

POSITIONS OF KNOWN AND DISCOVERED ASTEROIDS OBTAINED IN LA SILLA, CHILE, AT THE EUROPEAN SOUTHERN OBSERVATORY, SEPTEMBER 1984

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RESUMO

São fornecidas 234 posições de asteroídes obtidas na missão setembro/outubro de 1984 de Henri Debehogne, Observatoire Royal de Belgique, no European Southern Observatory-ESO, La Silla. Destas posições, 75 são de asteroídes catalogados na Ephemeridi Malik Planet (1984) e 159 correspondem a planetóides não catalogados e possivelmente a descobertas. O método dos mínimos quadrados e o das dependências foram utilizados na redução. A posição e o movimento próprio das cinco estrelas de referência foram extraídas do SAO Star Catalogue (1966), sendo o equinócio 1950.0.

ABSTRACT

234 positions of asteroids are given, obtained during the September/October 1984 mission of Henri Debehogne, Observatoire Royal de Belgique, at the European Southern Observatory, ESO, La Silla. Of these positions, 75 refer to catalogued asteroids in the Ephemeridi Malik Planet (1984) and 159 do not correspond to catalogued planetoids, but possibly to discoveries. The methods of least squares and dependences were used for reductions. Positions and proper motions of the five reference stars were obtained from the SAO Star Catalogue (1966), 1950.0 being the equinox.

Key words: ASTEROIDS — DISCOVERIES

I. INTRODUCTION

In continuation to the joint program of Observatoire Royal de Belgique and Observatório do Valongo, Universidade Federal do Rio de Janeiro, H. Debehogne (ORB) has been at the European Southern Observatory (ESO), La Silla, during September/October 1984; he has operated the refractor GPO telescope ($D = 40\text{-cm}$; $F = 4\text{-m}$) and has utilized Kodak II a-0 photographic plates, previously hypersensitized, with $16\text{-cm} \times 16\text{-cm}$ format. Extremely favourable transparency of the night sky made it possible to reach photographic magnitude 18.0, indispensable to recognize asteroids not included in the Ephemeridi Malik Planet (1984), thus allowing to perform rediscoveries and discoveries. Among 234 obtained positions, only 79 refer to known asteroids; the other 159 refer to not yet identified asteroids, which are provisionally denoted without the order number of the above mentioned Ephemeris.

II. OBSERVATION TECHNIQUES

The refractor GPO telescope ($D = 40\text{-cm}$; $F = 4\text{-m}$)

was initially pointed at the selected coordinates of asteroids included in the Ephemeris. Next day the plates were examined searching for uncatalogued asteroids. In case those were found, predicted centres were conveniently changed in order to make possible the following up of such celestial bodies. Due to this reason, the number of known asteroids in this paper is only of four: 2088 Sahlia, 2317 Galya, 2535 Hameenlinna and 2712 1937 YD. The remaining ones, about 53% of the reduced positions, have not been catalogued yet. They are provisionally identified by the year 1984 followed by: SV 2, ST 5, SE 6, SX 5 and SU 5. In order to save working time and plates, three exposures were made in each plate. To simplify the identification of the asteroids, the interval between the second and third declinations was always longer than between the first two.

III. REDUCTION TECHNIQUES

After identification of the asteroids and the five reference stars, the plates were read (0.1μ) at the Asc-record Coordinatograph of the Observatoire Royal de

Belgique, and then reduced in the Univac Computer of the Institut Royal Meteorologique of Brussels, with a terminal at the ORB. The methods of least squares and of dependences were used for the reduction (Debehogne and Machado 1979). Coordinates and proper motions of the stars were taken from the SAO Star Catalogue (1966), for the 1950.0 equinox. Elements of the known asteroids were obtained from the Ephemeridi Malik Planet (1984).

