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 TWX 710-320-6842 ASTROGRAM CAM \*\* Brian G. Marsden, Director  
 Telephone 617-864-5758 \*\* Conrad M. Bardwell, Assistant Director  
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IDENTIFICATION CHANGES.

Continuation to MPC 5067.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
1929 QJ	* 1929 08	30.90889	20 56 37.26	-13 18 53.4	1929 PA		024
1929 QK	* 1929 08	30.90889	20 56 11.62	-13 16 04.3	1929 PA		024
1929 QL	* 1929 08	30.94292	20 58 19.44	-13 16 07.5	1929 PA	16	024
1930 JC	* 1930 05	02.89854	10 09 12.71	+16 05 05.8	1930 DA	16	024
1931 EQ	* 1931 03	14.86090	10 04 04.50	+09 19 50.5	1931 DF	15	024
1931 EQ	1931 03	15.99319	10 03 21.47	+09 22 19.1	1931 DF	16	024
1931 EQ	1931 03	19.86229	10 01 13.29	+09 30 42.1	1931 DF	15	024
1931 VL1	* 1931 11	04.95944	00 23 32.46	+12 21 38.9	1931 TD2	15.0	024
1933 UZ1	* 1933 10	20.80111	21 25 40.74	-12 04 09.0	1933 OD	15	024
1936 WJ	* 1936 11	16.80500	02 28 02.10	+11 01 49.8	1936 UE	14.5	020
1937 NY	* 1937 07	14.93874	17 30 15.55	-15 58 40.0	1937 LH		012
1966 FT	* 1966 03	28.96417	11 56 22.53	+03 04 49.0	1966 GA	16.0	095
1974 XY	* 1974 12	10.87212	04 06 39.67	+17 17 03.8	1974 VM1	17.0	095

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OBSERVATIONS MADE AT SONNEBERG BY W. GOTZ. MEASURED AND REDUCED BY M. GRESSMANN. OBJECTS DISCOVERED BY H. GESSNER.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1953 XL1	* 1953 12	04.9212	06 36 27.31	+09 18 18.4	16.0		031
1953 XL1	1953 12	06.9625	06 35 02.34	+09 21 27.4			031
1953 XL1	1953 12	09.0125	06 33 31.82	+09 25 13.8			031
1953 XL1	1953 12	09.1375	06 33 26.09	+09 25 29.5			031
1953 XM1	* 1953 12	04.9212	06 41 14.27	+09 30 51.3	17.0	1	031
1953 XM1	1953 12	06.9625	06 39 51.93	+09 31 01.9		3	031
1953 XM1	1953 12	09.0125	06 38 25.17	+09 29 34.4		3	031
1953 XM1	1953 12	09.1375	06 38 19.56	+09 29 35.3		3	031
1957 BF1	* 1957 01	29.8875	06 44 59.67	+08 13 52.5	17.0	5	031
1957 BF1	1957 01	29.9420	06 45 01.59	+08 13 56.9		7	031

Note 1: measurement uncertain. 2: trail very weak. 3 = 1 + 2. 4 = planet near edge of plate. 5 = 1 + 4. 7 = 1 + 2 + 4.

OBSERVATIONS MADE AT THE KLET OBSERVATORY BY A. MRKOS AND Z. VAVROVA.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
/1974 II	1979 12	24.97875	09 07 33.71	+17 22 05.7	12.8T	1	046
/1974 II	1979 12	24.99333	09 07 33.49	+17 22 07.5		1	046
/1974 II	1979 12	28.11972	09 06 37.54	+17 24 10.4	12.6T	1	046
/1974 II	1979 12	28.13402	09 06 37.27	+17 24 10.7		1	046
/1979i	1979 12	25.11701	09 50 51.38	+48 49 00.0	14.2T		046
/1979i	1979 12	25.12181	09 50 49.73	+48 48 56.2			046
670	1979 11	25.94074	04 53 54.09	+10 30 59.7			046
670	1979 11	25.95498	04 53 53.30	+10 30 56.9			046

1108		1979	11	25.94074	04	50	52.07	+11	36	40.8		046	
1108		1979	11	25.95498	04	50	50.98	+11	36	30.1		046	
1358		1979	12	25.06278	07	09	39.30	+25	44	34.7		046	
1358		1979	12	25.07736	07	09	38.42	+25	44	36.9		046	
2178		1979	12	25.06278	07	12	38.42	+27	54	48.2	17.2	046	
2178		1979	12	25.07736	07	12	37.47	+27	54	53.9		046	
2199		1979	11	25.94074	04	51	03.41	+09	27	27.4	17.8	046	
2199		1979	11	25.95498	04	51	02.68	+09	27	26.4		046	
1979	WD	*	1979	11	25.94074	04	56	50.12	+10	23	43.2		046
1979	WD		1979	11	25.95498	04	56	49.17	+10	23	41.3		046
1979	WD		1979	12	24.92123	04	28	27.58	+10	25	04.4		046
1979	WD		1979	12	24.94264	04	28	26.66	+10	25	08.0		046
1979	WE	*	1979	11	25.94074	04	49	03.76	+08	49	09.9	17.6	046
1979	WE		1979	11	25.95498	04	49	03.09	+08	49	07.2		046
1979	WF	*	1979	11	25.90220	02	19	46.60	+18	07	07.9	17.0	046
1979	WF		1979	11	25.91644	02	19	45.92	+18	07	10.0		046
1979	WG	*	1979	11	25.90220	02	23	03.63	+14	49	15.0	17.8	046
1979	WG		1979	11	25.91644	02	23	03.28	+14	49	13.2		046
1979	YC	*	1979	12	24.92123	04	21	55.31	+09	16	10.1	18.2	046
1979	YC		1979	12	24.94264	04	21	53.91	+09	16	17.2		046
1979	YD	*	1979	12	24.92123	04	29	18.48	+10	17	43.8	17.5	046
1979	YD		1979	12	24.94264	04	29	18.09	+10	17	42.6		046
1979	YE	*	1979	12	25.06278	07	04	20.25	+25	23	32.1	17.5	046
1979	YE		1979	12	25.07736	07	04	19.54	+25	23	32.1		046
1979	YF	*	1979	12	25.06278	07	05	05.94	+25	59	29.6	17.8	046
1979	YF		1979	12	25.07736	07	05	05.40	+25	59	31.5		046
1980	AA	*	1980	01	13.89501	06	54.7	+30	16		13.0	046	

Note 1: coma diameter 1'.5, very sharp central condensation.

## OBSERVATIONS MADE AT BRORFELDE BY K. S. JENSEN.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
1980 AA	1980 01	16.92083	07 21 17.96	+25 58 27.3	1	054
1980 AA	1980 01	16.93472	07 21 24.40	+25 57 15.9	1	054
1980 AA	1980 01	16.95000	07 21 31.65	+25 55 55.5	1	054

Note 1: observatory code 054, Long. and Parallax 11.67, -241, -350 (see MPC 4766).

## OBSERVATIONS MADE AT BUCHAREST UNDER THE DIRECTION OF C. CRISTESCU. REDUCTIONS BY B. MILET.

Object	Date	UT	R. A. (1950)	Decl.	O - C	Obs.
1	1972 02	01.87365	09 35 51.90	+29 06 02.3		073
1	1972 02	01.87573	09 35 51.79	+29 06 03.4		073
1	1972 02	01.87780	09 35 51.69	+29 06 04.3		073
1	1972 02	02.84875	09 34 59.50	+29 13 19.9		073
1	1972 02	04.84983	09 33 09.89	+29 27 57.4		073
1	1972 02	04.85675	09 33 09.48	+29 28 00.8		073
1	1972 02	08.89287	09 29 23.44	+29 55 29.7		073
1	1972 02	08.89425	09 29 23.37	+29 55 30.9		073
1	1972 02	08.89564	09 29 23.28	+29 55 31.4		073
1	1972 02	09.90536	09 28 26.15	+30 01 56.1		073
1	1972 02	09.91228	09 28 25.76	+30 01 58.7		073
1	1972 02	09.91921	09 28 25.38	+30 02 01.6		073
1	1972 02	24.79772	09 15 03.08	+31 10 55.8		073
1	1972 02	24.80277	09 15 02.93	+31 10 56.8		073
1	1972 02	24.80534	09 15 02.64	+31 10 57.6		073
1	1972 03	08.74410	09 06 27.02	+31 28 43.3		073
1	1972 03	08.74895	09 06 27.17	+31 28 43.5		073
1	1972 03	08.75379	09 06 27.36	+31 28 43.8		073
1	1972 03	09.81582	09 05 55.94	+31 28 31.1		073

1	1972	03	09.81790	09	05	55.88	+31	28	31.0	073
1	1972	03	09.81998	09	05	55.82	+31	28	31.2	073
1	1972	03	13.77479	09	04	17.77	+31	25	38.0	073
1	1972	03	13.77756	09	04	17.71	+31	25	37.9	073
1	1972	03	13.78033	09	04	17.66	+31	25	37.7	073
1	1972	03	14.74537	09	03	57.97	+31	24	26.4	073
1	1972	03	14.74744	09	03	57.92	+31	24	26.4	073
1	1972	03	14.74952	09	03	57.86	+31	24	26.4	073
1	1972	03	16.73889	09	03	22.54	+31	21	24.9	073
1	1972	03	16.74166	09	03	22.48	+31	21	24.7	073
1	1972	03	16.74443	09	03	22.43	+31	21	24.7	073
1	1972	03	17.73858	09	03	07.44	+31	19	35.8	073
1	1972	03	17.74481	09	03	07.53	+31	19	36.9	073
1	1972	03	21.74462	09	02	25.73	+31	10	36.2	073
1	1972	03	21.74739	09	02	25.71	+31	10	35.9	073
1	1972	03	21.75016	09	02	25.67	+31	10	35.4	073
1	1972	03	22.75436	09	02	19.80	+31	07	51.9	073
1	1972	03	22.76059	09	02	19.85	+31	07	52.9	073
1	1972	03	23.74607	09	02	15.93	+31	05	03.6	073
1	1972	03	23.74953	09	02	15.91	+31	05	02.9	073
1	1972	03	23.75507	09	02	15.90	+31	05	02.0	073
1	1972	03	27.74208	09	02	18.05	+30	52	07.7	073
1	1972	03	27.74554	09	02	18.03	+30	52	07.0	073
1	1972	03	27.75039	09	02	18.06	+30	52	05.8	073
1	1972	03	28.75632	09	02	23.17	+30	48	25.1	073
1	1972	03	28.76186	09	02	23.13	+30	48	26.6	073
1	1972	03	28.76740	09	02	23.11	+30	48	27.7	073
1	1972	04	01.74021	09	03	00.53	+30	32	41.0	073
1	1972	04	01.74367	09	03	00.58	+30	32	40.7	073
1	1972	04	01.74713	09	03	00.62	+30	32	39.5	073
1	1972	04	07.74273	09	04	47.50	+30	05	02.7	073
1	1972	04	07.75013	09	04	47.33	+30	05	05.1	073
1	1972	04	10.73567	09	06	02.23	+29	49	43.5	073
1	1972	04	10.73844	09	06	02.28	+29	49	42.7	073
1	1972	04	10.74260	09	06	02.40	+29	49	41.2	073
1	1973	05	02.95541	17	01	32.40	-18	21	13.5	073
1	1973	05	02.95887	17	01	32.27	-18	21	14.1	073
1	1973	05	02.96232	17	01	32.13	-18	21	14.7	073
1	1973	05	11.90415	16	55	35.86	-18	35	05.5	073
1	1973	05	11.90899	16	55	36.07	-18	35	05.2	073
1	1973	05	11.91384	16	55	36.27	-18	35	04.8	073
1	1973	05	14.92538	16	53	13.84	-18	39	53.6	073
1	1973	05	21.91111	16	47	11.20	-18	51	12.0	073
1	1973	05	21.91872	16	47	10.84	-18	51	12.7	073
1	1973	05	23.84815	16	45	24.35	-18	54	23.2	073
1	1973	05	23.85231	16	45	24.13	-18	54	23.6	073
1	1973	05	26.90852	16	42	30.91	-18	59	27.1	073
1	1973	05	26.91263	16	42	31.19	-18	59	26.8	073
1	1973	06	02.90219	16	35	45.78	-19	11	10.4	073
1	1973	06	02.90566	16	35	45.60	-19	11	10.5	073
1	1973	06	20.82290	16	19	38.61	-19	43	28.4	073
1	1973	06	20.82705	16	19	38.80	-19	43	27.9	073
1	1973	06	20.83121	16	19	39.06	-19	43	27.6	073
1	1973	06	28.82771	16	14	01.24	-19	59	48.6	073
1	1973	06	28.83325	16	14	01.44	-19	59	47.8	073
1	1973	06	29.81553	16	13	25.51	-20	01	56.5	073
1	1973	06	29.81945	16	13	25.36	-20	01	56.8	073
1	1974	09	18.85817	22	48	02.94	-24	14	45.3	073
1	1974	09	18.86487	22	48	02.60	-24	14	46.3	073

1	1974	09	19.84644	22	47	17.21	-24	17	08.2	073
1	1974	09	19.85199	22	47	16.97	-24	17	08.9	073
1	1974	09	19.85753	22	47	16.70	-24	17	09.7	073
1	1974	10	03.76706	22	38	08.98	-24	29	32.5	073
1	1974	10	03.77329	22	38	08.65	-24	29	31.9	073
1	1974	10	17.77076	22	32	53.40	-24	04	20.6	073
1	1974	10	17.77769	22	32	53.36	-24	04	19.3	073
1	1974	11	06.70096	22	33	18.50	-22	35	33.6	073
1	1974	11	06.71066	22	33	18.60	-22	35	30.9	073
2	1972	01	26.67436	03	55	46.19	-24	46	22.3	073
2	1972	01	26.67713	03	55	46.21	-24	46	19.7	073
2	1972	01	26.67990	03	55	46.36	-24	46	15.8	073
2	1973	04	28.86384	15	06	09.29	+23	40	21.4	073
2	1973	04	28.86938	15	06	09.01	+23	40	24.9	073
2	1973	05	02.89308	15	02	49.66	+24	20	41.7	073
2	1973	05	02.89862	15	02	49.41	+24	20	44.8	073
2	1973	05	02.90277	15	02	49.18	+24	20	46.9	073
2	1973	05	07.88114	14	58	40.45	+25	01	58.1	073
2	1973	05	07.88599	14	58	40.24	+25	02	00.0	073
2	1973	05	07.89084	14	58	39.96	+25	02	02.1	073
2	1973	05	11.86709	14	55	24.49	+25	27	55.3	073
2	1973	05	11.87263	14	55	24.15	+25	27	57.2	073
2	1973	05	11.87748	14	55	23.96	+25	27	58.8	073
2	1973	05	14.84124	14	53	02.29	+25	43	14.6	073
2	1973	05	14.84609	14	53	02.06	+25	43	15.9	073
2	1973	05	14.85024	14	53	01.84	+25	43	17.1	073
2	1973	05	19.82411	14	49	15.79	+26	01	20.9	073
2	1973	05	19.83104	14	49	15.48	+26	01	21.6	073
2	1973	05	21.85570	14	47	48.62	+26	06	04.5	073
2	1973	05	21.85916	14	47	48.47	+26	06	05.0	073
2	1973	05	21.86332	14	47	48.27	+26	06	05.4	073
2	1973	05	22.80700	14	47	09.11	+26	07	46.3	073
2	1973	05	22.81037	14	47	08.97	+26	07	46.7	073
2	1973	05	26.87320	14	44	29.12	+26	11	27.4	073
2	1973	05	26.87874	14	44	29.34	+26	11	27.6	073
2	1973	06	02.82192	14	40	37.20	+26	05	02.5	073
2	1973	06	02.82809	14	40	37.02	+26	05	01.8	073
2	1974	07	25.82372	19	38	28.30	+18	39	47.1	073
2	1974	07	25.82857	19	38	28.05	+18	39	45.1	073
2	1974	07	25.83341	19	38	27.83	+18	39	43.2	073
2	1974	07	27.82657	19	36	53.95	+18	25	36.7	073
2	1974	07	27.83142	19	36	53.73	+18	25	34.2	073
2	1974	07	27.83634	19	36	53.49	+18	25	32.3	073
2	1974	07	29.81418	19	35	21.99	+18	10	37.1	073
2	1974	07	29.82111	19	35	21.66	+18	10	33.9	073
2	1974	07	29.82596	19	35	21.45	+18	10	31.8	073
2	1974	08	05.81927	19	30	14.78	+17	10	55.9	073
2	1974	08	05.82554	19	30	14.51	+17	10	52.4	073
2	1974	08	05.83246	19	30	14.23	+17	10	48.4	073
2	1974	08	07.84744	19	28	51.91	+16	51	49.6	073
2	1974	08	07.85298	19	28	51.68	+16	51	46.9	073
2	1974	08	07.85852	19	28	51.43	+16	51	43.7	073
2	1974	08	08.84574	19	28	12.32	+16	42	09.0	073
2	1974	08	08.84990	19	28	12.13	+16	42	06.5	073
2	1974	08	16.80729	19	23	27.82	+15	19	14.4	073
2	1974	08	16.81145	19	23	27.68	+15	19	12.1	073
2	1974	08	16.81560	19	23	27.54	+15	19	09.0	073
2	1974	08	21.78153	19	21	02.26	+14	23	12.0	073
2	1974	08	21.78811	19	21	02.02	+14	23	07.5	073

2	1974	08	21.79469	19	21	01.86	+14	23	03.0	073
3	1972	02	24.95666	13	15	18.11	-02	51	07.4	073
3	1972	02	24.96220	13	15	18.02	-02	51	15.3	073
3	1972	02	24.96567	13	15	17.93	-02	51	14.0	073
3	1972	03	08.93593	13	09	32.73	-01	14	53.8	073
3	1972	03	08.94286	13	09	32.50	-01	14	50.6	073
3	1972	03	09.92940	13	08	58.24	-01	06	46.9	073
3	1972	03	09.93148	13	08	58.17	-01	06	46.1	073
3	1972	03	09.94048	13	08	57.83	-01	06	41.3	073
3	1972	03	14.93409	13	05	49.53	-00	24	46.4	073
3	1972	03	14.93686	13	05	49.42	-00	24	44.7	073
3	1972	03	16.92277	13	04	28.54	-00	07	13.1	073
3	1972	03	16.92899	13	04	28.40	-00	07	41.0	073
3	1972	03	16.93215	13	04	28.13	-00	07	37.8	073
3	1972	03	17.91691	13	03	46.72	+00	00	54.8	073
3	1972	03	17.92384	13	03	46.41	+00	00	58.3	073
3	1972	03	21.89040	13	00	53.45	+00	35	30.7	073
3	1972	03	21.89594	13	00	53.20	+00	35	33.4	073
3	1972	03	21.90079	13	00	52.97	+00	35	36.0	073
3	1972	03	22.88871	13	00	08.47	+00	44	13.1	073
3	1972	03	22.89495	13	00	08.19	+00	44	16.3	073
3	1972	03	22.89979	13	00	07.95	+00	44	19.1	073
3	1972	03	27.80856	12	56	20.97	+01	26	55.9	073
3	1972	03	27.81410	12	56	20.72	+01	26	59.2	073
3	1972	03	27.81964	12	56	20.42	+01	27	01.6	073
3	1972	03	28.89310	12	55	29.73	+01	36	14.6	073
3	1972	03	28.90002	12	55	29.37	+01	36	18.8	073
3	1972	03	30.84402	12	53	57.26	+01	52	51.9	073
3	1972	03	30.85095	12	53	56.90	+01	52	55.3	073
3	1972	04	01.87560	12	52	20.46	+02	09	54.4	073
3	1972	04	01.87976	12	52	20.27	+02	09	56.8	073
3	1972	04	01.88391	12	52	20.07	+02	09	58.8	073
3	1972	04	04.84663	12	49	59.17	+02	34	16.9	073
3	1972	04	04.85494	12	49	58.80	+02	34	20.8	073
3	1972	04	05.91246	12	49	08.22	+02	42	55.0	073
3	1972	04	05.92284	12	49	08.71	+02	42	49.8	073
3	1972	04	07.81626	12	47	39.23	+02	57	50.2	073
3	1972	04	07.82942	12	47	38.71	+02	57	55.9	073
3	1972	05	08.78775	12	29	10.18	+05	45	22.5	073
3	1972	05	08.79606	12	29	09.99	+05	45	24.0	073
3	1972	05	15.77410	12	27	17.41	+05	59	50.6	073
3	1972	05	15.78484	12	27	17.29	+05	59	51.5	073
3	1973	05	07.97013	17	21	13.84	-05	40	16.0	073
3	1973	05	07.97498	17	21	13.67	-05	40	14.8	073
3	1973	05	07.97983	17	21	13.49	-05	40	13.2	073
3	1973	05	11.92630	17	18	56.81	-05	23	00.3	073
3	1973	05	11.93530	17	18	56.45	-05	22	57.9	073
3	1973	05	21.92669	17	12	04.14	-04	44	13.1	073
3	1973	05	21.93292	17	12	03.88	-04	44	12.0	073
3	1973	05	21.93708	17	12	03.69	-04	44	11.2	073
3	1973	05	23.86166	17	10	35.24	-04	37	41.7	073
3	1973	05	23.86789	17	10	37.49	-04	37	41.0	073
3	1973	06	02.91406	17	02	21.11	-04	10	09.5	073
3	1973	06	02.92020	17	02	20.79	-04	10	08.8	073
3	1973	06	20.84056	16	47	18.34	-03	52	13.5	073
3	1973	06	20.85025	16	47	18.78	-03	52	13.4	073
3	1973	06	22.85484	16	45	44.42	-03	52	53.0	073
3	1973	06	22.86107	16	45	44.14	-03	52	53.1	073
3	1973	06	26.84842	16	42	44.84	-03	55	47.5	073

3	1973	06	26.85673	16	42	45.22	-03	55	46.9	073
3	1973	06	28.84364	16	41	19.87	-03	58	02.0	073
3	1973	06	28.85334	16	41	20.27	-03	58	01.1	073
3	1973	06	29.82955	16	40	39.53	-03	59	18.6	073
3	1973	06	29.83641	16	40	39.23	-03	59	19.5	073
3	1973	07	05.83076	16	36	50.66	-04	09	50.2	073
3	1973	07	05.84115	16	36	51.02	-04	09	48.6	073
3	1974	08	27.84548	22	54	24.48	-02	31	41.4	073
3	1974	08	27.85102	22	54	24.20	-02	31	45.2	073
3	1974	09	09.83495	22	44	51.64	-04	59	53.4	073
3	1974	09	09.84187	22	44	51.33	-04	59	58.2	073
3	1974	09	18.79619	22	38	25.45	-06	46	03.9	073
3	1974	09	18.80381	22	38	25.14	-06	46	09.0	073
3	1974	09	19.80280	22	37	45.10	-06	57	43.4	073
3	1974	09	19.80904	22	37	44.83	-06	57	47.9	073
3	1974	09	19.81527	22	37	44.56	-06	57	52.2	073
3	1974	09	20.81014	22	37	05.85	-07	09	21.2	073
3	1974	09	20.81465	22	37	05.67	-07	09	24.6	073
3	1974	10	03.72897	22	30	25.38	-09	25	48.7	073
3	1974	10	03.73658	22	30	25.26	-09	25	53.1	073
3	1974	10	14.76199	22	28	01.62	-10	56	38.9	073
3	1974	10	14.77030	22	28	01.60	-10	56	42.3	073
3	1974	10	17.75137	22	27	59.38	-11	16	20.1	073
3	1974	10	17.75933	22	27	59.38	-11	16	16.9	073
3	1974	10	19.70887	22	28	06.80	-11	27	55.7	073
3	1974	10	19.70939	22	28	06.83	-11	28	00.1	073
3	1974	11	05.72698	22	34	00.31	-12	29	10.2	073
3	1974	11	05.73312	22	34	00.49	-12	29	11.0	073
3	1974	11	06.67465	22	34	34.69	-12	30	31.6	073
3	1974	11	06.68157	22	34	34.91	-12	30	32.4	073
4	1972	09	08.00386	04	47	34.27	+15	53	05.8	073
4	1972	09	08.00732	04	47	34.45	+15	53	05.9	073
4	1972	09	08.01078	04	47	34.62	+15	53	05.8	073
4	1972	10	23.85262	05	01	46.63	+15	32	36.5	073
4	1972	10	23.85608	05	01	46.55	+15	32	36.4	073
4	1972	10	23.86232	05	01	46.44	+15	32	35.8	073
4	1972	10	24.91153	05	01	24.05	+15	31	36.2	073
4	1972	10	24.91984	05	01	24.25	+15	31	36.6	073
4	1972	10	28.86249	04	59	42.81	+15	27	47.0	073
4	1972	10	28.86664	04	59	42.69	+15	27	46.8	073
4	1972	10	28.87357	04	59	42.48	+15	27	46.2	073
4	1972	11	01.91735	04	57	29.23	+15	23	54.8	073
4	1972	11	01.92220	04	57	29.44	+15	23	55.0	073
4	1972	11	03.90635	04	56	13.36	+15	22	03.4	073
4	1972	11	03.91189	04	56	13.60	+15	22	03.9	073
4	1972	11	07.94147	04	53	19.68	+15	18	26.0	073
4	1972	11	07.94355	04	53	19.56	+15	18	25.8	073
4	1972	11	09.83351	04	51	49.64	+15	16	48.9	073
4	1972	11	09.83905	04	51	49.38	+15	16	48.8	073
4	1972	11	09.84459	04	51	49.07	+15	16	48.3	073
4	1972	11	17.93180	04	44	29.42	+15	10	47.2	073
4	1972	11	17.93596	04	44	29.69	+15	10	47.8	073
4	1972	11	27.82206	04	34	10.01	+15	06	14.5	073
4	1972	11	27.82552	04	34	09.79	+15	06	14.2	073
4	1972	11	27.82898	04	34	09.57	+15	06	14.1	073
4	1972	12	12.76409	04	18	08.50	+15	08	33.0	073
4	1972	12	12.76755	04	18	08.26	+15	08	32.9	073
4	1972	12	12.77101	04	18	08.06	+15	08	33.3	073
4	1972	12	14.78944	04	16	07.95	+15	09	58.3	073

4	1972	12	14.79290	04	16	07.72	+15	09	58.6			073
4	1972	12	14.79636	04	16	07.53	+15	09	58.7			073
4	1972	12	21.75243	04	09	48.46	+15	17	13.2			073
4	1972	12	21.75589	04	09	48.30	+15	17	13.3			073
4	1972	12	21.75866	04	09	48.12	+15	17	13.5			073
4	1972	12	28.78455	04	04	33.02	+15	28	24.9			073
4	1972	12	28.78732	04	04	32.91	+15	28	25.3			073
4	1972	12	28.79009	04	04	32.80	+15	28	25.6			073
4	1972	12	29.76902	04	03	55.14	+15	30	18.7			073
4	1972	12	29.77179	04	03	55.03	+15	30	18.7			073
4	1972	12	29.77456	04	03	54.92	+15	30	19.5			073
4	1973	01	01.68705	04	02	12.50	+15	36	23.5			073
4	1973	01	01.69052	04	02	12.38	+15	36	23.7			073
4	1973	01	01.69398	04	02	12.29	+15	36	24.2			073
4	1973	01	11.66250	03	58	16.23	+16	02	25.1			073
4	1973	01	11.66597	03	58	16.19	+16	02	25.5			073
4	1973	01	11.66943	03	58	16.15	+16	02	26.0			073
4	1973	01	12.68228	03	58	02.37	+16	05	32.0			073
4	1973	01	12.68643	03	58	02.32	+16	05	32.7			073
4	1973	01	25.68033	03	57	50.09	+16	51	19.1			073
4	1973	01	25.68379	03	57	50.12	+16	51	19.9			073
4	1973	01	25.68725	03	57	50.15	+16	51	21.0			073
4	1973	01	26.68521	03	58	01.46	+16	55	18.5			073
4	1973	01	26.69352	03	58	01.53	+16	55	20.4			073
4	1973	01	27.70002	03	58	14.75	+16	59	25.0			073
4	1973	01	27.70417	03	58	14.62	+16	59	23.4			073
4	1973	02	05.69243	04	01	25.48	+17	37	38.8			073
4	1973	02	05.69520	04	01	25.55	+17	37	39.2			073
4	1973	02	05.69797	04	01	25.62	+17	37	40.2			073
4	1973	02	09.69231	04	03	30.86	+17	55	42.4			073
4	1973	02	09.69923	04	03	31.11	+17	55	44.3			073
4	1974	03	21.86442	13	07	00.61	+06	24	30.6			073
4	1974	03	21.86857	13	07	00.36	+06	24	32.5			073
4	1974	03	21.87273	13	07	00.15	+06	24	34.2			073
4	1974	03	28.85192	13	01	08.80	+07	14	48.1			073
4	1974	03	28.86023	13	01	08.34	+07	14	50.7			073
4	1974	04	22.83220	12	39	15.11	+09	09	12.8			073
4	1974	04	22.83497	12	39	14.98	+09	09	12.6			073
4	1974	04	22.83774	12	39	14.84	+09	09	13.0			073
4	1974	04	24.83609	12	37	48.76	+09	11	58.8			073
4	1974	04	24.84232	12	37	48.52	+09	11	59.5			073
4	1974	04	24.84856	12	37	48.23	+09	11	59.7			073
4	1974	05	06.77290	12	31	16.96	+09	06	26.6			073
4	1974	05	06.77705	12	31	16.87	+09	06	25.7			073
4	1974	05	06.78121	12	31	16.77	+09	06	24.0			073
4	1974	05	17.81168	12	28	46.18	+08	30	16.7			073
4	1974	05	17.81722	12	28	46.16	+08	30	15.1			073
4	1974	05	17.82276	12	28	46.08	+08	30	13.2			073
5	1972	08	09.88950	21	02	25.98	-15	54	24.3	0.0	0	073
5	1972	08	09.90196	21	02	25.23	-15	54	26.9	0.0	0	073
5	1972	08	28.78708	20	47	12.39	-17	25	07.9	0.0	0	073
5	1972	08	28.79816	20	47	11.90	-17	25	10.0	0.0	0	073
5	1972	09	04.76934	20	42	51.71	-17	52	08.5	0.0	0	073
5	1972	09	04.78250	20	42	51.25	-17	52	11.1	0.0	0	073
5	1973	09	25.02115	02	59	27.95	+09	29	24.6	0.0	1-	073
5	1973	09	25.02530	02	59	27.72	+09	29	21.6	0.0	1-	073
5	1973	10	29.89164	02	37	55.68	+06	30	51.4	0.0	1-	073
5	1973	10	29.89649	02	37	55.42	+06	30	49.8	0.0	1-	073
5	1973	11	02.90600	02	34	13.63	+06	09	46.4	0.0	0	073

