2	A	A
11	1957 Sep. 8.76496	13 59 13.78	+10 34 27.7	3	A	A
1958 IV P/Oterma						
1	1959 Feb. 10.14931	13 37 34.71	-7 13 33.8	30	A, T	Aá
2	Feb. 13.09444	13 37 59.93	-7 11 38.2	30	A, T	Aá
3	1959 Feb. 14.13542	13 38 06.52	-7 10 43.7	30	A, T	Aá
1959 I Burnham—Slaughter						
1	1958 Sep. 13.79097	21 08 19.77	+11 05 48.7	10	A	A, Aá
2	Sep. 14.79752	21 06 41.23	+11 11 56.4	15	A	A, Aá
3	Sep. 15.98542	21 04 46.26	+11 19 14.2	10	A, K	A, Aá
4	Oct. 9.91528	20 33 40.75	+13 12 48.3	10	A, T	A, Aá
5	Oct. 10.90625	20 32 46.07	+13 16 48.0	10	A, T	A, Aá
6	Oct. 11.74581	20 32 01.28	+13 20 03.5	10	A	A, Aá
7	Oct. 29.72708	20 21 50.19	+14 34 16.7	10	A, T	A, Aá
8	Oct. 29.80278	20 21 48.89	+14 34 38.0	10	A, T	A, Aá
9	Oct. 30.75729	20 21 34.38	+14 38 59.7	15	A, T	A, Aá
10	Nov. 27.70923	20 26 28.95	+17 34 03.1	10	A, T	A, Aá
11	Nov. 28.69028	20 27 02.07	+17 42 16.9	10	A	A, Aá
12	Nov. 29.70509	20 27 37.68	+17 50 59.4	10	A	A, Aá
13	Dec. 2.75374	20 29 34.08	+18 18 17.1	10	A	A, Aá
14	Dec. 3.70517	20 30 12.55	+18 27 06.7	10	A	A, Aá
15	Dec. 3.80101	20 30 17.33	+18 28 00.9	10	A	A, Aá
16	Dec. 4.69895	20 30 55.19	+18 36 30.9	10	A, T	A, Aá
17	1958 Dec. 8.70764	20 33 59.31	+19 16 33.4	10	A	A, Aá
18	1959 Apr. 15.84754	3 53 34.58	+58 22 34.6	5	A	Aá
19	1959 Apr. 15.86559	3 53 42.16	+58 22 25.4	5	A	Aá
1959 IV Alcock						
1	1959 Aug. 27.85729	16 03 45.65	+32 41 32.1	5	A	Aá
2	Aug. 27.88715	16 03 54.17	+32 39 50.2	5	A	Aá
3	Aug. 27.89971	16 03 58.43	+32 39 05.0	15	A	Al
4	Aug. 28.83333	16 08 40.57	+31 44 45.1	5	A	Aá
5	Aug. 28.84201	16 08 42.87	+31 44 15.4	5	A	Aá, Al
6	Aug. 29.83507	16 13 44.27	+30 44 31.8	5	A, Aá	Aá
7	Aug. 29.87500	16 13 56.44	+30 42 06.2	5	A, Aá	Al
8	Aug. 29.91146	16 14 07.60	+30 39 51.2	5	A, Aá	Aá
9	Aug. 30.85937	16 18 56.88	+29 40 50.1	5	A	Al
10	Aug. 30.87500	16 19 01.43	+29 39 52.5	5	A	Al
11	Aug. 30.89583	16 19 08.15	+29 38 30.9	5	A	Aá

Continuation Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
12	Sep. 2.82188	16 34 09.83	+26 25 15.1	5	A	Aá
13	Sep. 3.80174	16 39 13.77	+25 16 56.0	5	A	Aá
14	Sep. 4.79167	16 44 21.99	+24 06 12.8	5	A	A, Aá
15	Sep. 4.87500	16 44 47.76	+24 00 11.4	5	A	A, Aá
16	Sep. 5.83333	16 49 46.90	+22 50 00.2	5	A	A, Aá
17	1959 Sep. 5.87500	16 49 59.96	+22 46 52.8	5	A	A, Aá
1959 VI Alcock						
1	1959 Sep. 3.10174	8 48 18.15	+11 30 57.5	1	A	Aá
2	Sep. 3.10938	8 48 23.02	+11 30 02.7	2	A	Al
3	Sep. 5.11860	9 10 45.23	+7 54 17.3	1	A, Al	Al
4	Sep. 6.11649	9 22 36.06	+6 02 00.5	0.5	A, Aá	Al
5	1959 Sep. 6.12066	9 22 39.27	+6 01 31.3	0.5	A, Aá	Al
1959 VII Burnham						
1	1960 Feb. 1.92500	3 41 31.21	+19 26 40.3	10	A	A, Aá
2	1960 Feb. 2.85764	3 41 41.08	+19 48 13.9	10	A	A, Aá
1959 VIII P/Giacobini — Zinner						
1	1959 Sep. 7.86806	16 34 32.96	+23 27 06.1	20	A	Al
2	Sep. 7.89861	16 34 35.04	+23 26 26.1	10	A	A, Aá
3	Oct. 10.79896	17 43 52.07	+5 17 59.2	1	A, Aá	Aá
4	1959 Oct. 10.80174	17 43 52.55	+5 17 50.4	3	A, Aá	Aá
1959 IX Mrkos						
1	1959 Dec. 3.20499	15 03 45.67	-5 10 17.4	3	M, T	A
2	Dec. 10.18419	15 28 21.44	-7 09 32.7	3	A, Aá	A, Aá
3	Dec. 10.20502	15 28 25.85	-7 09 54.1	3	A, Aá	A
4	Dec. 21.19826	16 05 31.71	-9 53 48.6	3	A	A, Aá
5	1959 Dec. 21.21528	16 05 35.09	-9 53 59.5	2	A	A, Aá
6	1960 Jan. 5.19649	16 52 27.23	-12 47 46.0	10	A, Aá	Aá
7	Jan. 5.20378	16 52 28.24	-12 47 52.5	6	A, Aá	A, Aá
8	Jan. 11.20278	17 09 57.00	-13 42 08.8	6	A	A, Aá
9	Jan. 11.20972	17 09 58.05	-13 42 14.0	6	A	A, Aá
10	Jan. 24.18750	17 45 08.45	-15 13 22.5	10	A	A, Aá
11	1960 Jan. 24.20139	17 45 10.69	-15 13 30.2	6	A	A, Aá
1960 II Burnham						
1	1960 Jan. 16.73264	0 53 14.72	-2 16 26.5	10	A	A, Aá
2	Jan. 16.77431	0 53 08.43	-2 17 09.7	5	A	A, Aá
3	Jan. 16.81597	0 53 02.44	-2 17 54.4	5	A	A, Aá
4	Jan. 18.80625	0 48 16.02	-2 50 52.5	6	A	A, Aá
5	Jan. 19.70833	0 46 12.38	-3 05 10.1	6	A	A, Aá
6	Jan. 19.75000	0 46 06.70	-3 05 49.1	6	A	A, Aá
7	Jan. 19.79167	0 46 01.05	-3 06 29.1	6	A	A, Aá
8	Jan. 22.75000	0 39 38.6	-3 50 37	6	A	A, Aá
9	Jan. 22.79167	0 39 33.4	-3 51 13	10	A	A, Aá
10	Jan. 25.70833	0 33 49.24	-4 31 08.6	10	A	A, Aá
11	Jan. 25.75000	0 33 44.40	-4 31 42.0	10	A	A, Aá
12	Jan. 27.70833	0 30 08.72	-4 56 42.7	10	A	A, Aá
13	Jan. 27.75000	0 30 04.05	-4 57 15.2	10	A	A, Aá
14	1960 Apr. 27.00040	20 51 14.61	+58 33 21.4	30	A, Aá	Aá
1960 III P/Schaumasse						
1	1960 Mar. 22.82708	4 13 13.53	+26 26 26.8	6	A	A, Aá
2	Mar. 26.79306	4 26 49.90	+27 33 48.7	6	A	A, Aá
3	Mar. 26.81458	4 26 54.47	+27 34 07.0	6	A	A, Aá
4	Mar. 28.81250	4 34 02.59	+28 06 38.6	6	A	A, Aá
5	1960 Mar. 28.83333	4 34 07.11	+28 06 56.7	6	A, Aá	A, Aá

Continuation Table 1

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
1961 II Candy						
1	1960 Dec. 31.80660	22 14 12.17	+62 33 32.7	3	A	Aá
2	1960 Dec. 31.81354	22 14 16.38	+62 32 20.1	3	A	Aá
3	1961 Jan. 2.83750	22 30 15.18	+56 54 17.3	1	A	Aá
4	Jan. 2.84444	22 30 17.91	+56 53 07.4	1	A	Aá
5	Jan. 10.75833	23 01 06.94	+38 54 17.3	1	A	Aá
6	1961 Jan. 10.76528	23 01 07.96	+38 53 29.4	1	A	Aá
1961 V Wilson—Hubbard						
1	1961 Aug. 2.04107	6 15 13.40	+40 26 57.9	0.3	A	A
2	Aug. 2.04272	6 15 12.99	+40 27 04.3	1	A	A, Al
3	Aug. 2.05435	6 15 09.43	+40 27 44.7	0.5	A	A, Al
4	Aug. 2.05982	6 15 07.72	+40 28 03.4	0.3	A	A, Al
5	Aug. 2.06147	6 15 07.29	+40 28 09.7	1	A	A
6	Aug. 3.01771	6 10 19.11	+41 22 40.8	1	A	A, Al
7	Aug. 3.03403	6 10 14.33	+41 23 35.4	4	A	A, Al
8	Aug. 5.99965	5 55 16.37	+44 04 53.9	1	A	A, Al
9	Aug. 6.04756	5 55 01.79	+44 07 26.4	1	A	A, Al
10	Aug. 6.07759	5 54 52.51	+44 09 02.0	1.5	A	A, Al
11	Aug. 6.94999	5 50 24.56	+44 54 18.7	2	A	A, Al
12	Aug. 6.95311	5 50 23.32	+44 54 31.5	1	A	A, Al
13	Aug. 7.03367	5 49 58.53	+44 58 40.5	1	A	A, Al
14	Aug. 7.03714	5 49 57.51	+44 58 50.0	1	A	A, Al
15	Aug. 7.04131	5 49 56.38	+44 59 02.3	3	A	A, Al
16	Aug. 8.98226	5 39 47.44	+46 36 41.4	2	A	A, Al
17	Aug. 8.98503	5 39 46.56	+46 36 49.6	2	A	A, Al
18	Aug. 8.98920	5 39 45.30	+46 37 03.0	2	A	A, Al
19	Aug. 9.02392	5 39 34.07	+46 38 46.0	2	A	A, Al
20	Aug. 9.02740	5 39 32.92	+46 38 58.9	1	A	A, Al
21	1961 Aug. 9.06559	5 39 20.82	+46 40 50.6	2	A	A, Al
1961 VII P/Schwassmann—Wachmann						
1	1962 Mar. 1.06250	13 05 38.35	-1 49 49.1	10	A	A, Aá
2	1962 Mar. 1.10417	13 05 37.40	-1 49 38.4	10	A	A, Aá
1961 VIII Seki						
1	1961 Oct. 16.11250	11 23 53.88	+14 00 07.9	0.5	A	Aá
2	Oct. 16.15417	11 23 51.22	+13 59 59.0	0.5	A	Aá
3	Oct. 24.15051	11 15 23.58	+12 59 15.1	0.5	T	Aá
4	1961 Oct. 25.08627	11 14 22.25	+12 46 10.4	0.5	Sa, T	Aá
1962 IV Honda						
1	1962 May 11.97146	1 07 59	+62 55 55	4	Pe, Pž	A
2	May 16.96007	0 38 47.95	+67 51 13.2	1	A	A
3	May 17.03229	0 38 13.77	+67 55 50.8	1	A	A
4	May 23.93958	23 07 50.96	+75 09 50.9	2	A	A
5	1962 May 23.97569	23 07 05.17	+75 11 51.5	2	A	A
1962 V P/Tuttle—Giacobini—Kresák						
1	1962 Feb. 7.98264	8 57 43.15	-2 56 23.5	60	A	A
2	Feb. 8.90139	8 57 09.33	-2 42 30.9	30	A	A
3	Feb. 28.96181	8 46 21.24	+5 58 21.3	10	A	A
4	Mar. 8.86875	8 45 52.12	+11 20 46.0	10	A	A
5	Mar. 8.95799	8 45 52.45	+11 24 43.7	5	A	A
6	Mar. 9.90486	8 46 06.11	+12 07 22.7	10	A	A
7	Mar. 13.91464	8 47 50.71	+15 15 55.4	10	A	A
8	Mar. 13.92888	8 47 51.22	+15 16 36.6	5	A	A
9	Mar. 26.89201	9 04 36.57	+26 28 20.7	5	A	A
10	Apr. 1.97292	9 19 49.73	+31 52 13.4	2	A	A
11	Apr. 24.90063	11 12 37.76	+47 08 38.3	4	A	A
12	Apr. 24.96521	11 13 03.08	+47 09 52.2	4	A	A