IV. RESULTS

Table 1 presents the positions for 1950 of the asteroids, as well as residues for the ones included in the Ephemeris. Table 2 gives the dependences, which may be most valuable in case the positions and proper motions of the references stars should be changed in the future. In this case, new coordinates for the asteroids may be computed without the need of new readings of the

TABLE 1

POSITIONS

No.	Object	Date UT 1984			α (1950) δ						Residuals	
		Plate	Mon	Day	h	m	s	o	'	"	m	'
1	2088 SAHLIA	7392	9	21.288193	0	3	13.249	+00	23	42.74	+ .1	0
2	2088 SAHLIA	7392	9	21.293747	0	3	12.912	+00	23	41.70	+ .1	0
3	2088 SAHLIA	7392	9	21.299305	0	3	12.573	+00	23	40.71	+ .1	0
4	2088 SAHLIA	7410	9	22.275692	0	2	9.911	+00	20	20.14	+ .1	0
5	2088 SAHLIA	7410	9	22.281246	0	2	9.567	+00	20	19.00	+ .1	0
6	2088 SAHLIA	7410	9	22.286804	0	2	9.238	+00	20	17.39	+ .1	0
7	2088 SAHLIA	7421	9	23.083332	0	1	18.462	+00	17	33.17	+ .1	0
8	2088 SAHLIA	7421	9	23.088886	0	1	18.126	+00	17	32.13	+ .1	0
9	2088 SAHLIA	7421	9	23.094444	0	1	17.787	+00	17	31.12	+ .1	0
10	2088 SAHLIA	7443	9	24.232635	0	0	3.952	+00	13	34.58	+ .0	0
11	2088 SAHLIA	7443	9	24.238194	0	0	3.606	+00	13	33.22	+ .0	0
12	2088 SAHLIA	7443	9	24.243748	0	0	3.255	+00	13	32.34	+ .0	0
13	2088 SAHLIA	7457	9	26.279858	23	57	51.976	+00	06	31.59	+ .0	0
14	2088 SAHLIA	7457	9	26.285416	23	57	51.664	+00	06	30.09	+ .0	0
15	2088 SAHLIA	7457	9	26.290970	23	57	51.323	+00	06	28.90	+ .0	0
16	2088 SAHLIA	7471	9	27.163887	23	56	55.497	+00	03	28.91	- .0	0
17	2088 SAHLIA	7471	9	27.169441	23	56	55.136	+00	03	27.76	- .0	0
18	2088 SAHLIA	7471	9	27.174999	23	56	54.766	+00	03	26.64	- .0	0
19	2088 SAHLIA	7488	9	28.163887	23	55	51.590	+00	00	04.80	- .1	0
20	2088 SAHLIA	7488	9	28.169441	23	55	51.251	+00	00	03.38	- .1	0
21	2088 SAHLIA	7488	9	28.174999	23	55	50.910	+00	00	02.43	- .1	0
22	2088 SAHLIA	7506	9	29.145485	23	54	49.272	-00	03	14.72	- .1	0
23	2088 SAHLIA	7506	9	29.150692	23	54	48.955	-00	03	15.78	- .1	0
24	2088 SAHLIA	7506	9	29.156246	23	54	48.614	-00	03	16.90	- .1	0
25	2088 SAHLIA	7515	9	29.329261	23	54	37.159	-00	03	52.56	- .1	0
26	2088 SAHLIA	7515	9	29.335415	23	54	36.820	-00	03	53.31	- .1	0
27	2088 SAHLIA	7515	9	29.340969	23	54	36.477	-00	03	54.09	- .1	0
28	2088 SAHLIA	7525	9	30.157639	23	53	45.251	-00	06	38.00	- .1	- 1
29	2088 SAHLIA	7525	9	30.163287	23	53	44.868	-00	06	39.02	- .1	- 1
30	2088 SAHLIA	7525	9	30.170830	23	53	44.451	-00	06	40.79	- .1	- 1
31	2088 SAHLIA	7533	9	30.336803	23	53	33.621	-00	07	14.01	- .1	- 1
32	2088 SAHLIA	7533	9	30.342358	23	53	33.287	-00	07	15.15	- .1	- 1
33	2088 SAHLIA	7533	9	30.347916	23	53	32.922	-00	07	16.22	- .1	- 1
34	2088 SAHLIA	7542	10	1.237499	23	52	37.419	-00	10	11.00	- .2	- 1
35	2088 SAHLIA	7542	10	1.243053	23	52	37.083	-00	10	11.90	- .2	- 1
36	2088 SAHLIA	7542	10	1.248608	23	52	36.756	-00	10	13.06	- .2	- 1
37	2317 GALYA	7392	9	21.288193	23	58	0.952	+00	58	43.81	+ .0	+ 0
38	2317 GALYA	7392	9	21.293747	23	58	0.676	+00	58	41.11	+ .0	+ 0
39	2317 GALYA	7392	9	21.299305	23	58	0.407	+00	58	37.82	+ .0	+ 0
40	2317 GALYA	7421	9	23.083332	23	56	37.548	+00	44	21.27	+ .0	+ 0
41	2317 GALYA	7421	9	23.088886	23	56	37.302	+00	44	18.40	+ .0	+ 0
42	2317 GALYA	7421	9	23.094444	23	56	37.009	+00	44	15.74	+ .0	+ 0
43	2317 GALYA	7443	9	24.232635	23	55	43.395	+00	35	07.78	+ .0	+ 0
44	2317 GALYA	7443	9	24.238194	23	55	43.152	+00	35	05.31	+ .0	+ 0
45	2317 GALYA	7443	9	24.243748	23	55	42.893	+00	35	02.80	+ .0	+ 0
46	2317 GALYA	7457	9	26.279858	23	54	7.763	+00	18	38.33	+ .0	0
47	2317 GALYA	7457	9	26.285416	23	54	7.459	+00	18	35.58	+ .0	0
48	2317 GALYA	7457	9	26.290970	23	54	7.183	+00	18	32.93	+ .0	0
49	2317 GALYA	7471	9	27.163887	23	53	27.035	+00	11	31.89	- .0	0
50	2317 GALYA	7471	9	27.169441	23	53	26.753	+00	11	29.25	- .0	0