5	1973	11	02.91501	02	34	13.07	+06	09	43.1	0.0	0	073
5	1973	12	05.75123	02	09	05.92	+04	34	34.3	0.0		073
5	1973	12	05.76162	02	09	05.66	+04	34	34.9	0.0		073
5	1973	12	12.71655	02	06	41.88	+04	38	42.9	0.0	1-	073
5	1973	12	12.72659	02	06	41.69	+04	38	43.2	0.0	1-	073
5	1973	12	23.67407	02	05	40.70	+05	02	49.5	0.0	0	073
5	1973	12	23.68169	02	05	40.69	+05	02	51.3	0.0	0	073
5	1974	01	21.78400	02	18	40.33	+07	30	57.9			073
5	1974	01	21.79231	02	18	40.72	+07	31	01.4			073
5	1974	01	31.73250	02	27	36.52	+08	40	46.7			073
5	1974	01	31.74289	02	27	37.13	+08	40	52.1			073
6	1972	07	14.94110	21	05	06.79	-10	04	06.9			073
6	1972	07	14.94460	21	05	06.67	-10	04	08.7			073
6	1972	08	14.81111	20	41	01.41	-16	18	54.6			073
6	1972	08	14.81388	20	41	01.27	-16	18	56.9			073
6	1972	08	14.81665	20	41	01.11	-16	18	59.1			073
6	1972	08	16.83751	20	39	23.93	-16	45	35.9			073
6	1972	08	16.84444	20	39	23.66	-16	45	41.0			073
6	1972	08	30.77020	20	30	25.46	-19	36	27.6			073
6	1972	08	30.77712	20	30	25.65	-19	36	22.9			073
6	1972	09	04.74962	20	28	28.88	-20	29	30.0			073
6	1972	09	04.75238	20	28	28.81	-20	29	31.6			073
6	1972	09	04.75515	20	28	28.74	-20	29	33.5			073
6	1972	09	07.73381	20	27	42.14	-20	58	49.4			073
6	1972	09	07.73728	20	27	42.08	-20	58	52.0			073
6	1972	09	29.75249	20	31	43.45	-23	31	39.9			073
6	1972	09	29.75873	20	31	43.69	-23	31	41.6			073
6	1974	02	13.81822	09	05	58.08	+16	21	38.5			073
6	1974	02	13.82584	09	05	57.70	+16	21	43.2			073
6	1974	02	15.86747	09	04	06.35	+16	41	22.9			073
6	1974	02	15.87509	09	04	05.94	+16	41	27.3			073
6	1974	03	21.74012	08	46	03.34	+20	36	03.2			073
6	1974	03	21.74981	08	46	03.28	+20	36	05.6			073
6	1974	03	22.73219	08	45	59.06	+20	39	57.7			073
6	1974	03	22.74119	08	45	59.01	+20	39	59.9			073
6	1974	03	22.75019	08	45	58.95	+20	40	02.1			073
6	1974	03	23.74643	08	45	56.27	+20	43	48.7			073
6	1974	03	23.75405	08	45	56.26	+20	43	50.6			073
6	1974	03	27.73414	08	46	02.27	+20	57	13.2			073
6	1974	03	27.74314	08	46	02.24	+20	57	14.5			073
6	1974	03	29.73283	08	46	14.97	+21	02	58.4			073
6	1974	03	29.74114	08	46	15.06	+21	02	59.9			073
7	1972	05	16.93651	18	20	50.46	-23	05	13.5			073
7	1972	05	16.94482	18	20	50.27	-23	05	12.9			073
7	1972	05	24.92227	18	16	07.95	-22	53	15.6			073
7	1972	05	24.92919	18	16	07.68	-22	53	15.3			073
7	1972	05	31.91213	18	10	42.73	-22	41	59.7			073
7	1972	05	31.92044	18	10	42.12	-22	41	58.5			073
7	1972	06	09.92805	18	02	15.26	-22	26	01.3			073
7	1972	06	09.93775	18	02	14.68	-22	26	00.1			073
7	1972	06	12.90385	17	59	11.84	-22	20	19.2			073
7	1972	06	12.91146	17	59	11.33	-22	20	18.7			073
7	1972	06	14.88306	17	57	06.89	-22	16	26.0			073
7	1972	06	14.89137	17	57	06.41	-22	16	25.3			073
7	1972	06	29.86223	17	41	03.71	-21	44	35.1			073
7	1972	06	29.86916	17	41	03.25	-21	44	34.4			073
7	1972	07	01.86438	17	39	00.14	-21	40	09.7			073
7	1972	07	01.87131	17	38	59.67	-21	40	09.2			073
7	1972	07	07.83728	17	33	10.31	-21	27	02.6			073



7	1972	07	07.84559	17	33	09.91	-21	27	01.8			073
7	1973	10	28.06500	06	49	52.87	+23	59	43.6			073
7	1973	10	28.07261	06	49	53.24	+23	59	41.5			073
7	1973	10	30.05959	06	51	30.26	+23	51	25.5			073
7	1973	10	30.06444	06	51	30.47	+23	51	24.4			073
7	1973	10	30.06929	06	51	30.68	+23	51	23.3			073
7	1973	11	05.97780	06	55	56.72	+23	22	18.1			073
7	1973	11	05.98126	06	55	56.82	+23	22	17.1			073
7	1973	11	05.98472	06	55	56.91	+23	22	16.3			073
7	1973	11	19.84300	06	58	54.53	+22	24	14.4			073
7	1973	11	19.84785	06	58	54.48	+22	24	13.3			073
7	1973	11	19.85270	06	58	54.49	+22	24	12.3			073
7	1973	12	06.92336	06	51	18.85	+21	17	38.6			073
7	1973	12	06.92752	06	51	18.65	+21	17	37.7			073
7	1973	12	06.93444	06	51	18.29	+21	17	36.1			073
7	1973	12	23.83890	06	34	39.95	+20	18	27.5			073
7	1973	12	23.84305	06	34	39.65	+20	18	26.7			073
7	1973	12	23.84721	06	34	39.36	+20	18	25.9			073
7	1973	12	27.81411	06	30	12.77	+20	05	44.7			073
7	1973	12	27.82173	06	30	12.26	+20	05	43.5			073
7	1973	12	27.82727	06	30	11.85	+20	05	42.2			073
7	1974	01	14.74769	06	12	27.84	+19	17	09.1			073
7	1974	01	14.75392	06	12	27.55	+19	17	08.6			073
7	1974	01	14.76431	06	12	27.04	+19	17	07.1			073
7	1974	02	09.77355	06	04	16.30	+18	41	49.1			073
7	1974	02	09.77857	06	04	16.32	+18	41	49.2			073
7	1974	02	11.69588	06	04	39.19	+18	40	43.2			073
7	1974	02	11.71978	06	04	39.47	+18	40	42.7			073
7	1974	02	11.72393	06	04	39.54	+18	40	42.6			073
7	1974	02	13.73165	06	05	11.77	+18	39	44.3			073
7	1974	02	13.73997	06	05	11.93	+18	39	44.5			073
7	1974	02	14.69706	06	05	30.10	+18	39	19.0			073
7	1974	02	14.70122	06	05	30.17	+18	39	18.9			073
7	1974	02	14.70537	06	05	30.24	+18	39	18.8			073
7	1974	02	16.69751	06	06	14.15	+18	38	33.0			073
7	1974	02	16.70652	06	06	14.36	+18	38	33.6			073
7	1974	03	01.70810	06	14	00.42	+18	35	28.7			073
7	1974	03	01.71710	06	14	00.81	+18	35	28.6			073
8	1973	04	18.85343	13	25	39.28	+01	25	20.2	0.0	0	073
8	1973	04	18.86035	13	25	38.93	+01	25	22.1	0.0	0	073
8	1973	04	20.84970	13	23	42.43	+01	35	11.0	0.1-	0	073
8	1973	04	20.85593	13	23	42.16	+01	35	12.5	0.1-	0	073
8	1973	04	28.84168	13	16	19.43	+02	08	03.1	0.1-	0	073
8	1973	04	28.84999	13	16	18.96	+02	08	04.9	0.1-	0	073
8	1974	09	09.81902	22	16	56.82	-19	51	45.0			073
8	1974	09	09.82595	22	16	56.44	-19	51	48.9			073
9	1973	04	18.77171	12	14	21.02	+06	37	51.9	0.0	0	073
9	1973	04	18.77863	12	14	20.72	+06	37	52.7	0.0	0	073
9	1973	04	20.78218	12	12	57.58	+06	40	15.6	0.0	0	073
9	1973	04	20.78772	12	12	57.35	+06	40	15.8	0.0	0	073
10	1972	04	07.91805	14	32	23.23	-20	40	17.9	0.1-	1+	073
10	1972	04	07.92636	14	32	22.94	-20	40	16.6	0.1-	1+	073
10	1972	04	10.91330	14	30	29.36	-20	33	01.2	0.1-	1+	073
10	1972	04	10.92161	14	30	29.03	-20	32	54.6	0.1-	1+	073
10	1972	05	08.87050	14	09	23.04	-18	41	16.1	0.1+	0	073
10	1972	05	08.88089	14	09	22.55	-18	41	13.4	0.1+	0	073
10	1972	05	09.87434	14	08	39.37	-18	36	26.2	0.1+	0	073
10	1972	05	09.88508	14	08	38.88	-18	36	22.9	0.1+	1+	073
10	1972	05	15.86066	14	04	34.32	-18	07	43.7	0.0	1+	073

10	1972	05	15.86759	14	04	34.06	-18	07	41.9	0.0	1+	073
10	1972	05	16.85030	14	03	56.74	-18	03	01.8	0.0	1+	073
10	1972	05	16.85723	14	03	56.49	-18	02	59.8	0.0	1+	073
10	1972	05	24.80557	13	59	33.49	-17	27	07.2	0.0	0	073
10	1972	05	24.81250	13	59	33.27	-17	27	05.7	0.0	0	073
10	1973	08	02.88167	21	29	34.38	-11	25	40.6	0.0	0	073
10	1973	08	02.89345	21	29	34.03	-11	25	42.0	0.0	0	073
10	1973	09	01.81317	21	07	22.11	-12	47	26.0	0.0	1+	073
10	1973	09	01.82079	21	07	21.82	-12	47	27.0	0.0	1+	073
10	1973	09	05.48924	21	05	07.09	-12	56	40.6	0.2-	1-	073
10	1973	09	05.49824	21	05	06.86	-12	56	41.5	0.2-	1-	073
10	1973	09	08.77194	21	03	36.50	-13	03	02.8	0.1-	0	073
10	1973	09	08.78025	21	03	36.34	-13	03	03.7	0.1-	0	073
10	1973	09	21.79066	20	59	09.45	-13	23	47.0	0.0	0	073
10	1973	09	21.79966	20	59	09.32	-13	23	47.6	0.0	0	073
10	1973	09	24.72924	20	58	39.65	-13	26	41.9	0.1+	1+	073
10	1973	10	01.70702	20	58	15.23	-13	30	51.0	0.0	0	073
10	1973	10	01.71256	20	58	15.28	-13	30	50.9	0.0	0	073
10	1973	10	11.69837	20	59	32.68	-13	29	40.6	0.0	1-	073
10	1973	10	11.70321	20	59	32.75	-13	29	40.3	0.0	1-	073
10	1973	10	15.71550	21	00	39.29	-13	26	50.1	0.0	0	073
10	1973	10	15.72242	21	00	39.43	-13	26	49.2	0.0	0	073
10	1973	10	17.73671	21	01	20.16	-13	24	53.7	0.0	0	073
10	1973	10	17.74641	21	01	20.30	-13	24	53.2	0.0	0	073
10	1973	10	20.72125	21	02	29.19	-13	21	25.3	0.0	0	073
10	1973	10	20.72887	21	02	29.41	-13	21	24.9	0.0	0	073
10	1973	10	26.68029	21	05	17.16	-13	12	13.4	0.0	0	073
10	1973	10	26.68929	21	05	17.36	-13	12	12.2	0.0	0	073
10	1974	10	19.82591	01	55	22.23	+17	17	28.2	0.0	0	073
10	1974	10	19.83595	01	55	21.77	+17	17	26.0	0.0	0	073
10	1974	10	23.82365	01	52	17.02	+17	00	13.2	0.0	0	073
10	1974	10	23.83196	01	52	16.60	+17	00	11.3	0.0	0	073
10	1974	11	04.83801	01	43	15.43	+16	04	43.0			073
10	1974	11	04.84770	01	43	15.01	+16	04	39.8			073
10	1974	11	06.82494	01	41	51.52	+15	55	22.3	0.0	0	073
10	1974	11	06.83325	01	41	51.17	+15	55	20.1	0.0	0	073
10	1974	11	20.74691	01	33	26.76	+14	53	09.3	0.1-	1-	073
10	1974	11	20.75661	01	33	26.48	+14	53	08.0	0.1-	1-	073
11	1972	02	01.89270	09	11	47.71	+17	21	57.7			073
11	1972	02	01.89789	09	11	47.37	+17	21	59.3			073
11	1972	02	09.88954	09	03	58.26	+18	09	04.0			073
11	1972	02	09.89785	09	03	57.79	+18	09	06.5			073
11	1972	03	08.72090	08	42	33.58	+20	10	09.0			073
11	1972	03	08.73267	08	42	33.23	+20	10	11.2			073
11	1972	03	09.75158	08	42	06.02	+20	12	48.9			073
11	1972	03	09.76266	08	42	05.67	+20	12	51.1			073
11	1972	03	14.72910	08	40	15.93	+20	23	55.9			073
11	1972	03	14.73325	08	40	15.84	+20	23	56.3			073
11	1972	03	14.73740	08	40	15.76	+20	23	56.6			073
11	1972	03	17.72023	08	39	30.12	+20	29	03.0			073
11	1972	03	17.73062	08	39	29.96	+20	29	03.9			073
11	1972	03	22.73150	08	38	47.53	+20	35	06.6			073
11	1972	03	22.74189	08	38	47.47	+20	35	07.3			073
11	1972	03	23.73119	08	38	44.16	+20	35	56.6			073
11	1972	03	23.73466	08	38	44.13	+20	35	57.1			073
11	1972	03	23.73812	08	38	44.14	+20	35	56.9			073
11	1972	03	27.72338	08	38	47.25	+20	38	06.8			073
11	1972	03	27.72753	08	38	47.26	+20	38	02.1			073
11	1972	03	27.73169	08	38	47.31	+20	38	06.5			073



14	1973	10	26.77275	00	15	06.75	-12	00	46.7	0.0	0	073
14	1973	10	27.80014	00	14	29.05	-12	01	04.5	0.0	0	073
14	1973	10	27.80983	00	14	28.71	-12	01	04.4	0.0	0	073
14	1973	11	02.80143	00	11	14.24	-11	58	40.9	0.0	0	073
14	1973	11	02.81182	00	11	13.90	-11	58	40.5	0.0	0	073
14	1973	11	15.69706	00	06	52.69	-11	31	53.0	0.0	0	073
14	1973	11	15.70399	00	06	52.60	-11	31	50.5	0.0	0	073
14	1973	11	19.70485	00	06	05.43	-11	18	14.3	0.2-	0	073
14	1973	11	19.71386	00	06	05.35	-11	17	58.0	0.2-	0	073
15	1972	09	19.82120	23	59	18.37	+21	47	12.0	0.1-	0	073
15	1972	09	19.82986	23	59	17.93	+21	47	11.6	0.1-	0	073
15	1972	10	02.80958	23	47	23.93	+21	14	01.9	0.1-	0	073
15	1972	10	02.81304	23	47	23.71	+21	14	00.9	0.1-	0	073
15	1972	10	23.71930	23	33	31.58	+19	08	03.9	0.1-	1-	073
15	1972	10	23.72554	23	33	31.39	+19	08	01.5	0.1-	1-	073
15	1974	03	13.84225	09	33	42.53	+02	20	43.0			073
15	1974	03	13.85058	09	33	42.17	+02	20	44.2			073
15	1974	03	21.75743	09	29	14.33	+02	44	42.7	0.0	0	073
15	1974	03	21.76366	09	29	14.18	+02	44	43.8	0.0	0	073
15	1974	03	22.76300	09	28	46.70	+02	47	35.3			073
15	1974	03	22.77131	09	28	46.45	+02	47	36.6			073
15	1974	03	23.76338	09	28	20.66	+02	50	23.9	0.1-	0	073
15	1974	03	23.76964	09	28	20.49	+02	50	24.6	0.1-	0	073
15	1974	03	28.76569	09	26	33.09	+03	03	41.0	0.1-	0	073
15	1974	03	28.77262	09	26	32.96	+03	03	42.4	0.1-	0	073
15	1974	03	29.75049	09	26	16.42	+03	05	56.7	0.0	0	073
15	1974	03	29.75742	09	26	16.34	+03	05	58.1	0.0		073
16	1972	03	22.83123	10	29	19.92	+10	31	54.2	0.1+	0	073
16	1972	03	22.84023	10	29	19.62	+10	31	56.1	0.1+	0	073
16	1972	03	23.80009	10	28	45.71	+10	35	46.8	0.1+	0	073
16	1972	03	23.80771	10	28	45.46	+10	35	47.7	0.1+	0	073
16	1972	03	30.78827	10	25	06.80	+11	00	35.5	0.1+	0	073
16	1972	03	30.79658	10	25	06.50	+11	00	36.8	0.1+	0	073
16	1973	05	07.86521	14	58	18.18	-12	24	12.0	0.0	0	073
16	1973	05	07.87214	14	58	17.84	-12	24	10.0	0.0	0	073
16	1973	05	11.84909	14	55	05.72	-12	09	37.8	0.0	0	073
16	1973	05	11.85809	14	55	05.26	-12	09	35.9	0.0	0	073
17	1972	02	24.74405	08	31	42.56	+20	32	15.3	0.0	1+	073
17	1972	02	24.75305	08	31	42.23	+20	32	17.0	0.0	1+	073
17	1973	06	20.92228	18	47	43.85	-17	46	11.1	0.3-	1+	073
17	1973	06	20.93197	18	47	43.29	-17	46	12.7	0.3-	1+	073
17	1973	06	26.86850	18	42	24.23	-18	09	04.8	0.4-	1+	073
17	1973	06	26.87958	18	42	23.59	-18	09	07.2	0.4-	1+	073
17	1973	07	21.79939	18	21	04.36	-19	59	47.1	0.5-	0	073
17	1973	07	21.80770	18	21	04.06	-19	59	49.3	0.5-	0	073
18	1972	01	14.74424	05	23	26.75	+08	43	01.0			073
18	1972	01	14.75393	05	23	26.43	+08	43	05.5			073
18	1972	01	26.71172	05	20	04.28	+10	24	56.3			073
18	1972	01	26.71449	05	20	04.33	+10	24	56.6			073
18	1972	01	26.71726	05	20	04.26	+10	24	58.8			073
18	1972	02	09.76546	05	22	25.44	+12	25	47.9			073
18	1972	02	09.77239	05	22	25.59	+12	25	51.2			073
18	1972	02	24.69592	05	31	33.18	+14	24	51.2			073
18	1972	02	24.69869	05	31	33.29	+14	24	52.6			073
18	1972	02	24.70146	05	31	33.44	+14	24	54.4			073
18	1973	03	26.93059	13	35	46.81	+02	00	05.3			073
18	1973	03	26.93463	13	35	46.50	+02	00	07.3			073
18	1973	04	18.83334	13	15	41.23	+04	58	43.5			073
18	1973	04	18.84303	13	15	40.83	+04	58	47.3			073

18	1973 04	28.82298	13 07	20.25	+05 54	00.1			073
18	1973 04	28.83198	13 07	19.83	+05 54	02.5			073
18	1973 05	11.81896	12 58	45.69	+06 35	35.2			073
18	1973 05	11.82589	12 58	45.44	+06 35	36.1			073
18	1973 05	14.80348	12 57	16.54	+06 40	05.5			073
18	1973 05	14.80833	12 57	16.43	+06 40	05.9			073
18	1973 05	14.81318	12 57	16.29	+06 40	06.3			073
18	1973 05	21.77987	12 54	35.22	+06 43	31.8			073
18	1973 05	21.78402	12 54	35.15	+06 43	31.6			073
18	1973 05	21.78818	12 54	35.08	+06 43	31.6			073
18	1973 05	23.79433	12 54	01.06	+06 42	43.5			073
18	1973 05	23.80764	12 54	00.95	+06 42	43.2			073
18	1974 08	21.82343	21 13	10.12	-13 10	27.2			073
18	1974 08	21.82828	21 13	09.89	-13 10	30.4			073
18	1974 08	21.83312	21 13	09.63	-13 10	34.8			073
18	1974 08	27.78974	21 08	44.62	-14 24	13.4			073
18	1974 08	27.79666	21 08	44.34	-14 24	17.8			073
18	1974 09	04.80081	21 03	59.12	-15 57	15.2			073
18	1974 09	04.80842	21 03	58.83	-15 57	20.3			073
18	1974 09	09.80136	21 01	56.22	-16 49	48.3			073
18	1974 09	09.80898	21 01	56.07	-16 49	52.2			073
18	1974 09	10.75189	21 01	38.57	-16 59	12.0			073
18	1974 09	10.76089	21 01	38.39	-16 59	17.7			073
18	1974 09	17.80273	21 00	26.78	-18 02	22.2			073
18	1974 09	17.80827	21 00	26.75	-18 02	25.3			073
18	1974 09	18.76364	21 00	25.71	-18 10	02.1			073
18	1974 09	18.77126	21 00	25.68	-18 10	05.8			073
18	1974 09	19.73563	21 00	26.84	-18 17	31.4			073
18	1974 09	19.74324	21 00	26.85	-18 17	34.7			073
18	1974 09	19.75086	21 00	26.84	-18 17	38.1			073
18	1974 09	20.78556	21 00	30.22	-18 25	21.0			073
18	1974 09	20.79110	21 00	30.25	-18 25	23.5			073
18	1974 09	24.77776	21 01	06.88	-18 52	29.9			073
18	1974 10	03.71234	21 04	41.60	-19 38	05.0			073
18	1974 10	03.71927	21 04	41.84	-19 38	06.7			073
18	1974 10	11.72100	21 10	20.74	-20 01	19.7			073
18	1974 10	11.72723	21 10	21.05	-20 01	21.2			073
18	1974 10	14.73671	21 13	02.08	-20 05	51.1			073
18	1974 10	14.74502	21 13	02.53	-20 05	51.4			073
19	1972 01	14.82284	06 48	46.15	+20 19	15.1	0.1+	0	073
19	1972 01	14.82977	06 48	45.73	+20 19	15.3	0.1+	0	073
19	1974 09	04.78176	20 40	52.23	-15 47	21.4			073
19	1974 09	04.79007	20 40	51.93	-15 47	22.2			073
20	1972 10	23.83773	04 11	07.17	+20 36	33.2	0.1+	1+	073
20	1972 10	23.84466	04 11	06.98	+20 36	32.5	0.1+	1+	073
20	1972 11	01.88619	04 05	54.60	+20 17	53.8	0.0	1+	073
20	1972 11	01.89242	04 05	54.39	+20 17	51.0	0.0	1+	073
20	1972 11	03.87068	04 04	25.99	+20 12	47.2	0.0	1+	073
20	1972 11	03.87899	04 04	25.63	+20 12	45.6	0.0	1+	073
20	1972 11	17.86982	03 51	34.55	+19 28	32.9	0.1+	1+	073
20	1972 11	17.87674	03 51	34.13	+19 28	31.2	0.1+	1+	073
20	1972 12	12.72842	03 28	14.11	+18 03	18.7	0.1-	0	073
20	1972 12	12.73535	03 28	13.80	+18 03	18.2	0.1-	0	073
20	1972 12	21.70258	03 23	12.78	+17 44	03.1	0.0	0	073
20	1972 12	21.70812	03 23	12.63	+17 44	02.9	0.0	0	073
20	1974 05	17.84714	14 35	39.41	-14 48	60.0			073
20	1974 05	17.85406	14 35	39.78	-14 49	01.8			073
20	1974 05	20.81340	14 33	08.98	-14 36	30.8	0.0	0	073
20	1974 05	20.81894	14 33	08.65	-14 36	29.0	0.0	0	073

20	1974	05	24.82180	14	30	00.83	-14	20	44.6				073
20	1974	05	24.83011	14	30	00.41	-14	20	42.4				073
21	1972	04	10.76232	10	43	31.52	+12	46	26.3	0.1-	1+		073
21	1972	04	10.77340	10	43	31.28	+12	46	27.2	0.1-	1+		073
21	1973	07	19.82567	18	55	49.28	-25	38	58.2	0.5-	0		073
21	1973	07	19.83398	18	55	48.76	-25	38	59.5	0.5-	0		073
21	1973	07	21.81739	18	54	01.28	-25	44	10.6	0.5-	0		073
21	1973	07	21.82570	18	54	00.81	-25	44	11.6	0.5-	0		073
22	1974	05	23.89171	15	53	35.47	-18	20	26.2	0.1-	0		073
22	1974	05	23.89725	15	53	35.15	-18	20	26.2	0.1-	0		073
23	1973	04	18.81361	13	02	10.45	+07	34	41.7	0.1+	1-		073
23	1973	04	18.82122	13	02	10.00	+07	34	37.9	0.1+	1-		073
23	1973	04	20.81784	13	00	26.61	+07	32	29.5	0.1+	1-		073
23	1973	04	20.82408	13	00	26.29	+07	32	29.0	0.1+	1-		073
23	1973	04	28.80497	12	54	18.28	+07	15	31.2	0.1+	1-		073
23	1973	04	28.81259	12	54	18.03	+07	15	29.8	0.1+	1-		073
25	1972	04	10.93338	14	51	00.13	-16	00	25.7	0.0	0		073
25	1972	04	10.94308	14	50	59.83	-16	00	16.8	0.0	0		073
25	1972	05	24.81977	14	17	04.93	-03	48	28.6	0.0	0		073
25	1972	05	24.82739	14	17	04.64	-03	48	21.6	0.0	0		073
25	1972	05	31.80617	14	13	36.48	-02	15	56.6	0.0	0		073
25	1972	05	31.81310	14	13	36.28	-02	15	51.1	0.0	0		073
26	1974	03	13.92122	12	46	46.33	-00	48	56.0				073
26	1974	03	13.93091	12	46	45.97	-00	48	53.5				073
26	1974	04	20.84147	12	15	49.35	+01	36	44.8	0.4+	0		073
26	1974	04	20.84909	12	15	49.68	+01	36	42.9	0.4+	0		073
26	1974	04	24.81566	12	13	23.04	+01	43	59.6				073
26	1974	04	24.82536	12	13	22.75	+01	44	00.7				073
27	1973	02	07.83386	08	27	18.92	+21	01	52.2	0.1-	0		073
27	1973	02	07.84148	08	27	18.47	+21	01	53.7	0.1-	0		073
27	1973	02	09.79827	08	25	35.82	+21	08	53.6	0.1-	0		073
27	1973	02	09.80519	08	25	35.43	+21	08	54.9	0.1-	0		073
28	1972	10	02.84940	00	25	12.93	-07	26	09.8	0.0	0		073
28	1972	10	02.85979	00	25	12.46	-07	26	14.1	0.0	0		073
28	1974	02	11.76792	07	53	33.39	+16	18	13.7				073
28	1974	02	11.77554	07	53	33.11	+16	18	17.3				073
28	1974	02	16.81142	07	50	48.81	+16	53	42.0				073
28	1974	02	16.82250	07	50	48.42	+16	53	47.6				073
29	1972	03	09.83035	10	10	34.35	+14	42	23.6	0.2+	1-		073
29	1972	03	09.84767	10	10	33.40	+14	42	24.8	0.2+	1-		073
29	1972	03	16.81542	10	05	01.73	+14	51	07.1	0.2+	2-		073
29	1972	03	16.82788	10	05	01.16	+14	51	08.0	0.2+	0		073
29	1972	03	17.83483	10	04	18.43	+14	51	51.3	0.2+	2-		073
29	1972	03	17.85007	10	04	17.82	+14	51	51.7	0.2+	2-		073
29	1972	03	20.85504	10	02	19.07	+14	53	10.1	0.3+	2-		073
29	1972	03	20.86405	10	02	18.73	+14	53	10.5	0.3+	2-		073
29	1972	03	22.79245	10	01	09.90	+14	53	20.9	0.3+	2-		073
29	1972	03	22.80145	10	01	09.59	+14	53	21.1	0.3+	2-		073
29	1972	03	30.76542	09	57	27.72	+14	48	42.8	0.3+	2-		073
29	1972	03	30.77857	09	57	27.48	+14	48	41.7	0.3+	2-		073
29	1974	10	19.78644	00	09	36.81	+04	11	55.4	0.2-	1-		073
29	1974	10	19.79336	00	09	36.74	+04	11	54.4	0.3-	0		073
29	1974	10	23.78867	00	06	44.95	+04	02	17.7	0.3-	0		073
29	1974	10	23.79560	00	06	44.67	+04	02	16.7	0.3-	0		073
29	1974	11	06.77300	00	00	06.65	+03	42	49.2	0.2-	0		073
29	1974	11	06.78270	00	00	06.85	+03	42	49.0	0.2-	0		073
29	1974	11	20.70051	23	58	33.15	+03	50	30.9	0.3+	0		073
29	1974	11	20.71021	23	58	33.19	+03	50	31.8	0.2+	0		073
30	1973	03	26.90208	12	44	37.13	-08	03	09.6	0.1+	1-		073