Continuation Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
13	May 6.04097	12 29 37.28	+48 23 32.5	6	A	A
14	May 6.97431	12 35 58.80	+48 16 42.8	4	A	A
15	May 7.02153	12 36 17.41	+48 16 15.8	4	A	A
16	May 7.02986	12 36 20.88	+48 16 11.4	4	A	A
17	May 31.03066	14 42 47.00	+37 22 31.1	10	A	A
18	June 12.99338	15 22 59.83	+28 36 41.9	10	A	A
19	June 13.96561	15 25 30.06	+27 56 52.6	10	A	A
20	June 14.02881	15 25 39.72	+27 54 04.4	10	A	A
21	June 23.98495	15 48 32.41	+21 12 17.4	10	A	A
22	June 24.93772	15 50 30.81	+20 35 04.5	10	A	A
23	June 24.95855	15 50 33.20	+20 34 13.0	10	A	A
24	June 29.96374	16 00 27.26	+17 22 59.7	15	A	A
25	1962 June 30.01304	16 00 32.57	+17 21 12.2	15	A	A
1962 VIII Humason						
1	1961 Sep. 6.89961	1 02 03.86	+31 12 39.5	9	A	A
2	Sep. 6.92009	1 02 02.65	+31 12 35.2	30	A	A
3	Sep. 11.85833	0 56 37.33	+30 52 09.1	6	A	A
4	Sep. 11.86875	0 56 36.54	+30 52 05.9	9	A	A
5	Sep. 16.88958	0 50 43.67	+30 26 25.1	9	A	A, Aá
6	Sep. 16.90000	0 50 42.90	+30 26 20.8	6	A	Aá, A
7	Sep. 17.81042	0 49 36.76	+30 21 07.6	6	A	A
8	Sep. 17.82083	0 49 35.97	+30 21 03.8	6	A	A
9	Oct. 15.92292	0 12 47.24	+26 17 11.7	6	A	A
10	1961 Oct. 15.93333	0 12 46.42	+26 17 05.3	6	A	A
11	1962 Jan. 4.76528	23 17 20.33	+11 24 21.7	4	A	A, Pš
12	Jan. 4.78611	23 17 20.30	+11 24 11.5	4	A	A, Pš
13	Jan. 5.73958	23 17 20.77	+11 17 53.6	4	A	A
14	Jan. 5.78125	23 17 20.86	+11 17 38.0	4	A	A, Pš
15	June 30.03423	23 59 16.10	+3 15 39.4	2	A	A
16	June 30.03596	23 59 16.08	+3 15 37.3	1	A	A
17	July 15.99146	23 43 12.08	-0 37 31.3	1	A	A
18	July 16.01576	23 43 10.01	-0 37 58.4	1	A	A
19	July 16.02375	23 43 09.34	-0 38 07.2	2	A	A
20	July 16.03382	23 43 08.46	-0 38 18.9	1	A	A
21	July 24.95668	23 28 02.37	-3 53 14.6	1	A	A
22	July 24.97716	23 27 59.80	-3 53 44.8	2	A	A
23	July 24.99958	23 27 57.14	-3 54 17.8	1	A	A
24	July 25.03237	23 27 53.20	-3 55 06.7	1	A	A
25	July 26.97951	23 23 50.76	-4 45 12.7	1	A	A
26	July 26.98785	23 23 49.66	-4 45 25.7	9	A	A
27	July 26.99549	23 23 48.69	-4 45 38.1	1	A	A
28	July 27.01840	23 23 45.69	-4 46 14.4	1	A	A
29	Sep. 2.93016	21 06 41.76	-26 39 51.5	1	A	A
30	Sep. 2.93641	21 06 40.09	-26 40 02.5	1	A	A
31	Sep. 2.96836	21 06 31.45	-26 41 01.1	1	A	A
32	Sep. 10.86763	20 31 53.35	-30 09 43.0	2	A	A
33	Sep. 10.87075	20 31 52.53	-30 09 47.5	4	A	A
34	Sep. 16.78009	20 08 14.96	-32 04 54.1	1	A	A
35	Sep. 16.78290	20 08 14.43	-32 04 56.8	1.1	A	A
36	1962 Sep. 16.82002	20 08 05.82	-32 05 34.9	2	A	A
37	1963 Nov. 25.18472	12 40 57.34	-18 45 48.5	10	A	A
1963 I Ikeya						
1	1963 June 27.95476	23 22 27.17	+22 22 36.5	30	A, Pe	A
2	1963 June 27.96830	23 22 24.75	+22 22 38.1	5	A, Pe	A
1963 III Alcock						
1	1963 Mar. 23.09428	19 30 30.95	+49 22 14.7	4	A	A
2	Mar. 24.89254	19 28 25.71	+49 43 19.2	1	A	A
3	Mar. 24.89497	19 28 25.40	+49 43 24.5	2	A	A
4	Mar. 24.93490	19 28 22.51	+49 43 52.6	1	A	A, Aá
5	Mar. 24.94254	19 28 22.01	+49 43 58.7	15	A	A, Aá
6	Mar. 24.96059	19 28 20.64	+49 44 12.1	1	A	A, Aá
7	Mar. 25.11615	19 28 09.00	+49 46 06.7	1	A	A, Aá
8	Mar. 25.12691	19 28 08.17	+49 46 15.9	2	A	A
9	Mar. 25.93870	19 27 05.16	+49 56 10.3	2	A	A

Continuation Table I

No.	Date U. T.	$\alpha$ (1950.0)	$\delta$ (1950.0)	t	Obs.	M + R
10	1963 Mar. 25.95954	19 27 03.54	+49 56 27.8	2	A	A
11	Mar. 28.89420	19 22 44.44	+50 34 12.5	2	A	A
12	Mar. 28.91573	19 22 42.31	+50 34 28.8	2	A	A, A $\acute{a}$
13	Mar. 29.91362	19 21 02.19	+50 47 56.7	2	A	A
14	Mar. 29.92404	19 21 00.98	+50 48 05.7	2	A	A
15	Apr. 3.11703	19 12 42.78	+51 47 29.1	2	A	A, A $\acute{a}$
16	Apr. 3.12744	19 12 41.33	+51 47 38.6	2	A	A, A $\acute{a}$
17	Apr. 3.92396	19 10 51.38	+51 59 19.6	2	A	A, A $\acute{a}$
18	Apr. 3.93438	19 10 49.90	+51 59 28.0	2	A	A, A $\acute{a}$
19	Apr. 5.12325	19 07 54.67	+52 17 15.6	2	A	A
20	Apr. 5.12777	19 07 53.89	+52 17 20.0	1	A	A
21	Apr. 8.95626	18 56 58.74	+53 15 44.8	2	A	A, A $\acute{a}$
22	Apr. 8.96668	18 56 56.87	+53 15 53.7	2	A	A, A $\acute{a}$
23	Apr. 13.91461	18 38 40.95	+54 31 20.7	2	A	A
24	Apr. 13.92711	18 38 37.89	+54 31 32.3	2	A	A
25	Apr. 19.88994	18 08 45.22	+55 51 07.9	1	A	A
26	Apr. 19.90142	18 08 41.23	+55 51 16.0	2.1	A	A
27	Apr. 25.97604	17 27 31.13	+56 33 52.1	1	A	A, A $\acute{a}$
28	Apr. 25.98160	17 27 28.58	+56 33 52.3	1	A	A, A $\acute{a}$
29	Apr. 25.99960	17 27 20.16	+56 33 54.4	1	A	A
30	Apr. 26.00382	17 27 18.17	+56 33 54.9	1	A	A, A $\acute{a}$
31	May 16.93366	14 22 26.67	+44 13 40.8	1	A	A
32	May 16.93713	14 22 25.10	+44 13 24.5	1	A	A, De
33	May 18.97999	14 07 47.3	+41 31 43	0.5	A	A
34	May 18.98433	14 07 45.5	+41 31 21	1	A	A, De
35	May 19.89336	14 01 39.93	+40 16 07.2	1	A	A
36	May 19.90361	14 01 35.80	+40 15 15.7	0.5	A	A, De
37	May 23.90570	13 39 59.35	+34 12 13.8	0.5	A	A, De
38	May 23.91264	13 39 57.06	+34 11 36.7	0.5	A	A, De
39	May 23.91976	13 39 54.78	+34 10 58.2	1	A	A, De
40	June 1.99541	12 59 14.79	+21 05 27.1	1	A	A, De
41	June 1.99957	12 59 14.04	+21 05 06.2	1	A	A, De
42	June 2.00860	12 59 12.28	+21 04 21.5	1	A	A, De
43	June 2.01207	12 59 11.64	+21 04 04.3	1	A	A, De
44	June 2.87179	12 56 28.75	+19 52 22.7	1	A	A
45	June 7.89338	12 43 03.53	+13 18 08.2	1	A	A
46	June 7.90380	12 43 02.07	+13 17 21.6	1	A	A, De
47	June 7.93973	12 42 57.04	+13 14 42.1	0.5	A	A, De
48	June 7.94199	12 42 56.79	+13 14 32.3	1	A	A, De
49	June 18.88715	12 24 42.96	+1 33 58.6	1	A	A, De
50	June 18.89167	12 24 42.65	+1 33 42.5	2	A	A
51	June 19.87735	12 23 37.10	+0 40 35.4	1	A	A
52	June 19.88082	12 23 36.84	+0 40 24.2	1	A	A, De
53	June 19.88997	12 23 36.30	+0 39 55.1	1	A	A, De
54	June 27.84399	12 17 11.86	-5 39 09.0	1	A	A
55	1963 June 27.84642	12 17 11.72	-5 39 14.4	2	A	A
1963 V Pereyra						
1	1963 Sep. 25.13522	9 31 33.39	-8 23 49.9	2	A	A
2	Oct. 20.12611	9 20 39.23	-16 36 28.1	4	A	A
3	Oct. 21.12820	9 19 57.01	-16 54 58.1	4	A	A
4	1963 Oct. 21.13236	9 19 56.74	-16 55 03.6	2	A	A

Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
1946 I Timmers									
1	Greenwich 2 (78°)	3831	2151	.33024	2168	.31652	2701	.35324	1.5 0.7
			2169	.34546	2705	.38421	2707	.27033	
2	Greenwich 2 (81°)	4383	1322	.39578	1361	.29457	1888	.30965	0.5 0.2
			1327	.27721	1362	.22008	1887	.50271	
3	Greenwich 2 (85°)	4879	1426	.19959	1434	.55913	1441	.24128	0.3 0.3
			1428	.30383	1433	.03157	1439	.66460	

No.	Catalogue	Plate	Star Numbers and Dependences						Note
1946 III P/Tempel (2)									
1	San Fernando 5	490	49	.10861	57	.20489	81	.68650	0.0 0.1
			64	.07270	66	.20810	75	.71920	
1946 IV P/Brooks (2)									
1	Bordeaux 5	1477	35	.39485	39	.16147	84	.44368	0.2 0.9
			36	.34933	40	.21677	83	.43390	
2	Yale 19		998	.49270	1002	.09480	1006	.41250	0.3 1.0
			1000	.59527	1002	.27284	1010	.13189	
3	Toulouse 1	26	16	.39248	22	.32651	38	.28101	0.9 0.3
			18	.19149	24	.08932	25	.71919	
4	Toulouse 1	26	12	.38498	22	.36712	39	.24790	2.3 1.1
			16	.36306	23	.48810	25	.14884	
5	Toulouse 3	24	108	.17262	117	.61615	140	.21123	0.6 0.2
			115	.38915	116	.31655	130	.29430	
6	Toulouse 3	24	78	.51175	106	.24165	114	.24660	0.0 0.4
			85	.31613	94	.21180	99	.47207	
7	Toulouse 3	24	74	.15786	91	.35516	94	.48698	0.4 0.7
			78	.44266	99	.32615	104	.23119	
8	Toulouse 3	24	67	.34716	78	.38182	104	.27102	0.3 0.6
			71	.39769	74	.28666	94	.31565	
9	Toulouse 3	24	21	.15609	40	.47571	210	.36820	0.3 0.2
			32	.38008	39	.44586	204	.17406	
10	Toulouse 3	23	324	.38206	344	.28685	356	.33109	0.9 0.1
			335	.18187	343	.24515	346	.57298	
11	Toulouse 3	23	49	.20885	75	.20019	277	.59096	0.5 0.2 j
			76	.23724	270	.30118	273	.46158	
1946 V P/Giacobini—Zinner									
1	Greenwich 1 (69°)	2771	8935	.43655	8958	.31867	9022	.24478	0.3 0.2
			8957	.33486	9002	.42939	9027	.23575	
2	Greenwich 1 (69°)	1699	2179	.39493	2193	.28963	2195	.31544	0.2 0.2
			2184	.39860	2186	.40714	2194	.19426	
3	Catania 5	1447	31	.35650	43	.30491	87	.33859	0.2 0.0
			50	.71728	70	.15374	76	.12898	
4	Helsingfors 3	262	268	.35577	321	.33537	329	.30886	0.0 0.2
			282	.11630	308	.65243	323	.23127	
5	Paris 4	605	337	.14558	358	.65709	375	.19733	2.4 1.0
			341	.33735	356	.33445	377	.32820	
1947 I Bester									
1	Cordoba 30	3893	612	.31409	621	.37090	631	.31501	1.1 0.6
			614	.34390	620	.45636	635	.19974	
2	Hyderabad 5	1712	3061	.23915	3070	.44626	3087	.31459	1.3 0.9
			3071	.45203	3072	.41687	3094	.13110	
3	San Fernando 6	544	5	.49044	22	.22518	29	.28438	1.1 0.7
			6	.34907	14	.29179	26	.35914	
1947 XI P/Encke									
1	Helsingfors 3	375	46	.33236	49	.43458	51	.23306	1.7 0.7 i
			47	.38214	48	.12483	50	.49303	
2	Helsingfors 4	395	4	.36134	39	.20192	43	.43674	0.9 1.4
			8	.02806	11	.06486	18	.90708	
3	Helsingfors 4	395	4	.23168	39	.45852	43	.30980	0.7 1.0
			8	-.05290	11	-.11247	18	1.16537	
4	Oxford 4	1745	81	.55030	91	.21090	109	.23880	
			82	.80603	92	-.07527	110	.26924	
5	Oxford 4	1745	81	.50332	91	.42772	109	.06897	
1948 I Bester									
1	Potsdam 6	290	369	.39580	525	.28839	532	.31581	0.2 1.1
			436	.27086	465	.56582	511	.16332	
2	Helsingfors	807	87	.29560	127	.33102	148	.37338	0.4 1.2
			103	.36788	105	.26693	145	.36519	