TABLE I (CONTINUED)

No.	Object	Date UT 1984			α (1950) δ						Residuals		
		Plate	Mon	Day	h	m	s	°	'	"	m	m	
51	2317 GALYA	7471	9	27.174999	23	53	26.466	+00	11	26.87	-	.0	0
52	2317 GALYA	7488	9	28.163887	23	52	41.020	+00	03	31.78	-	.0	0
53	2317 GALYA	7488	9	28.169441	23	52	40.765	+00	03	29.46	-	.0	0
54	2317 GALYA	7488	9	28.174999	23	52	40.471	+00	03	26.80	-	.0	0
55	2317 GALYA	7506	9	29.145465	23	51	56.290	-00	04	17.81	-	.0	-0
56	2317 GALYA	7506	9	29.156692	23	51	56.006	-00	04	20.38	-	.0	-0
57	2317 GALYA	7506	9	29.156246	23	51	55.776	-00	04	23.55	-	.0	-0
58	2317 GALYA	7525	9	30.157639	23	51	10.561	-00	12	21.21	-	.0	-0
59	2317 GALYA	7525	9	30.163887	23	51	10.274	-00	12	24.15	-	.0	-0
60	2317 GALYA	7525	9	30.170830	23	51	9.937	-00	12	27.35	-	.0	-0
61	2317 GALYA	7542	10	1.237499	23	50	22.278	-00	20	50.73	+	.0	-0
62	2317 GALYA	7542	10	1.243053	23	50	22.006	-00	20	53.07	+	.0	-0
63	2317 GALYA	7542	10	1.248608	23	50	21.736	-00	20	55.71	+	.0	-0
64	2535 HAMEENLINNA	7392	9	21.298193	0	2	26.021	-00	32	02.45	+	.0	0
65	2535 HAMEENLINNA	7392	9	21.293747	0	2	25.728	-00	32	05.09	+	.0	0
66	2535 HAMEENLINNA	7392	9	21.299305	0	2	25.379	-00	32	08.13	+	.0	0
67	2535 HAMEENLINNA	7410	9	22.275692	0	1	31.132	-00	39	51.87	+	.0	+0
68	2535 HAMEENLINNA	7410	9	22.281246	0	1	30.818	-00	39	54.59	+	.0	+0
69	2535 HAMEENLINNA	7410	9	22.286804	0	1	30.496	-00	39	57.30	+	.0	+0
70	2535 HAMEENLINNA	7421	9	23.083332	0	0	46.551	-00	46	15.21	+	.0	+0
71	2535 HAMEENLINNA	7421	9	23.088886	0	0	46.213	-00	46	18.03	+	.0	+0
72	2535 HAMEENLINNA	7421	9	23.094444	0	0	45.894	-00	46	20.87	+	.0	+0
73	2712 1937 YD	7392	9	21.288193	23	57	15.391	-00	33	25.91	+	.0	0
74	2712 1937 YD	7392	9	21.293747	23	57	15.076	-00	33	28.31	+	.0	0
75	2712 1937 YD	7392	9	21.299305	23	57	14.744	-00	33	31.38	+	.0	0
76	1984 SV5	7392	9	21.288193	0	0	4.279	-00	27	59.61			
77	1984 SV5	7392	9	21.293747	0	0	4.000	-00	28	00.31			
78	1984 SV5	7392	9	21.299305	0	0	3.725	-00	28	01.00			
79	1984 SV5	7410	9	22.275692	23	59	13.244	-00	30	03.56			
80	1984 SV5	7410	9	22.281246	23	59	13.007	-00	30	04.31			
81	1984 SV5	7410	9	22.286804	23	59	12.772	-00	30	05.07			
