The MINOR PLANET CIRCULARS/MINOR PLANETS AND COMETS are published, on behalf of Commission 20 of the International Astronomical Union, usually in batches on the 1st of each month, by:

Minor Planet Center
Smithsonian Astrophysical Observatory
Cambridge, MA 02138, U.S.A.

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

IDENTIFICATION CHANGES.

Continuation to MPC 5137.

Object		Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	Obs.
A910 CK	*	1910 02	02.15749	09 06 35.6	+24 24.3	603		803
A910 CK		1910 02	05.05756	09 03 32.6	+24 19.8	603		803
A916 KE	*	1916 05	19.91396	11 03 35.00	+02 19 04.1	A916 FC	15	024
1931 FS	*	1931 03	23.93632	11 12 49.30	+04 45 12.6	1931 EK	14	024
1931 JS	*	1931 05	12.87944	10 58 48.59	+07 44 54.9	1931 EJ	16.5	024
1932 CH1	*	1932 02	06.83431	02 02 17.52	+32 11 43.2	1931 VP	16.5	024
1932 EE1	*	1932 03	10.97778	09 36 35.88	+15 37 40.1	1932 BN	17	024
1933 JB	*	1933 05	15.95463	13 00 13.60	-05 34 34.4	1933 GA		012
1934 GW	*	1934 04	06.88868	08 16 39.13	+20 23 35.0	1934 CU	16	024
1936 GB	*	1936 04	08.85878	08 28 17.48	+13 23 53.7	1936 EA		012
1936 GB		1936 04	09.85154	08 29 07.23	+13 19 28.7	1936 EA		012
1936 GB		1936 04	13.85689	08 30 51.61	+13 13 35.4	1936 EA		012
1951 EZ2	*	1951 03	05.31771	11 36 06.91	+01 13 22.9	603	16.8	760
1951 EZ2		1951 03	05.34792	11 36 04.97	+01 13 23.1	603		760
1951 EZ2		1951 03	13.37220	11 27 33.0	+01 05 14	603	15.8	711
1955 DU	*	1955 02	24.98	11 08.2	+07 28	603		062
1956 OA	*	1956 07	31.96610	18 47 21.29	-32 29 39.5	603	15.5	839
1957 SK	*	1957 09	18.10795	23 03 32.26	-12 10 58.8	1925 VF	16.5	760
1957 SK		1957 09	18.20042	23 03 27.81	-12 11 41.8	1925 VF		760
1959 CG1	*	1959 02	03.98994	09 34 26.26	+10 06 16.9	1144	14.8	024
1959 CG1		1959 02	08.11392	09 31 18.10	+10 31 17.8	1144	14.5	024
1959 EG1	*	1959 03	02.90799	09 52 31.08	+15 35 28.0	603		075
1969 QT	*	1969 08	16.26839	23 25 18.64	-04 58 35.7	603		805
1976 GW8	*	1976 04	01.83626	11 05 06.89	+07 26 20.7	1969 UC	15.5	095
1976 GW8		1976 04	02.83885	11 04 23.55	+07 29 09.1	1969 UC	15.5	095
1976 GW8		1976 04	04.85396	11 03 03.35	+07 34 13.6	1969 UC	16.5	095

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OBSERVATIONS MADE AT THE HOHER LIST OBSERVATORY BY M. HOFFMANN.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
/1978 XXI	1979 08	05.0764	23 32 16.31	-18 04 13.1	017
/1978 XXI	1979 08	29.9747	23 06 35.87	-18 38 57.9	017
/1978 XXI	1979 08	30.0215	23 06 32.81	-18 39 01.3	017
/1979i	1979 09	30.8361	13 15 30.18	+64 38 52.1	017

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
/1974 II	1980 01	13.94594	09 00 12.30	+17 40 00.1	14.0T	1	046
/1974 II	1980 01	13.96040	09 00 11.98	+17 40 04.2		1	046
/1974 II	1980 01	14.93037	08 59 46.20	+17 41 09.3	14.4T	1	046
/1974 II	1980 01	14.94461	08 59 45.85	+17 41 10.9		1	046

/1974	II		1980	01	17.90451	08	58	25.29	+17	44	37.8	14.5T	1 046
/1974	II		1980	01	17.91875	08	58	25.05	+17	44	38.7		1 046
/1974	II		1980	01	21.87568	08	56	33.70	+17	49	26.4	14.5T	1 046
/1974	II		1980	01	21.88980	08	56	33.23	+17	49	27.7		1 046
1808			1980	01	21.84067	08	57	49.98	+20	23	50.4		046
1808			1980	01	21.85497	08	57	49.18	+20	23	54.0		046
2178			1980	01	15.82985	06	45	37.18	+28	25	29.4		046
2178			1980	01	15.84432	06	45	36.08	+28	25	30.6		046
2208			1980	01	21.84067	08	56	50.71	+23	05	34.5		046
2208			1980	01	21.85497	08	56	50.14	+23	05	38.6		046
1979	TA	*	1979	10	11.79328	23	23	51.03	+00	38	31.8	17.5	046
1979	TA		1979	10	11.80792	23	23	50.75	+00	38	29.6		046
1979	TA		1979	10	12.85716	23	23	25.15	+00	35	25.7		046
1979	TA		1979	10	12.87163	23	23	24.77	+00	35	21.6		046
1979	TA		1979	10	15.79450	23	22	25.23	+00	27	34.4		046
1979	TA		1979	10	15.80874	23	22	24.81	+00	27	29.8		046
1979	TA		1979	10	19.79387	23	21	30.00	+00	18	52.8		046
1979	TA		1979	10	19.80816	23	21	29.96	+00	18	50.9		046
1979	YH	*	1979	12	25.06278	07	08	07.24	+27	50	14.4	17.5	046
1979	YH		1979	12	25.07736	07	08	06.41	+27	50	12.5		046
1979	YJ	*	1979	12	24.97895	09	08	24.55	+18	22	02.8	16.5	046
1979	YJ		1979	12	24.99333	09	08	24.40	+18	22	07.0		046
1979	YJ		1979	12	28.11972	09	07	36.83	+18	39	49.8		046
1979	YJ		1979	12	28.13402	09	07	36.62	+18	39	52.9		046
1980	AA		1980	01	13.89501	06	54	36.89	+30	16	16.8	15	046
1980	AA		1980	01	13.90948	06	54	44.83	+30	14	59.3		046
1980	AA		1980	01	14.80161	07	02	56.25	+29	00	34.8		046
1980	AA		1980	01	14.80751	07	02	59.26	+29	00	07.4		046
1980	AA		1980	01	15.00630	07	04	39.73	+28	43	25.9		046
1980	AA		1980	01	15.01463	07	04	43.59	+28	42	44.6		046
1980	AA		1980	01	15.75248	07	11	23.33	+27	39	25.7		046
1980	AA		1980	01	15.76081	07	11	27.74	+27	38	42.8		046
1980	AA		1980	01	18.95312	07	37	35.69	+23	01	24.3		046
1980	AA		1980	01	18.95868	07	37	38.20	+23	00	53.8		046
1980	AA		1980	01	19.91910	07	44	53.14	+21	37	45.3		046
1980	AA		1980	01	19.92465	07	44	55.28	+21	37	18.5		046
1980	AA		1980	01	20.77927	07	51	08.86	+20	24	01.2		046
1980	AA		1980	01	20.78552	07	51	11.33	+20	23	31.1		046
1980	AA		1980	01	21.05444	07	52	56.91	+20	00	54.5		046
1980	AA		1980	01	21.06000	07	52	58.97	+20	00	26.1		046
1980	AA		1980	01	21.78622	07	58	05.40	+18	59	30.6		046
1980	AA		1980	01	21.79177	07	58	07.48	+18	59	04.5		046
1980	AA		1980	01	21.90985	07	58	52.11	+18	49	27.6		046
1980	AA		1980	01	21.91540	07	58	54.01	+18	49	01.7		046
1980	AA		1980	01	23.85912	08	11	17.61	+16	12	39.8		046
1980	AA		1980	01	23.86329	08	11	18.94	+16	12	21.5		046
1980	AB	*	1980	01	13.94594	09	04	08.25	+18	38	11.3	17.0	046
1980	AB		1980	01	13.96040	09	04	07.65	+18	38	24.4		046
1980	AB		1980	01	14.93037	09	03	30.57	+18	53	41.6		046
1980	AB		1980	01	14.94461	09	03	30.03	+18	53	55.5		046
1980	AB		1980	01	21.84067	08	58	28.67	+20	45	11.3		046
1980	AB		1980	01	21.85497	08	58	27.94	+20	45	23.7		046
1980	BF	*	1980	01	17.90451	09	00	21.73	+15	24	26.9	17.8	046
1980	BF		1980	01	17.91875	09	00	20.89	+15	24	26.6		046
1980	BG	*	1980	01	21.84067	08	50	41.96	+21	47	58.0	16.6	046
1980	BG		1980	01	21.85497	08	50	41.18	+21	48	06.9		046
1980	BH	*	1980	01	21.84067	08	53	13.62	+22	06	16.7	18.0	046
1980	BH		1980	01	21.85497	08	53	13.20	+22	06	31.0		046
1980	BJ	*	1980	01	21.84067	09	04	23.90	+21	11	19.3	17.8	046