Continuation Table I

No.	Catalogue	Plate	Star Numbers and Dependences						Note
1948 II Mrkos									
2	Toulouse 1	126	44 .21488	173 .58109	188 .20403			0.4 0.6 g	
			49 .34225	70 .21452	167 .44323				
3	Toulouse 1	126	82 .23072	102 .50936	103 .25992			0.0 0.0	
			88 .23688	91 .37606	109 .38706				
5	Bordeaux 5	955	73 .30412	85 .68528	86 .01060			0.6 0.4	
			75 .40604	79 .31678	89 .27718				
6	Bordeaux 5	955	71 .34605	86 .17496	87 .47899			0.9 0.3	
			75 .38769	79 .29981	90 .31250				
7	Bordeaux 5	955	73 .26392	85 .59873	86 .13735			0.3 0.7	
			75 .33220	79 .32117	89 .34663				
10	Bordeaux 1	510	82 .16986	92 .44303	106a .38711			0.0 0.4	
			91 .40542	97a .28714	100 .30744				
11	Bordeaux 1	510	89 .14751	91 .40508	106 .44741			0.2 0.4	
			90 .13625	97 .50202	100 .36173				
14	Oxford 6	2575	51051 .28492	51143 .29574	51176 .41934			0.5 1.4	
			51098 .30117	51099 .35028	51144 .34855				
15	Oxford 1	1604	44902 .34810	44906 .24400	44926 .40790			0.8 0.0	
			44904 .42907	44928 .34275	44948 .22818				
16	Potsdam 6	290	800 .15318	855 .68835	868 .15847			0.4 1.2	
			805 .09770	816 .38034	885 .52196				
17	Potsdam 6	290	796 .21492	837 .40838	904 .37670			1.0 0.3	
			800 .30569	868 .27764	894 .41667				
18	Potsdam 2	611	202 .36991	204 .23218	310 .39791			1.1 0.6	
			210 .30334	249 .30820	270 .38846				
19	Potsdam 2	611	204 .28388	270 .29777	282 .41835			0.1 0.2	
			210 .15624	249 .32229	276 .52147				
20	Potsdam 2	611	472 .22820	499 .37291	501 .39889			0.7 0.1	
			479 .15685	485 .62429	518 .21886				
21	Potsdam 2	611	485 .52146	492 .25898	518 .21956			0.4 0.2	
			487 .21124	490 .25605	501 .53271				
22	Potsdam 2	612	185 .19642	219 .30471	223 .49887			0.2 0.9	
			193 .37857	212 .22036	234 .40107				
23	Potsdam 2	612	185 .19653	214 .28820	234 .51527			0.3 0.6	
			204 .19870	219 .33380	223 .46750				
24	Potsdam 1	613	20 .54366	43 .18679	71 .26955			0.6 1.2	
			27 .33070	31 .42764	67 .24166				
25	Potsdam 2	920	189 .34517	263 .20962	270 .44521			1.2 1.2	
			219 .22541	246 .40566	254 .36893				
26	Potsdam 2	1066	23 .42993	72 .23356	92 .33651			0.0 0.2	
			48 .37557	50 .44110	70 .18333				
27	Potsdam 2	1066	23 .40891	72 .24982	92 .34127			0.3 0.2	
			48 .41212	50 .34264	70 .24524				
28	Helsingfors 7	862	543 .23243	571 .47674	622 .29083			0.5 0.3	
			568 .18555	573 .40366	594 .41079				
29	Helsingfors 7	869	641 .28740	692 .34400	729 .36860			0.2 0.6	
			643 .35052	693 .24725	729 .40223				
30	Helsingfors 7	873	273 .32811	303 .38167	304 .29022			0.1 1.6	
			285 .37327	287 .31667	332 .31006				
31	Helsingfors 8	917	223 .20732	262 .38666	265 .40602			0.1 0.5	
			243 .38643	261 .40450	264 .20907				
32	Helsingfors 8	920	178 .30958	225 .31095	277 .37947			0.2 0.5	
			195 .34556	251 .40318	278 .25126				
33	Helsingfors 8	920	178 .27931	225 .28958	277 .43111			0.1 0.4	
			195 .33178	251 .32459	278 .34363				
34	Helsingfors 8	931	262 .21749	296 .25489	314 .52762			1.3 1.7	
			265 .23348	305 .60328	317 .16324				
35	Helsingfors 1	24	267 .30050	292 .24609	293 .45341			0.6 0.9	
			268 .29374	272 .45649	325 .24977				
36	Helsingfors 1	20	205 .17536	221 .42142	236 .40322			1.0 0.7	
			210 .29096	234 .26307	240 .44597				
37	Helsingfors 1	16	182 .17599	241 .21208	243 .61193			1.0 0.0	
			201 .26744	206 .26763	242 .46493				
38	Hyderabad 12	3279	232 .50416	267 .15519	268 .34065			0.5 0.7	
			233 .51919	266 .24778	281 .23308				
39	Potsdam 7	319	243 .43329	244 .09114	315 .47557			1.0 0.1	
			258 .41772	280 .29636	318 .28592				
1948 IV Honda—Bernasconi									
2	Vatican 10	3	2852 .27606	2856 .36303	2913 .36091			0.1 0.3	
			2853 .34486	2881 .30821	2911 .34693				



Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
3	Vatican 10	2	1741	.54865	1842	.20296	1799	.24839	0.1 0.8
			1793	.31025	1794	.33009	1799	.35966	
4	Vatican 10	2	1741	.51932	1842	.29866	1845	.18202	0.2 0.7
			1793	.42265	1794	.29448	1799	.28287	
5	Yale 4		7196	.34509	7214	.22793	7241	.42698	0.6 0.0
			7214	.57163	7215	.27536	7257	.15301	
6	Catania 4	1791	212	.16420	265	.43668	269	.39912	0.2 0.3
			228	.29376	256	.33364	275	.37260	
1948 V Pajdušáková—Mrkos									
2	Bordeaux 2	289	397	.25149	416	.26122	417	.48729	0.1 0.5 g
			398	.34865	418	.19700	421	.45435	
4	Yale 18		6808	.21286	6838	.57870	6844	.20844	0.4 0.0
			6824	.33717	6836	.45326	6842	.20957	
5	Helsingfors 7	792	166	.24075	206	.38986	218	.36939	0.8 0.3
			187	.27157	205	.55097	247	.17746	
7	Helsingfors 7	794	209	.38890	228	.13169	253	.47941	0.6 0.7
			219	.48115	229	.27918	265	.23967	
8	Yale 4		5802	.15778	5806	.42314	5821	.41908	0.7 0.8
			5802	.34764	5816	.47374	5823	.17862	
9	Greenwich 1 (69°)	3540	6982	.41333	6994	.32325	7003	.26342	0.5 0.4
			6983	.19314	6985	.49742	7004	.30944	
10	Greenwich 2 (76°)	5674	6606	.24063	6625	.42940	6634	.32997	0.2 0.2
			6622	.20523	2666	.37812	6635	.41665	
11	Helsingfors 2	131	69	.33121	72	.14635	111	.52244	0.4 0.5
			70	.30469	88	.29296	112	.40235	
1948 XI Eclipse Comet									
1	Yale 13, 14		7989	.55356	8018	.30046	9333	.14598	1.6 0.8
			7996	.65065	8010	.20224	9338	.14711	
2	Cordoba 31	4527	791	.62426	838	.11770	858	.25804	0.1 2.1 p
			806	.11664	808	.21713	820	.66623	
3	Cape		5126	.39494	5146	.35218	5166	.25288	0.1 0.8
			5136	.66622	5153	.05986	5172	.27392	
4	Cape		5054	.28461	5071	.56605	5089	.14934	0.6 0.2
			5057	.25219	5062	.30088	5076	.44693	
5	Cape		4806	.24929	4827	.35578	4835	.39493	0.5 0.1
			4820	.08482	4821	.81862	4848	.09656	
6	Cape		4730	.20787	4752	.27715	4756	.51498	1.0 0.9
			4735	.39599	4752	.41927	4769	.18474	
7	Cape		4567	.13210	4569	.47490	4613	.39300	0.2 0.0
			4569	.60250	4610	.09402	4613	.30348	
1948 XII P/Honda—Mrkos—Pajdušáková									
2	Cordoba 27	3214	110	.46574	112	.27536	154	.25890	0.3 0.1 g,j
			111	.57678	129	.28319	155	.14003	
3	Cordoba 27	3214	95	.32267	97	.34463	122	.33270	1.9 1.1
			96	.22773	108	.43179	109	.34048	
4	Cordoba 27	3214	95		97		122		1.4 1.3
			96		108		109		
5	Cordoba 27	3214	60		63		93		0.4 0.5
			62		84		94		
6	Cordoba 27	3214	60	.12133	63	.30296	93	.57571	0.8 0.5 i
			62	.11750	84	.54779	94	.33471	
7	Cordoba 27	3214	45	.78698	60	-.22140	75	.43442	0.8 0.5
			46	.28420	62	.09462	74	.62118	
8	Cordoba 27	3214	27	.13853	45	.40791	75	.45356	0.3 0.0
			46	.30459	60	.09067	74	.60474	
9	Cordoba 27	3214	999	.58962	11	-.08338	13	.49376	0.4 0.4
			000	.64731	1	.13190	12	.22079	
1949 IV Bappu—Bok—Newkirk									
1	Hyderabad 9	2881	972	.31398	1000	.49834	1004	.18768	0.5 0.1
			986	.33065	996	.44735	1005	.22200	
2	Hyderabad 9	2881	967	.34546	977	.28670	1000	.36784	0.1 0.4
			976	.40775	986	.33375	990	.25850	

Continuation Table 11

No.	Catalogue	Plate	Star Numbers and Dependences						Note
3	Hyderabad 9	2881	952	.26218	976	.29017	977	.44765	0.2 0.3
			966	.29640	967	.37885	984	.32475	
4	Hyderabad 10	3375	526	.45080	527	.27246	553	.27674	2.1 0.4
			527	.34358	532	.15337	537	.50305	
5	Hyderabad 12	3412	342	.33107	343	.17225	361	.49668	0.1 0.6
			347	.55724	352	.32985	353	.11291	
6	Hyderabad 12	3412	324	.27165	340	.23915	347	.48920	0.2 0.3
			335	.42905	343	.24647	352	.32448	
1950 I P/Johnson									
1	Vatican 7	429	43354	.28645	43372	.40561	43381	.30794	1.0 0.5
			43362	.47047	43371	.14521	43382	.38432	
2	Greenwich 1 (65°)	2522	3784	.27120	3790	.37429	3791	.35451	2.2 0.1
			3788	.49392	3793	.39964	3796	.10644	
1950 II P/d'Arrest									
1	Yale 20		636	.27688	651	.57705	654	.14607	0.4 0.6
			639	.40462	652	.43038	660	.16500	
2	Yale 20		651	.04282	652	.49825	666	.45893	0.7 0.2
			655	.24497	660	.51019	666	.24484	
1950 IV P/Reinmuth									
3	Toulouse 4	26	22	.14812	23	.46116	28	.39072	0.7 0.2
			22	.42416	26	.38500	28	.19084	
1950 VII P/Arend—Rigaux									
1	Yale 9		3978	.55478	3981	.26622	4003	.17900	0.4 0.4
			3978	.09608	3982	.46370	3984	.44022	
1951 I Minkowski									
1	Toulouse 7	128	84	.33227	105	.25505	138	.41268	0.0 0.7
			95	.35037	118	.29208	122	.35755	
2	Toulouse 7	128	84	.36157	118	.34574	122	.29269	0.5 0.7
			88	.21399	106	.44024	114	.34577	
3	Toulouse 1	124	140	.30235	167	.32865	169	.36900	0.1 0.3
			143	.18432	156	.39672	171	.41896	
4	Toulouse 2	122	17	.39195	29	.32553	123	.28252	1.2 0.5
			20	.25439	23	.47654	24	.26907	
5	Toulouse 3	120	67	.30666	72	.15092	144	.54242	0.4 0.0
			71	.41573	140	.37416	146	.21011	
6	Toulouse 4	119	41	.38536	45	.29003	48	.32461	1.0 0.4
			42	.13020	44	.83065	53	.03915	
1951 II Pajdušáková									
2	Paris 3	756	604a	.19701	628a	.59408	663a	.20891	0.6 1.0
			607a	.50667	640a	.33798	681a	.15535	
3	Yale 10		7959	.36115	7974	.33095	7981	.30790	0.1 0.1
			7961	.17313	7970	.40347	7975	.42340	
4	Yale 10		7959	.35871	7974	.31357	7981	.32772	0.0 0.2
			7961	.17405	7970	.37543	7975	.45052	
5	Yale 10		7959	.35089	7974	.27420	7981	.37491	1.7 0.2
			7961	.17347	7970	.30829	7975	.51824	
6	Yale 10		7994	.04509	7996	.34190	7998	.61301	0.3 0.2
			7997	.49726	7998	.49319	8015	.00955	
9	Yale 9		11981	.32860	12018	.07606	12044	.59534	0.0 0.8
			11981	.16391	12025	.58974	12032	.24635	
12	Helsingfors 8	949	15	.15896	80	.64506	98	.19598	1.3 0.0
			49	.54868	50	.14246	111	.30886	

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
1951 IV Tuttle—Giacobini—Kresák									
1	Oxford 1	2342	22571	.32129	22589	.35944	22591	.31927	0.0 0.2
			22575	.60923	22587	.06843	22588	.32234	
2	Oxford 1	2342	22571	.31944	22589	.37146	22591	.30910	0.8 0.3 a
			22575	.59044	22587	.04187	22588	.36769	
3	Oxford 1	2342	22571	.26039	22589	.48485	22591	.25476	
			22575	.35049	22587	.02043	22588	.62908	
4	Potsdam 4	61	23	.52491	37	.27727	53	.19782	0.0 1.0
			28	.73344	46	.19931	49	.06725	
5	Potsdam 4	61	23	.46832	37	.26900	53	.26218	0.1 0.7
			28	.64647	46	.19679	49	.15674	
6	Potsdam 4	61	95	.22352	104	.25101	126	.52547	0.2 0.7
			106	.73996	116	-.11231	120	.37235	
7	Potsdam 4	61	95	.19126	104	.25151	126	.55723	0.5 1.4 a
			106	.58804	116	.05984	120	.35212	
8	Potsdam 4	61	95	.18294	104	.25072	126	.56634	0.6 1.8
			106	.54780	116	.10318	120	.34902	
9	Potsdam 4	62	14	.35528	26	.48921	30	.15551	0.4 1.2
			16	.36064	19	.27603	34	.36333	
10	Potsdam 4	62	14	.29748	26	.47489	30	.22763	0.1 0.9
			16	.31537	19	.26363	34	.42100	
11	A. G. Leiden 7, A. G. Leiden 8		4810	.12501	4818= <del>4061</del>	.53648	<del>4051</del>	.33851	1.1 0.4 a, g
			4810	.19206	4819= <del>4062</del>	.51269	<del>4051</del>	.29525	
			4816	.15678	4819= <del>4062</del>	.43625	<del>4051</del>	.40697	
			4816	.09824	4823= <del>4068</del>	.35111	<del>4051</del>	.55065	
12	A. G. Leiden 8, A. G. Lund 8		4314	.31053	4326	.09796	5089	.59151	0.1 1.0 a
			4317	.00864	5077	.59825	4330	.39311	
13	Potsdam 4	80	31	.40699	40	.34240	45	.25061	2.1 0.6
			34	.25138	37	.58190	50	.16672	
14	Potsdam 4	80	31	.16245	40	.16673	45	.67082	2.2 1.1
			34	.19334	37	.41037	50	.39629	
15	Yale 9		6343	.03476	6351	.41187	6359	.55337	1.7 0.8
			6343	.39857	6351	.00555	6365	.59588	
			6343	.40354	6359	-.00756	6365	-.05694	
16	Yale 9		6343	-.14063	6351	.38224	6359	.75839	0.9 0.8
			6433	.35845	6351	-.17395	6365	.81550	
			6343	.20236	6359	.23719	6365	.56045	
			6351	.22552	6359	.54470	6365	.22978	
17	Oxford 6	2657	33245	.11337	33261	.54259	33281	.34404	1.4 1.1
			33249	.18484	33267	.13651	33275	.67865	
18	Oxford 6	2657	33245	.23938	33261	.36016	33281	.40046	0.6 0.5
			33249	.35620	33275	.43026	33282	.21354	
19	Oxford 6	2657	33245	.32512	33261	.23908	33281	.43580	0.4 1.2
			33249	.22083	33267	.26893	33275	.51024	
20	Oxford 6	2658	33324	.19320	33350	.66422	33365	.14258	0.1 0.3
			33328	.39543	33337	.16917	33374	.43540	
21	Oxford 6	2658	33324	.23642	33350	.58650	33365	.17708	0.5 0.1
			33328	.37226	33337	.21858	33374	.40916	
22	Paris 1	250	53	.34088	207	.50268	221	.15644	1.0 2.3
			53	.42193	207	.49087	231	.08720	
			184	.43688	221	.22265	227	.34047	
			184	.51185	227	.22803	231	.26012	
23	Paris 1	250	53	.22824	207	.51376	221	.25800	1.1 2.6
			53	.36182	207	.49427	231	.14391	
			184	.39982	221	.21308	227	.38710	
			184	.47162	227	.27946	231	.24892	
24	Paris 3	530	42	.35286	53	.39049	100	.25665	0.4 0.9
			47	.49038	52	.13954	99	.37008	
25	Paris 3	530	42	.31408	53	.39745	100	.28847	0.9 2.6
			47	.40813	52	.19068	99	.40119	
26	Paris 6	1197	3	.38913	12	.31357	101	.29730	1.1 0.4
			4	.29551	5	.31819	10	.38630	
27	Bordeaux 1	422	64	.18567	67	.25974	131	.55459	0.8 1.1
			71	.23821	128	.44002	132	.32177	
28	Bordeaux 2	485	26	.06923	31	.46200	34	.46877	0.1 1.2
			30	.22112	55	.41028	75	.36860	
29	Bordeaux 2	486	14	.21725	35	.46066	37	.32209	0.2 2.0
			15	.23925	32	.40140	39	.35935	
30	Bordeaux 3	944	10	.14328	11	.50517	20	.35155	0.7 1.0
			11	.28058	18	.70535	20	.01407	
			11	.38192	18	.39981	19	.21827	