82	1984 SV5	7421	9	23.083332	23	58	32.043	-00	31	42.72			
83	1984 SV5	7421	9	23.088886	23	58	31.737	-00	31	43.73			
84	1984 SV5	7421	9	23.094444	23	58	31.465	-00	31	44.74			
85	1984 SV5	7443	9	24.232635	23	57	32.644	-00	34	05.00			
86	1984 SV5	7443	9	24.238194	23	57	32.390	-00	34	05.67			
87	1984 SV5	7443	9	24.243748	23	57	32.129	-00	34	06.28			
88	1984 SV5	7457	9	26.279358	23	55	47.467	-00	38	19.08			
89	1984 SV5	7457	9	26.285416	23	55	47.141	-00	38	19.76			
90	1984 SV5	7457	9	26.290970	23	55	46.856	-00	38	20.29			
91	1984 SV5	7471	9	27.163887	23	55	2.508	-00	40	07.19			
92	1984 SV5	7471	9	27.169441	23	55	2.226	-00	40	07.39			
93	1984 SV5	7471	9	27.174999	23	55	1.944	-00	40	08.08			
94	1984 SV5	7488	9	28.163887	23	54	11.803	-00	42	07.47			
95	1984 SV5	7488	9	28.169441	23	54	11.507	-00	42	08.05			
96	1984 SV5	7488	9	28.174999	23	54	11.222	-00	42	08.77			
97	1984 SV5	7506	9	29.145485	23	53	22.332	-00	44	04.17			
98	1984 SV5	7506	9	29.150692	23	53	22.037	-00	44	04.80			
99	1984 SV5	7506	9	29.156246	23	53	21.761	-00	44	05.50			
100	1984 SV5	7515	9	29.329861	23	53	12.876	-00	44	26.17			
101	1984 SV5	7515	9	29.335415	23	53	12.596	-00	44	26.83			
102	1984 SV5	7515	9	29.340969	23	53	12.315	-00	44	27.60			
103	1984 SV5	7525	9	30.157639	23	52	31.753	-00	46	01.47			
104	1984 SV5	7525	9	30.163887	23	52	31.443	-00	46	02.14			
105	1984 SV5	7525	9	30.170830	23	52	31.064	-00	46	03.29			
106	1984 SV5	7542	10	1.237499	23	51	38.150	-00	48	04.86			
107	1984 SV5	7542	10	1.243053	23	51	37.865	-00	48	05.48			
108	1984 SV5	7542	10	1.248608	23	51	37.585	-00	48	06.16			
109	1984 SV2	7392	9	21.288193	0	4	30.909	+01	01	58.76			
110	1984 SV2	7392	9	21.293747	0	4	30.582	+01	01	57.73			
111	1984 SV2	7392	9	21.299305	0	4	30.275	+01	01	56.88			
112	1984 SV2	7410	9	22.275692	0	3	35.541	+00	59	27.42			
113	1984 SV2	7410	9	22.281246	0	3	35.252	+00	59	26.42			
114	1984 SV2	7410	9	22.286804	0	3	34.962	+00	59	25.79			
115	1984 SV2	7421	9	23.083332	0	2	50.695	+00	57	22.12			
116	1984 SV2	7421	9	23.088886	0	2	50.386	+00	57	21.26			
117	1984 SV2	7421	9	23.094444	0	2	50.077	+00	57	20.00			