30	1973	03	26.91351	12	44	36.46	-08	03	06.3	0.1+	1-	073
30	1973	04	18.79179	12	23	54.87	-05	55	04.3	0.0	0	073
30	1973	04	18.80287	12	23	54.29	-05	55	00.4	0.0	0	073
30	1973	04	20.79810	12	22	23.18	-05	44	40.0	0.0	0	073
30	1973	04	20.80780	12	22	22.72	-05	44	37.6	0.0	0	073
31	1972	10	24.89110	03	03	37.04	+27	41	22.7	0.0	1+	073
31	1972	10	24.89803	03	03	36.56	+27	41	25.7	0.0	1+	073
31	1972	11	01.87199	02	53	58.53	+28	41	20.1	0.1-	0	073
31	1972	11	01.87891	02	53	58.07	+28	41	22.5	0.1-	0	073
31	1972	11	03.88904	02	51	22.61	+28	54	55.0	0.1-	0	073
31	1972	11	03.89665	02	51	22.03	+28	54	58.1	0.1-	0	073
31	1972	11	09.81585	02	43	32.70	+29	30	52.4	0.0	0	073
31	1972	11	09.82346	02	43	32.07	+29	30	55.1	0.0	0	073
31	1972	11	17.85250	02	32	55.93	+30	09	56.9	0.1+	1+	073
31	1972	11	17.86012	02	32	55.31	+30	09	58.8	0.1+	1+	073
31	1972	11	30.66755	02	17	50.90	+30	51	47.1	0.0	0	073
31	1972	11	30.67378	02	17	50.50	+30	51	48.3	0.0	0	073
31	1974	03	13.89594	12	47	05.41	+18	28	51.0			073
31	1974	03	13.90633	12	47	04.76	+18	28	51.1			073
31	1974	04	20.82416	12	08	52.25	+16	45	30.5	0.1-	1+	073
31	1974	04	20.83247	12	08	51.87	+16	45	27.6	0.1-	1+	073
32	1972	01	14.72277	05	14	54.15	+16	36	03.8	0.3+	3-	073
32	1972	01	14.73385	05	14	53.81	+16	36	02.8	0.3+	3-	073
32	1974	08	21.86116	22	17	55.49	-01	58	47.5			073
32	1974	08	21.87086	22	17	55.03	-01	58	15.8			073
32	1974	09	10.79309	22	01	50.05	-03	55	44.1			073
37	1973	03	03.88979	11	04	58.24	+08	04	10.0	0.3-	3+	073
37	1973	03	03.90087	11	04	57.59	+08	04	13.2	0.3-	3+	073
37	1973	03	29.82567	10	43	51.68	+09	36	30.3	0.2-	3+	073
37	1973	03	29.83121	10	43	51.47	+09	36	31.2	0.2-	3+	073
38	1972	10	12.72131	23	06	32.79	+04	23	22.3	0.0	0	073
38	1972	10	12.73482	23	06	32.37	+04	23	19.0	0.0	0	073
38	1974	02	11.81259	08	14	27.76	+16	47	07.3			073
38	1974	02	11.82159	08	14	27.30	+16	47	06.8			073
38	1974	03	01.78774	08	04	22.52	+16	35	16.6			073
38	1974	03	01.79917	08	04	22.37	+16	35	15.7			073
39	1972	03	16.96813	15	41	33.78	-07	46	13.7			073
39	1972	03	16.97228	15	41	33.83	-07	46	12.8			073
39	1972	03	16.97644	15	41	33.79	-07	46	11.3			073
39	1972	03	17.97543	15	41	40.35	-07	41	42.5			073
39	1972	03	17.98790	15	41	40.37	-07	41	40.6			073
39	1972	03	21.95100	15	41	29.25	-07	25	06.9			073
39	1972	03	21.95515	15	41	29.28	-07	25	05.1			073
39	1972	04	03.93663	15	40	00.67	-06	14	19.3			073
39	1972	04	03.94286	15	40	00.53	-06	14	16.8			073
39	1972	04	03.94771	15	40	00.45	-06	14	14.9			073
39	1972	04	04.94498	15	39	42.26	-06	08	34.8			073
39	1972	04	04.95605	15	39	42.00	-06	08	31.2			073
39	1972	04	07.93538	15	38	39.64	-05	51	21.1			073
39	1972	04	07.94576	15	38	39.43	-05	51	17.9			073
39	1972	04	10.95210	15	37	24.55	-05	33	41.1			073
39	1972	04	10.95557	15	37	24.49	-05	33	39.4			073
39	1972	05	08.89198	15	18	37.74	-02	58	35.9			073
39	1972	05	08.90064	15	18	37.31	-02	58	33.7			073
39	1972	05	09.89546	15	17	48.76	-02	54	02.8			073
39	1972	05	09.90413	15	17	48.39	-02	54	01.0			073
39	1972	05	15.87209	15	12	55.55	-02	29	27.6			073
39	1972	05	15.87902	15	12	55.29	-02	29	26.4			073
39	1972	05	16.86657	15	12	07.20	-02	25	50.3			073

39	1972	05	16.87350	15	12	06.86	-02	25	48.7	073
39	1972	05	24.83773	15	05	52.05	-02	02	02.9	073
39	1972	05	24.84465	15	05	51.73	-02	02	01.9	073
39	1972	05	31.82522	15	00	53.93	-01	49	26.2	073
39	1972	05	31.83387	15	00	53.55	-01	49	25.6	073
39	1972	06	08.82209	14	56	04.87	-01	44	55.1	073
39	1972	06	08.82377	14	56	05.12	-01	44	54.9	073
39	1972	06	09.81551	14	55	33.98	-01	45	05.7	073
39	1972	06	09.82521	14	55	33.70	-01	45	06.2	073
39	1972	06	12.79962	14	54	06.72	-01	46	37.3	073
39	1972	06	12.81139	14	54	07.04	-01	46	36.7	073
39	1972	06	14.80341	14	53	14.41	-01	48	27.0	073
39	1972	06	14.81311	14	53	14.68	-01	48	26.3	073
39	1973	08	02.92738	22	35	28.78	-05	51	41.7	073
39	1973	08	02.93569	22	35	29.04	-05	51	38.2	073
39	1973	08	21.86392	22	24	08.61	-08	25	04.5	073
39	1973	08	21.87015	22	24	08.31	-08	25	07.6	073
39	1973	09	01.88450	22	16	08.05	-10	07	05.7	073
39	1973	09	01.89212	22	16	07.69	-10	07	09.9	073
39	1973	09	05.82927	22	13	20.64	-10	43	06.0	073
39	1973	09	05.83619	22	13	20.95	-10	43	02.3	073
39	1973	09	08.82248	22	11	19.65	-11	09	37.8	073
39	1973	09	08.82947	22	11	19.90	-11	09	33.4	073
39	1973	09	15.79690	22	07	05.59	-12	07	42.9	073
39	1973	09	15.80244	22	07	05.36	-12	07	46.8	073
39	1973	09	17.76687	22	06	02.49	-12	23	00.8	073
39	1973	09	17.77172	22	06	02.34	-12	23	02.9	073
39	1973	09	17.77864	22	06	02.11	-12	23	06.0	073
39	1973	09	21.81247	22	04	07.29	-12	52	31.7	073
39	1973	09	21.82079	22	04	07.07	-12	52	34.9	073
39	1973	09	22.73359	22	03	43.88	-12	58	56.3	073
39	1973	09	22.74260	22	03	44.10	-12	58	52.8	073
39	1973	09	24.79053	22	02	56.10	-13	12	31.0	073
39	1973	09	24.79330	22	02	56.04	-13	12	32.0	073
39	1973	09	24.79607	22	02	55.97	-13	12	32.8	073
39	1973	09	25.80107	22	02	34.69	-13	18	56.9	073
39	1973	09	25.80722	22	02	34.60	-13	18	58.7	073
39	1973	09	26.78445	22	02	15.43	-13	25	00.4	073
39	1973	09	26.79276	22	02	15.25	-13	25	03.7	073
39	1973	09	27.72639	22	01	58.30	-13	30	38.5	073
39	1973	09	27.73124	22	01	58.19	-13	30	40.5	073
39	1973	09	27.73609	22	01	58.11	-13	30	42.3	073
39	1973	10	01.72399	22	01	00.21	-13	52	42.7	073
39	1973	10	01.72884	22	01	00.27	-13	52	35.7	073
39	1973	10	11.71220	22	00	25.27	-14	34	08.8	073
39	1973	10	11.71913	22	00	25.30	-14	34	10.3	073
39	1973	10	11.72398	22	00	25.32	-14	34	11.3	073
39	1973	10	15.73350	22	00	56.19	-14	45	17.6	073
39	1973	10	15.73904	22	00	56.26	-14	45	18.4	073
39	1973	10	18.73190	22	01	35.75	-14	51	34.0	073
39	1973	10	18.73744	22	01	35.82	-14	51	34.4	073
39	1973	10	19.73852	22	01	52.21	-14	53	17.2	073
39	1973	10	19.74753	22	01	52.33	-14	53	18.2	073
39	1973	10	20.74029	22	02	24.34	-14	54	09.0	073
39	1973	10	20.74860	22	02	24.46	-14	54	08.3	073
39	1973	10	26.69934	22	04	28.16	-14	59	58.5	073
39	1973	10	26.70765	22	04	28.43	-14	59	58.3	073
39	1973	10	29.68110	22	05	56.99	-15	00	06.3	073
39	1973	10	29.68733	22	05	57.15	-15	00	06.7	073



39	1973	10	29.69149	22	05	57.29	-15	00	06.0	073
39	1973	11	02.73564	22	08	17.72	-14	57	49.0	073
39	1973	11	02.74464	22	08	18.07	-14	57	48.8	073
39	1973	11	08.68984	22	12	24.17	-14	49	26.1	073
39	1973	11	08.69503	22	12	24.44	-14	49	24.9	073
39	1973	11	20.67996	22	22	47.29	-14	16	04.1	073
39	1973	11	20.68965	22	22	47.80	-14	16	02.6	073
40	1972	02	24.93970	12	56	52.48	+01	07	43.4	073
40	1972	02	24.94385	12	56	52.39	+01	07	44.6	073
40	1972	02	24.94801	12	56	52.29	+01	07	46.2	073
40	1972	03	08.91827	12	49	41.14	+02	21	13.4	073
40	1972	03	08.92658	12	49	40.77	+02	21	16.5	073
40	1972	03	09.91728	12	48	57.34	+02	27	35.0	073
40	1972	03	09.92005	12	48	57.20	+02	27	36.1	073
40	1972	03	09.92282	12	48	57.07	+02	27	37.1	073
40	1972	03	14.92414	12	44	58.52	+03	00	17.1	073
40	1972	03	14.92751	12	44	58.37	+03	00	18.2	073
40	1972	03	16.89922	12	43	16.73	+03	13	24.9	073
40	1972	03	16.90268	12	43	16.53	+03	13	26.5	073
40	1972	03	16.91030	12	43	16.12	+03	13	29.4	073
40	1972	03	17.89891	12	42	23.73	+03	20	04.7	073
40	1972	03	17.90722	12	42	23.29	+03	20	08.1	073
40	1972	03	21.87135	12	38	45.77	+03	46	25.1	073
40	1972	03	21.87620	12	38	45.53	+03	46	27.0	073
40	1972	03	21.88174	12	38	45.19	+03	46	29.3	073
40	1972	03	22.87175	12	37	49.33	+03	52	59.5	073
40	1972	03	22.88006	12	37	48.83	+03	53	02.2	073
40	1972	03	27.78640	12	33	06.48	+04	24	21.0	073
40	1972	03	27.79298	12	33	06.12	+04	24	23.3	073
40	1972	03	27.79956	12	33	05.68	+04	24	25.8	073
40	1972	03	28.87509	12	32	03.11	+04	31	03.2	073
40	1972	03	28.88479	12	32	02.44	+04	31	07.0	073
40	1972	03	30.82394	12	30	09.71	+04	42	44.2	073
40	1972	03	30.83502	12	30	09.07	+04	42	47.6	073
40	1972	04	01.84097	12	28	12.74	+04	54	22.2	073
40	1972	04	01.84444	12	28	12.50	+04	54	23.5	073
40	1972	04	01.84790	12	28	12.31	+04	54	24.8	073
40	1972	04	03.84175	12	26	17.81	+05	05	24.4	073
40	1972	04	03.84590	12	26	17.55	+05	05	25.8	073
40	1972	04	03.85006	12	26	17.31	+05	05	27.0	073
40	1972	04	04.82793	12	25	21.76	+05	10	38.4	073
40	1972	04	04.83832	12	25	21.15	+05	10	41.6	073
40	1972	04	07.79825	12	22	36.10	+05	25	30.1	073
40	1972	04	07.80657	12	22	35.60	+05	25	32.5	073
40	1972	04	10.81221	12	19	54.06	+05	39	06.2	073
40	1972	04	10.81567	12	19	53.86	+05	39	07.0	073
40	1972	04	10.81914	12	19	53.69	+05	39	08.0	073
40	1972	04	12.79912	12	18	11.66	+05	47	09.8	073
40	1972	04	12.80258	12	18	11.47	+05	47	10.9	073
40	1972	04	12.80605	12	18	11.30	+05	47	11.4	073
40	1972	05	08.76940	12	04	05.92	+06	17	42.5	073
40	1972	05	08.77944	12	04	06.06	+06	17	43.3	073
40	1973	08	21.88193	22	36	35.87	-16	00	45.3	073
40	1973	08	21.88747	22	36	35.57	-16	00	48.1	073
40	1973	09	01.91012	22	26	15.63	-17	15	00.2	073
40	1973	09	01.91775	22	26	15.21	-17	15	02.5	073
40	1973	09	05.84624	22	22	36.81	-17	37	40.6	073
40	1973	09	05.85385	22	22	37.22	-17	37	37.8	073
40	1973	09	15.81076	22	14	19.36	-18	21	48.0	073

40	1973 09	15.81560	22 14	19.10	-18 21	48.3			073
40	1973 09	21.83914	22 10	18.48	-18 38	11.3			073
40	1973 09	21.84814	22 10	18.13	-18 38	12.2			073
40	1973 09	22.75264	22 09	46.81	-18 39	57.5			073
40	1973 09	22.76164	22 09	47.15	-18 39	56.4			073
40	1973 09	24.82204	22 08	40.89	-18 43	14.2			073
40	1973 09	24.82620	22 08	40.79	-18 43	14.2			073
40	1973 09	26.80557	22 07	44.74	-18 45	29.9			073
40	1973 09	26.81458	22 07	44.49	-18 45	30.5			073
40	1973 09	27.74336	22 07	20.78	-18 46	14.2			073
40	1973 09	27.74890	22 07	20.64	-18 46	14.5			073
40	1973 09	27.75444	22 07	20.50	-18 46	15.1			073
40	1973 10	01.73681	22 05	56.95	-18 47	14.4			073
40	1973 10	01.74270	22 05	56.85	-18 47	13.5			073
40	1973 10	01.74859	22 05	56.71	-18 47	12.8			073
40	1973 10	12.72300	22 04	46.31	-18 32	28.2			073
40	1973 10	12.73546	22 04	46.30	-18 32	27.2			073
40	1973 10	19.76311	22 06	02.60	-18 10	41.2			073
40	1973 10	19.77280	22 06	02.72	-18 10	39.3			073
40	1973 10	20.75195	22 06	20.65	-18 06	55.0			073
40	1973 10	20.76972	22 06	20.94	-18 06	51.7			073
40	1973 10	26.71769	22 08	46.04	-17 40	49.9			073
40	1973 10	26.72669	22 08	46.20	-17 40	48.0			073
40	1973 10	29.69945	22 10	21.54	-17 25	37.8			073
40	1973 10	29.70430	22 10	21.43	-17 25	38.6			073
40	1973 10	29.70915	22 10	21.27	-17 25	41.1			073
40	1973 11	01.68988	22 12	11.15	-17 09	09.1			073
40	1973 11	01.69542	22 12	11.34	-17 09	07.0			073
40	1973 11	01.70096	22 12	11.61	-17 09	04.1			073
40	1973 11	08.70299	22 17	21.16	-16 25	32.6			073
40	1973 11	08.70854	22 17	21.59	-16 25	32.5			073
40	1973 11	15.67975	22 23	34.88	-15 36	03.9			073
40	1973 11	15.68737	22 23	35.32	-15 36	00.2			073
40	1973 11	19.67402	22 27	34.98	-15 05	10.3			073
40	1973 11	19.67956	22 27	35.35	-15 05	07.5			073
41	1973 12	06.71111	02 15	11.41	-01 31	07.1	0.1-	8+	073
41	1973 12	06.71873	02 15	11.02	-01 31	06.7	0.1-	8+	073
42	1974 04	24.88328	14 04	08.29	-00 27	15.8			073
42	1974 05	17.82705	13 42	56.51	+00 08	43.7			073
42	1974 05	17.83536	13 42	56.40	+00 08	43.5			073
43	1974 03	01.75415	06 47	15.11	+20 14	24.9			073
43	1974 03	01.76939	06 47	15.09	+20 14	25.0			073
44	1974 05	23.91457	16 17	38.43	-15 43	17.7	0.0	0	073
44	1974 05	23.92045	16 17	38.07	-15 43	15.6	0.0	0	073
44	1974 05	24.89244	16 16	39.14	-15 41	14.4			073
44	1974 05	24.90214	16 16	38.55	-15 41	13.1			073
45	1973 03	03.88979	11 07	49.94	+08 48	47.9	0.0		073
45	1973 03	03.90087	11 07	49.38	+08 48	52.1	0.0		073
45	1973 03	23.84796	10 52	33.26	+11 11	11.1	0.1-	1+	073
45	1973 03	23.85731	10 52	32.91	+11 11	13.7	0.1-	1+	073
45	1973 03	31.79874	10 47	48.26	+11 53	50.7	0.1-	0	073
45	1973 03	31.80774	10 47	48.06	+11 53	53.2	0.1-	0	073
46	1972 02	24.86732	11 06	03.06	+04 34	08.8			073
46	1972 02	24.87702	11 06	02.62	+04 34	10.9			073
46	1973 05	21.91111	16 51	10.83	-18 59	00.7	0.0	0	073
46	1973 05	21.91872	16 51	10.51	-18 59	00.2	0.0	0	073
48	1973 10	26.84685	02 26	51.58	+08 59	01.6			073
48	1973 10	26.85654	02 26	51.23	+08 58	58.5			073
48	1973 10	29.86221	02 24	35.07	+08 41	57.0	0.7+	5+	073

48	1973	10	29.87537	02	24	34.45	+08	41	52.8	0.7+	5+	073
48	1973	11	19.79731	02	09	45.00	+06	59	37.4	0.1-	0	073
48	1973	11	19.80770	02	09	44.56	+06	59	34.7	0.1-	0	073
49	1973	01	26.83653	07	00	20.32	+22	13	01.9	0.2+	0	073
49	1973	01	26.84623	07	00	19.94	+22	13	02.0	0.2+	0	073
49	1973	02	05.79049	06	54	14.34	+22	11	53.3	0.2+	0	073
49	1973	02	05.79672	06	54	14.22	+22	11	53.0	0.2+	0	073
50	1972	04	03.87845	13	24	39.44	-06	59	24.1	0.1-	0	073
50	1972	04	03.89300	13	24	38.80	-06	59	16.8	0.1-	0	073
50	1972	04	04.87016	13	23	51.95	-06	54	03.7	0.1-	0	073
50	1972	04	04.88679	13	23	51.12	-06	53	57.9	0.1-	0	073
51	1972	10	02.76733	22	30	07.00	-07	24	15.7	0.1-	1-	073
51	1972	10	02.77426	22	30	06.80	-07	24	18.8	0.1-	1-	073
51	1973	12	06.94172	07	25	02.75	+06	23	49.7	0.0	0	073
51	1973	12	06.94933	07	25	02.54	+06	23	47.9	0.0	0	073
51	1973	12	23.85563	07	13	14.66	+06	00	01.7	0.0	0	073
51	1973	12	23.86187	07	13	14.30	+06	00	01.6	0.0	0	073
51	1973	12	27.83767	07	09	32.87	+06	02	46.0	0.0	0	073
51	1973	12	27.84737	07	09	32.40	+06	02	47.2	0.0	0	073
51	1974	01	14.77367	06	51	33.68	+06	55	25.7	0.0	0	073
51	1974	01	14.78267	06	51	33.12	+06	55	28.3	0.0	0	073
51	1974	02	11.94036	06	32	49.66	+09	48	31.4	0.0	1-	073
51	1974	02	11.94799	06	32	49.83	+09	48	35.3	0.0	1-	073
51	1974	02	13.75034	06	32	23.76	+10	02	41.9			073
51	1974	02	13.76419	06	32	23.50	+10	02	48.9			073
51	1974	02	14.71335	06	32	13.43	+10	09	28.3	0.0	1+	073
52	1972	01	14.85816	07	16	10.55	+18	26	39.2	0.4+	1-	073
52	1972	01	14.86924	07	16	09.93	+18	26	41.9	0.4+	1-	073
52	1972	02	09.75959	06	58	13.34	+20	15	55.4	0.4+	1-	073
52	1972	02	09.78383	06	58	13.00	+20	15	58.5	0.4+	1-	073
52	1973	05	19.80056	13	23	38.20	+02	02	19.7	0.1+	2-	073
52	1973	05	19.81095	13	23	37.94	+02	02	19.7	0.1+	2-	073
53	1973	05	02.91489	15	55	33.77	-12	30	06.2	0.0	0	073
53	1973	05	02.92943	15	55	33.06	-12	30	03.4	0.0	0	073
55	1973	10	29.94913	04	13	50.08	+29	20	26.9	0.1-	2+	073
55	1973	10	29.95530	04	13	49.81	+29	20	27.9	0.1-	2+	073
55	1973	11	05.94595	04	08	11.18	+29	34	32.1	0.1-	1+	073
55	1973	11	05.95288	04	08	10.55	+29	34	32.4	0.1-	1+	073
55	1973	12	14.83228	03	30	23.32	+28	50	57.5	0.1-	1+	073
55	1973	12	14.84267	03	30	22.84	+28	50	55.7	0.1-	1+	073
56	1974	08	21.76143	19	09	18.27	-09	02	44.3			073
56	1974	08	21.77251	19	09	18.29	-09	02	44.8			073
57	1974	04	22.76641	11	32	02.20	-02	28	33.0	0.1+	0	073
57	1974	04	22.77541	11	32	02.04	-02	28	30.1	0.1+	0	073
58	1973	11	19.79731	02	11	04.92	+06	15	01.7	0.1+	1-	073
58	1973	11	19.80770	02	11	04.49	+06	14	59.1	0.1+	1-	073
59	1972	10	24.87102	02	53	57.71	+05	18	24.7	0.3+	1-	073
59	1972	10	24.88141	02	53	57.22	+05	18	19.9	0.3+	1-	073
59	1972	10	28.84415	02	50	51.52	+04	49	35.6	0.4+	0	073
59	1972	10	28.85246	02	50	51.13	+04	49	32.5	0.3+	0	073
59	1972	11	01.85675	02	47	35.54	+04	21	53.6	0.3+	1-	073
59	1972	11	01.86368	02	47	35.20	+04	21	50.6	0.3+	1-	073
59	1972	11	09.79749	02	41	03.08	+03	33	11.2	0.2+	0	073
59	1972	11	09.80650	02	41	02.64	+03	33	08.4	0.3+	0	073
59	1972	11	17.83207	02	34	50.57	+02	54	55.8	0.3+	1-	073
59	1972	11	17.84108	02	34	50.10	+02	54	53.9	0.3+	1-	073
59	1972	11	27.78708	02	28	30.81	+02	26	03.7	0.3+	0	073
59	1972	11	27.79678	02	28	30.52	+02	27	02.8	0.3+	0	073
59	1974	03	21.77405	09	51	25.91	+10	08	20.1	0.3-	2-	073

59	1974	03	21.78444	09	51	25.61	+10	08	23.8	0.3-	2-	073
59	1974	03	22.80560	09	50	57.40	+10	14	08.7			073
59	1974	03	22.81867	09	50	57.70	+10	14	05.0			073
60	1973	03	29.80212	10	27	04.81	+07	17	13.8	0.0	0	073
60	1973	03	29.81251	10	27	04.62	+07	17	16.4	0.0	0	073
60	1973	03	31.75996	10	26	26.30	+07	26	32.8	0.0	0	073
60	1973	03	31.76965	10	26	26.16	+07	26	35.4	0.0	0	073
60	1973	04	02.77181	10	25	53.88	+07	35	21.2	0.0	0	073
60	1973	04	02.78151	10	25	53.73	+07	35	23.8	0.0	0	073
63	1973	07	21.88030	19	35	54.50	-29	18	17.0	0.1-	0	073
63	1973	07	21.88861	19	35	53.95	-29	18	15.8	0.1-	0	073
64	1973	09	24.98098	01	24	19.23	+10	50	42.8	0.0	0	073
64	1973	09	24.98548	01	24	19.01	+10	50	43.1	0.0	0	073
64	1973	10	29.78469	00	55	41.97	+08	03	55.6	0.0	1-	073
64	1973	10	29.79226	00	55	41.58	+08	03	53.2	0.0	1-	073
65	1972	12	21.68596	03	26	32.58	+14	04	58.8	0.0	1-	073
65	1972	12	21.69288	03	26	32.30	+14	04	59.4	0.0	1-	073
66	1972	01	13.67078	04	24	47.76	+26	24	53.9	0.3-	0	073
66	1972	01	13.68671	04	24	47.66	+26	24	53.0	0.3-	0	073
67	1974	05	23.87371	15	11	05.79	-11	48	14.7	0.2+	1-	073
67	1974	05	23.87890	15	11	05.77	-11	48	13.3	0.2+	1-	073
69	1972	10	23.77436	00	55	37.92	+02	36	13.9	0.1-	0	073
69	1972	10	23.78129	00	55	37.64	+02	36	10.4	0.1-	0	073
69	1972	10	24.78930	00	54	56.66	+02	29	29.5	0.1-	0	073
69	1972	10	24.80176	00	54	56.20	+02	29	26.1	0.1-	0	073
69	1972	11	01.72586	00	50	00.61	+01	40	57.8	0.0	0	073
69	1972	11	01.73833	00	50	00.16	+01	40	53.3	0.0	0	073
69	1972	11	13.68060	00	44	32.43	+00	44	46.6	0.1-	0	073
69	1972	11	13.69030	00	44	32.26	+00	44	43.9	0.1-	0	073
69	1974	02	11.83371	08	56	14.09	+06	28	49.8			073
69	1974	02	11.84029	08	56	13.77	+06	28	52.1			073
69	1974	02	18.81739	08	51	16.49	+07	17	14.5	0.0	1-	073
69	1974	02	18.82328	08	51	16.25	+07	17	16.4	0.0	1-	073
70	1972	11	01.82837	02	18	58.76	+10	06	41.7	0.1-	1-	073
70	1972	11	01.84361	02	18	57.78	+10	06	41.5	0.1-	1-	073
70	1972	11	09.77464	02	10	51.18	+10	05	36.2	0.0	1-	073
70	1972	11	09.78364	02	10	50.68	+10	05	37.5	0.0	1-	073
70	1972	11	15.74300	02	05	19.14	+10	07	20.6	0.0	1-	073
70	1972	11	15.75408	02	05	18.31	+10	07	23.0	0.0	1-	073
70	1972	11	17.81026	02	03	33.51	+10	08	34.8	0.0	1-	073
70	1972	11	17.82134	02	03	32.88	+10	08	36.1	0.0	1-	073
70	1972	11	30.65145	01	54	52.52	+10	25	01.1	0.1+	0	073
70	1972	11	30.65906	01	54	52.25	+10	25	00.8	0.1+	0	073
71	1974	03	22.78240	09	28	03.17	-00	21	57.7			073
71	1974	03	22.79209	09	28	02.74	-00	21	58.8			073
71	1974	03	23.77898	09	27	23.33	-00	24	56.9			073
71	1974	03	23.78729	09	27	23.01	-00	24	58.5			073
71	1974	03	29.76711	09	24	03.40	-00	35	20.2			073
71	1974	03	29.77404	09	24	03.16	-00	35	20.8			073
72	1974	05	24.91806	16	23	04.36	-15	15	52.8			073
72	1974	05	24.92915	16	23	03.66	-15	15	49.5			073
72	1974	06	13.83894	16	04	10.36	-13	38	06.7	0.0	0	073
72	1974	06	13.84794	16	04	09.91	-13	38	04.7	0.0	0	073
72	1974	06	17.81903	16	01	04.24	-13	24	22.7	0.0	0	073
72	1974	06	17.83080	16	01	03.66	-13	24	20.6	0.0	0	073
77	1973	03	03.84339	09	48	27.88	+15	18	16.5	0.1-	0	073
77	1973	03	03.85170	09	48	27.44	+15	18	17.9	0.1-	0	073
77	1973	03	26.75006	09	35	41.59	+15	53	12.5	0.0	1-	073
77	1973	03	26.75976	09	35	41.44	+15	53	13.7	0.0	1-	073