1980 BJ		1980 01 21.85497	09 04 23.16	+21 11 22.0						046
1980 BK	*	1980 01 17.90451	09 05 39.94	+16 05 25.2				17.8		046
1980 BK		1980 01 17.91875	09 05 38.87	+16 05 30.0						046
1980 BK		1980 01 21.87568	09 00 39.00	+16 37 15.4						046
1980 BK		1980 01 21.88980	09 00 38.24	+16 37 22.6						046
1980 BL	*	1980 01 21.87568	09 01 47.4	+19 47 27				17.8		046
1980 BL		1980 01 21.88980	09 01 46.7	+19 47 27						046

Note 1: strong central condensation, coma 2′.0 in diameter.

OBSERVATIONS MADE AT BALDONE BY A. ALKSNIS AND L. DUNCANS (WITH ASSISTANCE FROM I. ROZENIECE, G. BICEVSKA, I. PLATAIS, M. DIRIKIS AND G. KASTEL′).

Object	Date	UT	R. A. (1950)	Decl.	O - C	Mag.	N	Obs.
35	1977 11	10.89329	03 01 37.90	+26 43 32.3	0.2- 0		1	069
35	1977 11	10.92598	03 01 35.99	+26 43 27.1	0.2- 0		1	069
35	1977 11	19.00123	02 54 23.08	+26 20 28.6	0.1- 0		1	069
35	1977 11	19.02791	02 54 23.10	+26 20 28.1	0.1- 0		1	069
212	1977 11	30.87280	04 24 10.88	+27 43 34.9	0.2- 0		1	069
212	1977 11	30.90475	04 24 09.07	+27 43 30.0	0.2- 0		1	069
260	1977 12	11.00576	06 23 47.44	+15 00 07.4	0.1+ 0		1	069
327	1977 10	14.91311	01 13 37.08	+13 18 04.5	0.0 0		1	069
327	1977 10	20.95260	01 08 08.94	+12 58 38.0	0.0 0		1	069
349	1977 11	30.87280	04 32 23.62	+29 51 55.4	0.0 1+		1	069
349	1977 11	30.90475	04 32 21.62	+29 51 55.8	0.0 1+		1	069
577	1977 11	10.89329	03 06 48.84	+25 16 28.2	0.1+ 0		1	069
577	1977 11	10.92598	03 06 47.08	+25 16 22.0	0.1+ 0		1	069
577	1977 11	19.00123	02 59 47.77	+24 48 36.2	0.1- 1+		1	069
577	1977 11	19.02791	02 59 47.72	+24 48 35.9	0.0 1+		1	069
752	1978 01	18.91024	07 58 18.42	+26 22 39.2	0.7- 2+		1	069
752	1978 01	18.96089	07 58 15.25	+26 22 55.1	0.7- 2+		1	069
752	1978 01	19.00724	07 58 12.16	+26 23 10.0	0.7- 2+		1	069
752	1978 01	19.90104	07 57 15.22	+26 28 05.6	0.8- 2+		1	069
752	1978 01	19.96817	07 57 10.87	+26 28 27.6	0.8- 2+		1	069
752	1978 01	20.01512	07 57 07.89	+26 28 42.8	0.8- 2+		1	069
823	1977 10	14.10660	01 12 42.99	+13 28 39.1	0.2- 1-		1	069
823	1977 10	14.91311	01 11 55.01	+13 22 51.0	0.1- 0		1	069
823	1977 10	20.95260	01 05 59.48	+12 38 01.1	0.1- 0		1	069
1021	1978 02	09.97221	09 25 43.09	+25 26 37.0	0.0 1+		1	069
1021	1978 02	10.00554	09 25 41.09	+25 26 55.8	0.0 1+		1	069
1021	1978 02	10.03817	09 25 39.23	+25 27 14.2	0.0 1+		1	069
1062	1977 10	14.10660	01 20 20.75	+14 33 02.6	0.1- 1-		1	069
1062	1977 10	14.91311	01 19 44.38	+14 30 21.3	0.0 1-		1	069
1062	1977 10	20.95260	01 14 39.52	+14 08 51.9	0.0 0		1	069
1977 UT1	* 1977 10	20.95260	01 10 00.67	+12 37 59.9		16.0	1	069
1977 VP2	* 1977 11	10.89329	02 53 11.76	+24 42 36.8		16.0	1	069
1977 VP2	1977 11	10.92598	02 53 09.24	+24 42 48.0			1	069
1977 VQ2	* 1977 11	10.89329	03 00 19.70	+23 55 54.3		15.5	1	069
1977 VQ2	1977 11	10.92598	03 00 17.05	+23 55 50.4			1	069
1977 VQ2	1977 11	19.00123	02 51 04.24	+23 41 02.4		15.5	1	069
1977 VQ2	1977 11	19.02791	02 51 04.37	+23 41 02.0			1	069
1977 XG	* 1977 12	10.91045	04 53 40.25	+30 27 20.2		15.0	1	069
1977 XH	* 1977 12	10.91045	04 58 03.87	+30 51 53.3		16.0	1	069

Note 1: observatory code 069, Long. and Parallax 24.41, -234, -355 (see MPC 4766).