TABLE 1 (CONTINUED)

No.	Object	Date UT 1984			α (1950) δ						Residuals	
		Plate	Mon	Day	h	m	s	°	'	"	m	'
118	1984 SV2	7443	9	24.232635	0	1	45.275	+00	54	22.31		
119	1984 SV2	7443	9	24.232194	0	1	44.936	+00	54	21.42		
120	1984 SV2	7443	9	24.243748	0	1	44.602	+00	54	20.51		
121	1984 SV2	7457	9	26.279858	23	59	49.462	+00	48	58.78		
122	1984 SV2	7457	9	26.285416	23	59	49.158	+00	48	57.72		
123	1984 SV2	7457	9	26.290970	23	59	48.852	+00	48	56.59		
124	1984 SV2	7471	9	27.163887	23	59	3.176	+00	46	39.66		
125	1984 SV2	7471	9	27.169441	23	58	59.865	+00	46	38.54		
126	1984 SV2	7471	9	27.174999	23	58	59.547	+00	46	37.64		
127	1984 SV2	7488	9	28.163887	23	58	4.273	+00	44	03.62		
128	1984 SV2	7488	9	28.169441	23	58	3.975	+00	44	02.75		
129	1984 SV2	7488	9	28.174999	23	58	3.672	+00	44	01.85		
130	1984 SV2	7506	9	29.145485	23	57	9.973	+00	41	31.07		
131	1984 SV2	7506	9	29.150692	23	57	9.667	+00	41	30.12		
132	1984 SV2	7506	9	29.156246	23	57	9.356	+00	41	29.33		
133	1984 SV2	7515	9	29.329861	23	56	59.228	+00	41	02.85		
134	1984 SV2	7515	9	29.335415	23	56	58.908	+00	41	02.00		
135	1984 SV2	7515	9	29.340969	23	56	58.583	+00	41	01.08		
136	1984 SV2	7525	9	30.157639	23	56	14.245	+00	38	55.92		
137	1984 SV2	7525	9	30.163887	23	56	13.901	+00	38	54.89		
138	1984 SV2	7525	9	30.170830	23	56	13.552	+00	38	53.73		
139	1984 SV2	7533	9	30.336803	23	56	3.956	+00	38	20.67		
140	1984 SV2	7533	9	30.342358	23	56	3.660	+00	38	27.62		
141	1984 SV2	7533	9	30.347916	23	56	3.359	+00	38	26.56		
142	1984 SV2	7542	10	1.237499	23	55	15.454	+00	36	14.92		
143	1984 SV2	7542	10	1.243053	23	55	15.155	+00	36	13.94		
144	1984 SV2	7542	10	1.248608	23	55	14.849	+00	36	13.12		
145	1984 ST5	7392	9	21.288193	23	58	59.720	+01	01	43.35		
146	1984 ST5	7392	9	21.293747	23	58	59.404	+01	01	41.80		
147	1984 ST5	7392	9	21.299305	23	58	59.114	+01	01	40.46		
148	1984 ST5	7410	9	22.275692	23	58	7.973	+00	57	38.73		
149	1984 ST5	7410	9	22.281246	23	58	7.683	+00	57	37.37		
150	1984 ST5	7410	9	22.286804	23	58	7.389	+00	57	36.00		