78	1973	02	07.81378	07	39	18.47	+29	17	35.4	0.1-	0	073
78	1973	02	07.82278	07	39	18.89	+29	17	38.4	0.1-	0	073
78	1973	02	09.76710	07	37	55.39	+29	06	40.7	0.1-	0	073
78	1973	02	09.77541	07	37	54.94	+29	06	37.6	0.1-	0	073
80	1972	06	12.86541	17	27	19.79	-12	22	13.6	0.4-	1-	073
80	1972	06	12.87580	17	27	19.12	-12	22	10.1	0.4-	1-	073
80	1972	06	29.83003	17	10	09.31	-11	15	37.8	0.3-	0	073
80	1972	06	29.83765	17	10	08.91	-11	15	36.9	0.3-	0	073
81	1972	03	09.79365	09	14	06.45	+23	02	11.1	0.2-	1+	073
81	1972	03	09.80542	09	14	06.06	+23	02	09.6	0.2-	1+	073
82	1973	09	17.74054	21	26	17.25	-18	27	52.9	0.5+	3+	073
82	1973	09	17.75439	21	26	17.19	-18	27	55.7	0.5+	3+	073
83	1973	12	27.72514	03	50	11.11	+25	44	58.5	0.0	0	073
83	1973	12	27.73553	03	50	10.84	+25	44	57.1	0.0	0	073
85	1972	04	03.91031	14	06	38.99	-11	39	03.7	0.3-	1+	073
85	1972	04	03.92347	14	06	38.45	-11	38	56.6	0.3-	1+	073
85	1972	05	15.83677	13	35	15.69	-05	54	19.4	0.3-	1+	073
85	1972	05	15.84785	13	35	15.29	-05	54	14.9	0.3-	1+	073
85	1972	05	16.82918	13	34	42.20	-05	47	45.3	0.3-	1+	073
85	1972	05	16.83957	13	34	41.83	-05	47	41.4	0.3-	1+	073
85	1973	09	22.84059	00	08	10.02	+09	15	45.5	0.8-	2-	073
85	1973	09	22.85098	00	08	09.56	+09	15	37.8	0.8-	2-	073
85	1973	10	20.79813	23	52	29.26	+03	45	48.9	0.7-	4-	073
85	1973	10	20.80644	23	52	29.13	+03	45	43.4	0.7-	4-	073
85	1973	10	29.72405	23	50	44.38	+02	22	04.5	0.7-	3-	073
85	1973	10	29.72890	23	50	44.40	+02	22	06.6	0.7-	3-	073
88	1972	08	30.75357	20	18	22.43	-13	50	49.6	0.0	0	073
88	1972	08	30.76050	20	18	22.48	-13	50	50.1	0.0	0	073
89	1972	08	09.88950	21	00	39.35	-14	52	15.1	0.1+	0	073
89	1972	08	09.90196	21	00	38.35	-14	52	11.0	0.1+	0	073
89	1972	09	07.75077	20	33	57.21	-12	08	57.2	0.1-	0	073
89	1972	09	07.76323	20	33	56.79	-12	08	53.0	0.1-	0	073
89	1974	02	11.75234	07	19	35.54	+27	08	20.7			073
89	1974	02	11.75961	07	19	35.24	+27	08	18.5			073
89	1974	02	14.75425	07	17	34.57	+26	53	12.2	0.0	0	073
89	1974	02	14.75455	07	17	34.89	+26	53	14.3	0.0	0	073
90	1972	10	02.82441	23	54	10.05	-04	09	42.0	0.0	1-	073
90	1972	10	02.83549	23	54	09.59	-04	09	44.6	0.0	1-	073
90	1972	10	28.71810	23	41	03.76	-05	07	48.2	0.0	0	073
90	1972	10	28.73334	23	41	03.53	-05	07	48.4	0.0	0	073
91	1972	03	08.76868	09	42	16.51	+16	00	11.8	0.2+	0	073
91	1972	03	08.78184	09	42	15.96	+16	00	13.7	0.2+	0	073
91	1972	03	23.76373	09	34	39.58	+16	17	57.8	0.2+	0	073
91	1972	03	23.77204	09	34	39.44	+16	17	57.2	0.2+	0	073
96	1972	10	12.78191	23	38	37.85	+14	52	04.3	0.0	1-	073
96	1972	10	12.81515	23	38	36.39	+14	51	56.9	0.0	1-	073
96	1972	10	23.69922	23	31	53.65	+14	07	40.7	0.1-	1-	073
96	1972	10	23.70961	23	31	53.34	+14	07	36.8	0.1-	1-	073
100	1972	09	07.95126	01	55	06.92	+02	57	48.2	0.1-	0	073
100	1972	09	07.96309	01	55	06.84	+02	57	45.5	0.1-	0	073
101	1972	10	02.88368	01	16	10.82	+18	56	54.2	0.0	0	073
101	1972	10	02.88991	01	16	10.45	+18	56	54.5	0.0	0	073
101	1972	10	23.78960	00	54	53.13	+18	19	28.8	0.0	0	073
101	1972	10	23.79652	00	54	52.73	+18	19	27.8	0.0	0	073
101	1972	10	30.78189	00	48	51.83	+17	56	25.7	0.0	0	073
101	1972	10	30.78951	00	48	51.45	+17	56	23.9	0.0	0	073
101	1972	11	17.68976	00	39	16.45	+17	02	47.9	0.0	0	073
101	1972	11	17.70014	00	39	16.25	+17	02	47.2	0.0	0	073
102	1972	08	28.82240	21	30	10.54	-05	26	28.1	1.0+	3+	073

102	1972	08	30.79166	21	28	53.26	-05	38	52.7	1.0+	3+	073
102	1972	08	30.80690	21	28	53.16	-05	38	56.4	1.0+	3+	073
102	1972	09	07.78125	21	24	26.15	-06	29	51.1	1.0+	3+	073
102	1972	09	07.79440	21	24	25.75	-06	29	56.3	1.0+	3+	073
103	1972	01	13.72376	05	42	34.86	+18	05	48.4	4.0-	1-	073
103	1972	01	13.72861	05	42	34.66	+18	05	48.3	4.0-	1-	073
103	1972	01	14.76571	05	41	49.98	+18	07	55.4	3.7-	1-	073
103	1972	01	14.77679	05	41	49.48	+18	07	56.3	3.7-	1-	073
103	1973	04	12.83623	11	40	35.29	+08	22	00.7	0.0	0	073
103	1973	04	12.84696	11	40	34.97	+08	22	03.5	0.0	0	073
106	1972	03	09.79365	09	19	37.32	+22	11	03.5	0.0	0	073
106	1972	03	09.80542	09	19	37.01	+22	11	04.5	0.0	0	073
108	1973	05	02.86988	14	13	18.76	-18	27	12.9	0.0	0	073
108	1973	05	02.88165	14	13	18.16	-18	27	04.5	0.0	0	073
110	1974	04	22.81558	12	32	07.44	+02	57	39.0	0.1-	1+	073
110	1974	04	22.82329	12	32	07.03	+02	57	40.0	0.1-	1+	073
113	1973	01	26.77282	05	49	28.83	+20	39	16.6	0.1-	0	073
113	1973	01	26.78528	05	49	28.40	+20	39	17.7	0.1-	0	073
114	1972	10	02.78499	22	34	17.90	-09	38	56.6	0.3-	18-	073
114	1972	10	02.79538	22	34	17.93	-09	38	56.7	0.3-	18-	073
116	1972	09	29.77436	22	10	38.75	-16	28	03.9	0.0	0	073
116	1972	10	02.73755	22	09	18.78	-16	31	22.6	0.1+	0	073
116	1972	10	02.75140	22	09	18.39	-16	31	23.5	0.1+	0	073
116	1973	12	23.69346	02	57	55.16	+16	40	26.1	0.0	0	073
116	1973	12	23.70246	02	57	54.96	+16	40	25.8	0.0	0	073
118	1973	10	20.93387	02	35	14.50	+11	44	30.6	4.9+	0	073
118	1973	10	20.94287	02	35	14.01	+11	44	29.8	4.9+	0	073
118	1973	10	26.86693	02	29	14.28	+11	43	47.8	8.5+	0	073
118	1973	10	26.87663	02	29	13.61	+11	43	48.3	8.5+	0	073
118	1973	12	01.76595	01	56	59.62	+12	11	17.0	0.2-	1-	073
118	1973	12	01.77564	01	56	59.37	+12	11	18.9	0.2-	1-	073
119	1973	10	01.87774	00	42	02.99	+06	56	55.7	0.3-	1-	073
119	1973	10	01.88951	00	42	02.39	+06	56	52.1	0.3-	1-	073
119	1973	10	05.83953	00	38	53.39	+06	24	40.5	0.4-	2-	073
119	1973	10	05.85269	00	38	52.79	+06	24	34.1	0.4-	2-	073
119	1973	10	25.79383	00	24	52.85	+03	49	34.0	0.4-	1-	073
119	1973	10	25.80007	00	24	52.53	+03	49	31.4	0.4-	1-	073
124	1973	03	23.77489	10	22	46.47	+08	11	54.5	0.2-	1+	073
124	1973	03	23.78667	10	22	46.03	+08	11	57.3	0.2-	1+	073
124	1973	03	26.83178	10	21	01.76	+08	26	38.8	0.1-	0	073
124	1973	03	26.84425	10	21	01.29	+08	26	42.4	0.1-	0	073
125	1972	10	23.73523	23	48	43.94	-03	39	26.9	0.1-	4-	073
125	1972	10	23.74424	23	48	44.37	-03	39	34.2	0.1-	4-	073
125	1972	10	28.71810	23	46	47.59	-03	54	25.9	0.2-	2-	073
125	1972	10	28.73334	23	46	47.87	-03	54	22.7	0.2-	2-	073
126	1973	03	03.86485	10	11	14.54	+14	53	32.1	0.0	1-	073
126	1973	03	03.87732	10	11	13.83	+14	53	34.4	0.0	1-	073
128	1972	10	02.92904	01	30	26.16	-00	25	52.2	1.3+	8+	073
128	1972	10	02.93943	01	30	25.63	-00	25	54.4	1.3+	8+	073
128	1972	10	23.77713	01	12	42.63	-01	31	50.7	1.2+	7+	073
128	1972	10	23.80414	01	12	42.23	-01	31	51.8	1.2+	7+	073
128	1972	10	24.83639	01	11	52.41	-01	33	41.1	1.2+	7+	073
128	1972	10	24.84678	01	11	51.90	-01	33	42.0	1.2+	7+	073
128	1972	10	28.82199	01	08	46.63	-01	39	07.6	1.3+	7+	073
128	1972	10	28.83160	01	08	46.19	-01	39	06.4	1.3+	7+	073
128	1972	11	01.76914	01	05	57.59	-01	41	45.7	1.2+	7+	073
128	1972	11	01.77746	01	05	57.20	-01	41	45.9	1.2+	7+	073
128	1972	11	15.72084	00	58	42.08	-01	27	47.8	1.1+	7+	073
128	1972	11	15.73054	00	58	41.78	-01	27	47.7	1.1+	7+	073

129	1972	10	23.75739	23	54	13.17	-14	21	21.2	0.0	0	073
129	1972	10	23.76501	23	54	12.94	-14	21	21.7	0.0	0	073
129	1972	10	24.71381	23	53	47.33	-14	22	54.0	0.0	0	073
129	1972	10	24.74324	23	53	47.05	-14	22	55.5	0.0	0	073
130	1972	03	21.76160	09	20	38.26	+17	27	59.3	0.0	0	073
130	1972	03	21.77406	09	20	38.02	+17	28	03.7	0.0	0	073
134	1972	12	12.80910	04	32	23.84	+42	17	13.5			073
134	1972	12	12.81811	04	32	23.02	+42	17	11.7			073
137	1972	02	24.72050	08	34	27.37	+02	10	09.8	0.0	4+	073
137	1972	02	24.73159	08	34	24.86	+02	10	06.5	0.0	4+	073
139	1972	11	30.74186	03	08	55.06	+32	00	28.0	0.6-	11-	073
139	1972	11	30.74825	03	08	54.26	+32	00	26.1	0.6-	11-	073
139	1974	04	20.80546	12	06	24.38	-05	08	53.0	0.0	1-	073
139	1974	04	20.81378	12	06	24.04	-05	08	53.0	0.0	1-	073
139	1974	04	24.79246	12	03	54.54	-05	11	06.2			073
139	1974	04	24.80285	12	03	54.17	-05	11	06.8			073
140	1972	04	01.85761	12	23	40.25	+02	40	10.1	0.0	0	073
140	1972	04	01.86592	12	23	39.81	+02	40	13.7	0.0	0	073
140	1973	09	05.86391	22	26	56.42	-14	33	58.1	0.0	1-	073
140	1973	09	05.87360	22	26	56.35	-14	34	00.6	0.0	1-	073
140	1973	09	22.77203	22	16	46.79	-15	33	53.6	0.0	0	073
140	1973	09	22.78103	22	16	46.55	-15	33	54.7	0.0	0	073
141	1973	09	17.86936	23	34	08.58	+12	34	22.3	0.0	0	073
141	1973	09	17.87974	23	34	07.90	+12	34	23.5	0.0	0	073
141	1973	09	24.87641	23	27	10.02	+12	37	27.7	0.0	0	073
141	1973	09	24.88056	23	27	09.70	+12	37	28.0	0.0	0	073
141	1973	10	01.80536	23	20	44.97	+12	31	18.8	0.0	0	073
141	1973	10	01.81160	23	20	44.66	+12	31	22.0	0.0	0	073
141	1973	10	11.76554	23	13	16.65	+12	14	10.2	0.0	0	073
141	1973	10	11.77247	23	13	16.37	+12	14	09.4	0.0	0	073
141	1973	10	15.77367	23	11	03.08	+12	05	27.3	0.0	0	073
141	1973	10	15.77990	23	11	02.89	+12	05	26.0	0.0	0	073
141	1973	10	18.76495	23	09	43.39	+11	58	49.7	0.0	0	073
141	1973	10	18.77188	23	09	43.24	+11	58	48.7	0.0	0	073
145	1973	12	05.86273	04	17	00.27	+18	01	48.2	0.4-	2-	073
145	1973	12	05.87104	04	16	59.73	+18	01	49.4	0.4-	2-	073
148	1974	02	12.87751	08	56	16.63	+11	17	12.5			073
148	1974	02	12.88466	08	56	16.30	+11	17	17.3			073
150	1973	11	19.77619	02	01	30.55	+11	28	33.6	0.0	0	073
150	1973	11	19.78519	02	01	30.26	+11	28	30.7	0.0	0	073
171	1972	04	01.85761	12	23	36.50	+01	43	18.7	0.0	0	073
171	1972	04	01.86592	12	23	36.11	+01	43	20.7	0.0	0	073
173	1972	05	31.93083	18	56	31.07	-05	21	10.4	0.0	0	073
173	1972	05	31.94191	18	56	30.34	-05	21	12.5	0.0	0	073
173	1972	06	12.94848	18	49	24.98	-05	16	20.3	0.0	0	073
173	1972	06	12.96095	18	49	24.38	-05	16	21.1			073
173	1972	07	01.88238	18	33	46.68	-05	57	41.9	0.1+	0	073
173	1972	07	01.89174	18	33	46.23	-05	57	44.1	0.1+	0	073
173	1972	07	05.89121	18	30	12.16	-06	14	12.4	0.0	0	073
173	1972	07	05.90367	18	30	11.49	-06	14	15.4	0.0	0	073
173	1972	07	15.81547	18	21	40.73	-07	05	29.1	0.0	0	073
173	1972	07	15.82861	18	21	40.07	-07	05	34.3	0.0	0	073
173	1973	12	24.73782	04	47	17.54	+00	41	55.9	0.0	0	073
173	1973	12	24.74405	04	47	17.27	+00	41	57.7	0.0	0	073
176	1973	10	01.82545	23	47	52.36	+10	35	08.2	0.1-	0	073
176	1973	10	01.83445	23	47	51.96	+10	35	01.1	0.1-	0	073
176	1973	10	15.81384	23	41	06.18	+07	20	35.7	0.1-	0	073
176	1973	10	15.82146	23	41	05.99	+07	20	30.1	0.1-	0	073
178	1972	04	10.88144	13	49	46.35	-09	48	13.1	0.0	0	073

178	1972	04	10.89876	13	49	45.27	-09	48	05.9	0.0	0	073
181	1972	03	16.75655	09	27	33.72	+19	01	40.3	0.1-	1+	073
181	1972	03	16.76902	09	27	33.52	+19	01	46.2	0.1-	1+	073
181	1973	05	14.87854	15	30	01.43	+07	52	04.9	0.1-	1+	073
181	1973	05	14.88824	15	30	01.07	+07	52	07.5	0.1-	1+	073
181	1973	05	21.87335	15	24	51.66	+08	04	05.7	0.1-	1+	073
181	1973	05	21.88235	15	24	51.33	+08	04	07.4	0.1-	1+	073
182	1972	04	01.77658	10	40	18.82	+11	23	14.4	0.0	0	073
182	1972	04	01.78766	10	40	18.44	+11	23	15.7	0.0	0	073
182	1972	04	10.76232	10	36	21.69	+11	41	17.8	0.4-	2+	073
182	1972	04	10.77340	10	36	21.47	+11	41	24.3	0.4-	2+	073
182	1974	10	19.85292	01	25	23.45	+04	44	20.4	0.0	0	073
182	1974	10	19.86123	01	25	23.07	+04	44	18.2	0.0	0	073
185	1973	03	03.81564	09	33	53.35	+11	18	19.5	0.1-	0	073
185	1973	03	03.82746	09	33	52.88	+11	18	27.1	0.1-	0	073
190	1972	11	01.72586	00	48	42.94	+01	45	17.4	0.0	0	073
190	1972	11	01.73833	00	48	42.63	+01	45	13.6	0.0	0	073
190	1972	11	13.68060	00	44	00.54	+01	08	26.9	0.0	0	073
190	1972	11	13.69030	00	44	00.32	+01	08	28.8	0.0	0	073
191	1972	11	27.73810	02	20	21.21	-02	25	15.6	0.0	0	073
191	1972	11	27.74761	02	20	20.92	-02	25	14.5	0.0	0	073
192	1972	03	16.78702	10	01	57.69	+13	06	55.4	0.3-	2+	073
192	1972	03	16.79949	10	01	57.01	+13	06	57.4	0.3-	2+	073
192	1972	03	17.79641	10	01	11.98	+13	08	42.0	0.3-	2+	073
192	1972	03	17.81268	10	01	11.22	+13	08	44.0	0.3-	2+	073
192	1972	03	22.77236	09	57	47.49	+13	15	40.9	0.3-	2+	073
192	1972	03	22.78068	09	57	47.17	+13	15	41.7	0.3-	2+	073
192	1972	03	30.76542	09	53	35.23	+13	20	40.4	0.3-	2+	073
192	1972	03	30.77857	09	53	34.93	+13	20	40.0	0.3-	2+	073
192	1974	11	06.87688	03	02	19.14	+30	37	38.7	0.1+	0	073
192	1974	11	06.88242	03	02	18.72	+30	37	38.1	0.1+	0	073
194	1972	03	09.89130	11	44	16.58	+08	25	44.0	0.0	1+	073
194	1972	03	09.90376	11	44	15.99	+08	25	52.5	0.0	0	073
194	1972	03	16.87359	11	38	46.85	+09	35	24.5	0.0	0	073
194	1972	03	16.88606	11	38	45.94	+09	35	31.0	0.0	0	073
194	1973	07	19.84367	19	27	05.72	+03	46	03.9	0.1-	0	073
194	1973	07	19.85199	19	27	05.28	+03	45	57.9	0.1-	0	073
194	1973	07	21.81935	19	25	37.51	+03	22	31.8	0.1-	0	073
194	1973	07	21.82766	19	25	37.16	+03	22	25.9	0.1-	0	073
196	1972	03	08.85871	10	20	08.15	+21	23	58.9	0.0	0	073
196	1972	03	08.87257	10	20	07.49	+21	24	01.1	0.0	0	073
196	1972	03	22.81253	10	11	05.27	+21	51	27.5	0.0	0	073
196	1972	03	22.82154	10	11	04.93	+21	51	27.7	0.0	0	073
196	1973	05	07.89845	15	20	38.65	-14	07	02.1	0.0	0	073
196	1973	05	07.90538	15	20	38.33	-14	07	01.5	0.0	0	073
203	1972	02	24.89018	11	34	24.86	+02	54	29.5	1.3+	7-	073
203	1972	02	24.90334	11	34	24.77	+02	54	15.8	1.3+	7-	073
206	1972	03	08.80123	10	06	47.35	+12	48	33.8	0.6-	4+	073
206	1972	03	08.81785	10	06	46.63	+12	48	41.3	0.6-	4+	073
206	1972	03	16.78702	10	01	29.62	+13	26	45.2	0.6-	3+	073
206	1972	03	16.79949	10	01	29.11	+13	26	49.1	0.6-	3+	073
206	1972	03	17.79641	10	00	54.56	+13	31	00.1	0.6-	3+	073
206	1972	03	17.81268	10	00	53.95	+13	31	04.4	0.6-	3+	073
207	1972	09	07.92253	00	52	21.42	+02	24	14.7	0.0	0	073
207	1972	09	07.93429	00	52	20.90	+02	24	13.2	0.0	0	073
207	1972	10	30.69670	00	07	04.39	-00	45	41.7	0.0	0	073
207	1972	10	30.70848	00	07	04.86	-00	45	39.3	0.0	0	073
212	1973	02	05.80988	07	45	37.89	+22	33	51.5	0.2+	0	073
212	1973	02	05.82858	07	45	37.38	+22	33	46.3	0.2+	1+	073



213	1972	06	08.80023	14	28	07.77	-04	21	04.3	0.0	0	073
213	1972	06	08.81269	14	28	07.51	-04	21	06.4	0.0	0	073
219	1973	05	02.83248	13	27	20.32	-06	11	23.9	0.1-	2+	073
219	1973	05	02.84494	13	27	19.68	-06	11	18.1	0.1-	2+	073
230	1972	01	14.80345	06	07	24.43	+13	03	21.3	0.0	0	073
230	1972	01	14.81245	06	07	23.88	+13	03	21.3	0.0	0	073
230	1973	05	02.86988	14	10	34.88	-19	06	53.7	0.1-	0	073
230	1973	05	02.88165	14	10	34.25	-19	06	47.1	0.1-	0	073
230	1974	09	18.88050	23	08	14.06	+11	16	51.9			073
230	1974	09	18.88968	23	08	13.58	+11	16	47.1			073
250	1972	04	03.87845	13	29	35.01	-07	51	16.4	0.0	0	073
250	1972	04	03.89300	13	29	34.27	-07	51	14.7	0.0	0	073
250	1972	04	04.87016	13	28	45.34	-07	49	43.0			073
250	1972	04	04.88679	13	28	44.48	-07	49	41.6			073
250	1972	04	10.86205	13	23	40.73	-07	39	57.3	0.0	1+	073
255	1972	03	08.85871	10	24	15.60	+19	44	37.9	0.1+	0	073
255	1972	03	08.87257	10	24	15.37	+19	44	37.9	0.1+	0	073
259	1974	03	18.83452	11	20	28.36	+21	13	37.7	0.1-	0	073
259	1974	03	18.84422	11	20	27.85	+21	13	41.1	0.1-	0	073
259	1974	03	28.80585	11	13	12.24	+21	43	01.1	0.3-	0	073
259	1974	03	28.81555	11	13	11.82	+21	43	10.2	0.3-	0	073
266	1973	11	05.92760	03	33	29.05	+21	16	41.1	0.2-	0	073
266	1973	11	05.93453	03	33	28.72	+21	17	47.9	0.2-	0	073
266	1973	11	19.82016	03	21	39.02	+19	00	10.7	0.3-	0	073
266	1973	11	19.83194	03	21	38.45	+19	00	04.8	0.3-	0	073
266	1973	12	06.74816	03	09	19.13	+16	20	49.3	0.3-	1-	073
266	1973	12	06.75509	03	09	18.99	+16	20	45.9	0.3-	1-	073
266	1973	12	23.71285	03	03	29.32	+14	22	49.8	0.2-	1-	073
266	1973	12	23.73848	03	03	29.24	+14	22	48.3	0.2-	1-	073
270	1973	01	01.65626	03	59	47.37	+20	19	12.0	0.0	0	073
270	1973	01	01.66318	03	59	47.19	+20	19	11.5	0.0	0	073
283	1972	11	30.79203	03	31	00.44	+30	16	08.1	0.1-	1-	073
283	1972	11	30.80381	03	30	59.78	+30	16	03.8	0.1-	1-	073
283	1972	12	21.65929	03	17	25.84	+28	20	33.9	0.1-	0	073
283	1972	12	21.67107	03	17	25.55	+28	20	28.7	0.1-	0	073
288	1973	05	02.91489	16	00	48.03	-13	22	32.7	0.0	0	073
288	1973	05	02.92943	16	00	47.34	-13	22	30.7	0.0	0	073
289	1973	03	26.83178	10	23	49.10	+06	59	21.2	0.3-	3+	073
289	1973	03	26.84425	10	23	48.59	+06	59	23.9	0.3-	3+	073
289	1973	03	29.80212	10	22	46.75	+07	08	26.1	0.2+	2-	073
289	1973	03	29.81251	10	22	46.33	+07	08	29.5	0.2+	2-	073
305	1973	03	26.90208	12	42	03.63	-06	54	44.2	0.2-	1+	073
305	1973	03	26.91351	12	42	03.04	-06	54	39.7	0.2-	1+	073
306	1972	09	07.95126	01	53	51.37	+02	12	07.2	0.1-	1-	073
306	1972	09	07.96309	01	53	51.26	+02	12	02.8	0.1-	1-	073
308	1973	03	03.91403	12	12	13.45	-01	59	25.2	0.0	0	073
308	1973	03	03.92718	12	12	12.94	-01	59	21.0	0.0	0	073
313	1972	10	02.95190	02	27	12.24	+04	47	21.4	0.0	1-	073
313	1972	10	02.96090	02	27	11.91	+04	47	15.8	0.0	1-	073
313	1972	11	17.78533	01	50	45.43	-02	04	13.9	0.0	0	073
313	1972	11	17.79710	01	50	44.98	-02	04	18.5	0.0	0	073
313	1972	11	27.71783	01	45	24.13	-02	39	57.9	0.0	0	073
313	1972	11	27.72614	01	45	23.89	-02	39	58.5	0.0	0	073
322	1973	05	02.86988	14	11	10.97	-20	03	59.1	0.1-	1+	073
322	1973	05	02.88165	14	11	10.48	-20	03	56.9	0.1-	1+	073
327	1972	10	02.78499	22	35	20.55	-09	39	52.1			073
327	1972	10	02.79538	22	35	20.55	-09	39	52.5			073
328	1974	03	21.81803	10	55	10.56	+08	54	15.0	0.2-	0	073
328	1974	03	21.84145	10	55	10.03	+08	54	13.6	0.2-	0	073