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
31	Bordeaux 3	944	75	.47528	80	.30693	81	.21779	0.3 1.4
			76	.44465	79	.35480	82	.20055	
32	Bordeaux 4	275	81	.15248	85	.51715	86	.33037	0.6 0.2
			82	.12628	84	.63122	88	.24250	
33	Bordeaux 5	1126	2	.29744	78	.26642	86	.43614	0.5 0.2
			3	.18614	78	.45233	93	.36153	
34	Toulouse 7	113	15	.11118	24	.27850	33	.61032	0.1 1.9
			23	.27081	27	.36001	37	.36918	
35	Alger 1	2478	17	.31073	30	.26784	103	.42143	1.3 0.1 j
			32	.28918	85	.30574	104	.40508	
1952 II P/Wolf—Harrington									
1	Paris 7	1123	32	.15784	42	.32527	137	.51689	1.7 0.6
			35	.28384	36	.19681	146	.51935	
2	Paris 7	1123	150	.30594	158	.43812	163	.25594	0.7 0.1
			151	.25023	156	.52175	166	.22802	
3	Bordeaux 4	881	37	.24061	39	.35735	46	.40204	1.0 0.8
			38	.30510	43	.28134	44	.41356	
1952 III P/Schaumasse									
1	Oxford 5	611	16040	.38006	16073	.46217	16117	.15777	0.2 0.0
			16053	.37434	16071	.21151	16073	.41415	
2	Oxford 5	611	16149	.32885	16174	.26176	16182	.40939	0.5 0.2
			16150	.37113	16173	.35796	16184	.27091	
3	Hyderabad 10	2733	432	.65162	470	.31488	493	.03350	0.1 0.3
			433	.28026	442	.47118	476	.24856	
4	Helsingfors 3	303	81	.32476	101	.18466	104	.49058	0.3 1.1
			86	.29234	88	.26852	103	.43914	
1952 V Mrkos									
1	Helsingfors 8	1002	165	.38029	181	.42650	193	.19321	0.1 3.4 g
			166	.36171	181	.52701	193	.11128	
2	Helsingfors 8	1002	165	.39063	181	.38056	193	.22881	0.1 1.8
			166	.37073	181	.48688	193	.14239	
3	Helsingfors 8	1002	281	.16277	302	.27145	303	.56578	h, l
4	Helsingfors 8	1002	281	.17125	302	.26241	303	.56634	h, l
5	Helsingfors 8	1002	292	.44737	305	.22474	306	.32789	0.8 2.4
			292	.61588	306	.17450	312	.20962	
6	Helsingfors 8	1002	292	.47812	305	.25642	306	.26546	0.4 1.6
			292	.67228	306	.08624	312	.24148	
7	Hyderabad 10	2784	321	.44723	366	.28839	371	.26438	0.0 0.2
			323	.35846	349	.19515	369	.44639	
8	Hyderabad 10	2784	270	.12499	295	.18721	296	.68780	3.6 3.8 h
			294	.16592	296	.59413	297	.23995	
9	Hyderabad 10	2784	270	.12252	295	.19493	296	.68255	2.9 2.2 h
			294	.17771	296	.56042	297	.26187	
10	Potsdam 7	318	142	.57195	164	.24510	179	.18295	0.1 0.0
			145	.42579	153	.22415	171	.35006	
11	Potsdam 7	318	52	.24283	62	.19925	115	.55792	0.6 1.1
			70	.34083	73	.27115	101	.38802	
12	Yale 9	768	8898	.24654	8908	.41520	8916	.33826	0.4 0.6
			8902	.37575	8907	.36769	8923	.25656	
13	Paris 4	768	145b	.41078	167	.29422	174	.29500	0.7 0.4
			154	.40675	156	.41439	186	.17886	
14	Tacubaya 2	2007	215	.31728	287	.31080	316	.37192	0.1 1.6
			249	.47285	277	.34783	345	.17932	
15	Tacubaya 2	2007	215	.28025	259	.30605	316	.41370	0.0 1.7
			249	.60576	277	.23608	345	.15816	
16	Yale 14	2007	14431	.07242	14442	.64189	14456	.28569	0.1 0.0
			14442	.43614	14448	.40277	14455	.16109	
17	Yale 13	2007	13575	.52263	13582	-.01590	13597	.49327	0.0 1.5
			13579	.52763	13590	.28813	13600	.18424	
18	Yale 13	2007	13575	.33163	13582	.31589	13597	.35248	0.3 0.5
			13579	.61690	13590	.20618	13600	.17692	

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
1952 VI Peltier									
1	Greenwich 1 (71°)	2667	6395	.32435	6398	.29929	6437	.37636	0.8 1.9
			6407	.25903	6408	.32476	6424	.41621	
2	Greenwich 1 (70°)	2669	6426	.31416	6454	.24181	6470	.44403	1.0 0.0
			6440	.20246	6453	.54549	6473	.25205	
3	Greenwich 2 (73°)	2706	7455	.18331	7515	.38394	7521	.43275	0.7 2.2
			7514	.22798	7518	.39281	7522	.37921	
1952 VII P/Comas Sola									
1	Paris 4	461	4	.10788	63	.07636	72	.81876	1.0 0.4 1
			8	.13600	63	.15024	72	.71376	
			8	.27028	63	.08940	71	.64032	
			8	.30711	69	.51712	72	.17577	
2	Bordeaux 2	410	90	.31782	99	.29477	100	.38741	1.4 0.4
			93	.15888	95	.70597	106	.13515	
3	Bordeaux 5	1316	10	.22533	61	.55165	65	.22302	2.8 0.2
			23	.32691	51	.10619	61	.56690	
4	Bordeaux 2	265	1	.42623	3	.21223	4	.36154	0.4 2.4 h
			2	.77728	3	.17072	6	.05200	
1953 I Harrington									
1	Yale 4		8050	.14251	8070	.67899	8071	.17850	0.1 1.2
			8059	.22223	8061	.56332	8084	.21445	
2	Potsdam 5	156	114	.37571	118	.39310	132	.23119	1.4 1.4
			115	.27417	116	.24252	124	.48331	
3	Potsdam 5	156	119	.33022	126	.08713	136	.58265	0.5 0.2
			120	.17641	127	.31073	136	.51286	
4	Hyderabad 1	775	4210	.31714	4230	.44130	4231	.24156	0.7 0.4
			4218	.40687	4227	.36582	4242	.22731	
1953 II Mrkos									
1	Tacubaya 4	1921	129	.32214	148	.51043	161	.16743	2.1 1.1 g
			132	.36303	136	.42260	163	.21437	
2	Tacubaya 3	2274	88	.29264	98	.24638	150	.46098	0.8 0.9
			109	.36042	113	.43023	141	.20935	
3	Tacubaya 4	1921	154	.19458	180	.54985	181	.25557	2.4 0.8
			164	.29915	175	.37128	182	.32957	
4	Tacubaya 4	1921	154	.18624	180	.56752	181	.24624	0.3 0.3
			164	.28161	175	.39231	182	.32608	
5	Tacubaya 3	2274	168	.48378	190	.32319	207	.19303	1.7 0.8
			170	.18643	180	.42619	201	.38738	
6	Tacubaya 3	2274	168	.33882	190	.51621	207	.14497	0.6 0.7
			170	.24205	180	.27041	201	.48754	
7	Tacubaya 3	2274	168	.28799	190	.58311	201	.52128	1.3 0.9
			170	.26170	180	.21702	201	.52128	
1953 III Mrkos—Honda									
1	Yale 18		8646	.40111	8659	.21955	8669	.37934	2.4 3.2 d, g
			8648	.21636	8658	.51598	8664	.26766	
2	Yale 18, <i>Paris 7</i>	1926	89	.21665	8672	.36392	8681	.41943	1
3	Yale 18, <i>Paris 5</i>	1034	534	.35544	8694	.20627	8701	.43829	1
4	Paris 4	749	114	.34143	275	.22354	284	.43503	0.3 0.3
			120	.22577	137	.33083	274	.44340	
5	Yale 9		12702	.44709	12733	.13008	12766	.42283	1.2 1.3
			12711	.34348	12717	.33269	12774	.32383	
6	Yale 9		12702	.40600	12733	.17982	12766	.41418	0.0 0.2
			12711	.30138	12717	.35825	12774	.34037	
7	Helsingfors 8	945	105	.41568	132	.39272	192	.19160	2.1 1.1
			130	.28668	131	.49904	157	.21428	
8	Helsingfors 8	945	105	.36524	106	.22513	193	.40963	2.6 1.1
			130	.34964	131	.26095	157	.38941	
9	Vatican 2	872	1781	.35697	1782	.23773	1864	.40530	2.0 1.4
			1801	.21909	1813	.58096	1834	.19995	

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
10	Greenwich 1 (65°)	1632	347	.47957	394	.16049	418	.35994	0.7 0.1
			354	.15023	393	.36916	403	.48061	
11	Vatican 8	271	30676	.34315	30678	.30028	30726	.35657	0.9 0.5
			30677	.36037	30705	.40927	30727	.23036	
12	Vatican 8	271	30676	.28077	30678	.39104	30726	.32819	0.4 0.2
			30677	.44620	30705	.31158	30727	.24222	
1954 II Pajdušáková									
1	Hyderabad 1	808	3943	.40158	3977	.24800	3978	.35042	4.3 3.8 b, g, r
			3965	.33532	3972	.57233	3986	.09235	
2	Hyderabad 1	799	3703	.49955	3707	.27722	3731	.22323	0.1 1.0
			3704	.27834	3712	.33480	3713	.38686	
3	Hyderabad 3	1161	2614	.28814	2632	.27207	2638	.43979	0.4 0.3
			2617	.33176	2621	.25508	2644	.41316	
4	Hyderabad 3	1161	2614	.34375	2643	.49683	2647	.15942	0.5 1.4
			2617	.37900	2638	.33144	2644	.28956	
5	Hyderabad 4	1105	2298	.44712	2329	.17287	2338	.38001	0.1 0.4
			2308	.12822	2315	.45317	2334	.41861	
1954 VII P/Pons—Brooks									
1	Helsingfors 6	732	154	.25219	172	.29530	181	.45251	1.3 5.0
			171	.36243	179	.26194	182	.37563	
2	Helsingfors 6	734	131	.09063	165	.77336	191	.13601	0.2 0.4
			132	.06351	164	.57678	181	.35971	
3	Hyderabad 12	3460	565	.14341	590	.66503	621	.19156	0.7 0.3
			589	.52877	606	.12472	622	.34651	
4	Hyderabad 10	3175	218	.38249	222	.44014	293	.17737	0.0 0.0 s
			219	.12200	221	.23094	259	.64706	
5	Helsingfors 8		11	.33318	38	.30606	40	.36076	0.6 0.8 t
			23	.21055	31	.64498	39	.14447	
6	Helsingfors 8		11	.30394	38	.31398	40	.38208	0.2 0.6 t
			23	.18205	31	.61193	39	.20602	
7	Helsingfors 8		11	.28688	38	.32004	40	.39308	0.3 0.5 t
			23	.16677	31	.58911	39	.24412	
1954 VIII Vozárová									
1	Greenwich 1 (65°)	813	2349	.39910	2190	.25051	2193	.35039	1.8 0.5 g, u
	(66°)		2350	.08765	2361	.78683	2400	.12552	
2	Greenwich 1 (68°)	1785	2938	.21215	2949	.06498	3145	.72287	0.0 0.4 v
	(69°)		2938	.21539	3143	.12763	3145	.65698	
3	Boss GC								
4	Greenwich 1 (70°)	1787	3346	.38868	3383	.31694	3386	.29438	0.4 0.1 x
			3372	.28897	3373	.56164	3382	.14939	
5	Greenwich 2 (83°)	4873	1376	.37532	1382	.61967	1386	.21296	0.5 0.7
			1380	.16737	1382	.61967	1386	.21296	
6	Greenwich 2 (85°)	5547	1096	.23289	1128	.36103	1129	.40608	1.0 0.6
			1102	.27199	1104	.31172	1141	.41629	
7	Greenwich 2 (82°)	4485	2630	.54216	2656	.31010	2674	.14774	0.6 0.5
			2631	.27458	2654	.12640	2655	.59902	
8	Greenwich 2 (82°)	4485	2630	.57100	2654	.02359	2655	.61472	0.2 0.2
			2631	.36169	2654	.02359	2655	.61472	
9	Greenwich 2 (79°)	3174	5297	.14528	4242	.61466	4264	.24006	1.7 1.6
	(80°)		5298	.43407	4245	.14672	4253	.41921	
10	Greenwich 2 (79°)	3174	5297	.13496	4242	.67176	4264	.19328	1.3 1.7
	(80°)		5298	.50821	4245	.09854	4253	.39325	
11	Greenwich 2 (77°)	4570	5972	.48522	5985	.24166	5988	.10956	1.0 0.2
			5978	.64878	5985	.24166	5988	.10956	
12	Greenwich 2 (77°)	4570	5972	.54610	5987	.03238	5994	.42152	1.7 0.1
			5978	.78280	5985	.15320	5988	.06400	
1954 X Abell									
1	Greenwich 2 (84°)	4786	958	.37873	969	.26370	981	.35757	0.1 2.2
			968	.50689	970	.22589	975	.26722	
2	Greenwich 2 (84°)	4786	958	.34741	969	.24794	981	.40465	2.4 2.7
			968	.43436	970	.24451	975	.32113	