151	1984 ST5	7421	9	23.083332	23	57	26.255	+00	54	18.39		
152	1984 ST5	7421	9	23.088886	23	57	25.968	+00	54	17.06		
153	1984 ST5	7421	9	23.094444	23	57	25.679	+00	54	15.51		
154	1984 ST5	7443	9	24.232635	23	56	25.537	+00	49	32.13		
155	1984 ST5	7443	9	24.238194	23	56	25.247	+00	49	30.62		
156	1984 ST5	7443	9	24.243748	23	56	24.958	+00	49	29.32		
157	1984 ST5	7457	9	26.279858	23	54	38.290	+00	40	59.10		
158	1984 ST5	7457	9	26.285416	23	54	38.000	+00	40	57.56		
159	1984 ST5	7457	9	26.290970	23	54	37.713	+00	40	56.73		
160	1984 ST5	7471	9	27.163887	23	53	52.795	+00	37	17.73		
161	1984 ST5	7471	9	27.169441	23	53	52.508	+00	37	16.31		
162	1984 ST5	7471	9	27.174999	23	53	52.198	+00	37	15.00		
163	1984 ST5	7488	9	28.163887	23	53	1.298	+00	33	08.60		
164	1984 ST5	7488	9	28.169441	23	53	1.031	+00	33	08.38		
165	1984 ST5	7488	9	28.174999	23	53	0.760	+00	33	06.86		
166	1984 ST5	7506	9	29.145485	23	52	11.307	+00	29	06.00		
167	1984 ST5	7506	9	29.150692	23	52	11.049	+00	29	04.73		
168	1984 ST5	7506	9	29.156246	23	52	10.766	+00	29	03.40		
169	1984 ST5	7525	9	30.157639	23	51	20.204	+00	24	58.18		
170	1984 ST5	7525	9	30.163887	23	51	19.887	+00	24	56.87		
171	1984 ST5	7525	9	30.170830	23	51	19.538	+00	24	55.56		
172	1984 ST5	7542	10	1.237499	23	50	26.302	+00	20	37.45		
173	1984 ST5	7542	10	1.243053	23	50	26.020	+00	20	36.19		
174	1984 ST5	7542	10	1.248608	23	50	25.738	+00	20	35.02		
175	1984 SE6	7410	9	22.275692	0	4	36.309	-00	16	40.42		
176	1984 SE6	7410	9	22.281246	0	4	35.987	-00	16	41.72		
177	1984 SE6	7410	9	22.286804	0	4	35.661	-00	16	43.01		
178	1984 SE6	7443	9	24.232635	0	2	45.644	-00	22	38.40		
179	1984 SE6	7443	9	24.238194	0	2	45.315	-00	22	39.01		
180	1984 SE6	7443	9	24.243748	0	2	44.986	-00	22	39.67		
181	1984 SE6	7457	9	26.279858	0	0	50.643	-00	28	45.22		
182	1984 SE6	7457	9	26.285416	0	0	50.311	-00	28	45.86		
183	1984 SE6	7457	9	26.290970	0	0	49.977	-00	28	46.53		
184	1984 SE6	7471	9	27.163887	0	0	1.776	-00	31	23.19		