OBSERVATIONS MADE AT THE ABASTUMANI OBSERVATORY BY A. SH. KHATISASHVILI.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1979 XA	1979 12	19.63758	02 00 57.21	+12 10 15.5	14	119
1979 XA	1979 12	19.64522	02 00 54.43	+12 10 05.5		119
1979 XA	1979 12	19.65286	02 00 51.70	+12 09 55.3		119

OBSERVATIONS MADE AT THE CRIMEAN ASTROPHYSICAL OBSERVATORY BY N. S. CHERNYKH, L. I. CHERNYKH, T. M. SMIRNOVA AND L. V. ZHURAVLEVA; ASSISTED BY L. G. KARACHKINA (38TH REPORT).

Object		Date	UT	R. A. (1950)	Decl.	O - C		Mag.	N	Obs.
1977 PC1	*	1977 08	14.94457	22 15 37.41	-02 07 30.1			16.0	1	095
441		1977 08	14.94457	22 17 20.25	+02 13 31.4	0.1+	1+		1	095
1977 PD1	*	1977 08	14.94457	22 17 22.44	-02 04 16.6			16.5	1	095
1288		1977 08	14.94457	22 18 38.03	-03 53 50.8	0.2-	2-		1	095
1977 PE1	*	1977 08	14.94457	22 21 06.16	-01 46 22.8			17.0		095
1977 PF1	*	1977 08	14.94457	22 22 39.90	-02 08 57.4			16.5		095
1977 PG1	*	1977 08	14.94457	22 22 41.47	+00 08 07.1			17.0		095
1977 PH1	*	1977 08	14.94457	22 24 55.06	-00 40 09.7			17.0		095
1977 PJ1	*	1977 08	14.94457	22 26 57.88	-01 51 22.8			17.0		095
1977 PK1	*	1977 08	14.94457	22 27 37.37	+01 04 28.5			17.0		095
1977 PL1	*	1977 08	14.94457	22 28 45.85	-01 48 14.1			15.0		095
1977 PM1	*	1977 08	14.94457	22 29 01.50	+00 46 12.0			16.5		095
1977 PN1	*	1977 08	14.94457	22 29 19.56	-00 40 36.3			17.0		095
1977 PO1	*	1977 08	14.94457	22 32 48.68	-03 10 59.8			15.3		095
1977 PP1	*	1977 08	14.94457	22 32 54.91	-02 38 27.9			17.0		095
1977 PQ1	*	1977 08	14.94457	22 33 45.88	-01 36 14.4			17.5		095
1977 PR1	*	1977 08	14.94457	22 34 15.75	+04 14 58.3			17.0	1	095
1900		1977 08	14.94457	22 34 46.78	+00 54 48.3	0.1+	0			095
1977 PS1	*	1977 08	14.94457	22 35 51.91	+02 34 54.3			17.0		095
1977 PT1	*	1977 08	14.94457	22 37 44.75	-00 36 45.4			17.5		095
1977 PU1	*	1977 08	14.94457	22 39 15.94	-03 21 17.6			16.0		095
1194		1977 08	14.94457	22 39 51.03	+03 29 22.8	0.0	0			095
1977 PV1	*	1977 08	14.94457	22 40 32.12	+05 06 25.5			16.5	1	095
1977 PW1	*	1977 08	14.94457	22 41 14.90	+03 31 00.1			16.3		095
1977 PX1	*	1977 08	14.94457	22 43 38.28	+01 22 30.2			16.8		095
1977 PY1	*	1977 08	14.94457	22 44 07.69	+01 27 53.9			16.0		095
1407		1977 08	14.94457	22 44 10.97	+02 19 42.0	0.5-	4-			095
1977 PZ1	*	1977 08	14.94457	22 45 27.90	-02 39 48.1			15.8		095
1977 PA2	*	1977 08	14.94457	22 45 51.18	+01 08 30.9			16.8		095
1977 PB2	*	1977 08	14.94457	22 46 24.85	-04 10 07.1			16.5	1	095
1977 PC2	*	1977 08	14.94457	22 51 27.25	-00 03 31.7			16.5	1	095
1307		1977 08	14.94457	22 53 30.07	+00 09 52.7	0.0	0		1	095
1977 PD2	*	1977 08	14.94804	22 34 39.00	-00 41 32.5			17.0	2	095
1977 PE2	*	1977 08	14.94804	22 39 04.56	+01 43 27.9			17.0	2	095
1977 PF2	*	1977 08	14.94804	22 43 46.06	-03 22 36.5			17.0	2	095
1977 PG2	*	1977 08	14.94804	22 48 24.94	-02 58 04.1			17.0	2	095
1977 NK		1977 08	18.89592	20 58 41.20	-18 57 31.0			16.0	1	095
2144		1977 08	18.89592	20 59 25.80	-16 58 51.1			16.0	1	095
1977 QA4	*	1977 08	18.89592	21 00 25.85	-14 30 24.7			16.5	1	095
1977 NQ		1977 08	18.89592	21 07 51.25	-18 01 52.2			16.5		095
1977 QB4	*	1977 08	18.89592	21 09 33.88	-15 26 09.5			16.0		095
2114		1977 08	18.89592	21 12 48.97	-16 42 16.6			16.2		095
1977 QC4	*	1977 08	18.89592	21 13 13.10	-12 47 38.2			15.5		095
1977 NR		1977 08	18.89592	21 14 52.91	-18 59 04.1			15.8		095
1977 QD4	*	1977 08	18.89592	21 16 15.72	-18 44 03.9			17.0		095
1977 QE4	*	1977 08	18.89592	21 17 15.72	-14 19 48.6			16.0		095
1383		1977 08	18.89592	21 17 18.82	-15 44 15.6	0.5+	2+			095
1977 NT		1977 08	18.89592	21 18 10.75	-16 56 38.4			15.8		095
1977 QF4	*	1977 08	18.89592	21 18 38.78	-14 27 00.6			16.5		095
1191		1977 08	18.89592	21 18 40.03	-18 16 01.1	0.2-	1-			095
1977 QG4	*	1977 08	18.89592	21 19 58.78	-16 39 16.0			15.5		095
1336		1977 08	18.89592	21 24 57.22	-18 53 18.8	0.3-	2-			095
1977 QH4	*	1977 08	18.89592	21 25 20.91	-19 44 57.3			16.5		095
1977 QJ4	*	1977 08	18.89592	21 27 20.00	-14 26 54.3			17.0		095
1381		1977 08	18.89592	21 27 23.94	-19 34 55.4	0.1-	2-			095