333	1972	03	16.75655	09	23	43.27	+17	35	30.0	0.0	1+	073
333	1972	03	16.76902	09	23	43.00	+17	35	30.7	0.0	1+	073
333	1972	03	21.76160	09	21	38.76	+17	39	00.2	0.0	1+	073
335	1973	05	14.85925	15	00	13.96	-07	25	13.1	0.4-	2+	073
335	1973	05	14.86825	15	00	13.55	-07	25	10.8	0.4-	2+	073
337	1973	10	25.80942	00	56	09.85	+13	23	49.1	0.0	0	073
337	1973	10	25.81773	00	56	09.35	+13	23	48.6	0.0	0	073
337	1973	10	29.80265	00	52	21.28	+13	12	34.7	0.0	0	073
337	1973	10	29.81096	00	52	20.81	+13	12	33.9	0.0	0	073
338	1972	12	14.70383	03	08	16.90	+24	10	41.9	0.1-	0	073
338	1972	12	14.71144	03	08	16.59	+24	10	40.8	0.1-	0	073
347	1972	11	30.68642	02	12	48.56	+01	27	30.7	0.3+	3+	073
347	1972	11	30.69612	02	12	48.32	+01	27	30.4	0.3+	3+	073
347	1974	03	23.84372	11	18	39.05	+26	43	24.0	0.0	1+	073
347	1974	03	23.85445	11	18	38.48	+26	43	25.0	0.0	1+	073
347	1974	03	29.83429	11	14	18.33	+26	44	06.2	0.1-	1+	073
347	1974	03	29.84676	11	14	17.80	+26	44	05.7	0.1-	1+	073
349	1972	12	29.78425	04	08	02.63	+29	32	50.7	0.2+	0	073
349	1972	12	29.79256	04	08	02.33	+29	32	50.4	0.2+	0	073
349	1973	01	01.67253	04	06	26.98	+29	28	23.5	0.2+	0	073
349	1973	01	01.67877	04	06	26.79	+29	28	22.8	0.2+	0	073
349	1974	03	13.86720	10	48	09.80	+17	38	40.7			073
349	1974	03	18.81374	10	44	14.59	+17	48	30.3	0.0	0	073
349	1974	03	18.82067	10	44	14.35	+17	48	30.8	0.0	0	073
349	1974	03	22.83468	10	41	16.80	+17	53	52.8			073
349	1974	03	22.84507	10	41	16.34	+17	53	53.8			073
349	1974	03	23.79941	10	40	35.89	+17	54	49.5	0.0	0	073
349	1974	03	23.80841	10	40	36.28	+17	54	48.6	0.0	0	073
349	1974	03	28.78507	10	37	21.50	+17	57	25.3	0.0	0	073
349	1974	03	28.81139	10	37	21.25	+17	57	25.1	0.0	0	073
349	1974	03	29.78789	10	36	45.58	+17	57	30.0	0.1-	0	073
349	1974	03	29.79759	10	36	45.27	+17	57	29.7	0.1-	0	073
349	1974	04	11.76351	10	30	50.20	+17	45	13.5	0.1-	0	073
349	1974	04	11.77321	10	30	49.98	+17	45	12.2	0.1-	0	073
349	1974	04	12.77809	10	30	31.44	+17	43	16.6			073
349	1974	04	12.78848	10	30	31.23	+17	43	15.5			073
354	1973	04	12.86289	12	17	11.75	+21	03	45.5	0.4-	1+	073
354	1973	04	12.86843	12	17	11.53	+21	03	47.4	0.4-	1+	073
354	1973	04	18.75370	12	14	00.73	+21	26	07.8	0.3-	1+	073
354	1973	04	18.76132	12	14	00.49	+21	26	09.1	0.3-	1+	073
354	1973	04	20.76729	12	13	04.17	+21	31	16.2	0.3-	1+	073
354	1973	04	20.77110	12	13	04.06	+21	31	16.5	0.3-	1+	073
354	1973	04	20.77490	12	13	03.95	+21	31	17.2	0.3-	1+	073
354	1973	04	28.75961	12	10	10.08	+21	39	32.7	0.3-	1+	073
354	1973	04	28.76584	12	10	09.97	+21	39	32.5	0.3-	1+	073
354	1973	05	03.79790	12	09	04.92	+21	35	23.6	0.3-	0	073
354	1973	05	03.80759	12	09	04.81	+21	35	22.6	0.3-	0	073
357	1972	05	08.81163	13	37	16.35	+10	27	57.0	0.1+	1+	073
357	1972	05	08.82895	13	37	15.78	+10	27	57.5	0.1+	1+	073
357	1972	05	15.80284	13	33	32.32	+10	33	43.0	0.1-	0	073
357	1972	05	15.82154	13	33	31.68	+10	33	43.0	0.1-	0	073
367	1972	03	08.88988	12	16	22.08	+04	22	01.3	0.1+	0	073
367	1972	03	08.90165	12	16	21.39	+04	22	06.0	0.1+	0	073
372	1972	10	02.87052	01	15	44.19	+42	18	38.6	0.0	0	073
372	1972	10	02.87606	01	15	43.82	+42	18	40.3	0.0	0	073
372	1972	10	23.82076	00	50	25.19	+43	09	57.2	0.1-	1-	073
372	1972	10	23.82769	00	50	24.69	+43	09	57.0	0.1-	1-	073
374	1972	09	07.97932	01	50	05.95	+16	21	13.8	0.3-	0	073
374	1972	09	07.99010	01	50	05.76	+16	21	12.2	0.3-	0	073

377	1972	09	07.78125	21	24	48.86	-05	41	05.9	3.0+	13+	073
377	1972	09	07.79440	21	24	48.39	-05	41	11.0	3.0+	13+	073
383	1972	03	09.83054	10	09	44.28	+14	57	20.4	0.0	0	073
383	1972	03	09.84767	10	09	43.54	+14	57	23.7	0.0	0	073
383	1972	03	16.81542	10	05	18.14	+15	19	38.4	0.0	0	073
383	1972	03	16.82788	10	05	17.71	+15	19	40.2	0.0	0	073
384	1972	04	03.81889	11	35	02.59	+09	51	37.3	0.7+	5-	073
384	1972	04	03.83067	11	35	02.22	+09	51	35.1	0.7+	5-	073
384	1972	04	10.78795	11	30	21.85	+10	00	24.7	0.7+	5-	073
384	1972	04	10.80041	11	30	21.31	+10	00	26.5	0.7+	5-	073
385	1973	10	29.76837	23	55	56.70	+09	09	43.7	0.1-	2-	073
387	1972	05	08.91205	16	59	41.21	+06	21	02.6	0.0	1-	073
387	1972	05	08.92175	16	59	40.98	+06	21	05.0	0.0	1-	073
387	1972	05	09.95295	16	59	10.15	+06	25	08.4	0.0	1-	073
387	1972	05	09.96264	16	59	09.83	+06	25	10.6	0.0	1-	073
387	1972	05	16.91990	16	55	01.22	+06	45	24.8	0.0	0	073
387	1972	05	16.92683	16	55	00.91	+06	45	25.4	0.0	0	073
387	1972	05	26.88562	16	47	26.24	+06	49	00.0	0.1-	0	073
387	1972	05	26.89255	16	47	26.05	+06	49	00.3	0.1-	0	073
387	1972	06	08.86741	16	36	14.68	+06	01	52.3	0.1+	0	073
387	1972	06	08.87433	16	36	14.40	+06	01	50.2	0.1+	0	073
387	1972	06	09.86711	16	35	23.41	+05	55	42.9	0.1+	0	073
387	1972	06	09.87542	16	35	22.99	+05	55	39.5	0.0	0	073
387	1972	06	12.82178	16	32	54.58	+05	35	24.8	0.0	0	073
387	1972	06	12.83217	16	32	53.98	+05	35	20.4	0.0	0	073
387	1972	06	14.82488	16	31	16.71	+05	19	54.9	0.1-	1-	073
387	1972	06	14.83319	16	31	16.35	+05	19	51.3	0.1-	1-	073
387	1972	06	29.79644	16	21	24.56	+02	45	16.2	0.0	0	073
387	1972	06	29.80337	16	21	24.33	+02	45	10.9	0.0	0	073
387	1972	07	01.81867	16	20	28.69	+02	19	57.4	0.0	0	073
387	1972	07	01.82560	16	20	28.44	+02	19	51.9	0.0	0	073
387	1972	07	07.79884	16	18	24.05	+01	00	21.8	0.0	1-	073
387	1972	07	07.80992	16	18	23.91	+01	00	12.9	0.0	1-	073
388	1972	03	08.76868	09	48	08.21	+17	10	40.7	0.1-	1+	073
388	1972	03	08.78184	09	48	07.67	+17	10	41.2	0.1-	1+	073
389	1972	11	27.69878	01	27	30.49	+20	19	41.2	0.2-	2-	073
389	1972	11	27.70778	01	27	30.26	+20	19	37.8	0.2-	2-	073
393	1972	05	26.90224	17	54	42.67	-03	25	40.5	0.1-	0	073
393	1972	05	26.90986	17	54	42.45	-03	25	33.6	0.1-	0	073
393	1972	05	31.89586	17	52	25.96	-02	15	39.9	0.0	1-	073
393	1972	05	31.90278	17	52	25.69	-02	15	34.4	0.0	1-	073
393	1972	06	12.88411	17	44	55.37	+00	14	04.6	0.1-	0	073
393	1972	06	12.89450	17	44	54.93	+00	14	11.5	0.1-	0	073
393	1972	06	14.86540	17	43	30.26	+00	35	17.0	0.1-	1+	073
393	1972	06	14.87336	17	43	29.92	+00	35	21.9	0.1-	1+	073
393	1972	06	29.84631	17	32	51.17	+02	32	10.9	0.0	0	073
393	1972	06	29.85392	17	32	50.86	+02	32	13.1	0.0	0	073
393	1972	07	07.81893	17	28	15.65	+02	59	55.9	0.0	0	073
393	1972	07	07.82655	17	28	15.44	+02	59	56.8	0.0	0	073
394	1972	11	27.76076	02	25	58.62	+11	04	13.7	0.9+	0	073
394	1972	11	27.77185	02	25	58.11	+11	04	14.0	0.9+	0	073
402	1973	05	14.82358	14	21	33.75	+06	26	57.6	0.5+	1-	073
402	1973	05	14.83189	14	21	33.33	+06	26	57.2	0.5+	1-	073
404	1973	01	01.70474	04	25	17.52	+16	31	03.4	0.4+	2-	073
404	1973	01	01.71513	04	25	17.02	+16	31	05.5	0.4+	2-	073
404	1974	04	24.86033	14	01	51.08	+13	20	11.0			073
404	1974	04	24.87072	14	01	50.48	+13	20	10.4			073
404	1974	05	17.79935	13	44	19.94	+11	14	53.7			073
404	1974	05	17.80835	13	44	19.58	+11	14	48.8			073

404	1974	05	24.79721	13	41	23.12	+10	04	22.1				073
404	1974	05	24.80068	13	41	22.89	+10	04	16.8				073
409	1972	06	12.84325	16	51	48.37	-17	29	01.6	0.0	1-		073
409	1972	06	12.85364	16	51	47.77	-17	28	58.0	0.0	1-		073
409	1972	06	14.84427	16	50	00.53	-17	16	08.2	0.0	0		073
409	1972	06	14.85536	16	49	59.95	-17	16	04.7	0.0	0		073
409	1972	06	29.81202	16	38	36.81	-15	55	57.8	0.0	0		073
409	1972	06	29.82103	16	38	36.59	-15	51	54.3	0.0	0		073
409	1972	07	01.83391	16	37	26.55	-15	42	37.6	0.0	0		073
409	1972	07	01.84083	16	37	26.26	-15	42	35.0	0.0	0		073
409	1973	10	05.86654	00	42	04.21	+18	43	37.0	0.0	0		073
409	1973	10	05.87762	00	42	03.74	+18	43	32.3	0.0	0		073
409	1973	10	18.84771	00	31	35.16	+16	51	39.6	0.0	0		073
409	1973	10	18.85672	00	31	34.68	+16	51	34.6	0.0	0		073
410	1974	05	23.94677	18	18	37.48	-17	21	36.5	0.0	1-		073
410	1974	05	23.95058	18	18	37.37	-17	21	37.2	0.0	1-		073
410	1974	06	14.92035	18	04	58.94	-19	48	11.2				073
410	1974	06	14.93004	18	04	58.50	-19	48	15.0				073
416	1972	11	27.76076	02	19	51.73	+09	22	04.5	0.0	1-		073
416	1972	11	27.77185	02	19	51.31	+09	22	05.2	0.0	1-		073
420	1972	09	07.86365	23	27	29.00	+06	17	40.9	0.0	0		073
420	1972	09	07.87820	23	27	28.44	+06	17	37.3	0.0	0		073
420	1972	10	12.72131	23	06	37.90	+03	21	42.5	0.2-	1-		073
420	1972	10	12.73482	23	06	37.55	+03	21	38.9	0.2-	1-		073
432	1973	10	29.82204	01	18	16.30	-10	53	46.6	0.1-	0		073
432	1973	10	29.83312	01	18	15.73	-10	53	45.7	0.1-	0		073
436	1972	09	29.77436	22	15	06.66	-15	50	26.6	0.3-	7-		073
436	1972	09	29.79686	22	15	06.45	-15	50	29.3	0.3-	7-		073
436	1972	10	02.73755	22	13	46.29	-15	36	51.4	0.0	7-		073
436	1972	10	02.75140	22	13	46.02	-15	36	53.5	0.0	7-		073
444	1974	08	21.80472	20	47	53.89	-02	33	13.0				073
444	1974	08	21.81510	20	47	53.42	-02	33	17.9				073
444	1974	08	27.80774	20	44	19.69	-03	21	05.6				073
444	1974	08	27.81813	20	44	19.30	-03	21	11.3				073
450	1972	10	28.71810	23	41	20.98	-03	49	11.0	0.6-	5-		073
450	1972	10	28.73339	23	41	20.67	-03	49	09.8	0.6-	5-		073
459	1972	10	02.84940	00	21	53.53	-06	02	30.2	0.3-	0		073
459	1972	10	02.85979	00	21	52.99	-06	02	32.4	0.3-	0		073
471	1974	05	23.82800	14	47	56.63	-02	57	42.7	0.0	1+		073
471	1974	05	23.83493	14	47	56.36	-02	57	42.7	0.0	1+		073
481	1973	11	05.88258	02	57	20.57	+09	53	15.2	0.1+	0		073
481	1973	11	05.89159	02	57	19.99	+09	53	15.6	0.1+	0		073
488	1972	10	28.84415	02	52	55.65	+04	26	23.7	0.0	0		073
488	1972	10	28.85246	02	52	55.26	+04	26	23.0	0.0	0		073
488	1972	11	27.78708	02	29	21.05	+03	55	48.3	0.0	0		073
488	1972	11	27.79678	02	29	20.69	+03	55	49.2	0.0	0		073
490	1973	04	02.77181	10	30	43.93	+06	39	02.2	0.0	0		073
490	1973	04	02.78151	10	30	43.68	+06	39	04.6	0.0	0		073
494	1972	03	08.88988	12	17	36.64	+05	43	34.8				073
494	1972	03	08.90165	12	17	36.00	+05	43	37.9				073
500	1973	09	22.79281	22	44	04.63	+08	36	17.7	0.8+	6+		073
500	1973	09	22.80666	22	44	04.08	+08	36	14.4	0.8+	6+		073
500	1973	10	05.71591	22	36	03.66	+07	37	41.5	0.7+	5+		073
500	1973	10	05.73115	22	36	03.25	+07	37	37.5	0.7+	5+		073
500	1973	10	11.74960	22	33	52.85	+07	10	11.8	0.6+	5+		073
500	1973	10	11.75653	22	33	52.74	+07	10	09.8	0.6+	5+		073
511	1973	10	05.91363	01	57	45.97	-13	30	12.4	0.1-	1-		073
511	1973	10	05.92194	01	57	45.67	-13	30	15.2	0.1-	1-		073

511	1973	10	25.85339	01	42	40.53	-14	52	30.8	0.2-	1-	073
511	1973	10	25.85824	01	42	40.25	-14	52	31.2	0.2-	1-	073
511	1973	10	29.84317	01	39	35.40	-14	58	25.3	0.2-	1-	073
511	1973	10	29.84871	01	39	35.64	-14	58	30.8	0.2-	1-	073
511	1973	11	19.76164	01	26	26.64	-14	23	45.0	0.1-	1-	073
511	1973	11	19.76718	01	26	26.51	-14	23	43.5	0.1-	1-	073
511	1973	12	11.68015	01	21	55.87	-12	04	09.1	0.1-	1-	073
511	1973	12	11.69123	01	21	55.81	-12	04	03.7	0.1-	1-	073
511	1973	12	23.61659	01	24	07.17	-10	16	37.4	0.1-	0	073
511	1973	12	23.62213	01	24	07.25	-10	16	34.1	0.1-	0	073
511	1973	12	24.65748	01	24	26.68	-10	06	55.4	0.1-	0	073
511	1973	12	24.66302	01	24	26.70	-10	06	52.6	0.1-	0	073
516	1973	10	15.79029	23	26	30.39	+07	56	21.7	0.0	0	073
516	1973	10	15.79929	23	26	30.07	+07	56	19.3	0.0	0	073
532	1973	03	23.86666	11	22	36.76	+30	33	17.7	0.1-	0	073
532	1973	03	23.87289	11	22	36.48	+30	33	19.1	0.1-	0	073
532	1973	04	12.81372	11	12	31.79	+30	37	20.1	0.0	0	073
532	1973	04	12.82065	11	12	31.66	+30	37	18.7	0.0	0	073
533	1972	09	07.75077	20	38	31.00	-12	22	38.8	0.3-	5-	073
533	1972	09	07.76323	20	38	30.45	-12	22	46.0	0.3-	5-	073
550	1974	08	16.82461	19	29	50.12	-10	25	36.1	0.1-	1-	073
550	1974	08	16.83430	19	29	49.77	-10	25	36.7	0.1-	1-	073
554	1973	10	05.89009	00	48	43.84	+11	09	34.6	0.1-	0	073
554	1973	10	05.89978	00	48	43.34	+11	09	28.8	0.1-	0	073
558	1972	09	04.90300	00	43	30.72	-03	13	31.5	0.0	1-	073
558	1972	09	04.91478	00	43	30.34	-03	13	35.9	0.0	1-	073
558	1972	10	02.84940	00	25	01.75	-06	30	24.8	0.0	1-	073
558	1972	10	02.85979	00	25	01.28	-06	30	29.2	0.0	1-	073
563	1974	11	06.80209	02	07	55.07	-02	17	08.7	0.6-	4-	073
563	1974	11	06.85195	02	07	54.76	-02	17	08.6	0.6-	4-	073
572	1972	11	01.72586	00	54	45.71	+01	37	41.8	0.1+	2-	073
572	1972	11	01.73833	00	54	45.66	+01	37	41.8	0.0	2-	073
584	1974	10	23.84927	01	34	05.44	+32	52	22.7	0.2+	1+	073
584	1974	10	23.85827	01	34	04.92	+32	52	18.2	0.2+	1+	073
585	1974	02	11.78835	07	56	22.31	+10	04	25.4			073
585	1974	02	11.80012	07	56	21.95	+10	04	31.5			073
592	1972	10	02.95190	02	25	22.34	+04	14	34.9	0.8-	4-	073
592	1972	10	02.96090	02	25	22.12	+04	14	33.7	0.8-	4-	073
620	1973	03	26.90208	12	40	51.82	-06	41	28.4	0.0	0	073
620	1973	03	26.91351	12	40	50.94	-06	41	31.8	0.0	0	073
642	1972	04	03.78704	10	37	56.32	+12	40	36.7	0.1+	1-	073
642	1972	04	03.80296	10	37	55.90	+12	40	35.1	0.1+	1-	073
665	1973	02	05.80988	07	46	48.62	+20	45	34.5	0.5+	1-	073
665	1973	02	05.82858	07	46	47.93	+20	45	36.7	0.5+	1-	073
674	1973	11	16.75112	01	33	40.72	+00	17	14.1	0.3+	4-	073
674	1973	11	16.79073	01	33	40.69	+00	17	13.5	0.3+	4-	073
675	1973	10	29.96436	04	35	01.92	+29	30	20.4	0.7-	0	073
675	1973	10	29.97060	04	35	01.72	+29	30	20.3	0.7-	0	073
675	1973	12	19.77051	03	55	41.72	+23	31	30.3	0.8-	1-	073
675	1973	12	19.77882	03	55	41.40	+23	31	26.2	0.8-	1-	073
675	1973	12	24.72120	03	53	21.06	+22	53	02.1	0.7-	1-	073
675	1973	12	24.72882	03	53	20.94	+22	52	59.0	0.7-	1-	073
694	1974	07	27.80441	18	44	43.05	+04	57	00.4			073
694	1974	07	27.81618	18	44	42.54	+04	57	01.2			073
694	1974	07	29.79202	18	43	24.38	+04	57	55.3	0.1-	1-	073
694	1974	07	29.80310	18	43	23.92	+04	57	55.6	0.1-	1-	073
694	1974	08	07.80829	18	38	50.53	+04	46	40.3			073
694	1974	08	07.81799	18	38	50.26	+04	46	38.5			073

695	1973	07	21.83840	19	34	27.40	-12	52	21.7	0.2-	0	073
695	1973	07	21.84948	19	34	27.40	-12	51	54.4	0.2-	0	073
704	1974	08	27.85933	23	03	55.43	+21	07	52.5			073
704	1974	08	27.86764	23	03	55.09	+21	07	53.5			073
704	1974	09	12.81706	22	50	27.21	+21	05	30.1			073
704	1974	09	12.82398	22	50	26.96	+21	05	29.2			073
704	1974	09	19.82221	22	44	40.37	+20	42	54.8			073
704	1974	09	19.82913	22	44	40.04	+20	42	52.9			073
704	1974	09	19.83605	22	44	39.73	+20	42	51.2			073
704	1974	10	03.74489	22	35	16.53	+19	29	08.1			073
704	1974	10	03.75182	22	35	16.39	+19	29	05.6			073
704	1974	10	03.75874	22	35	16.17	+19	29	03.1			073
704	1974	11	20.67870	22	39	56.61	+14	49	09.1			073
704	1974	11	20.68770	22	39	56.98	+14	49	07.7			073
709	1973	09	24.76802	21	35	21.59	-08	28	09.1	0.2-	2-	073
709	1973	09	24.77564	21	35	21.37	-08	28	08.2	0.2-	2-	073
712	1973	01	12.69647	04	42	42.24	+09	32	49.7	0.4+	1+	073
712	1973	01	12.70963	04	42	42.20	+09	32	51.5	0.4+	1+	073
714	1972	05	31.86573	17	26	04.56	-14	00	06.5	0.1+	0	073
714	1972	05	31.88305	17	26	04.43	-14	00	05.0	0.1+	0	073
714	1973	10	29.73963	23	49	54.40	+13	59	15.9	0.0	0	073
714	1973	10	29.75279	23	49	54.12	+13	59	13.7	0.0	0	073
737	1974	08	21.84177	22	09	11.37	+03	22	34.1			073
737	1974	08	27.80774	22	05	40.72	+02	07	26.2			073
737	1974	08	27.81813	22	05	40.34	+02	07	17.8			073
739	1972	03	09.86221	11	24	13.13	+23	00	53.9	0.1-	1+	073
739	1972	03	09.87606	11	24	12.53	+23	01	04.5	0.1-	1+	073
739	1972	03	16.84451	11	19	13.17	+24	28	41.5	0.1-	0	073
739	1972	03	16.85836	11	19	12.60	+24	28	50.4	0.1-	0	073
739	1972	03	17.87016	11	18	29.99	+24	40	19.5	0.1-	0	073
739	1972	03	17.88540	11	18	29.37	+24	40	29.5	0.1-	0	073
745	1972	05	16.79663	13	31	52.88	+09	47	36.3	0.3+	2-	073
745	1972	05	16.81463	13	31	52.30	+09	47	42.5	0.3+	2-	073
747	1973	09	24.80438	22	09	04.19	-27	10	48.6	0.1-	0	073
747	1973	09	24.80854	22	09	03.97	-27	10	48.7	0.1-	0	073
751	1973	02	05.74062	06	22	32.71	+35	44	42.9	0.1-	0	073
751	1973	02	05.75517	06	22	32.31	+35	44	43.9	0.1-	0	073
758	1973	01	25.75062	05	56	22.12	+22	46	12.5	0.1-	0	073
758	1973	01	25.75685	05	56	21.95	+22	46	12.7	0.1-	0	073
779	1973	12	06.73084	02	16	17.31	+32	02	27.2	0.2-	1-	073
779	1973	12	06.73845	02	16	17.17	+32	03	21.4	0.2-	1-	073
779	1973	12	13.74048	02	14	51.99	+30	48	38.4	0.2-	1-	073
779	1973	12	13.74880	02	14	52.01	+30	48	35.6	0.2-	1-	073
785	1972	05	31.78678	13	50	18.78	-01	02	05.7	0.1-	1+	073
785	1972	05	31.79717	13	50	18.61	-01	02	11.8	0.1-	1+	073
823	1972	03	09.76872	08	49	48.43	+11	22	56.8	0.0	0	073
823	1972	03	09.77703	08	49	48.30	+11	22	58.5	0.0	0	073
824	1972	04	03.81889	11	28	59.68	+11	02	18.6	0.0	0	073
824	1972	04	03.83067	11	28	59.50	+11	02	15.3	0.0	0	073
824	1972	04	10.78795	11	25	12.45	+11	34	21.7	0.0	0	073
824	1972	04	10.80041	11	25	12.31	+11	34	26.6	0.0	0	073
838	1973	04	02.79951	10	42	15.76	-06	08	43.6	0.1-	1+	073
838	1973	04	02.81406	10	42	15.02	-06	08	33.3	0.2-	1+	073
841	1972	03	21.76160	09	20	11.43	+17	39	55.2	0.0	1+	073
841	1972	03	21.77406	09	20	11.40	+17	39	56.0	0.0	1+	073
857	1972	10	02.92904	01	33	14.53	-00	17	23.1	0.1-	1-	073
857	1972	10	02.93943	01	33	13.88	-00	17	25.8	0.1-	1-	073
872	1972	09	04.79774	21	21	31.47	-06	59	22.0	0.5+	4-	073

872	1972 09 04.80882	21 21 31.03	-06 59 22.3	0.5+	4-	073
872	1972 09 07.78124	21 19 20.50	-07 13 53.2	0.1+	0	073
872	1972 09 07.79440	21 19 19.94	-07 13 59.0	0.1+	0	073
887	1974 01 14.82492	07 55 31.78	+25 32 45.0			073
887	1974 01 14.84015	07 55 35.86	+25 33 37.3			073
887	1974 02 11.85965	09 32 13.86	+38 35 40.0			073
911	1972 09 07.86365	23 28 08.66	+04 48 40.8	0.1-	2-	073
911	1972 09 07.87820	23 28 08.20	+04 48 36.4	0.1-	2-	073
912	1972 12 14.67614	03 07 53.75	+31 48 16.0	0.1+	1+	073
912	1972 12 14.68652	03 07 53.23	+31 48 16.3	0.1+	1+	073
914	1973 09 05.80193	21 15 22.54	+33 36 50.0	0.1-	1-	073
914	1973 09 05.81439	21 15 22.06	+33 36 44.5	0.1-	1-	073
914	1973 09 08.79409	21 13 30.26	+33 12 35.8	0.1-	1-	073
914	1973 09 08.80655	21 13 29.83	+33 12 30.8	0.1-	1-	073
932	1973 05 02.86988	14 10 50.25	-18 52 45.4	0.0	0	073
932	1973 05 02.88165	14 10 49.60	-18 52 44.3	0.0	0	073
953	1973 09 17.84027	22 50 56.23	-19 54 45.4	0.2-	1-	073
953	1973 09 17.85343	22 50 55.59	-19 54 45.4	0.2-	1-	073
977	1972 05 16.89012	16 30 46.52	-15 55 17.2			073
977	1972 05 16.90674	16 30 45.69	-15 55 13.8			073
987	1972 11 01.79131	01 37 44.23	+24 23 44.3	0.1+	1-	073
987	1972 11 01.80446	01 37 45.06	+24 23 47.9	0.1+	1-	073
1008	1972 09 07.92252	00 49 36.92	+00 56 18.7	0.2-	1-	073
1008	1972 09 07.93429	00 49 36.47	+00 56 13.9	0.2-	1-	073
1008	1972 11 09.68807	00 06 55.75	-00 23 59.3	0.3-	3-	073
1008	1972 11 09.69915	00 06 55.56	-00 23 57.1	0.3-	3-	073
1021	1972 11 17.91587	04 11 37.11	-05 47 35.8			073
1021	1972 11 17.92487	04 11 36.55	-05 47 33.8			073
1021	1972 12 14.77144	03 49 12.12	-02 02 45.0	0.0	0	073
1021	1972 12 14.77766	03 49 12.01	-02 02 41.0	0.0	0	073
1119	1973 09 17.84027	22 52 37.26	-20 52 17.1	0.6-	5+	073
1119	1973 09 17.85343	22 52 36.57	-20 52 13.3	0.6-	5+	073
1186	1972 11 30.71031	02 40 04.50	+17 56 01.2	0.1+	1-	073
1186	1972 11 30.72208	02 40 03.90	+17 56 58.0	0.1+	1-	073
1189	1973 04 02.79951	10 40 27.11	-05 58 11.4	0.3+	0	073
1189	1973 04 02.81406	10 40 26.71	-05 58 07.0	0.3+	0	073
1214	1973 04 02.79951	10 42 37.68	-06 02 18.5	0.2+	1+	073
1214	1973 04 02.81406	10 42 37.29	-06 02 10.3	0.2+	1+	073
1245	1972 08 09.88950	21 02 14.38	-15 41 17.8			073
1245	1972 08 09.90196	21 02 13.20	-15 41 29.0			073
1245	1972 08 28.78708	20 48 31.41	-16 47 42.5	0.6-	1+	073
1245	1972 08 28.79816	20 48 30.92	-16 47 37.8	0.6-	1+	073
1347	1972 11 09.71266	00 15 06.10	+10 39 40.9	0.3-	0	073
1347	1972 11 09.72512	00 15 05.70	+10 39 46.1	0.3-	0	073
1416	1972 11 30.74186	03 14 56.02	+32 59 34.2	0.1-	0	073
1416	1972 11 30.74825	03 14 55.28	+32 59 33.1	0.1-	0	073
1416	1972 12 14.67614	03 05 16.41	+32 02 30.6	0.7+	4-	073
1416	1972 12 14.68652	03 05 15.87	+32 02 30.0	0.7+	4-	073
1527	1972 09 04.84898	22 29 56.70	-17 17 25.2	1.0+	0	073
1527	1972 09 04.86145	22 29 56.14	-17 17 23.1	1.0+	0	073
1619	1973 09 17.84027	22 53 31.90	-20 18 58.2	1.2+	7+	073
1619	1973 09 17.85343	22 53 31.39	-20 18 57.3	1.5+	7+	073
1659	1972 11 09.73793	00 32 59.69	+29 46 58.0	0.1-	1-	073
1659	1972 11 09.74971	00 32 59.36	+29 46 55.2	0.1-	1-	073
1659	1972 11 13.70138	00 31 27.00	+29 32 40.1	0.1-	1-	073
1659	1972 11 13.70969	00 31 26.80	+29 32 38.0	0.1-	1-	073
1666	1972 08 14.78653	19 50 53.96	-16 47 50.6			073
1666	1972 08 14.79899	19 50 53.85	-16 47 49.9			073

## OBSERVATIONS MADE AT THE CRIMEAN ASTROPHYSICAL OBSERVATORY BY N. S. CHERNYKH, L. I. CHERNYKH, L. V. ZHURAVLEVA AND L. I. KARACHKINA.