TABLE 1 (CONTINUED)

No.	Object	Date UT 1984		α (1950) δ						Residuals
		Plate	Mon Day	h	m	s	o	"	m	
185	1984 SC6	7471	9 27.169441	0	0	1.465	-00	31	24.32	
186	1984 SE6	7471	9 27.174999	0	0	1.127	-00	31	25.51	
187	1984 SE6	7488	9 28.163887	23	59	6.754	-00	34	13.54	
188	1984 SE6	7488	9 28.169441	23	59	6.449	-00	34	15.11	
189	1984 SC6	7488	9 28.174999	23	59	6.141	-00	34	16.54	
190	1984 SE6	7506	9 29.145485	23	58	13.194	-00	37	00.88	
191	1984 SE6	7506	9 29.150692	23	58	12.908	-00	37	01.84	
192	1984 SC6	7506	9 29.156246	23	58	12.595	-00	37	02.80	
193	1984 SE6	7515	9 29.329861	23	58	2.882	-00	37	31.05	
194	1984 SE6	7515	9 29.335415	23	58	2.547	-00	37	31.64	
195	1984 SC6	7515	9 29.340969	23	58	2.258	-00	37	32.07	
196	1984 SE6	7525	9 30.157639	23	57	18.898	-00	39	47.69	
197	1984 SE6	7525	9 30.163887	23	57	18.562	-00	39	48.61	
198	1984 SE6	7525	9 30.170830	23	57	18.192	-00	39	49.56	
199	1984 SE6	7533	9 30.336803	23	57	8.775	-00	40	16.66	
200	1984 SE6	7533	9 30.342358	23	57	8.498	-00	40	17.60	
201	1984 SE6	7533	9 30.347916	23	57	8.220	-00	40	18.63	
202	1984 SE6	7542	10 1.237499	23	56	21.512	-00	42	42.40	
203	1984 SE6	7542	10 1.243053	23	56	21.212	-00	42	43.26	
204	1984 SE6	7542	10 1.248608	23	56	20.939	-00	42	44.11	
205	1984 SX5	7421	9 23.083332	0	3	51.113	-00	19	05.94	
206	1984 SX5	7421	9 23.088886	0	3	50.814	-00	19	09.20	
207	1984 SX5	7421	9 23.094444	0	3	50.518	-00	19	12.49	
208	2540	7515	9 29.329861	0	0	19.328	+00	02	53.08	
209	2540	7515	9 29.335415	0	0	19.008	+00	02	50.87	
210	2540	7515	9 29.340969	0	0	13.692	+00	02	48.58	
211	2540	7533	9 30.336803	23	59	22.427	-00	04	01.64	
212	2540	7533	9 30.342358	23	59	22.099	-00	04	03.78	
213	2540	7533	9 30.347916	23	59	21.774	-00	04	06.07	
214	1984 SU5	7392	9 21.238193	23	59	58.933	+00	24	10.38	
215	1984 SU5	7392	9 21.293747	23	59	58.682	+00	24	07.47	
216	1984 SU5	7392	9 21.299305	23	59	58.429	+00	24	04.46	
217	1984 SU5	7421	9 23.083332	23	58	37.003	+00	09	17.69	
218	1984 SU5	7421	9 23.088886	23	58	36.784	+00	09	15.20	
219	1984 SU5	7421	9 23.094444	23	58	36.564	+00	09	12.32	
220	1984 SU5	7443	9 24.232635	23	57	44.094	-00	00	09.80	
221	1984 SU5	7443	9 24.238194	23	57	43.851	-00	00	12.51	
222	1984 SU5	7443	9 24.243748	23	57	43.597	-00	00	14.87	
223	1984 SU5	7457	9 26.279858	23	56	11.775	-00	16	49.53	
224	1984 SU5	7457	9 26.285416	23	56	11.534	-00	16	52.39	
225	1984 SU5	7457	9 26.290970	23	56	11.283	-00	16	55.10	
226	1984 SU5	7471	9 27.163887	23	55	32.875	-00	23	56.90	
227	1984 SU5	7471	9 27.169441	23	55	32.631	-00	23	59.40	
228	1984 SU5	7471	9 27.174999	23	55	32.401	-00	24	02.14	
229	1984 SU5	7488	9 28.163887	23	54	49.274	-00	31	54.35	
230	1984 SU5	7488	9 28.169441	23	54	49.027	-00	31	57.10	
231	1984 SU5	7488	9 28.174999	23	54	48.787	-00	31	59.68	
232	1984 SU5	7506	9 29.145485	23	54	7.075	-00	39	37.89	
233	1984 SU5	7506	9 29.150692	23	54	6.826	-00	39	40.15	
234	1984 SU5	7506	9 29.156246	23	54	6.600	-00	39	42.50	