1340		1977	08	18.89592	21	27	42.28	-15	14	25.6	0.2-	0		095
1977	QK4	* 1977	08	18.89592	21	28	12.69	-12	22	50.7			15.5	1 095
1977	QL4	* 1977	08	18.89592	21	28	50.32	-16	12	16.2			16.0	095
1977	QM4	* 1977	08	18.89592	21	29	00.69	-13	39	28.5			16.0	095
1279		1977	08	18.89592	21	30	36.35	-17	29	32.8	0.2-	2-		095
1977	QN4	* 1977	08	18.89592	21	32	37.31	-13	06	17.1			16.5	095
1641		1977	08	18.89592	21	32	49.50	-17	12	40.9	1.3-	10-		095
1977	QO4	* 1977	08	18.89592	21	33	55.26	-14	40	32.4			16.5	1 095
1378		1977	08	18.89592	21	34	34.35	-21	13	55.1	0.1-	2-		1 095
716		1977	08	18.89592	21	36	00.62	-13	34	31.9	0.1+	0		1 095
1245		1977	08	18.89592	21	36	11.44	-13	34	34.3	0.1-	1-		1 095
1977	QP4	* 1977	08	18.89592	21	37	14.38	-15	52	20.8			15.0	1 095
1977	QQ4	* 1977	08	18.90121	21	26	17.94	-11	56	00.3			15.8	1 095
318		1977	08	19.88872	21	10	41.22	-10	26	39.5	0.1-	1-		095
1280		1977	08	19.88872	21	19	27.50	-11	10	36.3	0.0	0		095
707		1977	08	19.88872	21	26	46.97	-08	59	06.4	0.1-	2+		095
1279		1977	08	19.88872	21	29	36.94	-17	29	17.0	0.2-	1-		095
1245		1977	08	19.88872	21	35	24.69	-13	39	37.2	0.1-	1-		095
755		1977	08	19.88872	21	37	25.47	-11	27	46.6	0.2-	1-		095
1977	QR4	* 1977	08	21.91259	22	07	55.25	-03	58	40.5			16.0	095
1977	PD1	1977	08	21.91259	22	09	22.75	-02	02	32.4			16.5	095
1977	PC1	1977	08	21.91259	22	10	58.32	-01	48	19.3			16.0	1 095
441		1977	08	21.91259	22	11	49.82	+01	52	23.0	0.0	2+		095
1288		1977	08	21.91259	22	12	49.78	-04	06	02.3	0.2-	1-		095
1977	PE1	1977	08	21.91259	22	15	55.66	-02	13	31.7			17.0	095
1977	QS4	* 1977	08	21.91259	22	16	17.94	-05	50	52.2			16.5	1 095
1977	QT4	* 1977	08	21.91259	22	16	19.13	-03	09	51.4			17.5	095
1977	QU4	* 1977	08	21.91259	22	17	12.35	-00	27	32.5			17.0	095
1977	QV4	* 1977	08	21.91259	22	17	25.37	-02	05	20.2			17.0	095
1977	PF1	1977	08	21.91259	22	18	10.60	-03	20	20.5			16.5	095
1977	PK1	1977	08	21.91259	22	22	09.60	+01	05	38.2			17.5	095
1977	PL1	1977	08	21.91259	22	22	46.35	-01	57	35.2			15.0	095
1977	PJ1	1977	08	21.91259	22	24	01.53	-02	55	57.3			17.5	095
372		1977	08	21.91259	22	24	45.66	-05	20	03.2	0.0	1-		1 095
1977	PO1	1977	08	21.91259	22	27	39.79	-03	06	38.5			15.3	095
1977	PP1	1977	08	21.91259	22	27	53.54	-03	15	09.9			17.0	095
1900		1977	08	21.91259	22	28	11.11	+00	45	23.2	0.2+	2+		095
1977	PS1	1977	08	21.91259	22	30	19.60	+02	45	21.1			17.0	095
1977	QW4	* 1977	08	21.91259	22	30	36.91	-05	09	51.2			17.0	095
1754		1977	08	21.91259	22	33	05.65	-06	31	02.5	0.0	0		1 095
1977	QX4	* 1977	08	21.91259	22	33	41.22	-02	09	18.8			17.0	095
1977	PU1	1977	08	21.91259	22	33	58.85	-04	13	19.0			17.0	095
1194		1977	08	21.91259	22	34	27.97	+03	19	31.2	0.1+	1+		1 095
1977	PW1	1977	08	21.91259	22	36	19.90	+03	20	32.0			16.3	1 095
1977	PX1	1977	08	21.91259	22	38	15.90	+00	54	33.7			16.8	1 095
1977	PY1	1977	08	21.91259	22	39	06.85	+00	50	03.8			16.0	1 095
1977	PA2	1977	08	21.91259	22	39	22.34	+00	53	08.4			16.8	1 095
1977	PZ1	1977	08	21.91259	22	39	26.32	-02	42	53.7			15.8	1 095
1407		1977	08	21.91259	22	39	30.06	+02	19	06.6	0.4-	2+		1 095
1977	QY4	* 1977	08	21.91605	22	32	39.19	-03	00	02.9			17.5	095
1641		1977	08	22.89674	21	29	17.85	-17	14	10.6	1.3-	10-		1 095
1378		1977	08	22.89674	21	30	42.40	-21	27	19.2	0.1-	1-		1 095
1977	QP4	1977	08	22.89674	21	33	59.62	-16	14	38.4			15.5	1 095
2081		1977	08	22.89674	21	40	43.60	-21	40	44.3			15.5	095
1988		1977	08	22.89674	21	44	40.82	-19	34	09.8	0.1+	1-	16.1	095
634		1977	08	22.89674	21	47	29.25	-17	56	54.2	0.2-	2-		095
1977	QA5	* 1977	08	22.89674	21	50	07.62	-19	59	19.9			16.0	095
1977	QB5	* 1977	08	22.89674	21	52	23.19	-18	07	17.0			16.5	095
160		1977	08	22.89674	21	56	30.41	-16	51	09.9	0.0	1-		1 095