Object	Date	UT	R. A. (1950)			Decl.	Mag.	Obs.
/1977 V	1977 09	19.97600	01 34	26.70	+01 55	47.2	16.0T	095
/1977 V	1977 10	09.93683	01 16	35.63	-00 06	40.3	16.0T	095
/1978 XXI	1979 08	26.93741	23 09	51.00	-18 36	33.6	13.0T	095
/1978 XXI	1979 09	14.89562	22 50	19.78	-18 39	20.0	14.0T	095
/1978 XXIV	1979 09	24.90289	00 06	38.04	-04 41	22.9	15.5T	095
1979 XC *	1979 12	14.94501	06 29	14.49	+11 44	51.5	16	095
1979 XC	1979 12	14.97628	06 29	13.55	+11 45	41.9		095
1979 XC	1979 12	15.00756	06 29	12.61	+11 46	32.3		095

## OBSERVATIONS MADE AT THE PERTH OBSERVATORY BY M. BUHAGIAR, M. P. CANDY, P. JEKABSONS AND J. JOHNSTON.

Object	Date	UT	R. A. (1950)			Decl.	Mag.	Obs.
/19791	1979 12	26.82014	16 16	12.52	-36 09	09.8		323
/19791	1979 12	26.82292	16 16	12.18	-36 09	15.7		323
/19791	1979 12	27.84201	16 14	53.44	-36 36	02.5		323
/19791	1979 12	28.82431	16 13	41.91	-37 02	47.7		323
/19791	1979 12	28.83715	16 13	40.95	-37 03	08.9		323
/19791	1979 12	29.83993	16 12	32.79	-37 31	30.6		323
/19791	1979 12	31.83316	16 10	33.81	-38 31	51.0		323
/19791	1980 01	02.83819	16 08	59.11	-39 39	14.5		323
/19791	1980 01	03.81910	16 08	23.11	-40 15	20.5		323
/19791	1980 01	05.81111	16 07	34.53	-41 36	42.4	4 T	323
/19791	1980 01	05.81285	16 07	34.41	-41 36	48.2		323
/19791	1980 01	07.83513	16 07	24.11	-43 13	33.2	6 T	323
/19791	1980 01	09.79618	16 08	02.17	-45 05	55.9	6 T	323
/19791	1980 01	10.79560	16 08	44.30	-46 12	24.7	6 T	323
/19791	1980 01	11.78108	16 09	45.39	-47 25	29.7	6 T	323
/19791	1980 01	13.81102	16 13	12.02	-50 26	14.6	6 T	323
/19791	1980 01	17.83357	16 31	20.40	-59 37	45.7	6 T	323

## OBSERVATIONS MADE AT THE PURPLE MOUNTAIN OBSERVATORY UNDER THE DIRECTION OF J. ZHANG. FROM CHINESE ASTRON. CIRC. NO. 4.

Object	Date	UT	R. A. (1950)			Decl.	Obs.
1975 FX	1978 10	28.60826	02 22	52.43	+08 50	02.5	330
1975 FX	1978 11	03.54701	02 17	30.60	+08 44	16.7	330
1975 FX	1978 11	07.61505	02 13	53.08	+08 41	17.5	330
1975 FX	1978 11	26.55896	01 59	26.67	+08 44	03.7	330
1978 US1 *	1978 10	28.60826	02 23	38.07	+10 17	19.7	330
1978 US1	1978 11	03.54701	02 18	38.64	+09 49	45.2	330
1978 US1	1978 11	07.61505	02 15	17.11	+09 31	48.2	330
1978 US1	1978 11	26.59090	02 02	19.93	+08 29	10.9	330
1978 UT1 *	1978 10	29.63326	03 16	40.78	+14 13	50.1	330
1978 UT1	1978 11	03.60118	03 12	37.13	+13 54	22.7	330
1978 UT1	1978 11	07.66296	03 09	08.50	+13 38	20.6	330
1978 UT1	1978 11	26.64715	02 53	16.05	+12 31	04.8	330
1978 UT1	1978 11	30.51520	02 50	30.44	+12 20	41.2	330
1978 UU1 *	1978 10	29.63326	03 22	30.60	+12 14	09.6	330
1978 UU1	1978 11	03.60118	03 18	04.65	+11 56	00.3	330
1978 UU1	1978 11	07.66296	03 14	13.56	+11 41	56.6	330
1978 UU1	1978 11	26.64715	02 57	08.52	+10 58	02.2	330
1978 UV1 *	1978 10	30.60896	03 23	45.84	+16 46	59.5	330
1978 UV1	1978 11	03.65118	03 20	11.31	+16 46	02.5	330
1978 UV1	1978 11	07.71018	03 16	27.94	+16 44	41.4	330
1978 UV1	1978 11	27.59611	02 58	27.51	+16 36	30.0	330
1978 UV1	1978 11	30.55270	02 56	06.30	+16 35	52.5	330
1978 UW1 *	1978 10	30.60896	03 29	14.65	+16 48	38.7	330



1978 UW1	1978 11 03.65118	03 25 38.84	+16 51 47.2	330
1978 UW1	1978 11 07.71019	03 21 51.37	+16 54 31.4	330
1978 UW1	1978 11 27.59611	03 03 09.34	+17 05 40.4	330
1978 UW1	1978 11 30.58047	03 00 39.29	+17 07 44.9	330
1978 UX1 *	1978 10 30.60896	03 33 00.35	+20 00 05.2	330
1978 UX1	1978 11 03.65118	03 29 58.35	+19 37 59.5	330
1978 UX1	1978 11 07.71018	03 26 41.68	+19 14 31.8	330
1978 UX1	1978 11 27.56799	03 10 32.98	+17 15 35.1	330
1978 UX1	1978 11 30.58047	03 08 29.95	+16 59 16.5	330
1978 WH14*	1978 11 28.58882	03 45 22.98	+17 21 59.5	330
1978 WH14	1978 12 02.50895	03 42 04.91	+17 13 08.2	330
1978 WH14	1978 12 06.67839	03 38 45.12	+17 04 30.7	330
1978 WH14	1978 12 23.52013	03 28 43.06	+16 43 14.6	330
1978 WH14	1978 12 29.56733	03 26 49.26	+16 42 11.8	330
1978 WJ14*	1978 11 28.58882	03 45 54.69	+17 17 04.8	330
1978 WJ14	1978 12 02.50895	03 42 53.25	+17 12 49.4	330
1978 WJ14	1978 12 06.67839	03 39 48.07	+17 08 45.4	330
1978 WJ14	1978 12 23.52013	03 29 45.41	+17 00 48.4	330
1978 WJ14	1978 12 29.56733	03 27 23.00	+17 02 00.6	330
1978 WK14*	1978 11 28.58882	03 53 11.80	+14 58 57.9	330
1978 WK14	1978 12 02.50895	03 50 11.60	+13 07 24.1	330
1978 WK14	1978 12 05.60200	03 48 04.56	+11 44 51.7	330
1978 WK14	1978 12 23.56874	03 41 49.78	+05 41 21.7	330
1978 WK14	1978 12 29.54233	03 42 12.78	+04 24 49.0	330
1978 YB *	1978 12 23.63193	06 58 33.36	+20 36 51.5	330
1978 YB	1978 12 29.65691	06 52 32.77	+21 14 41.5	330
1978 YB	1979 01 04.64023	06 46 16.00	+21 52 58.3	330
1978 YB	1979 01 18.45958	06 32 15.38	+23 18 44.9	330
1978 YB	1979 01 22.56097	06 28 36.92	+23 42 27.6	330

OBSERVATIONS MADE AT GEISEI BY T. SEKI. FROM ORIENT. ASTRON. ASSOC. COMET  
BULL. NOS. 190-192.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
/1974 II	1979 12 17.82222		09 09 19.62	+17 18 48.7	10 T	372
/1979i	1979 11 23.85625		12 01 26.72	+53 41 43.7	16 T	372
/1979i	1979 12 17.83830		10 31 21.16	+50 56 53.3	16 T	372
1979 VA	1979 11 23.58299		02 21 26.20	+23 52 26.3	14	372
1979 VA	1979 11 23.59896		02 21 30.26	+23 52 16.3		372
1979 VA	1979 11 29.75521		02 44 45.73	+22 55 33.9	16	372
1979 VA	1979 11 29.76285		02 44 47.14	+22 55 30.9		372

OBSERVATIONS MADE AT THE TOKYO ASTRONOMICAL OBSERVATORY, KISO STATION,  
BY H. KOSAI AND G. SASAKI.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1979 YB *	1979 12 17.57133		06 04 59.86	+22 18 02.9	16.0	381
1979 YB	1979 12 17.59902		06 04 57.18	+22 17 16.2		381
1979 YB	1979 12 18.66959		06 03 15.53	+21 46 00.1	16.0	381
1979 YB	1979 12 18.69730		06 03 12.54	+21 45 09.5		381

OBSERVATIONS MADE AT MT. STROMLO (CODE 414) BY M. ASHLEY AND D. CAMPBELL-  
WILSON AND AT KAMBAH (CODE 415) BY D. HERALD.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
/19791	1979 12 28.72222		16 13 49.34	-36 59 54.5	415
/19791	1979 12 28.7281		16 13 48.92	-37 00 10.3	414
/19791	1979 12 28.7340		16 13 47.81	-37 00 23.3	414
/19791	1979 12 29.72917		16 12 40.10	-37 28 15.5	415
/19791	1979 12 29.7326		16 12 40.11	-37 28 28.1	414
/19791	1979 12 30.74002		16 11 36.0	-37 58 10	414
/19791	1979 12 30.74520		16 11 36.1	-37 58 17	414

OBSERVATIONS MADE AT STAKENBRIDGE BY B. MANNING. COMMUNICATED BY  
G. M. HURST.

Object	Date	UT	R. A. (1950)			Decl.	Obs.
1979 VA	1979 11 23.84305	02 22 37.29	+23 49 38.6			494	
1979 VA	1979 11 23.85277	02 22 40.16	+23 49 32.3			494	

OBSERVATIONS MADE AT MESCHEDÉ (CODE 519) BY R. HEMPEL AND AT LINZ (CODE  
540) BY MEYER, OBERMAIR AND HEMPEL. COMMUNICATED BY L. D. SCHMADEL.

Object	Date	UT	R. A. (1950)			Decl.	O - C	N	Obs.
246	1979 08 30.88333	20 22 26.16	-08 44 48.5	0.3-	1-			519	
246	1979 08 30.88750	20 22 26.01	-08 44 51.3	0.4-	1-			519	
246	1979 08 30.88958	20 22 26.02	-08 44 50.9	0.3-	0			519	
246	1979 08 30.89722	20 22 25.84	-08 44 57.3	0.4-	1-			519	
397	1979 08 30.94306	21 11 48.07	+08 45 41.8	0.0	0			519	
397	1979 08 30.94722	21 11 47.96	+08 45 40.3	0.0	0			519	
397	1979 08 30.95972	21 11 47.38	+08 45 34.4	0.0	0			519	
397	1979 08 30.96250	21 11 47.26	+08 45 33.4	0.0	0			519	
397	1979 09 12.85764	21 05 32.84	+06 52 36.0	0.1-	0		1	540	
397	1979 09 12.87361	21 05 32.47	+06 52 26.5	0.1-	0		1	540	
397	1979 09 12.88056	21 05 32.28	+06 52 22.4	0.1-	0		1	540	
397	1979 09 12.88194	21 05 32.24	+06 52 20.6	0.1-	0		1	540	
433	1979 08 30.91736	21 07 07.11	-05 29 12.8	0.0	0			519	
433	1979 08 30.92292	21 07 06.55	-05 29 13.0	0.0	0			519	
433	1979 08 30.92847	21 07 05.98	-05 29 12.2	0.0	0			519	
433	1979 08 30.93125	21 07 05.71	-05 29 13.0	0.0	0			519	
654	1979 08 30.85069	20 31 29.68	+00 04 05.6	0.0	0			519	
654	1979 08 30.85417	20 31 29.45	+00 04 05.4	0.0	0			519	
654	1979 08 30.86319	20 31 29.07	+00 04 07.6	0.0	0			519	
654	1979 08 30.86667	20 31 28.87	+00 04 07.8	0.0	0			519	
704	1979 08 30.83750	20 19 47.86	-03 19 34.5	0.2-	0			519	
704	1979 08 30.84028	20 19 47.73	-03 19 34.9	0.2-	0			519	
704	1979 08 30.87292	20 19 46.54	-03 19 34.9	0.2-	0			519	
704	1979 08 30.87708	20 19 46.40	-03 19 35.2	0.2-	0			519	

Note 1: observatory code 540, Long. and Parallax 14.27, -283, -318 (see MPC 4766).

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT PALOMAR BY  
C. T. KOWAL.

Object	Date	UT	R. A. (1950)			Decl.	Mag.	Obs.
1979 WC	* 1979 11 26.27500	03 26 36.09	+22 41 58.0			17	675	
1979 WC	1979 11 26.32708	03 26 27.35	+22 39 34.9				675	
1979 WC	1979 11 27.32500	03 23 42.26	+21 52 12.7			17	675	
1979 WC	1979 11 27.37708	03 23 33.96	+21 49 51.3				675	
1979 WH	* 1979 11 22.22847	00 28 27.34	+11 37 26.0			19	675	
1979 WH	1979 11 24.20556	00 28 02.14	+11 36 05.4				675	
1979 WJ	* 1979 11 22.22847	00 27 34.08	+12 52 48.5			19	675	
1979 WJ	1979 11 24.20556	00 27 13.00	+12 49 54.3				675	
1979 WK	* 1979 11 22.22847	00 38 43.12	+13 03 18.9			19	675	
1979 WK	1979 11 24.20556	00 38 15.19	+12 59 30.5				675	
1979 WL	* 1979 11 22.22847	00 39 32.16	+14 48 46.0			19	675	
1979 WL	1979 11 24.20556	00 38 57.49	+14 47 28.9				675	

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT PALOMAR. MEASURED BY  
C. J. VAN HOUTEN AND I. VAN HOUTEN-GROENEVELD ON EXPOSURES BY T. GEHRELS.

Object	Date	UT	R. A. (1950)			Decl.	Obs.
2177	1960 09 24.35002	00 01 33.33	-01 50 44.0				675
2177	1960 09 26.28543	00 00 07.40	-01 59 15.6				675
2177	1960 09 27.34237	23 59 20.64	-02 03 51.5				675
2177	1960 09 28.33822	23 58 36.96	-02 08 09.3				675

2177		1960	10	17.22501	23	46	31.29	-03	15	29.2	675
2177		1960	10	22.16324	23	44	12.60	-03	26	53.4	675
2177		1960	10	24.23753	23	43	22.63	-03	30	43.4	675
2177		1960	10	26.27157	23	42	38.49	-03	33	55.5	675
2525	P-L *	1960	09	24.46184	00	42	36.73	+01	29	56.6	675
2525	P-L	1960	09	26.37988	00	41	11.68	+01	21	59.7	675
2525	P-L	1960	09	28.43822	00	39	39.06	+01	13	29.1	675
2525	P-L	1960	09	29.39514	00	38	55.75	+01	09	31.9	675
2525	P-L	1960	10	17.31529	00	25	50.97	+00	02	41.5	675
2525	P-L	1960	10	22.26809	00	22	46.24	-00	11	06.7	675
2525	P-L	1960	10	25.30351	00	21	04.72	-00	18	09.1	675
2525	P-L	1960	10	26.35766	00	20	31.72	-00	20	18.9	675
2533	P-L *	1960	09	24.46184	00	47	04.83	+01	25	17.4	675
2533	P-L	1960	09	26.37988	00	45	21.56	+01	12	52.9	675
2533	P-L	1960	09	28.43822	00	43	28.44	+00	59	37.0	675
2533	P-L	1960	09	29.39514	00	42	35.75	+00	53	30.1	675
2533	P-L	1960	10	17.31529	00	27	21.40	-00	41	49.0	675
2533	P-L	1960	10	22.26809	00	24	14.37	-00	57	51.3	675
2533	P-L	1960	10	25.30351	00	22	41.05	-01	04	52.2	675
2533	P-L	1960	10	26.35766	00	22	12.61	-01	06	47.0	675
6521	P-L *	1960	09	24.35002	00	11	18.49	-02	31	23.0	675
6521	P-L	1960	09	26.28543	00	09	39.38	-02	47	18.6	675
6521	P-L	1960	09	27.34237	00	08	44.93	-02	55	55.5	675
6521	P-L	1960	09	28.33822	00	07	53.97	-03	03	56.7	675
6521	P-L	1960	10	17.28198	23	53	58.78	-05	08	16.1	675
6521	P-L	1960	10	22.23406	23	51	38.81	-05	27	55.1	675
6521	P-L	1960	10	25.25350	23	50	35.28	-05	36	43.0	675
6521	P-L	1960	10	26.31531	23	50	17.04	-05	39	13.6	675

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY, ANDERSON MESA STATION, BY  
H. L. GICLAS AND E. BOWELL. MEASURED BY BOWELL AND M. L. KANTZ.

Object	Date	UT	R. A. (1950)			Decl.	Mag.	N	Obs.	
100	1979	12	14.32708	09	00	12.59	+16	01	06.3	688
100	1979	12	16.45069	08	59	42.66	+16	05	08.6	688
232	1979	11	22.21667	02	39	13.50	+06	27	20.4	688
263	1979	11	22.13403	00	35	42.68	+04	12	18.0	688
277	1979	12	14.32708	08	46	15.64	+16	33	04.1	688
277	1979	12	16.45069	08	45	39.22	+16	34	16.2	688
319	1979	11	22.29097	03	32	49.55	+05	51	23.0	1 688
319	1979	12	08.18889	03	22	34.70	+04	48	28.8	688
444	1979	11	22.13403	00	56	00.92	+01	33	15.6	688
444	1979	12	07.08194	00	58	51.09	+01	10	18.7	688
444	1979	12	08.17014	00	59	16.31	+01	10	31.6	688
504	1979	11	22.29097	03	33	50.16	+01	46	45.8	688
504	1979	12	08.18889	03	20	04.75	+02	50	58.3	688
511	1979	11	22.29097	03	49	37.61	+00	02	09.4	688
511	1979	12	08.18889	03	36	22.14	+00	48	41.7	688
549	1979	12	14.32708	08	53	17.04	+17	47	44.0	688
549	1979	12	16.45069	08	53	22.13	+17	41	46.8	688
612	1979	11	22.29097	03	42	58.12	+02	18	24.0	688
612	1979	12	08.18889	03	31	10.29	+00	53	17.8	688
837	1979	12	07.10139	02	14	41.22	+07	35	36.6	1 688
863	1979	12	14.32708	08	42	39.17	+17	25	28.0	688
863	1979	12	16.45069	08	42	07.06	+17	39	43.6	688
873	1979	12	14.32708	08	52	50.40	+13	30	41.8	688
873	1979	12	16.45069	08	52	22.97	+13	32	32.0	688
913	1979	12	14.29028	07	41	49.50	+22	29	49.3	688
960	1979	12	16.45069	08	52	22.55	+14	20	20.8	3 688

966	1979	11	22.21667	02	50	45.82	+07	06	10.6		688
966	1979	12	07.12083	02	39	05.45	+07	27	38.1		688
979	1979	12	07.10139	02	13	21.98	+14	21	09.6	1	688
1074	1979	11	22.13403	00	37	23.28	+03	45	43.9		688
1117	1979	12	14.32708	08	51	07.48	+14	22	18.9		688
1117	1979	12	16.45069	08	50	28.42	+14	25	04.8		688
1122	1979	12	14.29028	07	44	15.13	+26	04	45.4	3	688
1131	1979	11	22.21667	02	49	09.70	+10	48	32.1		688
1131	1979	12	07.12083	02	40	27.12	+11	08	24.4		688
1149	1979	11	22.16354	02	11	08.79	+24	30	44.3		688
1188	1979	12	14.29028	07	45	29.21	+29	47	08.2	2	688
1389	1979	12	07.12083	02	50	05.36	+13	42	16.1		688
1427	1979	11	22.21667	02	48	54.89	+08	31	10.2		688
1427	1979	12	07.12083	02	38	03.83	+08	52	09.2		688
1456	1979	12	14.32708	08	58	01.19	+13	24	29.7		688
1456	1979	12	16.45069	08	57	20.58	+13	21	45.7	3	688
1650	1979	12	07.10139	02	16	33.44	+11	39	13.0		688
1693	1979	12	14.29028	07	34	57.24	+30	28	19.4	3	688
1795	1979	12	07.10139	02	22	06.79	+07	55	16.4	3	688
1831	1979	11	22.13403	00	46	57.24	-01	13	19.0	8	688
1914	1979	11	22.21667	03	02	21.32	+08	22	27.1		688
1941	1979	11	22.13403	00	50	11.80	+02	08	54.7	8	688
2042	1979	12	14.29028	07	38	30.16	+30	09	25.8	3	688
1979 UC	1979	11	22.21667	02	42	17.95	+10	40	16.1		688
1979 UC	1979	12	07.12083	02	30	45.54	+11	02	12.1		688
1979 UD	1979	11	22.21667	03	03	33.04	+10	13	56.4		688
1979 UD	1979	12	07.12083	02	52	55.97	+10	19	19.3		688
1979 UE	1979	11	22.21667	02	41	37.66	+09	04	10.7		688
1979 UE	1979	12	07.12083	02	29	55.00	+09	54	32.3	2	688
1979 UG	1979	11	22.13403	00	55	54.13	-00	23	10.7		688
1979 UG	1979	12	07.08194	01	01	09.42	+00	43	39.2		688
1979 UG	1979	12	08.17014	01	01	47.47	+00	50	07.1		688
1979 UH	1979	11	22.29097	03	54	01.30	+00	54	15.6	1	688
1979 UH	1979	12	08.18889	03	41	35.50	+01	26	27.0		688
1979 UJ	1979	11	22.29097	03	32	24.20	+02	54	20.2		688
1979 UJ	1979	12	08.18889	03	21	35.81	+01	59	34.9	17.0	688
1979 VA	1979	11	22.16354	02	14	45.00	+24	06	40.0		688
1979 VA	1979	12	15.20417	03	20	52.31	+21	25	01.2		688
1979 VA	1979	12	18.16319	03	26	01.91	+21	15	09.4		688
1979 VA	1979	12	19.14826	03	27	41.00	+21	12	18.2		688
1979 XA	1979	12	14.27431	02	30	48.98	+14	00	06.0		688
1979 XA	1979	12	15.19479	02	25	55.79	+13	42	52.0		688
1979 XA	1979	12	19.12917	02	03	54.97	+12	21	40.6		688
1979 XA	1979	12	20.16458	01	57	49.65	+11	58	13.2		688
1979 XA	1980	01	05.12292	00	10	01.92	+04	01	07.1		688
1979 UG1 *	1979	10	17.29097	01	05	19.32	+00	41	10.1	17.5	4 688
1979 UG1 *	1979	10	29.31597	00	57	26.76	-00	02	49.6	17.5	688
1979 XD *	1979	12	14.32708	08	47	05.59	+14	09	07.3	17.0	5 688
1979 XD *	1979	12	16.45069	08	46	40.14	+14	05	00.8	17.0	688
1979 XE *	1979	12	14.32708	08	51	42.51	+10	59	40.0	17.0	7 688
1979 XE *	1979	12	16.45069	08	52	06.04	+11	07	13.1	17.0	688
1979 XF *	1979	12	14.32708	08	57	07.20	+17	06	11.2		5 688
1979 XF *	1979	12	16.45069	08	56	32.98	+17	08	50.8	17.0	2 688
1979 XG *	1979	12	14.32708	08	46	05.87	+16	05	31.2		7 688
1979 XG *	1979	12	16.45069	08	45	43.79	+16	10	14.5	16.5	688
1979 XH *	1979	12	14.32708	08	50	41.16	+12	50	27.5		7 688
1979 XH *	1979	12	16.45069	08	50	16.55	+12	51	53.9	17.5	688
1979 YG *	1979	12	16.45069	08	50	45.73	+18	34	19.2	17.5	7 688

1980 AA	1980 01 16.17083	07 15 00.42	+27 04 00.2	15.5	688
1980 AA	1980 01 22.24306	08 01 05.82	+18 22 28.0	15.0	688
1980 AA	1980 01 22.25069	08 01 08.47	+18 21 50.2		688

Note 1: declination uncertain. 2: right ascension uncertain. 3 = 1 + 2.  
4: discoverer Bowell. 5 = 1 + 4. 7 = 3 + 4. 8: faint image.