No.	Catalogue	Plate	Star Numbers and Dependences						Note
3	Greenwich 2 (84°)	4818	981	.33376	999	.23911	1002	.42713	0.2 3.6
			988	.28617	989	.12055	1001	.59328	
4	Greenwich 2 (84°)	4818	1023	.40911	1025	.24571	639	.34518	0,9 0.0
	(85°)		1024	.22459	624	.68124	637	.09417	
5	Greenwich 2 (86°)	4813	392	.22769	399	.33896	401	.43335	0.1 0.5
			398	.48449	451	.20508	456	.31043	
1954 XII Kresák — Peltier									
1	Tacubaya	1089	899	.35878	976	.35972	1008	.28150	2.0 0.1 k
			925	.24311	958	.44069	975	.31620	
1955 III Mrkos									
1	Helsingfors 2	207	49	.16235	67	.09890	93	.73875	0.3 0.9 g, y
			50	.10777	66	.37801	104	.51422	
2	Helsingfors 2	207	50	.11184	92	.33587	93	.55229	0.3 0.7 y
			66	.30219	75	.11205	104	.58576	
3	Geschichte		1220	.30039	1222	.10834	1227	.59127	1.8 3.4 l, n
			1222	.42169	1223	.18410	1230	.39421	
4	Yale 4		2155	.13670	2174	.04185	2178	.82145	1.6 0.2 d
			2171	.42240	2172	.23565	2183	.34195	
5	Yale 4		2210	.31256	2227	.29486	2229	.39258	0.5 0.3
			2214	.45893	2227	.40029	2229	.14078	
6	Yale 4		2210	.18255	2227	.57120	2229	.09934	0.3 0.0
			2214	.26804	2227	.63262	2229	.09934	
7	Yale 4		2255	.33696	2268	.27522	2284	.38782	1.1 0.4
			2270	.57831	2271	.32556	2284	.09613	
8	Yale 4		2255	.19095	2268	.33167	2284	.47738	1.2 0.3
			2270	.50329	2271	.19171	2284	.30500	
9	Vatican 7	394	31659	.10520	31728	.39624	31728	.49856	0.1 0.3 z
			31664	.25886	31690	.24142	31787	.49972	
10	Catania 6	920	29	.29081	32	.25636	56	.45233	1.7 1.5
			31	.46653	48	.34823	60	.18524	
1955 IV Bakharev — Macfarlane — Krienke									
1	Yale 24		13656	.10333	13673	.39126	13683	.50541	0.0 0.5
			13658	.43585	13682	.33633	13704	.22782	
2	Potsdam 7	311	87	.05110	100	.79812	108	.15078	0.2 0.2
			94	.10070	100	.60072	107	.29858	
3	Potsdam 7	311	43	.32868	64	.36412	79	.30720	1.1 1.5
			57	.21909	61	.58730	75	.19361	
4	Vatican 6	585	51558	.26597	51561	.33478	51608	.39925	0.3 0.8
			51559	.54643	51591	.19313	51592	.26044	
5	Vatican 6	585	51643	.21428	51650	.46412	51671	.32160	0.6 0.2
			51644	.27936	51661	.38516	51662	.33548	
6	Vatican 5	678	33492	.18549	33495	.40018	33542	.41433	0.0 0.0
			33494	.39692	33517	.39776	33538	.20532	
7	Vatican 4	766	31923	.42758	32006	.33230	32026	.24012	0.3 0.0
			31924	.19676	31989	.39905	32002	.40419	
8	Vatican 3	856	30050	.27218	30070	.46054	30096	.26728	0.2 2.2
			30052	.18657	30069	.66879	30077	.14464	
9	Vatican 4	764	30673	.34904	30675	.26642	30719	.38454	1.5 0.3
			30674	.32504	30690	.38841	30703	.28655	
1955 V Honda									
1	Vatican 4	713	15738	.39044	15754	.11712	15802	.49244	0.0 0.6
			15752	.40358	15772	.19368	15787	.40274	
2	Greenwich 1 (68°)	2423	2057	.39534	2069	.45521	2088	.14945	0.1 0.0
			2058	.40387	2068	.25886	2079	.33727	
3	Greenwich 2 (81°)	4352	2868	.39471	2913	.35333	2939	.25196	0.2 0.0 h
			2894	.54049	2896	.22215	2932	.23736	
4	Greenwich 1 (65°)	359	4594	.23036	4595	.05186	4620	.71778	0.2 0.2
			4600	.19696	4613	.13726	4621	.66578	
5	Helsingfors 6	678	22	.28233	53	.36474	59	.35293	0.5 0.6
			42	.04118	43	.36902	52	.58980	
6	Helsingfors 6	680	18	.16162	34	.35425	45	.48413	1.8 1.6
			19	.40328	43	.34793	54	.24879	

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
1955 VII P/Perrine — Mrkos									
1	Bordeaux 4	225	61	.34914	77	.52439	78	.12647	1.0 2.4 c, g
			65	.21125	67	.50472	83	.28404	
3	Bordeaux 4	262	2	.40012	25	.38087	110	.21900	0.4 1.3 c
			6	.59289	12	.31442	122	.09268	
			9	.43552	21	.23801	113	.32647	
4	Bordeaux 4	262	169	.31842	194	.31264	211	.36894	0.7 1.4 c
			177	.13676	186	.33286	198	.53038	
			181	.24956	184	.46734	207	.28310	
6	Toulouse 7	67	17	.26044	20	.24746	57	.49210	0.7 0.4 c
			19	.42084	32	.22428	63	.35488	
			21	.47602	31	.20983	65	.31415	
7	Alger 1	2385	32	.29332	50	.16340	51	.54328	0.4 0.2 c, h
			38	.27760	39	.26337	53	.45903	
8	Alger 1	2385	32	.25611	50	.21235	51	.53154	0.5 0.0 c, j
			38	.23990	39	.24927	53	.51083	
9	Alger 1	2385	79	.36096	199	.24648	214	.39256	1.1 1.2 c
			88	.26571	200	.55017	216	.18412	
1957 III Arend—Roland									
1	Yale 25		473	.68477	483	.23349	490	.08174	
2	Yale 25		473	.81977	483	.03830	490	.14193	
3	Yale 25		458	.56312	473	.17406	482	.26282	
4	Yale 25		458	.64252	473	.06929	482	.28820	
5	Yale 25		446	.51489	458	.24029	469	.24482	
6	Yale 25		446	.62513	458	.14844	469	.22643	
7	Yale 25		436	.27343	441	.42041	454	.30616	
8	Yale 25		436	.28861	441	.48449	454	.22689	
9	Yale 25		417	.27915	432	.30463	437	.41622	
10	Yale 25		417	.30112	432	.41251	437	.28636	
11	Yale 18		229	-.01370	246	-.33998	247	1.35368	l
12	Yale 18		229	.02733	246	-.25616	247	1.22883	l
13	Yale 19		188	.69510	201	.35693	206	-.05202	e, l
14	Yale 19		188	.73469	201	.26291	206	.00240	
15	Yale 19		188	.81250	201	.08404	206	.10346	
16	Yale 19		185	.79427	188	.10579	192	.09994	l
22	Toulouse 1	4	37	.33701	70	.19768	89	.46531	0.8 1.0 c
			38	.49766	62	.31529	73	.18706	
23	Toulouse 1	4	37	.32471	70	.25343	89	.42186	0.8 0.9 c
			38	.27901	62	.46761	73	.25338	
24	Toulouse 2	4	2	.28938	18	.23749	59	.47313	1.0 0.5 c
			19	.30163	49	.44730	62	.25107	
25	Alger 3	2232	8	.13821	13	.61717	19	.24462	0.1 1.3 c
			13	.73681	17	.12088	20	.14231	
26	Alger 3	2232	8	.17108	13	.59628	20	.23264	0.1 1.1 c
			13	.73153	17	.11435	19	.15411	
27	Alger 3	2232	4	.41013	13	.26636	24	.32351	0.6 0.9 c
			5	.31894	9	.27010	20	.41097	
28	Alger 3	2232	4	.41406	13	.26052	24	.32542	0.8 1.2 c
			5	.31786	9	.27335	20	.40879	
29	Alger 3	2232	4	.22282	10	.46422	18	.31296	0.8 0.1 c
			5	.34331	9	.44219	24	.21448	
30	Alger 3	2232	4	.22140	10	.47186	18	.30673	1.0 0.4 c
			5	.33735	9	.45375	24	.20890	
			6	.31497	18	.48205	21	.20298	
32	Yale 21		36	.36029	42	.13374	45	.50598	c
1957 V Mrkos									
1	Yale 24		6157	.56199	6159	.14824	6174	.28977	0.1 0.4 g
			6149	.18700	6159	.27759	6166	.53540	
2	Yale 24		6249	-.12895	6251	.91161	6253	.21734	l
3	Yale 24		6249	-.14573	6251	.88695	6253	.25878	l
4	Yale 25		4668	.80421	4674	-.65157	4683	.84737	l
5	Yale 25		4668	.79625	4674	-.65590	4683	.85965	l
6	Yale 18		4938	.58494	4939	-.35343	4947	.76849	l
7	Yale 18		4938	.63466	4939	-.41555	4947	.78089	l



No.	Catalogue	Plate	Star Numbers and Dependences						Note	
8	Yale 19		4941	-.36285	4944	.70918	4947	.65367	0.2	0.2
			4944	.55610	4947	.34835	4956	.09555		
9	Yale 19		4951	.29424	4954	.14489	4968	.56086	0.5	0.2
			4951	.15919	4957	.20440	4966	.63641		
10	Yale 19		4967	.14080	4977	.22269	4984	.63651		
11	Yale 19		4981	.23828	4990	.03111	4997	.73061	0.5	0.3
			4981	.17253	4995	.88950	4996	-.06203		
1958 IV P/Oterma										
1	San Fernando 6	3905	70	.22917	76	.20793	91	.56291	0.1	0.5
			78	.29897	84	.42021	91	.28082		
2	San Fernando 6	3905	70	.04764	78	.17605	91	.77631	0.1	0.2
			76	.18091	87	.03684	91	.78225		
3	San Fernando 6	3905	70	-.01661	76	.14401	91	.87260	0.1	0.1
			78	.14237	87	.02103	91	.83660		
1959 I Burnham—Slaughter										
1	Bordeaux 7	1457	40	.07641	211	.51461	225	.40898	0.5	1.1
			211	.28233	218	.19717	221	.52050		
2	Bordeaux 7	1457	4	.50342	16	.18077	190	.31581	0.5	0.7
			10	.60076	187	.27929	196	.11995		
3	Bordeaux 7	1669	74	.52252	88	.13749	204	.33999	0.1	0.5
			80	.24025	83	.69301	190	.06674		
4	Bordeaux 5	1186	424	.53398	809	.13989	839	.32613	0.3	0.2
			810	.29581	426	.39358	839	.31060		
5	Bordeaux 5	1186	363	.36260	384	.17082	391	.46658	0.1	0.1
			371	.28592	379	.52831	399	.18577		
6	Bordeaux 5	1186	324	.16586	330	.10164	346	.73249	0.4	0.1
			329	.34119	332	.28813	363	.37068		
7	Bordeaux 4	965	165	.30888	179	.12956	196	.56156	0.1	0.4
			170	.24500	183	.50362	197	.25137		
8	Bordeaux 4	965	170	.37650	177	.19562	198	.42788	0.1	1.0
			170	.29139	183	.44457	197	.26404		
9	Bordeaux 4	965	163	.18610	179	.49129	183	.32261	0.4	0.3
			170	.44047	177	.29886	192	.26067		
10	Paris 7	1915	528	.30896	552	.29892	566	.39212	0.7	0.1
			540	.25774	544	.50045	573	.24182		
11	Paris 7	1915	542	.13661	571	.37386	573	.48953	1.3	1.0
			551	.11586	566	.65527	586	.22887		
12	Paris 7	1915	571	.36427	594	.20213	604	.43360	1.0	1.0
			575	.36890	591	.40259	612	.22852		
13	Paris 7	1915	306	.27828	329	.46622	345	.25550	0.5	0.3
			313	.30448	326	.26740	340	.42812		
14	Paris 7	1915	334	.09404	344	.42410	351	.48186	0.0	0.6
			336	.39757	349	.30356	353	.29887		
15	Paris 7	1915	331	.37762	355	.35618	362	.26620	0.3	0.2
			336	.27148	349	.41539	351	.31312		
16	Paris 7	1923	38	.46925	79	.28598	80	.24477	1.2	1.3
			45	.29705	65	.46782	84	.23513		
17	Paris 6	1007	1	.36909	13	.18180	18	.44911	0.2	0.2
			4	.26958	6	.34672	19	.38370		
18	Vatican 7	380	22870	.45229	22891	.30037	22932	.24734	0.4	0.2
			22873	.32319	22887	.34157	22906	.33524		
19	Vatican 7	380	22870	.41895	22891	.36257	22932	.21848	0.4	0.3
			22873	.22906	22887	.29709	22906	.33710		
1959 IV Alcock										
1	Potsdam 4	108	33	.25018	38	.48936	64	.26046	0.2	1.5
			34	.34822	47	.46665	53	.18513		
2	Potsdam 4	108	33	.16335	42	.58673	64	.24992	0.5	1.8
			34	.28950	47	.40052	53	.30998		
3	Potsdam 4	108	33	.17175	42	.53283	64	.29542	0.6	1.8
			34	.26174	47	.37181	53	.36645		
4	Potsdam 4	108	119	.17980	138	.33351	146	.48669	0.5	1.2
			121	.33730	146	.29453	148	.36818		
5	Potsdam 4	108	119	.15006	138	.32129	146	.52865	0.5	0.9
			121	.29621	146	.36431	148	.33948		