1977	QC5	*	1977	08	22.89674	21	57	19.94	-21	08	43.4		15.5		095
21			1977	08	22.89674	21	57	27.75	-18	23	29.6	0.0 0			095
1977	QD5	*	1977	08	22.89674	21	59	01.57	-16	45	26.6		16.0	1	095
484			1977	08	22.89674	22	03	16.00	-19	43	44.1	0.0 1-			095
364			1977	08	22.89674	22	06	49.84	-19	45	52.7	0.0 1-		1	095
1977	RR3	*	1977	09	06.84531	21	04	03.88	-19	31	20.9		16.0		095
1383			1977	09	06.84531	21	04	50.30	-16	39	50.6	0.3+ 1+			095
1977	NT		1977	09	06.84531	21	06	09.37	-17	43	08.2		16.0		095
1191			1977	09	06.84531	21	06	13.28	-20	44	46.6	0.3- 2-			095
1977	RS3	*	1977	09	06.84531	21	09	32.82	-18	13	50.7		15.5		095
1381			1977	09	06.84531	21	10	56.41	-19	48	05.8	0.3- 2-			095
1336			1977	09	06.84531	21	11	37.90	-19	59	20.3	0.5- 2-			095
1977	QL4		1977	09	06.84531	21	14	51.94	-17	35	24.0		16.0		095
1340			1977	09	06.84531	21	14	55.82	-16	11	15.9	0.2- 1-			095
1279			1977	09	06.84531	21	15	14.25	-17	08	18.7	0.4- 1-			095
1641			1977	09	06.84531	21	17	45.03	-17	09	35.5	1.5- 10-			095
1144			1977	09	06.84531	21	17	58.96	-12	32	32.0	0.1- 0		1	095
1378			1977	09	06.84531	21	18	42.53	-21	53	52.4	0.3- 1-		1	095
716			1977	09	06.84531	21	22	37.12	-15	30	04.1	0.0 0			095
1245			1977	09	06.84531	21	22	41.50	-15	02	23.5	0.2- 0			095
1977	QP4		1977	09	06.84531	21	24	19.19	-17	18	48.3		15.3		095
755			1977	09	06.84531	21	25	24.12	-12	45	01.5	0.2- 2-		1	095
2081			1977	09	06.84531	21	29	29.12	-22	16	11.9		15.5	1	095
1279			1977	09	07.84169	21	14	42.07	-17	06	09.2	0.4- 1-		1	095
1641			1977	09	07.84169	21	17	06.91	-17	08	36.6	1.4- 10-		1	095
1144			1977	09	07.84169	21	17	31.19	-12	37	28.2	0.2- 0		1	095
1378			1977	09	07.84169	21	18	05.91	-21	54	19.8	0.3- 2-		1	095
716			1977	09	07.84169	21	22	02.46	-15	35	20.5	0.0 0			095
1245			1977	09	07.84169	21	22	07.09	-15	06	14.7	0.2- 1-			095
1977	QP4		1977	09	07.84169	21	23	53.25	-17	21	39.9		15.5		095
1977	RT3	*	1977	09	07.84169	21	23	56.16	-15	51	41.7		16.8		095
755			1977	09	07.84169	21	24	50.87	-12	48	50.9	0.3- 2-		1	095
1977	RU3	*	1977	09	07.84169	21	26	23.88	-16	58	43.0		16.5		095
2081			1977	09	07.84169	21	28	55.28	-22	16	58.3		15.5	1	095
1977	RV3	*	1977	09	07.84169	21	29	37.62	-16	49	43.3		16.0		095
1977	RW3	*	1977	09	07.84169	21	30	32.16	-16	05	00.1		16.0		095
1977	RX3	*	1977	09	07.84169	21	31	04.78	-13	27	31.4		16.8		095
1988			1977	09	07.84169	21	31	58.22	-20	59	28.8	0.3- 3-	16.4		095
1977	RY3	*	1977	09	07.84169	21	33	40.88	-16	24	41.6		16.8		095
1977	QA5		1977	09	07.84169	21	35	01.62	-20	48	43.7		16.0		095
2057			1977	09	07.84169	21	36	07.85	-15	58	51.0		17.0		095
1805			1977	09	07.84169	21	36	33.62	-17	39	32.6	0.2- 2-			095
634			1977	09	07.84169	21	37	20.59	-20	05	31.2	0.4- 2-			095
1977	RA4	*	1977	09	07.84169	21	37	57.88	-20	05	51.3		17.0		095
1977	RB4	*	1977	09	07.84169	21	38	40.07	-12	35	13.7		16.0	1	095
2169			1977	09	07.84169	21	40	33.07	-16	20	00.1		16.8		095
1977	QB5		1977	09	07.84169	21	41	42.29	-19	11	14.0		16.0		095
1497			1977	09	07.84169	21	41	44.72	-12	56	04.4	0.3- 1-		1	095
545			1977	09	07.84169	21	41	54.93	-14	53	43.8	0.4- 2-			095
516			1977	09	07.84169	21	41	57.44	-12	57	55.8	0.2- 1-		1	095
275			1977	09	07.84169	21	42	44.68	-15	40	01.6	0.5- 2-			095
160			1977	09	07.84169	21	43	10.22	-17	34	46.6	0.1- 1-			095
1977	RC4	*	1977	09	07.84169	21	44	39.18	-12	24	30.9		16.0	1	095
21			1977	09	07.84169	21	45	05.68	-19	25	27.3	0.3- 3-			095
1977	QC5		1977	09	07.84169	21	45	27.88	-21	51	43.6		16.0	1	095
1977	QD5		1977	09	07.84169	21	45	59.25	-18	21	39.4		15.8		095
1128			1977	09	07.84169	21	48	23.75	-14	56	45.8	0.2- 2-			095
1977	RD4	*	1977	09	07.84169	21	49	05.78	-15	31	20.9		15.5		095
484			1977	09	07.84169	21	51	22.03	-21	53	45.6	0.3- 3-		1	095