TABLE 2

STAR RESIDUALS AND DEPENDENCES

Observations	No. SAO	Positions Used		Star Residuals						Dependences				
		s	"	s	"	s	"	s	"					
1	2	3	109000	+29.623	34.30	+0.018	+0.25	+0.015	+0.15	+0.027	+0.14	+0.294053	+0.293582	+0.293142
			108991	+05.124	27.04	+0.016	+0.28	+0.018	+0.31	+0.019	+0.14	+0.020531	+0.020758	+0.020995
			108997	+12.578	30.77	-0.027	-0.43	-0.027	-0.40	-0.036	-0.23	+0.192884	+0.192431	+0.191958
			128542	+32.709	12.46	-0.007	-0.09	-0.007	-0.10	-0.008	-0.05	-0.069546	-0.068010	-0.066475
			128581	+34.282	25.06	-0.001	-0.00	-0.000	+0.03	-0.004	-0.01	+0.562078	+0.561238	+0.560380

TABLE 2 (CONTINUED)

Observations	No. <i>SAO</i>	Positions Used		Star Residuals						Dependences		
		s	"	s	"	s	"	s	"			
229 230 231	146974	+19.023	49.79	-0.006	-0.00	-0.000	+0.02	-0.005	-0.02	+0.128650	+0.129140	+0.129605
	146982	+17.791	18.96	-0.010	+0.06	-0.009	-0.04	-0.007	+0.12	+0.005772	+0.006659	+0.007567
	146989	+16.186	17.94	+0.054	-0.14	+0.024	+0.01	+0.043	-0.21	+0.159287	+0.159413	+0.159521
	146996	+37.317	40.97	-0.030	+0.05	-0.010	+0.02	-0.024	+0.06	+0.080087	+0.080574	+0.080971
232 233 234	147004	+30.935	22.99	-0.009	+0.03	-0.005	-0.01	-0.007	+0.05	+0.626205	+0.624215	+0.627327
	147018	+12.690	30.16	+0.025	+0.03	+0.028	+0.11	+0.022	-0.14	+0.045451	+0.044485	+0.043570
	147012	+36.479	43.61	+0.011	+0.11	+0.006	-0.04	+0.020	+0.27	+0.101593	+0.101856	+0.102142
	146996	+37.317	40.97	-0.024	-0.13	-0.020	-0.01	-0.032	-0.22	+0.257191	+0.258277	+0.259399
	147004	+30.935	22.99	-0.036	-0.10	-0.036	-0.10	-0.037	+0.01	+0.171863	+0.170910	+0.169937
	146974	+19.023	49.79	+0.024	+0.09	+0.023	+0.05	+0.027	+0.08	+0.423902	+0.424472	+0.424953

stored plates which may suffer, with time, irreparable damage.

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