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
6	Oxford 1	1990	35938	.35323	35957	.15815	35984	.48862	2.4 0.7
			35954	.40302	35968	.37048	35984	.22650	
7	Oxford 1	1990	35938	.41171	35957	.28362	35984	.30467	1.8 0.3
			35922	.28902	35967	.33748	35969	.37349	
8	Oxford 1	1990	35923	.26677	35957	.31182	35966	.42142	0.6 1.3
			35938	.29617	35939	.20723	35968	.49661	
9	Oxford 2	1953	36282	.14497	36292	.19729	36297	.65774	0.1 0.1
			36287	.30809	36292	.23831	36297	.45360	
10	Oxford 2	1953	36282	.20157	36292	.28415	36297	.51428	0.2 0.3
			36287	.42814	36292	.34116	36297	.23069	
11	Oxford 2	1953	36275	.36417	36297	.46489	36298	.17093	1.7 1.4
			36282	.28045	36292	.41058	36297	.30896	
12	Oxford 6	1451	35612	.15109	35637	.58364	35656	.26527	0.3 0.3
			35621	.19915	35631	.35943	35643	.40542	
			35628	.32186	35631	.43192	35657	.24622	
13	Oxford 6	1408	39725	.32923	39735	.27864	39774	.39213	0.2 1.7
			39735	.25555	39737	.49729	39773	.24716	
			39736	.70039	39748	.10655	39772	.19306	
14	Paris 1	270	64	.27623	83	.36378	86	.35999	0.2 0.4
			70	.24566	80	.42712	84	.32732	
15	Paris 1	270	79	.26334	82	.39068	228	.34599	0.4 0.4
			79	.41164	84	.36230	93	.22606	
16	Paris 2	685	5	.42397	174	.44347	182	.13256	
17	Paris 2	685	5	.14589	174	.49553	182	.35858	0.3 0.5
			9	.34315	174	.49161	188	.16524	
1959 VI Alcock									
1	Bordeaux 6	1291	386	.36885	412	.44606	426	.18509	0.7 0.4
			391	.33401	411	.32510	412	.34090	
2	Bordeaux 6	1291	387	.14845	402	.39350	422	.45805	0.7 1.5
			391	.32787	412	.47387	426	.19826	
3	Yale 22		4985	.29213	5007	.45253	5036	.25534	0.8 3.9
			5007	.34049	5010	.96254	5017	.30303	
4	Yale 22		5094	.29856	5111	.05864	5114	.64271	4.7 2.5
			5101	.56162	5111	.09459	5120	.34379	
			5101	.61454	5111	.19045	5130	.19501	
5	Yale 22		5101	.61692	5111	.16847	5130	.21461	m
1959 VII Burnham									
1	Paris 6	1508	19	.30383	26	.19792	35	.49825	0.3 0.3
			19	.24988	26	.37394	36	.37618	
			19	.32067	36	.35272	128	.32661	
2	Paris 6	1508	20	.26737	31	.27782	37	.45481	0.9 0.5
			24	.37834	27	.26835	36	.35331	
1959 VIII P/Giacobini—Zinner									
1	Paris 1	680	286	.48755	302	.22898	308	.28347	0.5 0.9
			288	.47925	301	.31935	305	.20139	
2	Paris 1	680	286	.41549	302	.30693	308	.27758	1.1 1.3
			288	.43749	301	.25898	305	.30353	
3	Toulouse 6	133	155	.34538	194	.39692	220	.25770	0.1 0.1
			157	.39761	187	.27265	223	.32974	
4	Toulouse 6	133	155	.33489	194	.40933	220	.25578	0.1 1.3
			157	.39814	187	.26211	223	.33975	
1959 IX Mrkos									
1	San Fernando 4	989	107	.13042	134	.39308	140	.47650	0.3 0.8
			112	.28088	140	.44320	144	.27592	
2	San Fernando 6	216	96	.27739	121	.45652	128	.26608	0.0 0.4
			101	.46908	118	.26320	133	.26772	
3	San Fernando 6	216	96	.20301	121	.52122	128	.27577	0.2 0.3
			101	.43429	118	.23877	133	.32694	
4	San Fernando 8	2784	30	.28237	45	.24104	49	.47659	0.4 0.7
			30	.42946	49	.24990	54	.32065	

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
5	San Fernando 8	2784	30 .21938	45 .27072	49 .50991			0.1 1.2	
			30 .38408	49 .25608	54 .35984				
6	Tacubaya 4	2397	32 .35203	47 .37945	78 .26852			0.3 0.9	
			32 .36737	61 .34496	65 .28767				
7	Tacubaya 4	2397	32 .34553	47 .37207	78 .28241			0.4 0.5	
			32 .34909	61 .34884	65 .30207				
8	Tacubaya 3	2352	86 .37616	118 .31362	122 .31021			0.3 1.3	
			89 .23621	101 .18129	114 .58250				
9	Tacubaya 3	2352	86 .36759	118 .31660	122 .31581			0.5 1.0	
			89 .22396	101 .18099	114 .59505				
10	Tacubaya 1	2354	471 .42806	502 .28370	540 .28823			0.4 0.1	
			490 .47286	502 .34610	542 .18103				
11	Tacubaya 1	2354	471 .39819	502 .28717	540 .31464			0.2 0.2	
			490 .45683	502 .32718	542 .21599				
1960 II Burnham									
1	San Fernando 2	1477	26 .13874	36 .50364	42 .35762			0.8 0.4	
			30 .36003	36 .39008	55 .24989				
2	San Fernando 2	1477	26 .37555	36 .41713	55 .20732			0.5 0.0	
			30 .32430	36 .39464	42 .28106				
3	San Fernando 4	1477	26 .31695	36 .23846	39 .44458			0.5 0.3	
			30 .46703	36 .32004	42 .21293				
4	San Fernando 2	1357	79 .30092	85 .25583	118 .44325			0.6 0.3	
			89 .37338	101 .15301	105 .47361				
5	San Fernando 2	1357	36 .26467	63 .29510	67 .44024			1.0 0.2	
			51 .30994	55 .37510	78 .31496				
6	San Fernando 2	1357	36 .32996	63 .24786	67 .42218			0.9 0.7	
			51 .35441	55 .39209	78 .25350				
7	San Fernando 2	1357	36 .39496	63 .20059	67 .40445			0.9 0.0	
			51 .39986	55 .40753	78 .19260				
8	San Fernando 3	1422	8 .32915	26 .42207	38 .24878			1.5 2.9	
			15 .44943	18 .21127	41 .33930				
9	San Fernando 3	1422	8 .42993	26 .23080	38 .33927			1.8 1.6	
			15 .50084	18 .22017	41 .27899				
10	San Fernando 4	1369	111 -.01531	122 .27330	126 .74202			0.8 0.2	
			116 -.01721	122 .26110	126 .75610				
			116 .20993	122 .39310	132 .39697				
11	San Fernando 4	1369	111 .07122	122 .22052	126 .70826			2.7 0.7	
			116 .07999	122 .27722	126 .64279				
			116 .27286	122 .38940	132 .33774				
12	San Fernando 4	1369	59 .54804	62 .17014	88 .28182			0.4 0.5	
			62 .41022	70 .38097	79 .20881				
13	San Fernando 4	1369	59 .54641	62 .23298	88 .22060			0.2 0.5	
			62 .51735	70 .36876	79 .11389				
14	Yale 27		11671 .14741	11709 .53531	11732 .31728			0.1 0.1	
			11709 .53411	11714 .59007	11732 -.12418				
1960 III P/Schaumasse									
1	Oxford 6	494	10147 .31004	10174 .33364	10175 .35632			0.5 0.5	
			10148 .38465	10159 .24436	10182 .37099				
2	Oxford 4	1329	8610 .25480	8622 .51239	8624 .23281			0.8 0.4	
			8614 .19155	8618 .38812	8623 .42033				
3	Oxford 4	1329	8610 .24247	8622 .48917	8624 .26836			0.6 0.7	
			8614 .20758	8618 .33855	8623 .45387				
4	Oxford 4	1330	8863 .26920	8900 .49478	8916 .23602			0.4 0.3	
			8884 .44959	8891 .22219	8907 .32822				
5	Oxford 4	1330	8863 .26907	8900 .45323	8916 .27770			0.6 0.4	
			8884 .41057	8891 .25442	8907 .33502				
1961 II Candy									
1	Vatican 3	864	33959 .28340	33963 .29791	34073 .41869			0.1 1.9	
			33961 .47663	34032 .23305	34074 .29032				
2	Vatican 3	864	33959 .33168	33963 .35113	34073 .31720			0.3 1.8	
			33961 .56701	34032 .21291	34074 .22008				
3	Vatican 8	353	59917 .24831	60000 .34396	60001 .40774			0.4 0.1	
			59919 .32466	59957 .42292	60039 .25242				

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
4	Vatican 8	353	59917	.36225	60000	.28336	60001	.35439	0.3 0.1
			59919	.40354	59957	.41228	60039	.18418	
5	Hyderabad 10	2765	190	.30159	219	.34174	268	.35667	0.6 0.1
			215	.18623	217	.40464	246	.40913	
6	Hyderabad 10	2765	190	.34901	219	.35498	268	.29602	0.3 0.1
			215	.48990	217	.42547	246	.08462	
1961 V Wilson—Hubbard									
1	Helsingfors 3	264	29	.27053	46	.42573	72	.30374	0.8 0.5
			39	.53190	56	.12132	74	.34678	
2	Helsingfors 3	264	29	.27620	46	.42171	72	.30209	0.3 0.6
			39	.53377	56	.12981	74	.33642	
3	Helsingfors 3	264	29	.31698	46	.39680	72	.28622	0.1 0.1
			39	.65132	56	.18597	74	.26271	
4	Helsingfors 3	264	29	.33616	46	.38526	72	.27858	0.8 0.1
			39	.56113	56	.21079	74	.22808	
5	Helsingfors 3	264	29	.34182	46	.38122	72	.27696	0.2 0.1
			39	.56179	56	.22074	74	.21747	
6	Helsingfors 3	257	154	.37714	178	.24298	189	.37988	1.4 1.3
			137	.21958	168	.35041	202	.43001	
7	Helsingfors 3	257	137	.27650	168	.32818	202	.39532	1.7 1.0
			154	.38928	178	.34941	189	.26132	
8	Helsingfors 2	248	118	.22966	161	.54007	184	.23027	0.3 0.7
			130	.26143	158	.39293	188	.34564	
9	Helsingfors 2	248	140	.10441	160	.42113	174	.47446	0.2 0.6
			118	.36778	161	.43296	184	.19926	
10	Helsingfors 2	248	130	.33208	158	.49076	188	.17716	0.2 0.4
			140	.39040	160	.32224	174	.28736	
11	Helsingfors 2	245	118	.45507	161	.36566	184	.17927	0.2 0.4
			130	.37794	158	.55191	188	.07015	
12	Helsingfors 2	245	140	.57195	160	.26061	174	.16744	2.2 0.2
			137	.20042	168	.36628	193	.43330	
13	Helsingfors 2	245	138	.26091	179	.43454	180	.30455	0.2 0.1
			137	.21972	168	.34641	193	.43387	
14	Helsingfors 2	245	138	.27724	179	.44018	180	.28258	0.4 0.7
			137	.52292	180	.23278	177	.24430	
15	Helsingfors 2	245	138	.51031	166	.15363	179	.33606	0.1 0.5
			137	.53409	180	.22006	177	.24585	
16	Helsingfors 2	242	138	.51414	166	.17226	179	.31360	0.0 0.3
			137	.54616	180	.20544	177	.24840	
17	Helsingfors 2	242	138	.51776	166	.19448	179	.28776	1.0 1.0
			8	.23659	13	.36137	22	.40204	
18	Helsingfors 2	242	12	.55421	11	.16415	23	.28164	1.2 0.9
			8	.24649	13	.35680	22	.39671	
19	Helsingfors 2	242	12	.55623	11	.17572	23	.26805	1.3 0.7
			8	.26134	13	.34908	22	.38958	
20	Helsingfors 2	242	12	.55711	11	.19516	23	.24773	0.7 0.8
			8	.38533	13	.29195	22	.32272	
21	Helsingfors 2	242	12	.58775	11	.33871	23	.07354	1.2 1.0
			8	.39929	13	.28447	22	.31624	
21	Helsingfors 2	242	12	.58725	11	.35771	23	.05504	0.8 1.0
			8	.53342	13	.22245	22	.24413	
			12	.61904	11	.51398	23	-.13302	
1961 VII P/Schwassmann—Wachmann									
1	Alger 7	682	18	.35147	26	.33732	33	.31121	0.2 0.7
			21	.26763	23	.42333	29	.30904	
2	Alger 7	682	18	.36143	26	.33751	33	.30106	0.3 0.7
			21	.26850	23	.44391	29	.28759	
1961 VIII Seki									
1	Bordeaux 4	1039	17	.27217	21	.16384	27	.56399	1.2 1.0
			18	.16272	20	.35116	30	.48612	
2	Bordeaux 4	1039	17	.29216	21	.17407	27	.53377	0.7 1.0
			18	.19184	20	.34453	30	.46363	