364		1977	09	07.84169	21	51	42.82	-21	34	43.7	0.3-	3-		1	095
1977	RE4	* 1977	09	09.85803	21	52	21.44	+02	24	53.7			16.5	1	095
1977	RF4	* 1977	09	09.85803	21	52	25.94	-02	23	41.1			16.5	1	095
1977	RZ3	* 1977	09	09.85803	21	54	18.63	-01	41	54.7			16.0	1	095
441		1977	09	09.85803	21	56	56.97	+00	27	59.9	0.0	1+			095
1288		1977	09	09.85803	21	57	18.54	-04	53	24.0	0.4-	1-			095
1977	QV4	1977	09	09.85803	21	59	43.13	-04	09	04.8			17.0		095
1977	PE1	1977	09	09.85803	22	01	45.88	-03	52	14.6			17.0		095
1977	RG4	* 1977	09	09.85803	22	04	01.19	-04	40	00.6			17.0		095
1977	PL1	1977	09	09.85803	22	06	13.66	-02	48	31.4			15.0		095
372		1977	09	09.85803	22	06	25.88	-05	09	54.9	0.2-	2-			095
1900		1977	09	09.85803	22	08	52.85	-00	19	05.9	0.1-	1+			095
1977	RH4	* 1977	09	09.85803	22	10	38.91	+01	04	58.3			17.0		095
1977	RJ4	* 1977	09	09.85803	22	12	07.03	+01	38	38.8			17.0		095
1977	PO1	1977	09	09.85803	22	13	22.79	-03	09	41.1			15.3		095
1977	PP1	1977	09	09.85803	22	13	33.65	-05	15	12.0			16.5		095
1977	RK4	* 1977	09	09.85803	22	16	37.66	-02	32	56.2			17.0		095
1194		1977	09	09.85803	22	19	09.50	+02	25	57.1	0.1-	0		1	095
1977	PA2	1977	09	09.85803	22	20	35.79	-00	25	24.0			16.8		095
1977	PB2	1977	09	09.85803	22	21	02.07	-04	23	57.7			16.5		095
1977	RL4	* 1977	09	09.85803	22	21	48.38	-04	34	51.1			17.0		095
1977	PW1	1977	09	09.85803	22	22	08.25	+02	26	06.0			16.3	1	095
1977	PZ1	1977	09	09.85803	22	22	17.47	-03	17	44.0			15.8		095
1977	PY1	1977	09	09.85803	22	24	26.13	-01	27	20.6			16.0		095
1407		1977	09	09.85803	22	24	37.47	+01	32	10.2	0.8-	3-			095
1977	PC2	1977	09	09.85803	22	29	52.82	-01	41	01.9			16.0	1	095
1307		1977	09	09.85803	22	30	17.56	-02	10	54.5	0.1-	0		1	095
1977	RM4	* 1977	09	09.86150	21	56	45.31	-03	01	35.3			17.2		095
1977	RN4	* 1977	09	09.86150	22	24	13.13	-00	21	09.9			16.8		095
227		1977	09	09.86150	22	31	44.38	-06	06	52.4	0.1-	0		1	095
2016		1977	09	09.99190	00	33	20.15	+03	07	59.7	0.1+	2+		1	095
1051		1977	09	09.99190	00	34	04.57	+03	12	37.2	0.0	2+		1	095
1977	RO4	* 1977	09	09.99190	00	36	30.89	+05	22	24.3			16.5	1	095
1977	RP4	* 1977	09	09.99190	00	37	35.20	+06	58	57.4			16.0	1	095
1977	RQ4	* 1977	09	09.99190	00	37	48.78	+07	31	19.4			16.0	1	095
1174		1977	09	09.99190	00	37	49.09	+04	16	18.3	0.2+	1+		1	095
178		1977	09	09.99190	00	38	32.93	+01	32	26.2	0.2+	1+			095
1977	RR4	* 1977	09	09.99190	00	40	58.52	+07	48	51.2			16.0	1	095
1977	RS4	* 1977	09	09.99190	00	42	20.50	+10	11	24.4			16.0		095
872		1977	09	09.99190	00	42	20.86	+06	48	01.4	0.3+	0			095
1977	RT4	* 1977	09	09.99190	00	42	27.74	+07	03	38.5			17.0	2	095
981		1977	09	09.99190	00	43	53.38	+02	10	24.1	0.2+	1+		1	095
1977	RU4	* 1977	09	09.99190	00	45	24.14	+02	32	13.0			16.5	1	095
231		1977	09	09.99190	00	45	30.04	+06	46	13.8	0.0	0			095
1977	RV4	* 1977	09	09.99190	00	46	31.95	+10	15	49.2			16.0	1	095
1977	RW4	* 1977	09	09.99190	00	47	40.58	+11	25	01.3			16.5	1	095
1977	RX4	* 1977	09	09.99190	00	47	58.20	+09	08	14.0			16.5		095
1977	RY4	* 1977	09	09.99190	00	48	17.15	+05	36	58.7			16.5		095
1977	RZ4	* 1977	09	09.99190	00	48	22.89	+08	50	02.4			17.0		095
1977	RA5	* 1977	09	09.99190	00	48	27.65	+08	50	09.3			17.0		095
1977	RB5	* 1977	09	09.99190	00	48	28.44	+07	56	24.8			15.5		095
1977	RC5	* 1977	09	09.99190	00	48	32.94	+08	55	45.9			17.0		095
1977	RD5	* 1977	09	09.99190	00	48	38.29	+08	42	04.4			17.0		095
1977	RE5	* 1977	09	09.99190	00	48	56.63	+05	23	13.0			16.5		095
1977	RF5	* 1977	09	09.99190	00	49	21.60	+05	47	18.1			17.0		095
1977	RG5	* 1977	09	09.99190	00	49	40.07	+07	03	35.0			16.5		095
1977	RH5	* 1977	09	09.99190	00	50	26.46	+06	18	11.7			16.5		095
1977	RJ5	* 1977	09	09.99190	00	51	35.07	+03	21	25.2			16.5		095
1977	RK5	* 1977	09	09.99190	00	53	06.56	+10	42	06.3			17.0	1	095

1977	RL5	*	1977	09	09.99190	00	53	33.66	+05	12	43.5			17.0		095
1977	RM5	*	1977	09	09.99190	00	53	58.83	+09	27	02.0			16.0		095
1977	RN5	*	1977	09	09.99190	00	54	35.46	+08	08	35.4			17.0		095
1977	RO5	*	1977	09	09.99190	00	54	47.79	+02	53	58.8			16.0	1	095
1828			1977	09	09.99190	00	55	17.83	+05	42	31.5	0.2+	2+			095
1977	RP5	*	1977	09	09.99190	00	55	49.49	+11	15	15.0			16.5	1	095
229			1977	09	09.99190	00	56	12.74	+04	41	39.6	0.3+	2+			095
1977	RQ5	*	1977	09	09.99190	00	56	21.70	+08	54	36.8			17.0		095
1977	RR5	*	1977	09	09.99190	00	56	51.32	+04	28	35.9			16.0		095
1331			1977	09	09.99190	00	59	54.42	+01	54	32.6	0.2+	1+		1	095
1977	RS5	*	1977	09	09.99190	01	01	08.08	+06	56	14.0			16.5		095
1977	RT5	*	1977	09	09.99190	01	01	15.94	+04	54	17.8			16.5		095
2182			1977	09	09.99190	01	01	46.18	+04	11	39.1			16.0		095
1736			1977	09	09.99190	01	01	52.06	+03	03	47.1	0.3+	2+			095
841			1977	09	09.99190	01	02	02.65	+07	48	24.7	0.3+	1+			095
1977	RU5	*	1977	09	09.99190	01	02	17.85	+07	27	46.1			16.5		095
1977	RV5	*	1977	09	09.99190	01	02	18.50	+07	08	25.0			16.0		095
1481			1977	09	09.99190	01	02	21.22	+07	55	29.6	0.3+	1-			095
1977	RW5	*	1977	09	09.99190	01	02	34.23	+09	35	04.3			17.0		095
1977	RX5	*	1977	09	09.99190	01	02	35.55	+08	35	51.9			17.0		095
1977	RY5	*	1977	09	09.99190	01	03	30.78	+04	57	20.5			16.5		095
1559			1977	09	09.99190	01	03	42.65	+10	05	18.0	0.2+	1+		1	095
1841			1977	09	09.99190	01	04	19.96	+04	36	37.9	0.1+	1+			095
1977	RZ5	*	1977	09	09.99190	01	04	32.79	+10	49	50.5			16.0	1	095
1977	RA6	*	1977	09	09.99190	01	05	10.39	+08	54	33.5			16.0		095
1977	RB6	*	1977	09	09.99190	01	06	37.08	+06	32	06.9			16.5		095
1977	RC6	*	1977	09	09.99190	01	06	46.10	+07	09	46.4			16.5		095
1977	RD6	*	1977	09	09.99190	01	08	50.01	+02	40	06.5			16.5	1	095
1977	RE6	*	1977	09	09.99190	01	09	02.65	+08	16	23.2			16.5	1	095
1977	RF6	*	1977	09	09.99190	01	09	05.42	+10	13	16.4			17.0	1	095
73			1977	09	09.99190	01	09	24.43	+07	22	09.3	0.4+	4+		1	095
127			1977	09	09.99190	01	11	09.91	+02	04	25.3	0.1+	1-		1	095
1977	RG6	*	1977	09	09.99691	00	37	19.33	+06	07	40.3			17.0	3	095
1977	RH6	*	1977	09	11.01140	01	20	28.30	+13	39	21.3			16.0	3	095
1977	RJ6	*	1977	09	11.01140	01	42	07.05	+08	17	06.9			17.0	2	095
73			1977	09	11.01452	01	08	51.35	+07	19	48.0	0.4+	4+		1	095
1977	RK6	*	1977	09	11.01452	01	09	54.77	+07	30	50.2			17.0	3	095
1977	RL6	*	1977	09	11.01452	01	10	18.27	+11	27	47.6			16.2	1	095
1977	RM6	*	1977	09	11.01452	01	11	08.02	+08	28	16.3			17.0	1	095
1977	RN6	*	1977	09	11.01452	01	11	25.40	+09	52	44.1			16.5	1	095
1977	RO6	*	1977	09	11.01452	01	13	14.89	+09	26	20.7			17.0	1	095
1977	RP6	*	1977	09	11.01452	01	13	18.61	+07	14	47.6			17.0	1	095
1977	RQ6	*	1977	09	11.01452	01	16	33.52	+14	02	12.0			16.5	1	095
1910			1977	09	11.01452	01	16	34.73	+10	41	42.3	0.2+	2+			095
1977	RR6	*	1977	09	11.01452	01	16	38.38	+09	43	34.9			17.0		095
2002			1977	09	11.01452	01	17	18.73	+05	50	03.6	0.3+	2+		1	095
1977	RS6	*	1977	09	11.01452	01	19	53.09	+05	10	14.9			16.5	1	095
1977	RT6	*	1977	09	11.01452	01	20	20.70	+07	44	01.1			17.5		095
1977	RU6	*	1977	09	11.01452	01	20	29.88	+09	18	11.9			16.5		095
1977	RV6	*	1977	09	11.01452	01	20	37.78	+10	20	16.5			17.5		095
1977	RW6	*	1977	09	11.01452	01	21	08.14	+07	42	10.3			17.5		095
1977	RX6	*	1977	09	11.01452	01	21	13.70	+09	09	50.1			17.0		095
1977	RY6	*	1977	09	11.01452	01	21	45.48	+09	22	58.9			17.5		095
1977	RZ6	*	1977	09	11.01452	01	21	46.37	+09	12	03.2			16.0		095
332			1977	09	11.01452	01	23	21.14	+06	58	40.7	0.2+	1+			095
1977	RA7	*	1977	09	11.01452	01	23	52.67	+11	03	19.1			17.5		095
1059			1977	09	11.01452	01	25	25.67	+11	57	03.2	0.2+	2+			095
1977	RB7	*	1977	09	11.01452	01	25	40.28	+11	48	29.8			17.0		095
1977	RC7	*	1977	09	11.01452	01	25	45.29	+06	10	27.2			17.0	1	095