OBSERVATIONS MADE AT THE GOETHE LINK OBSERVATORY (CODE 760) AND AT HART-BEESPOORT (CODE 076), MEASURED AT INDIANA UNIVERSITY, REDUCED AT THE SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1957 JO	1957 05 04.26530	15 19 45.47	-14 26 15.5		760
1957 JO	1957 05 04.30350	15 19 43.49	-14 26 09.0		760
1957 JO	1957 05 05.86400	15 18 26.45	-14 20 29.9		076
1957 JO	1957 05 05.92700	15 18 23.35	-14 20 18.1		076

OBSERVATIONS MADE AT THE HARVARD COLLEGE OBSERVATORY AGASSIZ STATION BY R. E. MC CROSKY, C.-Y. SHAO, G. SCHWARTZ AND J. BULGER (WITH ASSISTANCE FROM C. M. BARDWELL AND B. G. MARSDEN).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
/1974 II	1979 12 28.35749	09 06 33.37	+17 24 24.3				801
/1978 XXIV	1979 09 20.30081	00 09 29.86	-04 16 12.1				801
/1978i	1978 07 31.24830	22 57 20.60	-03 38 23.1				801
/1978i	1978 08 30.22222	22 45 43.43	-06 10 21.5				801
/1978i	1978 09 27.19510	22 30 39.29	-09 22 01.2				801
1980	1979 07 15.15985	15 14 21.91	-00 44 07.3				801
1993	1977 04 13.21875	10 34 58.30	+12 02 35.7				801
2055	1979 10 23.22771	02 28 18.87	+43 56 39.1				801
2068	1979 12 18.14596	05 48 40.22	+19 56 24.0				801
2077	1979 03 28.37192	11 57 14.17	+47 38 39.5				801
2134	1977 02 18.01697	07 50 03.42	+68 58 29.9				801
2173	1979 09 19.08562	19 21 54.75	-09 00 04.9				801
2199	1979 12 18.08531	04 27 16.76	+09 12 08.5				801
2200	1979 12 15.03889	01 15 50.10	+13 22 22.6				801
1935 SQ1	1979 12 18.03377	02 04 37.02	+12 39 29.0				801
1935 SQ1	1979 12 19.16742	02 04 39.89	+12 40 27.6				801
1939 QB	1979 12 18.27660	08 25 23.64	+12 51 06.8				801
1941 SA1	1979 12 28.42039	09 51 49.37	+22 53 12.8				801
1941 SZ	1979 12 19.30891	06 59 21.82	+14 53 53.2				801
1943 EQ	1979 08 17.29203	00 10 20.99	-02 13 19.3				801
1943 EQ	1979 12 17.97690	00 06 40.98	-19 46 02.3				801
1968 HK1	1979 07 23.23273	19 46 26.84	-13 07 51.4				801
1972 NC	1979 12 12.22051	07 29 12.22	+20 22 29.6				801
1972 NC	1979 12 15.38806	07 26 04.62	+20 22 00.7				801
1972 RA	1979 12 15.35992	07 32 20.38	-03 16 24.2				801
1973 SU4	1979 12 15.32462	06 45 11.01	+11 59 01.9				801
1975 AK	1979 12 18.17965	06 14 45.92	+20 45 48.2				801
1976 GR3	1979 12 12.19536	06 43 08.79	+30 51 33.1				801
1977 QH1	1979 12 15.15093	04 26 22.42	+13 12 47.1				801
1977 QH1	1979 12 19.19935	04 24 18.31	+13 10 23.1				801
1977 TJ3	1979 12 12.16584	05 28 01.13	-07 50 51.7				801
1977 TL3	1979 12 12.25321	05 55 59.26	+08 57 26.0				801
1978 QC *	1978 08 30.22222	22 46 50.01	-06 15 28.2		18		801
1978 RC	1979 12 18.20757	06 47 22.73	+38 05 45.1				801
1979 KB	1979 09 13.05589	17 17 21.86	-07 55 35.2				801
1979 OC	1979 12 10.97021	22 15 29.23	-03 07 58.2				801
1979 VA	1979 12 11.25071	03 13 22.68	+21 41 34.3				801
1979 VA	1979 12 18.06135	03 25 51.37	+21 15 28.2				801
1979 XA	1979 12 18.00733	02 10 22.45	+12 46 06.0			1	801
1980 AA	1980 01 20.23332	07 47 08.07	+21 10 59.2				801

9597 P-L 1979 11 21.20529 04 58 00.74 +18 28 52.1 801  
 9597 P-L 1979 12 15.12603 04 31 40.66 +18 05 28.8 801

Note 1: correction to MPC 5122.

OBSERVATIONS MADE AT KAGIYA (CODE 878) AND AT TOKAI (CODE 879) BY T. FURUTA.

Object	Date	UT	R. A. (1950)			Decl.	O - C		Mag.	Obs.
18	1979 02	02.52361	05 52	12.86	+12 16	44.9	0.0	0	878	
18	1979 02	02.52465	05 52	12.85	+12 16	44.1			878	
85	1979 01	19.56319	05 20	36.61	+07 28	13.5			878	
85	1979 01	19.56563	05 20	36.78	+07 28	16.5			878	
85	1979 02	02.51563	05 16	26.57	+08 10	52.0			878	
85	1979 02	02.51840	05 16	26.24	+08 10	52.8			878	
119	1979 02	02.65839	07 50	49.00	+11 54	17.5	0.1-	1-	878	
125	1979 02	02.70689	08 43	40.99	+13 39	07.0	0.0	0	878	
125	1979 02	02.70972	08 43	40.82	+13 39	07.6			878	
127	1979 02	02.63142	08 13	21.49	+33 22	06.9	0.2-	0	878	
127	1979 02	02.63322	08 13	21.45	+33 22	06.7			878	
173	1979 02	02.64803	08 19	55.18	+11 33	35.0	0.1-	0	878	
173	1979 02	02.64959	08 19	54.99	+11 33	38.1			878	
259	1979 02	02.67512	08 18	04.72	+28 59	47.2	0.2+	0	878	
259	1979 02	02.68125	08 18	04.24	+28 59	49.0			878	
328	1979 02	02.69688	08 11	55.50	+39 25	05.1	0.1-	0	878	
328	1979 02	02.70035	08 11	55.35	+39 25	03.5			878	
416	1979 02	02.68796	08 32	47.49	+36 40	21.4	0.1+	0	878	
416	1979 02	02.69097	08 32	47.31	+36 40	22.7			878	
505	1979 02	02.61609	07 31	01.86	+30 18	03.5	0.0	0	878	
505	1979 02	02.61753	07 31	01.92	+30 18	03.8			878	
675	1979 02	02.65318	08 10	14.04	+08 45	10.9	0.1-	0	878	
758	1979 02	02.64236	08 18	21.98	+22 32	52.6	0.0	0	878	
758	1979 02	02.64456	08 18	21.66	+22 32	53.2			878	
2165	1979 12	16.51528	03 44	36.19	+20 56	24.1			879	
2165	1979 12	16.52639	03 44	35.76	+20 56	22.7			879	
2174	1979 10	20.64630	00 58	18.11	+13 37	13.3			879	
2174	1979 10	20.65428	00 58	17.77	+13 37	14.4			879	
2174	1979 10	20.65961	00 58	17.36	+13 37	15.1			879	
1935 SQ1	1979 11	11.52726	02 19	47.42	+13 30	55.8			879	
1935 SQ1	1979 11	11.53819	02 19	46.78	+13 30	53.1			879	
1968 BC	1979 10	20.58553	23 52	15.02	-21 06	40.4			879	
1968 BC	1979 10	20.59665	23 52	14.67	-21 06	37.2			879	
1972 HN	1979 11	11.45874	00 59	52.80	+04 33	26.1			879	
1972 HN	1979 11	11.47361	00 59	52.42	+04 33	24.3			879	
1977 QH1	1979 12	16.54502	04 25	38.97	+13 11	52.5			879	
1977 QH1	1979 12	16.55880	04 25	38.53	+13 11	52.5			879	
1979 VA	1979 12	16.48438	03 23	08.49	+21 20	32.2		16.5	879	
1979 VA	1979 12	16.49792	03 23	09.99	+21 20	29.4			879	

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#### ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are B = C. M. Bardwell, E = E. Bowell, M = B. G. Marsden, P = O. Kippes, S = L. D. Schmadel, Z = Purple Mountain Observatory. See also MPC 4499.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1926 FF	12.0	260326	55.56	344.55	109.74	2.94	0.1968	3.1489	17 4			B
1926 FG	12.5	260326	97.73	267.80	147.76	7.24	0.1640	2.7590	17 4			B
1929 BD	12.5	290129	336.55	223.45	291.25	7.97	0.1225	3.0483	17 4			B
1929 PA	13.0	290817	352.62	47.74	281.84	3.67	0.1852	3.1256	26 9			B

1929	PB	15.5	290817	347.11	181.82	159.40	4.01	0.2342	2.3623	27	4	1	B
1929	PK	15.5	290817	321.00	225.65	152.46	4.51	0.2144	2.2364	15	6		B
1930	DA	11.0	300305	123.97	220.79	151.63	16.32	0.2704	2.9804	28	3		B
1931	EG	13.0	310320	189.38	359.37	332.59	12.75	0.1413	2.6515	24	4	1	B
1931	TW	14.0	311006	110.94	258.94	357.15	4.18	0.0265	2.2373	29	4		B
1931	TS1	13.0	311006	336.13	38.61	11.06	1.70	0.1665	2.9154	25	5		B
1931	TU1	13.5	311006	41.93	131.15	181.95	6.48	0.2286	2.8341	24	4		B
1931	TD2	14.0	311006	276.01	156.18	319.67	6.32	0.1493	2.3127	9	3		B
1932	CW	13.0	320223	11.45	358.49	148.15	5.49	0.0311	2.7427	42	4		B
1932	CY	13.5	320223	346.15	59.30	119.75	1.04	0.1782	3.0891	30	4		B
1932	CD1	13.5	320223	69.49	267.77	156.66	11.72	0.2378	2.5978	42	5		B
1932	WB	13.5	321219	317.39	198.68	282.93	3.92	0.0843	2.2552	33	8		B
1933	OD	13.0	330816	354.60	149.71	181.20	6.01	0.1784	3.1054	35	4		B
1933	QU	14.5	330905	339.47	44.72	314.36	12.84	0.1600	2.4485	22	4		B
1934	AF	13.0	340123	345.77	4.71	139.14	0.93	0.1399	3.1507	57	5		B
1934	CZ	14.5	340212	88.31	71.05	313.57	3.27	0.1609	2.3103	29	4		B
1934	GA	13.0	340503	39.00	76.92	68.74	24.60	0.2156	2.6574	47	0	1	B
1935	CF	14.5	350207	315.79	5.95	191.07	5.40	0.1252	2.2269	24	3		B
1935	CL	14.0	350227	10.92	204.45	290.17	1.81	0.1358	2.4350	28	4		B
1935	SU1	13.0	351005	21.96	312.86	34.81	9.61	0.1698	2.8029	32	5		B
1935	SA2	14.5	351005	342.81	25.76	13.19	6.09	0.1669	2.2400	29	5		B
1937	GG	14.5	370507	11.67	111.00	88.92	7.93	0.2265	2.4231	69	7		B
1937	RB	12.5	370924	346.55	218.70	148.98	14.10	0.2178	3.1040	23	7		M
1937	TB	14.0	371014	2.57	355.31	25.64	3.07	0.1944	2.6737	27	5		B
1937	UE	13.0	371103	347.60	83.15	325.29	0.51	0.1336	3.1369	12	5		B
1938	SX	14.0	380919	16.75	202.67	140.32	2.65	0.1992	2.4412	5	3		B
1939	DH	13.5	390226	33.90	306.40	172.84	3.38	0.0853	2.2357	35	3		B
1939	PJ	14.0	390825	338.02	88.40	275.71	4.86	0.2266	2.3016	31	5		B
1939	VD	14.5	391113	24.60	305.08	60.30	10.68	0.2524	2.5356	9	3		B
1940	CK	12.0	400221	299.71	91.39	119.48	4.68	0.1324	3.2474	27	4		B
1942	AC	14.0	420302	29.05	358.54	96.31	16.28	0.1957	2.6616	87	9		B
1942	EB	14.0	420322	43.18	93.11	35.01	7.69	0.1569	2.3756	32	5		M
1947	CC	13.0	470224	13.01	326.64	154.88	3.82	0.1369	2.4273	10	4		B
1948	WF	13.5	481125	48.22	237.67	117.96	8.60	0.2910	2.2759	12	4		B
1953	XL1	12.5	531119	304.46	17.51	131.34	13.53	0.0826	2.7902	4	3		S
1978	UU1	15.5	781108	25.18	240.46	126.87	3.04	0.2248	2.3991	28	4		Z
1978	WH14	13.4	781108	340.85	315.56	126.87	1.64	0.1639	3.0491	31	5		Z
1979	OC	14.5	790904	7.69	64.35	255.25	7.45	0.0856	2.2907	141	0		M
1979	UC	13.9	791103	68.12	251.53	68.58	8.34	0.1335	2.3675	51	4		E
1979	UD	12.1	791103	61.09	261.24	77.53	10.18	0.0638	3.2298	51	4		E
1979	UE	13.0	791103	45.50	287.39	62.83	14.90	0.0772	2.7096	51	4		E
1979	UG	14.2	791103	26.59	207.63	140.30	3.51	0.1907	2.2661	52	5		E
1979	UH	15.0	791103	344.62	306.53	132.16	9.76	0.2954	2.7025	52	4		E
1979	UJ	11.9	791103	196.16	27.97	188.81	15.64	0.0386	3.2322	52	4		E

Note 1: double designations 1929 PB = 1929 PD (BZ 11, 63); 1931 EG = 1931 DF (B); 1934 GA = 1934 GB (P, MPC 936).

\* \* \* \* \*

ORBITAL ELEMENTS BY B. G. MARSDEN, SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

Comet Meier (1979i)

Epoch 1979 Oct. 14.0 ET = JDE 2444160.5

T 1979 Oct. 17.35657 ET

q	1.4322965	(1950.0)	P	Q
z	+0.0183841	Peri. 112.58877	+0.14650006	-0.55149454
	+/-0.0001384	Node 296.93081	+0.12516930	+0.83383241
e	0.9736685	Incl. 67.08791	+0.98125958	-0.02402651

From 31 observations 1979 Sept. 20-Dec. 25, mean residual 1".5.

Comet Bradfield (1979I)

T 1979 Dec. 21.60888 ET

q	0.5452940	(1950.0)	P	Q	
z	+0.0219912	Peri.	257.59705	-0.76736419	-0.39050671
	+/-0.0003136	Node	102.50788	-0.15558178	+0.88285062
e	0.9880083	Incl.	148.60420	-0.62205025	+0.26092006

From 17 observations 1979 Dec. 26-1980 Jan. 17.

(1316) Kasan = 1978 WK14

The identification is by C. M. Bardwell and B. G. Marsden.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	218.78894	(1950.0)	P	Q	
n	0.26339305	Peri.	148.29515	+0.85967739	-0.37786421
a	2.4102745	Node	237.80512	+0.34082807	+0.92553181
e	0.3196191	Incl.	23.96787	+0.38051415	+0.02468789
P	3.74	B(1,0)	15.5		

Residuals in seconds of arc

331117	094	1.0-	1.2+	331214	012	1.5+	2.0-	781128	330	1.6-	0.4+
331120	024	0.0+	2.5-	331216	029	1.7-	2.0-	781202	330	0.5+	2.2+
331121	094	3.1+	4.7+	331216	029	2.3-	3.3-	781205	330	0.8-	2.1+
331209	024	0.5+	0.6-	331218	754	1.4-	0.5-	781223	330	2.2+	0.2+
331211	094	0.8+	0.5+	340111	024	3.1-	3.4+	781229	330	1.5+	0.7+
331213	012	0.1-	2.8-	340210	024	(5.3+	2.9+)				

(2201)\* 1947 XC = 1979 XA

Discovered 1947 Dec. 12 by H. L. Giclas at the Lowell Observatory.

The identification is by J. G. Williams.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	96.34626	(1950.0)	P	Q	
n	0.30730933	Peri.	95.71305	-0.98975346	-0.13625987
a	2.1747978	Node	76.46086	+0.10733925	-0.90713264
e	0.7120909	Incl.	2.51592	+0.09416139	-0.39817536
P	3.21	B(1,0)	16.7		

Residuals in seconds of arc

471212	690	0.8-	2.5-	791214	688	(1.8-	3.8-)	791217	688	1.3+	1.9-
471212	690	4.6+	1.1+	791214	688	(0.4+	0.5-)	791217	372	(8.0-	2.5-)
471214	690	7.6-	1.0+	791214	675	2.0-	0.3+	791217	372	0.4-	0.0
471214	690	2.7+	1.8+	791215	801	2.0+	0.9+	791218	801	1.3+	2.4+
791213	675	1.4-	0.5+	791215	801	0.7-	0.5+	791219	688	2.3+	1.2-
791213	675	2.7-	0.3+	791215	688	1.6-	2.2-	791220	688	1.5+	1.2-
791214	675	0.6+	0.3-	791216	879	2.7+	0.4+	800105	688	0.9-	0.5+
791214	675	1.1-	0.9-	791216	879	0.0	0.5+				

(2202)\* 1972 RA

Discovered 1972 Sept. 7 by A. R. Klemola at the Lick Observatory.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	128.49871	(1950.0)	P	Q	
n	0.28364656	Peri.	216.97894	+0.89114992	-0.45290758
a	2.2941283	Node	169.84509	+0.44419901	+0.85883017
e	0.5103566	Incl.	8.79389	+0.09240701	+0.23934381
P	3.47	B(1,0)	18.5		



## Residuals in seconds of arc

720907	662	2.3-	0.2+	720928	808	0.5-	0.7+	721204	693	0.3+	0.0
720909	662	0.3+	0.6-	721002	688	0.3+	1.0-	721204	693	0.1+	0.1-
720910	662	1.3-	0.6+	721003	691	1.9+	0.7+	721212	662	0.6-	0.5-
720911	662	1.2+	0.2-	721003	691	1.9+	0.7+	721214	662	0.2-	0.5-
720914	662	0.2+	0.5-	721005	662	0.6-	0.6-	730106	662	1.0-	0.2-
720915	801	1.2+	0.8-	721005	662	1.7-	0.2-	730108	691	2.1+	0.7+
720915	688	0.6-	0.1-	721009	693	0.4-	0.3-	730108	691	1.5+	0.0+
720915	688	0.1-	1.2-	721009	693	0.5+	0.7-	730129	691	1.8+	0.6+
720916	662	0.2+	0.0	721020	808	0.8-	1.0+	730129	691	1.6+	0.5+
720916	662	0.2+	0.2-	721025	662	0.1+	0.3+	790823	675	(14.7-	0.8-)
720916	370	1.1-	2.1+	721025	662	0.4+	0.1+	790823	675	0.0	0.8-
720917	662	0.4+	0.1-	721104	693	0.7-	1.3-	790831	801	1.4+	0.9+
720917	662	0.5+	0.1+	721104	693	1.0-	1.5-	790901	801	(0.8-	10.2+)
720917	662	0.6+	0.1+	721105	808	0.3+	0.9+	790916	801	0.2-	1.9+
720918	662	0.4-	0.4-	721105	808	0.1+	0.7+	791023	801	0.5+	0.5-
720918	662	0.5+	0.4-	721106	662	0.2+	0.3+	791215	801	2.0-	0.3-
720928	808	0.2-	0.8+	721201	808	1.2-	0.2+				

## A915 TA = 1975 VE1

The identification is by B. G. Marsden. The identifications A915 TA = 1937 JL (MPC 643) and A915 TA = 1956 LD (MPC 2806) are invalid.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M 187.30542	(1950.0)	P	Q	
n	0.26382485	Peri. 146.32554	+0.96345273	+0.26639522
a	2.4076487	Node 198.28717	-0.26127913	+0.91133305
e	0.1710516	Incl. 5.14708	-0.05909364	+0.31385610
P	3.74	B(1,0) 16.0		

## Residuals in seconds of arc

150910	024	2.7-	3.0-	151014	045	2.2+	0.9+	751107	095	0.4+	1.0+
151002	024	2.2+	1.6+	151015	029	4.6-	0.7+	751202	095	1.3-	0.6-
151010	024	3.0+	0.6-	751101	095	0.6+	3.2-				

## 1975 FX = 1936 UE = 1949 FH1 = 1976 KH1

The 1978 recovery was made on the basis of computations at the Purple Mountain Observatory. The identifications are by B. G. Marsden.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M 96.27184	(1950.0)	P	Q	
n	0.18746205	Peri. 41.34201	-0.06790818	-0.98601873
a	3.0236255	Node 53.10626	+0.85801983	-0.13554762
e	0.0772093	Incl. 10.96861	+0.50910750	+0.09692218
P	5.26	B(1,0) 13.0		

## Residuals in seconds of arc (or two decimals in units of degrees)

361016	020(0.31-	0.23+)	361110	020	(8.7-	5.1-)	760529	095	1.1-	2.5-	
361020	020(0.06-	0.03+)	361110	020	3.5-	7.9-	781028	330	0.9-	1.8+	
361021	020	9.0+	1.6-	490322	094(0.03-	0.05-)	X	781103	330	2.4-	1.0+
361023	020(15.6-	15.3+)	750317	330	2.4-	0.5-	781107	330	1.9-	0.0	
361024	020	2.1-	3.4+	750401	330	1.0+	1.9-	781126	330	3.3+	0.9+
361108	020(17.7-	10.7-)	750403	330	1.2-	3.1+					
361110	020	(5.0-	3.9-)	750411	330	2.5+	1.3-				

## 1980 AA

Epoch 1980 Jan. 2.0 ET = JDE 2444240.5

M 357.22431	(1950.0)	P	Q	
n	0.38832038	Peri. 167.92552	-0.28497661	-0.95645972
a	1.8606982	Node 298.60360	+0.87331148	-0.23197090
e	0.4349395	Incl. 4.11710	+0.39511439	-0.17712792
P	2.54	B(1,0) 20.5		

From 6 observations 1980 Jan. 16-22.

## ORBITAL ELEMENTS BY C. M. BARDWELL, SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

The identifications are by C. M. Bardwell unless otherwise stated.

(2203)\* 1935 SQ1 = 1974 XQ

Discovered 1935 Sept. 28 by H. van Gent at Johannesburg.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	93.19676		(1950.0)		P		Q
n	0.17958482	Peri.	323.20355		+0.97257692		-0.23150814
a	3.1114033	Node	50.19762		+0.21970422		+0.88300178
e	0.1803328	Incl.	1.66473		+0.07631637		+0.40830360
P	5.49	B(1,0)	12.5				

Residuals in seconds of arc

350928	078	0.4+	0.2-	741214	330	1.7+	0.6-	750118	330	0.9+	0.1-
351001	078	1.2-	0.3-	741214	095	0.5+	1.9-	791111	879	1.8+	0.9-
351015	078	0.2-	1.0+	741218	330	2.2+	0.3-	791111	879	0.1+	1.6-
351018	078	0.5-	1.2+	750112	330	0.4-	0.4-	791218	801	0.6-	1.0-
351027	078	0.9-	0.2+	750116	330	0.6-	0.7-	791219	801	1.0-	0.8-
351030	078	2.2+	0.5+	750117	330	4.4-	0.0				

(2204)\* 1943 EQ = 1968 DN

Discovered 1943 Mar. 3 by Y. Vaisala at Turku. The identification is by B. G. Marsden (MPC 4611).

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	66.27098		(1950.0)		P		Q
n	0.23556158	Peri.	282.39902		+0.10100689		-0.98804587
a	2.5965683	Node	160.61552		+0.99323911		+0.09341438
e	0.4013654	Incl.	20.54134		+0.05721594		+0.12263402
P	4.18	B(1,0)	13.0				

Residuals in seconds of arc

430303	062	1.2+	0.4-	680225	095	(5.6+	3.2-)	680416	095	0.1+	0.8+
430308	062	0.0	1.6-	680227	095	5.9-	0.0	790817	801	3.5-	0.8+
430312	062	0.2+	2.6+	680327	095	4.2+	0.4-	790916	801	3.4+	1.4-
430313	062	0.4+	2.6+	680402	095	1.9+	4.9-	791217	801	0.8-	0.4+
430325	062	1.4-	0.6+								

(2205)\* 1973 SU4 = 1968 UC1

Discovered 1973 Sept. 27 by L. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	185.18687		(1950.0)		P		Q
n	0.18892031	Peri.	102.63176		+0.85790824		+0.49586689
a	3.0080400	Node	227.81894		-0.51296603		+0.81166856
e	0.1182992	Incl.	10.46305		-0.02931392		+0.30872345
P	5.22	B(1,0)	12.9				

Residuals in seconds of arc

681022	095	2.6+	1.4-	730928	095	1.0+	1.5+	770616	801	0.5+	0.8+
681023	095	3.9-	2.3+	731027	095	0.1+	1.2-	791124	801	0.1+	0.3-
681026	095	1.4+	0.5-	731029	095	0.8-	0.2+	791215	801	0.1-	0.4+
730927	095	0.2-	0.6-	770609	801	0.5-	0.8-				

(2206)\* 1976 GR3 = 1968 UV1 = 1971 HJ = 1973 UX1

Discovered 1976 Apr. 1 by N. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	309.72652		(1950.0)		P		Q
n	0.18812441	Peri.	156.64267	-0.75689778			+0.63108672
a	3.0165182	Node	63.59798	-0.62550300			-0.62427201
e	0.0519714	Incl.	10.92850	-0.18934556			-0.46044978
P	5.24	B(1,0)	12.8				

Residuals in seconds of arc

681023	095	1.7-	0.8+	760404	095	1.8+	0.9+	760525	095	2.1-	0.2-
710420	095	2.8+	0.9-	760405	095	0.2-	0.3-	791124	801	1.7+	0.3-
731026	095	1.1+	2.9-	760406	095	1.7-	1.2-	791212	801	0.5+	0.4-
760401	095	0.3+	3.0+	760503	095	0.1-	0.0				
760402	095	0.1+	0.3+	760523	095	2.5-	3.1-				

(2207)\* 1977 QH1 = 1959 EM = 1978 UU

Discovered 1977 Aug. 19 by N. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	8.73518		(1950.0)		P		Q
n	0.08433832	Peri.	295.28104	-0.06911399			-0.99666637
a	5.1497492	Node	158.54816	+0.95259243			-0.07883964
e	0.0170093	Incl.	6.80783	+0.29629532			+0.02098733
P	11.69	B(1,0)	10.0				

Residuals in seconds of arc

590311	690	0.8+	2.5-	770908	095	0.8+	0.5+	791121	801	0.5+	1.8+
590312	690	0.9-	1.4-	770910	095	0.0	0.5-	791122	801	1.0+	3.0+
770819	095	0.5+	1.3-	770918	095	0.3+	1.1-	791215	801	0.1-	0.6-
770820	095	0.1-	0.4-	770922	095	1.6+	0.7+	791216	879	1.3-	0.2-
770822	095	0.7+	1.3-	771007	095	0.5-	1.5+	791216	879	1.4-	0.3+
770824	095	1.8-	1.7-	781028	688	0.9+	3.1-	791219	801	0.2+	1.7+
770906	095	0.3+	1.2+	791019	801	0.5+	0.8+				

(2208)\* 1977 QL3 = 1968 HU = 1971 SN3 = 1971 UG2 = 1973 AN3 = 1978 WJ14

Discovered 1977 Aug. 22 by N. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	111.58836		(1950.0)		P		Q
n	0.15003885	Peri.	343.27182	+0.45861378			-0.88379990
a	3.5075206	Node	79.34935	+0.82567604			+0.38528564
e	0.0420107	Incl.	5.40547	+0.32853076			+0.26542930
P	6.57	B(1,0)	11.5				

Residuals in seconds of arc

680422	095	0.9-	0.5-	770822	095	1.1+	0.6+	781202	330	0.4-	0.7+
710926	805	0.2+	1.5+	770824	095	1.9+	0.8-	781206	330	2.5-	2.5-
710927	805	0.0	0.5+	770907	095	0.2-	0.2+	781223	330	0.3+	0.3+
711021	095	2.6-	1.3+	771006	095	0.9-	0.9-	781229	330	4.0+	5.5-
730102	095	1.8+	2.8+	781128	330	0.7-	0.9+				

(2209)\* 1978 US1 = 1952 HR2 = 1957 JO = 1959 UP = 1966 GA = 1971 FW

= 1973 QU = 1973 SW2 = 1976 GP7 = 1976 KB

Discovered 1978 Oct. 28 at the Purple Mountain Observatory.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	145.42548		(1950.0)		P		Q
n	0.20512273	Peri.	264.13264	+0.57541624			-0.81755718
a	2.8474768	Node	150.70320	+0.76720538			+0.53013838
e	0.0659357	Incl.	2.60967	+0.28335851			+0.22484115
P	4.80	B(1,0)	12.5				

Residuals in seconds of arc (or two decimals in units of degrees)

520426	711	1.2-	0.0	Y	591109	760	2.4+	1.7-	730926	095	(1.6-	9.0-)
570504	760	1.0+	0.0		660410	095	0.2-	4.8+	760405	095	1.4-	2.6+
570504	760	0.3+	1.7-		660416	095	2.4+	0.5+	760525	095	2.2+	2.8-
570505	076	3.0-	0.6-		710319	095	0.2+	4.3-	781028	330	1.1-	0.2+
570505	076	1.1-	2.2-		730828	095	6.4+	2.3+	781103	330	0.4-	0.3+
591029	760	0.5+	2.5-		730906	095	2.7-	0.8+	781107	330	1.2-	1.4-
591029	760	0.9-	1.9-		730922	095	(0.03+	0.05-)	781126	330	1.9-	0.0

(2210)\* 9597 P-L = 1975 TY2

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M 170.42759		(1950.0)		P		Q
n 0.26444073	Peri.	214.52826		+0.92454167		+0.37866315
a 2.4039042	Node	123.16483		-0.33705571		+0.86502027
e 0.2280279	Incl.	2.93482		-0.17780932		+0.32917191
P 3.73	B(1,0)	15.6				

Residuals in seconds of arc

600924	675	0.1+	0.2+	601026	675	1.0-	0.2-	791121	801	1.1+	0.1+
601017	675	1.2-	0.1+	751003	095	1.9-	1.1-	791215	801	1.3-	1.3+
601022	675	1.4-	0.8-	751105	095	0.9+	1.0+				
601024	675	0.7-	0.7-	751106	095	0.9+	0.5-				

1929 PC = 1971 OJ

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M 326.10733		(1950.0)		P		Q
n 0.21103815	Peri.	214.39682		+0.99507055		-0.01821666
a 2.7940206	Node	146.23955		+0.04293695		+0.96521231
e 0.1739753	Incl.	10.10282		-0.08939245		+0.26083200
P 4.67	B(1,0)	14.5				

Residuals in seconds of arc

290806	078	0.1+	0.2+	290814	024	1.1-	0.8-	710719	095	3.2-	3.8+
290806	078	3.0+	1.1+	290827	662	0.3+	1.9+	710725	095	2.6+	3.0-
290809	662	1.1-	1.2+	290827	024	0.0	1.9+				
290812	024	(10.4+	1.4-)	290902	024	0.7+	0.7-				

1950 DS = 1978 YB

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M 111.87544		(1950.0)		P		Q
n 0.23489481	Peri.	67.29180		-0.97298034		-0.12548026
a 2.6014849	Node	105.06140		+0.05288682		-0.93823396
e 0.1226307	Incl.	11.57842		+0.22474928		-0.32244648
P 4.20	B(1,0)	13.7				

Residuals in seconds of arc

500218	012	3.5-	4.9+	781223	330	0.7+	0.0	790118	330	2.8+	0.0
500221	012	0.7+	2.0-	781229	330	2.1-	1.8+	790122	330	0.9-	1.2+
500307	012	3.1+	0.7-	790104	330	0.8-	0.5+				

1961 RA

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M 29.36306		(1950.0)		P		Q
n 0.26094640	Peri.	164.44215		+0.99290771		-0.07929007
a 2.4253218	Node	200.72961		+0.06331533		+0.98332552
e 0.1861421	Incl.	14.49352		+0.10062526		+0.16365815
P 3.78	B(1,0)	14.5				

From 12 observations 1961 Sept. 14-1962 Jan. 7, mean residual 1".6.