No.	Catalogue	Plate	Star Numbers and Dependences						Note
3	Bordeaux 5	1094	6	.25313	13	.35564	14	.39123	1.1 0.2
			7	.41356	10	.22525	17	.36119	
4	Bordeaux 5	1098	78	.48827	84	.22834	169	.28339	0.4 0.2
			78	.63381	162	.10599	172	.26020	
			78	.70596	162	.07294	169	.36698	
			84	.71934	162	.20761	172	.07305	
1962 IV Honda									
1	Vatican 2	875	3070	.33416	3087	.30889	3116	.35695	3.2 5.7
			3078	.33851	3080	.39630	3124	.26519	
2	Greenwich 1	561	233	.38270	259	.31369	262	.30361	0.3 0.8
			239	.44279	248	.25826	265	.29895	
3	Greenwich 1	561	233	.24162	259	.31868	262	.43970	1.1 0.7
			239	.29278	248	.25468	265	.45254	
4	Greenwich 2	5081	8385	.42860	8844	.24062	8852	.33078	0.9 0.4
			8387	.38516	8412	.32373	8865	.29111	
5	Greenwich 2	5081	8385	.31125	8844	.39756	8852	.29119	1.0 0.7
			8387	.25576	8412	.39786	8865	.34638	
1962 V P/Tuttle—Giacobini—Kresák									
1	San Fernando 2	4235	500	.10681	523	.25708	531	.63611	0.5 0.4
			501	.37621	531	.35026	543	.27353	
2	San Fernando 2	4235	446	.28110	507	.37614	521	.34276	0.5 0.9
			460	.41810	503	.36370	535	.21820	
3	Toulouse 4	66	211	.39392	232	.33366	250	.27242	0.9 0.1
			219	.31959	228	.40386	241	.27655	
4	Yale 19 AGK2 12		3534	.25606	3545	.27613	1040	.46781	0.5 0.2
			3536	.45246	1039	.43461	3553	.11293	
5	Yale 19 AGK2 12		3534	.14297	3545	.48860	1040	.36843	0.3 0.3
			3536	.45876	1039	.26667	3553	.27457	
6	Yale 19 AGK2 12		3542	.34167	3546	.20886	3554	.44947	0.6 0.1
			1031	.33922	3551	.39518	3555	.26560	
7	Yale 18		3530	.35360	3549*	.31493	3564	.33147	0.4 0.5
			3537G	.50952	3549*	.34536	3558	.14512	
8	Yale 18		3537G	.48876	3549*	.37892	3558	.13232	
9	Yale 24		4814	.38238	4839	.37311	4841	.24451	0.1 0.0
			4823	.50133	4830	.29167	4853	.20700	
10	Potsdam 4	63	31	.33912	32	.37785	55	.28303	0.5 0.5
			31	.19766	38	.55233	47	.25001	
			32	.30355	35	.49458	64	.20187	
11	Catania 1	1527 1525	62	.41918	74	.39380	22	.18702	0.7 0.2
			63	.16216	70	.58281	79	.25503	
12	Catania 1	1527 1525	62	.26886	74	.43612	22	.29502	1.2 0.5
			63	.23756	70	.27281	79	.48963	
13	Catania 2	2390	11	.26887	32	.38757	44	.34356	0.2 0.4
			27	.32720	29	.42837	42	.24443	
14	Catania 2	2390	82	.36783	88	.41818	103	.21399	0.3 3.8
			86	.50734	94	.45203	101	.04063	
15	Catania 2	2390	82	.30168	88	.40404	103	.29428	0.6 4.0
			86	.37298	94	.51968	101	.10734	
16	Catania 2	2390	82	.28887	88	.40190	103	.30923	0.5 3.9
			86	.34823	94	.53187	101	.11990	
17	Hyderabad 10	3373	33581	.25477	33605	.25997	33611	.48526	0.2 0.9
			33582	.29429	33610	.33307	33618	.37264	
18	Oxford 3	1811	37281	.35286	37293	.26345	37316	.38369	0.2 0.5
			37274	.32284	37280	.26121	37318	.41595	
19	Oxford 4	1813	40438	.19833	40471	.31034	40483	.49133	1.4 0.8
			40447	.25254	40463	.30975	40497	.43771	
20	Oxford 4	1813	40438	.36069	40471	.25522	40483	.38409	0.3 1.6
			40447	.30870	40463	.41653	40497	.27477	
21	Paris 4	980	14	.13513	23	.19666	26	.66821	0.4 0.7
			18	.31267	22	.41190	34	.27543	
			19	.46834	22	.21321	34	.31845	

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
22	Paris 4	980	86	.36368	94	.26683	95	.36949	0.9 0.8
			89	.55490	93	.23165	96	.21345	
23	Paris 4	980	86	.33854	94	.28773	95	.37373	1.0 0.8
			89	.57927	93	.15667	96	.26406	
24	Yale 18 AGK2 11		5730	.42171	1564	.16269	5740	.41560	0.3 0.1
			5734	.27630	5738	.51572	1564	.20798	
25	Yale 18 AGK2 11		5730	.40189	1564	.11462	5740	.48349	0.3 0.3
			5734	.22467	5738	.57560	1564	.19973	
1962 VIII Humason									
1	Oxford 1	2057	1684	-.04811	1693	.65552	1706	.39259	1.5 0.3
			1686	.32591	1706	.50271	1708	.17138	
2	Oxford 1	2057	1684	-.02790	1693	.63230	1706	.39560	0.8 0.3
			1686	.32770	1706	.51279	1708	.15951	
3	Oxford 2	2058	1505	.26326	1520	.22356	1539	.51318	0.1 0.4
			1507	.18213	1530	.54774	1540	.27013	
4	Oxford 2	2058	1505	.26984	1520	.21404	1539	.51612	0.3 0.6
			1507	.18241	1530	.55782	1540	.25977	
5	Oxford 2	897	1255	.47778	1264	-.00302	1273	.52524	0.5 0.1
			1256	.32909	1270	.36775	1273	.30316	
6	Oxford 2	897	1255	.48940	1264	-.01410	1273	.52470	0.4 0.2
			1256	.32900	1270	.37825	1273	.29275	
7	Oxford 2	897	1255	.30802	1262	.48443	1270	.20755	
8	Oxford 2	897	1255	.30438	1262	.49843	1270	.19719	
9	Oxford 6	2601	336	.41317	371	.38966	382	.19717	0.4 0.4
			337	.41962	350	.31792	390	.26246	
10	Oxford 6	2601	336	.42054	371	.39252	382	.18694	0.1 1.4
			337	.41859	350	.32858	390	.25283	
11	Bordeaux 7	1725	45	.28888	62	.41420	72	.29692	0.0 0.3
			49	.40803	60	.17347	70	.41850	
12	Bordeaux 7	1725	45	.29486	62	.39738	72	.30776	0.2 0.9
			49	.41809	60	.14521	70	.43670	
13	Bordeaux 7	1725	45	.36839	62	.26420	72	.36741	0.5 0.1
			49	.40185	60	.38958	70	.20857	
14	Bordeaux 7	1725	60	.24511	72	.38040	200	.37449	0.6 2.3
			62	.37730	204	.40659	220 <sup>a</sup>	.21611	
15	Yale 20 AGK2 14		8225	.46449	8233	.37327	8234	.16224	0.8 0.6
			1	.47782	3058	.26932	8237	.25286	
16	Yale 20 AGK2 14		8225	.46470	8233	.37217	8234	.16313	0.9 0.5
			1	.47882	3058	.26919	8237	.25199	
17	Yale 21 AGK2 15		5883	.35699	5889*	.34309	5894	.29992	0.3 0.7
			5882	.31952	2990	.38189	5894	.29859	
18	Yale 21 AGK2 15		5883	.37035	5889*	.33349	5894	.29616	0.2 0.3
			5882	.33614	2990	.35631	5894	.30755	
19	Yale 21 AGK2 15		5883	.37471	5889*	.33036	5894	.29493	0.2 0.4
			5882	.34151	2990	.34808	5894	.31041	
20	Yale 21 AGK2 15		5883	.38048	5889*	.32618	5894	.29334	0.4 0.5
			5882	.34853	2990	.33726	5894	.31421	
21	Yale 17		8066	.36547	8073	.21161	8078	.42292	
22	Yale 17		8066	.38356	8073	.21751	8078	.39893	
23	Yale 17 San Fernando 3	1355	8066	.40205	8073	.22434	8078	.37361	0.3 0.4
			4	.35791	22	.29794	34	.34415	
24	Yale 17		8066	.42952	8073	.23444	8078	.33604	
25	San Fernando 4	1389	4	.26665	24	.46334	30	.27001	0.6 0.8
			6	.42766	8	.22085	39	.35149	
26	San Fernando 4	1389	4	.28012	24	.44808	30	.27180	0.5 0.7
			6	.42641	8	.23018	39	.34341	
27	San Fernando 4	1389	4	.29243	24	.43374	30	.27383	0.9 0.6
			6	.42492	8	.23886	39	.33622	
28	San Fernando 4	1389	4	.32961	24	.39124	30	.27915	0.9 0.3
			6	.42126	8	.26461	39	.31413	

Continuation Table II

No.	Catalogue	Plate	Star Numbers and Dependences						Note
29	Yale 13, 14		13903	.46316	14620	.29858	14629	.23826	0.3 0.0
			13910	.25865	14601	.14221	14620	.59914	
30	Yale 13, 14		13903	.47566	14620	.29268	14629	.23166	0.3 0.3
			13910	.25605	14601	.16012	14620	.58383	
31	Yale 13, 14		13903	.54042	14620	.26209	14629	.19749	0.6 0.6
			13910	.24369	14601	.25260	14620	.50371	
32	Yale 13 Cape 17		11211	.37854	11240	.47395	13540	.14751	0.4 1.5
			11233	.68949	13536	.37335	13540	-.06284	
33	Yale 13 Cape 17		11211	.38408	11240	.46860	13540	.14732	0.1 1.5
			11233	.68723	13536	.39380	13540	-.08103	
34	Cape 17		19088	.37078	11005	.31491	11023	.31431	0.3 0.4
			10996	.34069	10997	.39970	11022	.25961	
35	Cape 17		10988	.37385	11005	.31300	11023	.31315	0.2 0.1
			10996	.34310	10997	.40005	11022	.25685	
36	Cape 17		10988	.42118	11005	.28722	11023	.29160	0.0 1.3
			10996	.38085	10997	.40694	11022	.21221	
37	Yale 12		5494	.09075	5497	.43100	5502	.47825	0.5 0.3
			5497	.34839	5499	.38337	5504	.26824	
1963 I Ikeya									
1	Yale 25		8947	.35998	8967	.16445	8977	.47557	0.3 0.7
			8963	.45937	8968	.45484	8977	.08579	
2	Yale 25		8947	.36633	8967	.17336	8977	.46031	0.3 0.5
			8963	.46855	8968	.46753	8977	.06392	
1963 III Alcock									
1	Catania 3	991	158	.40934	186	.24227	217	.34839	1.3 1.0
			162	.40836	173	.31316	245	.27848	
2	Catania 4	1403	171	.29487	194	.19292	240	.51221	0.4 2.2
			172	.23069	196	.38676	252	.38255	
3	Catania 4	1403	171	.29339	194	.19798	240	.50863	0.5 2.3
			172	.23503	196	.38273	252	.38224	
4	Catania 4	1403	171	.29588	194	.22068	240	.48344	0.6 1.9
			172	.26184	196	.36548	252	.37268	
5	Catania 4	1403	171	.29517	194	.22637	240	.47846	0.6 1.5
			172	.26714	196	.36151	252	.37135	
6	Catania 4	1403	171	.29662	194	.23693	240	.46645	0.3 1.6
			172	.27993	196	.35315	252	.36692	
7	Catania 4	1403	171	.30586	194	.32966	240	.36448	0.5 1.6
			172	.38939	196	.28143	252	.32918	
8	Catania 4	1403	171	.30575	194	.33753	240	.35672	0.3 1.2
			172	.39766	196	.27557	252	.32677	
9	Catania 4	1403	159	.40914	187	.24299	195	.34787	0.1 0.7
			162	.37591	171	.27421	205	.34988	
10	Catania 4	1403	159	.42363	187	.25770	195	.31867	0.1 2.3
			162	.39896	171	.26189	205	.33915	
11	Catania 5	1749	216	.34522	268	.28001	271	.37477	0.9 1.0
			224	.20040	245	.27346	265	.52614	
12	Catania 5	1749	216	.35698	268	.28730	271	.35572	0.7 2.1
			224	.19685	245	.31650	265	.48665	
13	Catania 5	1749	196	.41702	225	.27926	245	.30372	0.1 0.4
			210	.35788	217	.46006	242	.18206	
14	Catania 5	1749	196	.42239	225	.28446	245	.29315	0.2 0.2
			210	.39362	217	.43066	242	.17572	
15	Catania 6	2624	278	.34472	361	.32296	371	.33232	0.8 1.0
			313	.35872	316	.39171	402	.24957	
16	Catania 6	2624	278	.36300	361	.29796	371	.33904	0.8 0.7
			313	.35115	316	.41428	402	.23457	
17	Catania 6	2624	182	.34531	244	.40677	304	.24792	0.2 0.5
			203	.36449	242	.34555	267	.28996	
18	Catania 6	2624	182	.34475	244	.42861	304	.22664	0.3 0.9
			203	.37906	242	.35988	267	.26106	
19	Yale 26		5870	.34218	s5879G	.40192	5913	.25590	0.1 0.2
			s5879G	.29802	5891	.11131	5892	.59067	
20	Yale 26		5870	.33512	s5879G	.41406	5913	.25082	0.2 0.2
			s5879G	.31228	5891	.10925	5892	.57847	