1977	RD7	*	1977	09	11.01452	01	26	59.41	+12	02	12.7			17.0	095
1977	RE7	*	1977	09	11.01452	01	27	36.21	+06	51	51.8			16.0	095
1977	RF7	*	1977	09	11.01452	01	27	37.13	+08	55	41.5			16.5	095
1977	RG7	*	1977	09	11.01452	01	28	20.24	+07	15	58.2			17.0	095
1977	RH7	*	1977	09	11.01452	01	29	34.63	+07	44	32.8			16.5	095
1977	RJ7	*	1977	09	11.01452	01	29	58.54	+09	02	22.9			17.0	2 095
954			1977	09	11.01452	01	30	18.60	+08	37	28.9	0.1+	0		095
1977	RK7	*	1977	09	11.01452	01	31	57.21	+06	44	59.5			17.0	095
1309			1977	09	11.01452	01	33	00.14	+12	47	37.0				095
1977	RL7	*	1977	09	11.01452	01	33	05.12	+12	05	19.7			17.0	095
485			1977	09	11.01452	01	33	14.54	+10	21	11.6	0.3+	1+		095
1977	RM7	*	1977	09	11.01452	01	36	44.75	+08	53	49.2			17.0	095
1977	RN7	*	1977	09	11.01452	01	37	53.80	+12	11	44.8			16.0	095
327			1977	09	11.01452	01	39	24.98	+14	03	14.2				1 095
1977	RO7	*	1977	09	11.01452	01	39	49.04	+09	44	38.3			17.0	095
421			1977	09	11.01452	01	39	57.14	+10	25	28.1				095
1977	RP7	*	1977	09	11.01452	01	40	08.02	+09	30	00.4			17.0	095
1977	RQ7	*	1977	09	11.01452	01	41	37.88	+10	08	31.9			17.0	095
1977	TB1		1977	09	11.01452	01	43	02.02	+12	21	46.5			17.0	095
1977	RR7	*	1977	09	11.01452	01	43	32.69	+08	37	07.2			17.0	095
93			1977	09	11.01452	01	44	38.81	+13	19	57.9				1 095
885			1977	09	11.01452	01	45	01.14	+07	12	47.7				1 095
1977	VY		1977	09	11.01452	01	46	10.65	+09	50	15.6			16.5	1 095
1977	RS7	*	1977	09	11.01765	01	21	21.20	+08	06	59.4			16.5	2 095
1340			1977	09	12.81604	21	11	56.09	-16	23	52.0	0.2-	1-		1 095
1279			1977	09	12.81604	21	12	31.16	-16	53	58.0	0.2-	1+		1 095
1641			1977	09	12.81604	21	14	16.07	-17	02	35.7	1.2-	9-		1 095
1144			1977	09	12.81604	21	15	23.32	-13	00	38.1	0.1-	1-		1 095
1378			1977	09	12.81604	21	15	29.32	-21	53	45.3	0.1-	1-		1 095
716			1977	09	12.81604	21	19	26.52	-15	59	47.7	0.1+	0		095
1245			1977	09	12.81604	21	19	33.63	-15	23	56.2	0.1-	0		095
1977	RT3		1977	09	12.81604	21	21	05.60	-16	16	37.0			16.5	095
1977	QP4		1977	09	12.81604	21	22	14.78	-17	32	57.3			15.5	095
1977	RU3		1977	09	12.81604	21	23	42.94	-17	13	18.3			16.0	095
1977	RV3		1977	09	12.81604	21	27	07.38	-16	58	01.1			16.0	095
1988			1977	09	12.81604	21	29	17.50	-21	14	03.6	0.2-	2-		095
1977	RY3		1977	09	12.81604	21	30	43.47	-16	22	52.4			17.0	095
1977	QA5		1977	09	12.81604	21	31	25.97	-20	53	51.3			16.0	095
2057			1977	09	12.81604	21	33	01.50	-16	10	23.5			16.5	095
1805			1977	09	12.81604	21	33	38.78	-17	51	54.0	0.1-	1-		095
634			1977	09	12.81604	21	34	55.60	-20	37	21.7	0.3-	1-		095
1977	RB4		1977	09	12.81604	21	36	06.69	-13	09	09.4			15.8	095
516			1977	09	12.81604	21	38	04.90	-12	54	55.7	0.2-	0		1 095
545			1977	09	12.81604	21	38	37.35	-14	46	09.7	0.3-	1-		095
1497			1977	09	12.81604	21	38	43.01	-13	10	20.7	0.1-	1-		1 095
275			1977	09	12.81604	21	39	33.35	-16	00	00.1	0.3-	2-		095
160			1977	09	12.81604	21	39	41.37	-17	42	45.5	0.0	1-		095
1977	QB5		1977	09	12.81604	21	39	59.97	-19	22	47.2			16.5	095
1977	RC4		1977	09	12.81604	21	41	49.87	-12	41	07.6			16.0	1 095
21			1977	09	12.81604	21	42	14.97	-19	35	04.4	0.2-	2-		095
1977	QD5		1977	09	12.81604	21	42	59.57	-18	41	28.8			16.0	095
2096			1977	09	12.81604	21	43	46.43	-12	30	14.5	0.0	1-		1 095
1128			1977	09	12.81604	21	45	08.93	-15	11	36.9	0.2-	1-		095
1977	RD4		1977	09	12.81604	21	47	04.37	-16	14	31.1			15.5	095
364			1977	09	12.81604	21	47	45.03	-21	57	48.1	0.3-	1-		1 095
484			1977	09	12.81604	21	48	18.60	-22	24	21.5	0.1-	0		1 095
1977	QC1		1977	09	12.94797	23	53	32.54	+05	29	08.6			16.5	1 095
1977	RT7	*	1977	09	12.94797	23	55	57.25	+06	30	34.5			16.0	1 095
1228			1977	09	12.94797	23	58	53.66	+04	02	21.6	0.1+	1+		1 095