1973 SJ4 = 1978 UX1

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M	176.26460		(1950.0)		P		Q
n	0.20450645	Peri.	148.21458	+0.93462403			-0.35008586
a	2.8532001	Node	232.40678	+0.30747825			+0.88388531
e	0.2542504	Incl.	4.53079	+0.17870383			+0.31013970
P	4.82	B(1,0)	13.5				

Residuals in seconds of arc

730926	095	0.2-	1.6-	781030	330	1.6-	0.2-	781127	330	0.6-	2.2-
731002	095	0.1-	0.2-	781103	330	0.1+	1.3-	781130	330	0.7-	0.4+
731026	095	1.3+	0.8+	781107	330	0.0	0.7+				

1978 UT1 = 1964 YK

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M	155.73341		(1950.0)		P		Q
n	0.20385420	Peri.	257.02099	+0.63421133			-0.77290273
a	2.8592830	Node	153.58522	+0.72556644			+0.58606724
e	0.0598596	Incl.	2.56823	+0.26707550			+0.24320066
P	4.83	B(1,0)	13.2				

Residuals in seconds of arc

641231	330	0.3+	2.9+	781103	330	1.4+	1.5+	781130	330	1.9-	0.7+
650108	330	0.8+	1.7+	781107	330	1.1+	1.3+				
781029	330	0.6-	2.9+	781126	330	0.1+	0.2+				

1978 UV1 = 1973 YE1 = 1976 JB3

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M	211.21398		(1950.0)		P		Q
n	0.18711323	Peri.	277.64404	+0.86648557			+0.47908511
a	3.0273822	Node	53.83688	-0.36134638			+0.79582146
e	0.1098047	Incl.	10.00670	-0.34442931			+0.37033181
P	5.27	B(1,0)	12.5				

Residuals in seconds of arc

731220	095	0.2-	0.3+	781030	330	1.7+	0.6-	781127	330	0.5-	0.2-
731221	095	0.7+	1.2-	781103	330	0.8-	1.4-	781130	330	1.4-	3.0-
760503	095	0.2-	0.4-	781107	330	2.0+	1.7+				

1978 UW1 = 1969 AE = 1973 YT1

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M	178.01556		(1950.0)		P		Q
n	0.18764560	Peri.	316.00403	+0.97281254			-0.16687832
a	3.0216535	Node	54.27360	+0.22570876			+0.83848236
e	0.1088599	Incl.	11.40888	-0.05187782			+0.51874749
P	5.25	B(1,0)	12.5				

Residuals in seconds of arc

690115	095	0.2+	0.6-	781030	330	0.4-	0.2-	781127	330	0.1-	0.2+
731220	095	0.4+	0.3+	781103	330	1.0+	1.0-	781130	330	1.3-	0.8-
731221	095	0.2+	2.0-	781107	330	1.1+	0.3+				

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NEW NAMES OF MINOR PLANETS.

(1367) Nongoma = 1934 NA

Discovered 1934 July 3 by C. Jackson at Johannesburg.

Named for the capital city of the Kwa-Zulu homeland.

(1430) Somalia = 1937 NK

Discovered 1937 July 5 by C. Jackson at Johannesburg.

Named for the state in the northeast of Africa.

- (1431) Luanda = 1937 OB  
Discovered 1937 July 29 by C. Jackson at Johannesburg.  
Named for the capital city of Angola.
- (1436) Salonta = 1936 YA  
Discovered 1936 Dec. 11 by G. Kulin at Budapest.  
Named for the birthplace of the discoverer.
- (1444) Pannonia = 1938 AE  
Discovered 1938 Jan. 6 by G. Kulin at Budapest.  
Named for the province of Roman times that includes much of modern Hungary.
- (1452) Hunnia = 1938 DZ1  
Discovered 1938 Feb. 26 by G. Kulin at Budapest.  
Named in honor of the Hungarian nation.
- (1456) Saldanha = 1937 NG  
Discovered 1937 July 2 by C. Jackson at Johannesburg.  
Named for a newly-developed harbor on the southwest tip of South Africa.
- (1489) Attila = 1939 GC  
Discovered 1939 Apr. 12 by G. Kulin at Budapest.  
Named for the fifth-century king of the Huns.
- (1513) Matra = 1940 EB  
Discovered 1940 Mar. 10 by G. Kulin at Budapest.  
Named for the mountain in northern Hungary where an outstation of the Konkoly Observatory is located.
- (1537) Transylvania = 1940 QA  
Discovered 1940 Aug. 27 by G. Strommer at Budapest.  
Named for the section of the old Hungarian empire in which the discoverer was born.
- (1538) Detre = 1940 RF  
Discovered 1940 Sept. 8 by G. Kulin at Budapest.  
Named in memory of Laszlo Detre (1906-1974), Hungarian astronomer well known for his work on variable stars, Director of the Konkoly Observatory for many years.
- (1546) Izsak = 1941 SG1  
Discovered 1941 Sept. 28 by G. Kulin at Budapest.  
Named in memory of Imre Izsak (1929-1965), Hungarian-born astronomer and celestial mechanic, who made important contributions to the study of artificial-satellite motion. In his later years he worked at the Cincinnati Observatory and the Smithsonian Astrophysical Observatory.
- (1595) Tanga = 1930 ME  
Discovered 1930 June 19 by C. Jackson and H. E. Wood at Johannesburg.  
Named for a port on the eastern seaboard of Tanzania.
- (1634) Ndola = 1935 QP  
Discovered 1935 Aug. 19 by C. Jackson at Johannesburg.  
Named for the most important mining town in Zambia.
- (1638) Ruanda = 1935 JF  
Discovered 1935 May 3 by C. Jackson at Johannesburg.  
Named for the state of Ruanda-Urundi.

- (1641) Tana = 1935 OJ  
Discovered 1935 July 25 by C. Jackson at Johannesburg.  
Named for a river in Kenya.
- (1676) Kariba = 1939 LC  
Discovered 1939 June 15 by C. Jackson at Johannesburg.  
Named for a large manmade lake between Zambia and Zimbabwe-Rhodesia.
- (1710) Gothard = 1941 UF  
Discovered 1941 Oct. 20 by G. Kulin at Budapest.  
Named in memory of Jenő Gothard (1857-1909), a Hungarian astronomer who discovered the central star in M57.
- (1712) Angola = 1935 KC  
Discovered 1935 May 28 by C. Jackson at Johannesburg.  
Named for the state on the southwestern coast of Africa.
- (1727) Mette = 1965 BA  
Discovered 1965 Jan. 25 by A. D. Andrews at Bloemfontein.  
Named by the discoverer in honor of his wife "for her tolerance of my nocturnal working hours and for the many months spent away from home".
- (1784) Benguella = 1935 MG  
Discovered 1935 June 30 by C. Jackson at Johannesburg.  
Named for the chief port of Angola.
- (1816) Liberia = 1936 BD  
Discovered 1936 Jan. 29 by C. Jackson at Johannesburg.  
Named for the state on the western coast of Africa.
- (1817) Katanga = 1939 MB  
Discovered 1939 June 20 by C. Jackson at Johannesburg.  
Named for the chief mining area of the Congo.
- (1948) Kampala = 1935 GL  
Discovered 1935 Apr. 3 by C. Jackson at Johannesburg.  
Named for the capital of Uganda.
- (1949) Messina = 1936 NE  
Discovered 1936 July 8 by C. Jackson at Johannesburg.  
Named for a copper-mining town on the border between South Africa and Zimbabwe-Rhodesia.
- (1989) Tatry = 1955 FG  
Discovered 1955 Mar. 20 by A. Paroubek and R. Podstanicka at Skalnaté Pleso Observatory.  
Named for Vysoké Tatry, the High Tatras, the highest mountain range in Czechoslovakia. The Skalnaté Pleso Observatory is located in this range.
- (2043) Ortutay = 1936 TH  
Discovered 1936 Nov. 12 by G. Kulin at Budapest.  
Named in memory of Gyula Ortutay, a professor of ethnography and a Hungarian cultural leader who patronized the popularization of astronomy in his country.
- (2058) Roka = 1938 BH  
Discovered 1938 Jan. 22 by G. Kulin at Budapest.  
Named in memory of Gedeon Roka, a well-known popularizer of astronomy in Hungary for three decades.

- (2066) Palala = 1934 LB  
 Discovered 1934 June 4 by C. Jackson at Johannesburg.  
 Named for a river, a tributary of the Limpopo, in the western Transvaal.
- (2085) Henan = 1965 YA  
 Discovered 1965 Dec. 20 at the Purple Mountain Observatory.  
 Named for the province situated in the lower stretch of the Yellow River, the cradle of civilization in ancient China.
- (2118) Flagstaff = 1978 PB  
 Discovered 1978 Aug. 5 by H. L. Giclas at the Lowell Observatory.  
 Named for the city of Flagstaff, Arizona, where Percival Lowell founded the Lowell Observatory in 1894. In more recent times several other astronomical facilities have been set up in Flagstaff.
- (2162) Anhui = 1966 BE  
 Discovered 1966 Jan. 30 at the Purple Mountain Observatory.  
 Named for a province in the northwestern part of East China that straddles the Yangtze and Huai Rivers.
- (2169) Taiwan = 1964 VP1  
 Discovered 1964 Nov. 9 at the Purple Mountain Observatory.  
 Named for an insular province of China.
- (2184) Fujian = 1964 TV2  
 Discovered 1964 Oct. 9 at the Purple Mountain Observatory.  
 Named for a coastal province in southeastern China.
- (2185) Guangdong = 1965 WO  
 Discovered 1965 Nov. 20 at the Purple Mountain Observatory.  
 Named for a coastal province in southern China.

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## EPHEMERIDES.

1969 RD2		Elements MPC 4169							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1979	12 13	08 31.48	+14 00.6	2.272	3.031	133.1	13.7	17.9	
1979	12 23	08 26.78	+14 02.6						
1980	01 02	08 19.92	+14 14.2	2.114	3.038	155.9	7.6	17.6	
1980	01 12	08 11.44	+14 33.9						
1980	01 22	08 02.13	+14 59.3	2.062	3.043	174.5	1.8	17.2	
1980	02 01	07 52.95	+15 27.4						
1980	02 11	07 44.84	+15 55.5	2.130	3.046	153.8	8.2	17.6	
1980	02 21	07 38.55	+16 21.3						
1980	03 02	07 34.56	+16 43.4	2.301	3.048	131.3	14.1	18.0	
1980	03 12	07 33.05	+17 00.8						
1980	03 22	07 34.00	+17 12.8	2.541	3.047	111.3	17.7	18.3	
1980	04 01	07 37.24	+17 19.1						
1980	04 11	07 42.52	+17 19.5	2.813	3.045	93.6	19.2	18.5	
1980	04 21	07 49.57	+17 13.5						
1980	05 01	07 58.12	+17 01.1	3.090	3.041	77.8	18.9	18.7	
1980	05 11	08 07.91	+16 42.1						
1980	05 21	08 18.75	+16 16.5	3.348	3.036	63.5	17.4	18.8	



1978 UV1		Elements MPC 5181							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1979 12 13		09 14.00	+28 03.2	2.612	3.296	126.7	13.9	17.5	
1979 12 23		09 11.66	+28 52.7						
1980 01 02		09 06.93	+29 47.4	2.434	3.307	147.6	9.2	17.2	
1980 01 12		09 00.08	+30 42.8						
1980 01 22		08 51.63	+31 33.2	2.356	3.317	165.4	4.3	17.0	
1980 02 01		08 42.41	+32 13.5						
1980 02 11		08 33.39	+32 39.9	2.394	3.326	157.3	6.6	17.1	
1980 02 21		08 25.47	+32 51.1						
1980 03 02		08 19.41	+32 47.7	2.542	3.334	136.8	11.7	17.4	
1980 03 12		08 15.63	+32 31.8						
1980 03 22		08 14.28	+32 05.9	2.771	3.341	116.9	15.4	17.7	
1980 04 01		08 15.34	+31 32.2						
1980 04 11		08 18.58	+30 52.5	3.044	3.347	98.8	17.2	17.9	
1980 04 21		08 23.77	+30 07.8						
1980 05 01		08 30.61	+29 19.0	3.331	3.352	82.5	17.3	18.1	
1980 05 11		08 38.84	+28 26.4						
1980 05 21		08 48.22	+27 30.2	3.607	3.356	67.7	16.2	18.3	

(2208) 1977 QL3		Elements MPC 5179							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1979 12 13		09 14.27	+20 42.0	2.764	3.426	125.1	13.6	16.7	
1979 12 23		09 12.66	+21 09.6						
1980 01 02		09 08.97	+21 45.1	2.568	3.433	146.8	9.0	16.4	
1980 01 12		09 03.43	+22 25.8						
1980 01 22		08 56.47	+23 08.1	2.469	3.440	169.1	3.1	16.1	
1980 02 01		08 48.78	+23 47.9						
1980 02 11		08 41.13	+24 21.4	2.487	3.447	164.2	4.5	16.2	
1980 02 21		08 34.29	+24 46.2						
1980 03 02		08 28.94	+25 01.2	2.620	3.454	141.9	10.2	16.5	
1980 03 12		08 25.49	+25 06.3						
1980 03 22		08 24.15	+25 02.3	2.840	3.462	121.1	14.3	16.8	
1980 04 01		08 24.95	+24 50.2						
1980 04 11		08 27.77	+24 31.0	3.113	3.469	102.4	16.4	17.0	
1980 04 21		08 32.40	+24 05.5						
1980 05 01		08 38.64	+23 34.2	3.405	3.477	85.6	16.8	17.3	
1980 05 11		08 46.22	+22 57.6						
1980 05 21		08 54.95	+22 15.9	3.692	3.484	70.3	15.9	17.4	

1975 FX		Elements MPC 5177							
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1980 01 02		09 54.76	+28 29.9	2.024	2.826	137.2	13.7	17.1	
1980 01 12		09 50.93	+29 35.5						
1980 01 22		09 44.55	+30 42.0	1.905	2.834	156.5	8.0	16.8	
1980 02 01		09 36.24	+31 41.5						
1980 02 11		09 26.96	+32 26.7	1.889	2.844	162.0	6.2	16.8	
1980 02 21		09 17.86	+32 52.5						
1980 03 02		09 10.07	+32 57.1	1.982	2.854	145.4	11.4	17.0	
1980 03 12		09 04.42	+32 41.9						
1980 03 22		09 01.38	+32 09.8	2.164	2.866	126.0	16.3	17.3	
1980 04 01		09 01.07	+31 24.3						
1980 04 11		09 03.34	+30 28.6	2.404	2.878	108.1	19.3	17.6	
1980 04 21		09 07.93	+29 24.9						
1980 05 01		09 14.50	+28 15.0	2.673	2.890	92.1	20.4	17.9	
1980 05 11		09 22.71	+26 59.7						
1980 05 21		09 32.27	+25 39.9	2.946	2.903	77.7	19.9	18.1	
1980 05 31		09 42.91	+24 15.9						
1980 06 10		09 54.40	+22 48.3	3.207	2.917	64.4	18.3	18.3	

(2209) 1978 US1

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Elements MPC	Mag.
1980 01 02		10 03.40	+10 49.4	2.052	2.800	131.2	15.3	5179	16.6
1980 01 12		10 00.42	+11 10.9						
1980 01 22		09 55.11	+11 45.9	1.896	2.813	153.8	8.9		16.3
1980 02 01		09 47.95	+12 31.1						
1980 02 11		09 39.69	+13 21.9	1.840	2.826	178.1	0.7		15.8
1980 02 21		09 31.27	+14 12.8						
1980 03 02		09 23.70	+14 58.4	1.899	2.840	157.4	7.7		16.3
1980 03 12		09 17.79	+15 35.0						
1980 03 22		09 14.08	+16 00.3	2.061	2.853	135.0	14.3		16.7
1980 04 01		09 12.83	+16 13.6						
1980 04 11		09 14.01	+16 15.2	2.293	2.867	115.1	18.5		17.0
1980 04 21		09 17.45	+16 05.7						
1980 05 01		09 22.91	+15 45.9	2.564	2.880	97.8	20.3		17.3
1980 05 11		09 30.07	+15 16.7						
1980 05 21		09 38.69	+14 38.8	2.846	2.893	82.5	20.3		17.5
1980 05 31		09 48.50	+13 53.0						
1980 06 10		09 59.27	+12 59.9	3.119	2.905	68.5	19.0		17.7

1978 UW1

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Elements MPC	Mag.
1980 01 02		10 08.15	+27 16.7	2.402	3.166	134.1	12.9	5181	17.2
1980 01 12		10 04.43	+28 17.4						
1980 01 22		09 58.41	+29 20.4	2.270	3.184	154.1	7.8		17.0
1980 02 01		09 50.57	+30 19.2						
1980 02 11		09 41.67	+31 07.3	2.244	3.202	163.3	5.1		16.9
1980 02 21		09 32.63	+31 39.7						
1980 03 02		09 24.46	+31 53.9	2.332	3.218	148.4	9.3		17.1
1980 03 12		09 17.92	+31 50.0						
1980 03 22		09 13.54	+31 30.0	2.518	3.234	128.6	13.9		17.4
1980 04 01		09 11.56	+30 56.7						
1980 04 11		09 11.94	+30 12.8	2.769	3.249	109.9	16.9		17.7
1980 04 21		09 14.52	+29 20.7						
1980 05 01		09 19.05	+28 22.2	3.052	3.263	93.0	18.0		17.9
1980 05 11		09 25.23	+27 18.4						
1980 05 21		09 32.82	+26 10.2	3.340	3.276	77.6	17.6		18.1
1980 05 31		09 41.56	+24 58.3						
1980 06 10		09 51.22	+23 43.0	3.613	3.288	63.5	16.0		18.2

1978 UT1

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Elements MPC	Mag.
1980 01 02		10 31.77	+08 23.5	2.180	2.847	123.8	16.7	5181	17.5
1980 01 12		10 30.52	+08 36.2						
1980 01 22		10 26.88	+09 03.6	1.992	2.859	145.6	11.2		17.2
1980 02 01		10 21.12	+09 44.1						
1980 02 11		10 13.77	+10 34.0	1.895	2.871	169.4	3.6		16.9
1980 02 21		10 05.58	+11 28.0						
1980 03 02		09 57.52	+12 20.4	1.911	2.883	166.1	4.8		17.0
1980 03 12		09 50.51	+13 06.0						
1980 03 22		09 45.24	+13 41.1	2.037	2.895	142.8	12.0		17.3
1980 04 01		09 42.19	+14 03.9						
1980 04 11		09 41.49	+14 13.8	2.248	2.907	122.1	17.0		17.7
1980 04 21		09 43.11	+14 11.2						
1980 05 01		09 46.86	+13 57.0	2.507	2.918	103.9	19.6		18.0
1980 05 11		09 52.48	+13 32.2						
1980 05 21		09 59.71	+12 57.7	2.787	2.929	87.8	20.2		18.2
1980 05 31		10 08.29	+12 14.5						
1980 06 10		10 17.99	+11 23.5	3.064	2.940	73.4	19.3		18.4

1973 SJ4		Elements MPC 5181						
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 01 02		10 57.75	+00 45.4	2.627	3.168	114.8	16.4	18.5
1980 01 12		10 56.72	+00 35.8					
1980 01 22		10 53.55	+00 40.7	2.428	3.210	136.0	12.3	18.2
1980 02 01		10 48.41	+01 00.3					
1980 02 11		10 41.66	+01 33.5	2.309	3.249	158.8	6.3	18.0
1980 02 21		10 33.87	+02 17.6					
1980 03 02		10 25.77	+03 08.3	2.300	3.286	172.5	2.2	17.8
1980 03 12		10 18.15	+04 00.9					
1980 03 22		10 11.67	+04 50.7	2.411	3.321	151.4	8.2	18.2
1980 04 01		10 06.87	+05 33.7					
1980 04 11		10 04.01	+06 07.5	2.622	3.354	129.8	13.3	18.5
1980 04 21		10 03.17	+06 30.7					
1980 05 01		10 04.29	+06 42.8	2.900	3.385	110.3	16.2	18.8
1980 05 11		10 07.19	+06 44.2					
1980 05 21		10 11.68	+06 35.3	3.210	3.413	92.8	17.2	19.1
1980 05 31		10 17.55	+06 17.1					
1980 06 10		10 24.58	+05 50.2	3.524	3.440	76.9	16.7	19.3

1978 UU1		Elements MPC 5175						
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 01 02		11 56.39	+02 23.3	2.462	2.836	-0.72	+4.2	20.2
1980 01 12		11 59.51	+02 16.5					
1980 01 22		12 00.37	+02 25.3	2.219	2.860	-0.81	+4.8	19.9
1980 02 01		11 58.82	+02 50.1					
1980 02 11		11 54.85	+03 30.6	2.026	2.880	-0.92	+5.4	19.6
1980 02 21		11 48.64	+04 24.4					
1980 03 02		11 40.69	+05 27.2	1.922	2.897	-1.00	+5.8	19.3
1980 03 12		11 31.76	+06 33.0					
1980 03 22		11 22.77	+07 35.3	1.932	2.912	-1.00	+5.6	19.3
1980 04 01		11 14.65	+08 27.9					
1980 04 11		11 08.16	+09 06.8	2.055	2.923	-0.93	+5.0	19.7
1980 04 21		11 03.77	+09 30.1					
1980 05 01		11 01.69	+09 37.5	2.264	2.931	-0.83	+4.4	20.0
1980 05 11		11 01.89	+09 30.1					
1980 05 21		11 04.23	+09 09.2	2.524	2.936	-0.72	+3.9	20.3
1980 05 31		11 08.46	+08 36.5					
1980 06 10		11 14.34	+07 53.7	2.801	2.939	-0.64	+3.5	20.5

1978 WH14		Elements MPC 5175						
Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 01 02		11 55.40	+01 35.1	2.485	2.856	-0.80	+4.9	18.1
1980 01 12		11 59.29	+01 17.3					
1980 01 22		12 01.02	+01 14.1	2.256	2.888	-0.89	+5.5	17.9
1980 02 01		12 00.46	+01 26.0					
1980 02 11		11 57.61	+01 52.6	2.077	2.921	-0.99	+6.2	17.6
1980 02 21		11 52.66	+02 32.2					
1980 03 02		11 46.09	+03 21.3	1.983	2.953	-1.07	+6.6	17.3
1980 03 12		11 38.56	+04 14.8					
1980 03 22		11 30.92	+05 07.0	2.000	2.986	-1.07	+6.5	17.3
1980 04 01		11 24.00	+05 52.4					
1980 04 11		11 18.49	+06 26.9	2.128	3.019	-1.01	+5.9	17.7
1980 04 21		11 14.83	+06 48.2					
1980 05 01		11 13.26	+06 55.4	2.346	3.051	-0.90	+5.3	18.0
1980 05 11		11 13.76	+06 49.0					
1980 05 21		11 16.22	+06 30.1	2.620	3.083	-0.79	+4.6	18.4
1980 05 31		11 20.44	+05 59.9					
1980 06 10		11 26.19	+05 20.0	2.922	3.115	-0.70	+4.2	18.6

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						Elements MPC 5176			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1980 01 22		12 33.40	-29 10.8	2.676	3.007	100.0	18.8	20.5	
1980 02 01		12 33.88	-30 09.0						
1980 02 11		12 31.91	-30 50.5	2.456	3.041	117.6	16.7	20.3	
1980 02 21		12 27.49	-31 10.9						
1980 03 02		12 20.86	-31 06.1	2.282	3.072	135.8	13.0	20.0	
1980 03 12		12 12.54	-30 33.3						
1980 03 22		12 03.32	-29 31.7	2.189	3.098	150.9	9.0	19.9	
1980 04 01		11 54.17	-28 04.6						
1980 04 11		11 46.00	-26 18.5	2.202	3.121	151.8	8.7	19.9	
1980 04 21		11 39.53	-24 22.0						
1980 05 01		11 35.23	-22 24.5	2.321	3.140	137.7	12.5	20.1	
1980 05 11		11 33.24	-20 33.7						
1980 05 21		11 33.53	-18 55.3	2.526	3.156	120.0	16.1	20.4	
1980 05 31		11 35.93	-17 32.6						
1980 06 10		11 40.19	-16 26.7	2.785	3.168	102.8	18.2	20.6	
1980 06 20		11 46.08	-15 37.7						
1980 06 30		11 53.36	-15 04.6	3.066	3.176	86.8	18.6	20.9	

## 1950 DS

						Elements MPC 5180			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1980 03 02		16 38.89	-10 46.8	2.141	2.382	91.4	24.6	17.8	
1980 03 12		16 48.58	-10 44.9						
1980 03 22		16 56.07	-10 37.1	1.918	2.403	106.8	23.4	17.6	
1980 04 01		17 01.04	-10 25.5						
1980 04 11		17 03.22	-10 12.3	1.717	2.426	124.2	20.0	17.3	
1980 04 21		17 02.41	-10 00.0						
1980 05 01		16 58.63	-09 51.5	1.563	2.450	143.8	14.0	16.9	
1980 05 11		16 52.16	-09 49.4						
1980 05 21		16 43.62	-09 56.1	1.488	2.475	163.6	6.6	16.7	
1980 05 31		16 34.01	-10 13.3						
1980 06 10		16 24.45	-10 41.4	1.511	2.501	163.4	6.7	16.7	
1980 06 20		16 16.06	-11 19.9						
1980 06 30		16 09.71	-12 07.6	1.633	2.527	143.9	13.7	17.1	
1980 07 10		16 05.90	-13 02.6						
1980 07 20		16 04.83	-14 02.9	1.834	2.553	124.7	19.1	17.5	
1980 07 30		16 06.46	-15 06.6						
1980 08 09		16 10.59	-16 11.8	2.086	2.579	107.5	22.0	17.9	

## 1929 PC

						Elements MPC 5180			
Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.	
1980 03 22		17 55.61	-12 46.2	2.687	2.901	92.2	20.1	19.4	
1980 04 01		18 02.93	-12 17.2						
1980 04 11		18 08.41	-11 45.4	2.389	2.867	108.3	19.4	19.1	
1980 04 21		18 11.79	-11 12.7						
1980 05 01		18 12.87	-10 41.1	2.119	2.832	126.1	16.7	18.8	
1980 05 11		18 11.53	-10 12.7						
1980 05 21		18 07.74	-09 50.1	1.905	2.796	145.3	11.9	18.4	
1980 05 31		18 01.75	-09 35.7						
1980 06 10		17 54.03	-09 31.5	1.773	2.761	163.1	6.1	18.1	
1980 06 20		17 45.31	-09 39.1						
1980 06 30		17 36.56	-09 58.6	1.743	2.724	160.8	7.0	18.0	
1980 07 10		17 28.71	-10 29.5						
1980 07 20		17 22.59	-11 10.0	1.814	2.688	142.0	13.5	18.2	
1980 07 30		17 18.77	-11 58.0						
1980 08 09		17 17.54	-12 51.0	1.962	2.652	122.8	18.8	18.5	
1980 08 19		17 18.97	-13 46.6						
1980 08 29		17 23.00	-14 42.7	2.160	2.616	105.4	21.8	18.8	