No.	Catalogue	Plate	Star Numbers and Dependences						Note
21	Yale 26		5785	.13409	5805	.53989	5813	.32602	0.2 0.1
			5805	.61488	5808	.50614	5820	-.12102	
22	Yale 26		5785	.14071	5805	.54413	5813	.31516	0.1 0.1
			5805	.62688	5808	.50731	5820	-.13419	
23	Yale 26		5672	.28532	5692	.50920	5706	.20548	0.0 0.2
			5677	.27197	5691	.36879	5695	.35924	
24	Yale 26		5672	.29470	5692	.50327	5706	.20203	0.2 0.3
			5677	.28505	5691	.36358	5695	.35137	
25	Yale 27		9643	.22951	9663	.31530	9685	.45519	0.3 0.0
			9643	.36772	9659	.25712	9694	.37516	
26	Yale 27		9643	.26061	9663	.28530	9685	.45409	0.1 0.1
			9643	.38035	9659	.25648	9694	.36317	
27	Yale 27		9267	.31939	9303	.37271	9326	.30790	0.3 0.4
			f9280	.53711	9303	.27578	9344	.18711	
28	Yale 27		9267	.32709	9303	.36980	9326	.30311	0.2 0.5
			f9280	.53876	9303	.28220	9344	.17904	
29	Yale 27		9267	.35196	9303	.36135	9326	.28669	0.1 0.4
			f9280	.54328	9303	.30449	9344	.15222	
30	Yale 27		9267	.35779	9303	.35946	9326	.28275	0.2 0.2
			f9280	.54437	9303	.30971	9344	.14592	
31	Helsingfors 5	605	62	.38135	81	.13400	87	.48465	0.7 0.6
			66	.49423	73	.27386	94	.23191	
32	Helsingfors 5	605	62	.39741	81	.12131	87	.48128	0.5 0.2
			66	.48641	73	.29652	94	.21707	
33	Helsingfors 5	593	56	.18154	76	.52573	92	.29273	2.0 0.8
			57	.27764	76	.44929	101	.27307	
34	Helsingfors 5	593	56	.20868	76	.48651	92	.30481	2.0 0.9
			57	.30698	76	.40886	101	.28416	
35	Helsingfors 5	589	26	.38925	52	.20137	55	.40938	0.9 0.2
			36	.24193	40	.43299	61	.32508	
36	Helsingfors 5	589	26	.40603	52	.23467	55	.35930	0.7 0.1
			36	.28189	40	.41374	61	.30437	
37	Uccle-Paris 2	91	108	.37981	125	.28093	134	.33926	0.1 0.6
			116	.34109	126	.30519	128	.35372	
38	Uccle-Paris 2	91	108	.37347	125	.31823	134	.30830	0.0 0.9
			116	.36585	126	.31814	128	.31601	
39	Uccle-Paris 2	91	108	.36642	125	.35682	134	.27676	0.0 1.1
			116	.39020	126	.33193	128	.27787	
40	Yale 25		4661	.35396	4667	.22965	4677	.41639	0.2 0.8
			4661	.40034	4669G	.28437	4680	.31529	
41	Yale 25		4661	.36865	4667	.21393	4677	.41742	0.3 0.1
			4661	.41058	4669G	.27364	4680	.31578	
42	Yale 25		4661	.40023	4667	.18090	4677	.41887	0.0 0.3
			4661	.43311	4669G	.25094	4680	.31595	
43	Yale 25		4661	.41224	4667	.16822	4677	.41954	0.1 0.3
			4661	.44159	4669G	.24223	4680	.31618	
44	Yale 25 AGK2 10		4656	.89371	1332	.11380	4662G	-.00751	
45	Yale 19 AGK2 12		4660	.37634	4664	.22580	4677	.39786	0.0 0.3
			1262	.50406	4672	.17008	1273	.32586	
46	Yale 19 AGK2 12		4660	.40139	4664	.20239	4677	.39622	0.3 0.2
			1262	.49835	4672	.19549	1273	.30616	
47	Yale 19 AGK2 12		4660	.48728	4664	.12237	4677	.39035	0.4 0.5
			1262	.47930	4672	.28233	1273	.23837	
48	Yale 19 AGK2 12		4660	.49218	4664	.11721	4677	.39061	0.2 0.1
			1262	.47780	4672	.28769	1273	.23451	
49	Yale 20 AGK2 14		1461	.33012	4492	.32026	4496G	.34962	
50	Yale 20 AGK2 14		1461	.33547	4492	.30343	4496G	.36110	
1	Yale 20, 21 AGK2 14		3408	.22253	4486	.55103	3416	.22644	0.1 0.8
			4476	.38564	3414	.33258	1576	.28178	
2	Yale 20, 21 AGK2 14		3408	.22958	4486	.53816	3416	.23226	0.2 0.4
			4476	.38498	3414	.33673	1576	.27829	
53	Yale 20, 21 AGK2 14		3408	.24641	4486	.50573	3416	.24786	0.2 0.4
			4476	.38265	3414	.34718	1576	.27017	



No.	Catalogue	Plate	Star Numbers and Dependences						Note	
54	Yale 17		4545	.13466	4555	.61395	4561	.25139	0.2	0.7
			4556	.86999	4558	.09761	4561	.03240		
55	Yale 17		4545	.13698	4555	.61088	4561	.25214	0.3	0.1
			4556	.86925	4558	.10058	4561	.03017		
1963 V Pereyra										
1	San Fernando 7 Yale 16	1765	107	.43938	138	.25123	158	.30939	1.2	1.3
			3715	.29697	3717	.22765	3735	.47538		
2	Hyderabad 1	468	28111	.44055	28127	.25132	28151	.30813	0.6	1.1
			28113	.25573	28125	.38469	28138	.35958		
3	Hyderabad 1	468	28157	.43311	28171	.33704	28199	.22985	1.1	0.4
			28159	.31681	28172	.30296	28183	.38023		
4	Hyderabad 1	468	28157	.43253	28171	.33058	28199	.23689	0.7	0.0
			28159	.30865	28172	.30432	28183	.38703		

## Notes to Table II

- a — parabolic reflector 24/120 cm,  
b — Maksutov camera 34/44/95 cm,  
c — parabolic reflector 40/200 cm — Observatory Lomnický Štít,  
d — parabolic reflector 20/95 cm — Observatory Lomnický Štít,  
e — Maksutov camera 34/44/95 cm — Observatory Lomnický Štít,  
f — recovery observation,  
g — first photographic observation after discovery,  
h — measurement difficult — images of bad quality,  
i — measurement difficult — comet image crossed by a star trail  
j — comet image extremely faint,  
k — comet image extremely faint — identity uncertain,  
l — reductions less accurate — reference stars unfavourably situated,  
m — reductions less accurate — reference star positions discordant,  
n — reference star numbers according to BD, zone 48°,  
o — referred to only one star in close vicinity,  
p — proper motions of stars No. 806, 808, 838, 858 from Yale  
q — p.m. from EBL,  
r — p.m. of No. 3977 and 3986 from Yale,  
s — p.m. of No. 293 from Boss GC,  
t — p.m. of No. 11 and 39 from Geschichte d. Fsh.,  
u — p.m. of No. 2350 from Boss GC,  
v — p.m. of No. 2938 and 3145 from Boss GC,  
w — p.m. from Boss GC,  
x — p.m. of No. 3386 from Boss GC,  
y — p.m. of No. 66 from Geschichte d. Fsh.,  
z — p.m. of No. 31664 and 31728 from Yale.  
(For the reference star positions from Yale Zone Catalogue and Cape Catalogue proper motions are *always* included.)

Table III

Definitive designation	Provisional designation	Name	Number of positions
1946 I	1946 a	Timmers	3
1946 III	1946 b	P/Tempel (2)	1
1946 IV	1946 e	P/Brooks (2)	11
1946 V	1946 c	P/Giacobini—Zinner	5
1947 I	1946 k	Bester	3
1947 III	1947 c	Bečvář	6
1947 IV	1947 b	Rondanina—Bester	7
1947 XI	1947 i	P/Encke	5
1948 I	1947 k	Bester	2
1948 II	1948 a	Mrkos	39
1948 IV	1948 g	Honda—Bernasconi	6
1948 V	1948 d	Pajdušáková—Mrkos	11
1948 XI	1948 l	Eclipse Comet	7
1948 XII	1948 n	P/Honda—Mrkos— Pajdušáková	9
1949 IV	1949 e	Bappu—Bok—Newkirk	6
1949 V	1949 h	P/Väisälä	1
1950 I	1949 a	P/Johnson	2
1950 II	1950 a	P/d'Arrest	2
1950 IV	1949 f	P/Reinmuth	3
1950 VII	1951 b	P/Arend—Rigaux	1
1951 I	1950 b	Minkowski	6
1951 II	1951 a	Pajdušáková	14
1951 IV	1951 f	P/Tuttle—Giacobini— Kresák	35
1952 II	1951 k	P/Wolf—Harrington	3
1952 III	1951 l	P/Schaumasse	4
1952 V	1952 c	Mrkos	18
1952 VI	1952 d	Peltier	3
1952 VII	1951 h	P/Comas Sola	4
1953 I	1952 e	Harrington	4
1953 II	1952 f	Mrkos	7
1953 III	1953 a	Mrkos—Honda	12
1954 II	1953 h	Pajdušáková	5
1954 VII	1953 e	P/Pons—Brooks	7
1954 VIII	1954 f	Vozárová	12
1954 X	1953 g	Abell	5
1954 XII	1954 d	Kresák—Peltier	1
1955 III	1955 e	Mrkos	10
1955 IV	1955 f	Bakharev—Macfarlane— Krienke	9
1955 V	1955 g	Honda	6
1955 VII	1955 i	P/Perrine—Mrkos	9
1956 III	1956 b	Mrkos	12
1956 VI	1956 g	P/Crommelin	9
1957 III	1956 h	Arend—Roland	32
1957 V	1957 d	Mrkos	11
1958 IV	—	P/Oterma	3
1959 I	1958 e	Burnham—Slaughter	19
1959 IV	1959 e	Alcock	17
1959 VI	1959 f	Alcock	5
1959 VII	1960 a	Burnham	2
1959 VIII	1959 b	P/Giacobini—Zinner	4
1959 IX	1959 j	Mrkos	11
1960 II	1959 k	Burnham	14
1960 III	1959 h	P/Schaumasse	5
1961 II	1960 n	Candy	6
1961 V	1961 d	Wilson—Hubbard	21
1961 VII	1960 j	P/Schwassmann— Wachmann	2
1961 VIII	1961 f	Seki	4
1962 IV	1962 d	Honda	5
1962 V	1962 b	P/Tuttle—Giacobini— Kresák	25
1962 VIII	1961 e	Humason	37
1963 I	1963 a	Ikeya	2
1963 III	1963 b	Alcock	55
1963 V	1963 e	Pereyra	4

Table IV

Observer	Abbr.	Period	Exposures	Measurements and reductions
A. Aldor	Al	1956—61	—	174
M. Antal	A	1956—63	267	232
A. Antalová— Višňovcová	Aá	1958—63	14	97
A. Bečvář	B	1948—51	8	—
E. Buchar*	Bu	1947	6	7
Š. Dendis	De	1963	—	16
M. Dzubák	D	1947	1	—
T. Jančík	J	1950—51	14	—
V. Kiss	Ki	1947	1	—
L. Kresák	K	1947—59	125	107
M. Kresáková— Vozárová	Ká	1953—55	41	22
A. Mrkos	M	1946—59	185	—
L. Pajdušáková— Mrkosová	P	1946—57	93	43
P. Paluš	Pš	1962	1	3
A. Paroubek	Pa	1953—55	4	—
L. Petrik	Pe	1962—63	3	—
M. Plavec**	Pl	1951	—	21
R. Podstanická— Šáškyová	Po	1954	2	—
J. Rečičár	R	1955	2	—
D. Sajták	Sa	1961	1	—
B. Šternberk**	Š	1946—50	—	20
J. Tremko	T	1958—61	13	—
V. Vanýsek***	V	1947	—	5

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## НАБЛЮДЕНИЯ КОМЕТ НА ОБСЕРВАТОРИИ СКАЛЬНАТЕ ПЛЕСО В ПЕРИОД 1946—1963 ГГ.

Фотографические наблюдения положений комет входят в постоянную программу обсерватории Скальнате Плесо с самого ее основания. В связи с современной программой поисков комет в ряде случаев удалось получить первые фотографии новых комет и фотографии, которые были использованы для определения первых орбит.

Для фотографических наблюдений используется основной телескоп обсерватории — 60-ти сантиметровой рефлектор Цейсса в Ньютонской установке. В качестве более точного гидирования телескопа и фотографирования более слабых, в ведущей трубе уже не видимых движущихся объектов, кассетная часть рефлектора снабжена устройством для передвижения фотопластинки в любом позиционном направлении; движение кометы элиминировано гидировкой на звезду с одновременным передвижением пластинки по эфемериде по  $1''$ . Фотопластинки измеряются на прямоугольном измерительном приборе Цейсса „Комес 1“; для обработки применялся метод зависимостей Шлезингера. Небольшое поле параболического рефлектора в большинстве случаев не позволяет сравнивать комету со звездами с известным собственным

движением. Поэтому используются преимущественно опорные звезды Астрографических каталогов.

Ошибки каталога, а также происходящие из различия эпохи ошибки уничтожены избранием двух треугольников, составленных из самых слабых по возможности звезд. Приведенные в табл. II для каждого положения различия пар независимых определений экваториальных координат, представляют некоторые информации о точности результатов. Этот контроль и сравнение больших серий положений с точными эфемеридами показывают, что вероятная ошибка результата, как правило, меньше чем  $1''$  для любой координаты. Только в случаях, когда комета очень слаба, без явной центральной конденсации или же без ядра, вероятная ошибка достигает  $\pm 2''$ .

В сводных табл. I и II. приведены результаты этой программы, полученные в период 1946—1963 гг., в общем 586 положений 62 комет, список которых приведен в табл. III. Работа является результатом труда большого числа сотрудников; список сотрудников и данные об их участии в наблюдениях, измерениях и обработке, приведен в табл. IV.

POZOROVANIA KOMÉT NA OBSERVATÓRIU  
NA SKALNATOM PLESE V ROKOCH 1946 — 1963

Pozičné fotografovanie komét je jedným zo stálych programov observatória na Skalnatom Plese už od jeho založenia. V spojitosti so súčasným programom hľadania komét podarilo sa v rade prípadov získať prvé snímky nových komét a snímky, ktoré poslúžili pri výpočte prvých dráh.

Na fotografické sledovanie sa používa hlavný ďalekohľad observatória — 60 cm Zeissov reflektor v Newtonovom usporiadaní. Pre spresnenie vedenia ďalekohľadu a fotografovanie slabých pohyblivých objektov, neviditeľných v pointovacom refraktore, je kazetová časť reflektoru doplnená zariadením na posun platne v ľubovoľnom pozičnom uhle; pohyb kométy sa eliminuje pointovaním na hviezdu so súčasným posunom platne podľa efemeridy po 1". Snímky sa premeriavajú na Zeissovom prístroji na meranie pravouhlých súradníc Komess I a merania sa redukujú Schlesingerovou metódou dependencií. Malé pole parabolického reflektora väčšinou nedovoľuje primeriavať kométu ku hviezdám so známym vlastným pohybom. Najčastejšie sa preto používajú referenčné hviezdy

z Astrografických katalógov CdC, pričom chyby katalógu a chyby z rozdielov v epoche sa obmedzujú výberom dvoch trojuholníkov, zložených z čo najslabších hviezd. Rozdiely z dvoch neodvislých určení ekvatoreálnych súradníc, uvedené pre každú polohu v tabuľke II, podávajú určitú informáciu o presnosti výsledkov. Táto kontrola spolu s porovnaním väčších sérií polôh s presnými efemeridami ukazuje, že pravdepodobná chyba výsledku je pravidelne menšia ako 1" v každej súradnici. Iba v prípadoch, keď je kométa veľmi slabá, bez zreteľnej centrálnej kondenzácie alebo jadra, dosahuje pravdepodobná chyba hodnotu  $\pm 2''$ .

V tabuľkách I a II podávame súhrnné výsledky tohto programu za roky 1946—1963, celkove 586 polôh 62 komét, ktorých zoznam je uvedený v tabuľke III. Práca je kolektívnym výsledkom väčšieho počtu spolupracovníkov; ich zoznam, s uvedením podielu na pozorovaniach, meraniach a redukciách, podáva tabuľka IV.