1977	QD1		1977	09	12.94797	00	00	01.13	+02	59	08.9			16.5		095
1977	RU7	*	1977	09	12.94797	00	00	10.69	+08	49	08.4			16.5	1	095
208			1977	09	12.94797	00	00	32.60	-00	20	51.4	0.0	1+		1	095
1977	RV7	*	1977	09	12.94797	00	01	52.18	-00	49	07.7			16.0		095
1977	QB1		1977	09	12.94797	00	02	00.19	+01	56	52.9			16.0		095
1977	QE1		1977	09	12.94797	00	04	06.08	+01	46	55.0			16.5		095
1977	QJ1		1977	09	12.94797	00	11	26.18	+04	49	24.3			15.5		095
1977	RW7	*	1977	09	12.94797	00	14	40.68	+05	25	19.3			17.0		095
1977	QZ2		1977	09	12.94797	00	15	19.83	+06	23	24.5			16.0		095
1977	RX7	*	1977	09	12.94797	00	16	10.95	+03	13	51.3			16.5		095
1777			1977	09	12.94797	00	16	50.81	+04	08	17.3	0.0	0			095
1269			1977	09	12.94797	00	17	45.69	-00	52	48.7	0.4+	2+		1	095
1319			1977	09	12.94797	00	21	28.44	+06	22	11.7	0.1+	0			095
1328			1977	09	12.94797	00	23	39.30	+08	39	18.8	0.1+	1-			095
395			1977	09	12.94797	00	24	43.12	+08	09	32.4	0.0	1+			095
1977	RY7	*	1977	09	12.94797	00	25	39.95	+02	33	34.5			16.2		095
41			1977	09	12.94797	00	26	17.11	+01	19	54.0	0.0	1+			095
592			1977	09	12.94797	00	28	50.72	-00	33	37.1	0.0	0		1	095
69			1977	09	12.94797	00	29	14.52	+03	54	19.3	0.0	0		1	095
1977	RZ7	*	1977	09	12.94797	00	31	31.30	+02	57	22.4			16.5	1	095
1051			1977	09	12.94797	00	32	31.75	+02	40	08.3	0.1-	1+			095
127			1977	09	13.02783	01	09	18.68	+01	57	22.1	0.1-	2-		1	095
1212			1977	09	13.02783	01	10	58.41	+00	37	50.6	0.1-	0		1	095
1185			1977	09	13.02783	01	12	49.77	-02	32	49.1	0.1+	0			095
1977	RA8	*	1977	09	13.02783	01	14	26.01	+03	21	06.8			16.5	1	095
1237			1977	09	13.02783	01	17	22.94	-05	33	34.3	0.1+	0		1	095
1977	RB8	*	1977	09	13.02783	01	25	52.06	+04	05	21.5			16.0	1	095
1860			1977	09	13.02783	01	30	35.69	-05	00	34.9	0.1+	1-		1	095
553			1977	09	13.02783	01	31	03.23	+00	03	27.9	0.2+	1-			095
912			1977	09	13.02783	01	33	09.89	-01	04	50.6	0.0	1-			095
758			1977	09	13.02783	01	35	48.22	+01	17	12.0					095
1279			1977	09	18.79670	21	11	01.06	-16	36	01.4				1	095
1641			1977	09	18.79670	21	11	36.97	-16	52	32.4	1.4-	10-			095
1144			1977	09	18.79670	21	13	20.32	-13	26	06.5				1	095
716			1977	09	18.79670	21	16	58.35	-16	25	14.6	0.1-	1-			095
1245			1977	09	18.79670	21	17	12.54	-15	41	28.5	0.3-	1-			095
755			1977	09	18.79670	21	19	50.19	-13	25	28.3	0.3-	1-		1	095
1977	RU3		1977	09	18.79670	21	21	10.07	-17	26	55.7			16.3		095
1977	SP	*	1977	09	18.79670	21	25	13.60	-16	44	45.7			16.0		095
1977	SQ	*	1977	09	18.79670	21	27	34.91	-20	28	58.1			16.0		095
1977	SR	*	1977	09	18.79670	21	29	57.69	-16	20	28.9			16.5		095
634			1977	09	18.79670	21	32	43.63	-21	09	22.0	0.5-	2-			095
1977	RB4		1977	09	18.79670	21	33	39.94	-13	45	58.3			15.5		095
1977	SS	*	1977	09	18.79670	21	34	01.57	-17	45	47.1			16.5		095
516			1977	09	18.79670	21	34	12.54	-12	48	58.1	0.4-	1-		1	095
545			1977	09	18.79670	21	35	22.91	-14	34	29.0	0.4-	2-			095
1497			1977	09	18.79670	21	35	44.54	-13	24	17.4	0.3-	1-		1	095
160			1977	09	18.79670	21	36	10.54	-17	48	12.3	0.3-	2-			095
275			1977	09	18.79670	21	36	16.13	-16	20	27.6	0.5-	2-			095
1977	RC4		1977	09	18.79670	21	39	02.59	-12	58	02.6			16.0	1	095
21			1977	09	18.79670	21	39	46.38	-19	39	46.4	0.4-	3-			095
1977	QC5		1977	09	18.79670	21	40	52.60	-21	46	58.1			16.3	1	095
1128			1977	09	18.79670	21	41	53.78	-15	25	35.5	0.3-	2-			095
364			1977	09	18.79670	21	43	50.12	-22	17	26.0	0.5-	3-		1	095
1977	RD4		1977	09	18.79670	21	45	33.72	-16	57	42.9			15.5	1	095
1481			1977	09	18.98690	00	56	43.17	+07	32	40.7	0.1+	1+		1	095
1559			1977	09	18.98690	00	57	03.30	+09	38	12.2	0.2+	1+		1	095
1977	RA6		1977	09	18.98690	00	59	04.40	+08	44	52.2			16.2	1	095
1841			1977	09	18.98690	00	59	24.63	+04	07	15.8	0.1+	0		1	095

1977	RZ5		1977	09	18.98690	00	59	36.60	+10	18	51.4			095
1977	RC6		1977	09	18.98690	01	02	24.70	+06	23	44.0		16.5	1 095
1977	ST	*	1977	09	18.98690	01	03	08.34	+11	24	11.1		16.2	095
1977	RB6		1977	09	18.98690	01	03	09.51	+06	08	42.0		16.5	095
1977	SU	*	1977	09	18.98690	01	03	46.61	+04	52	39.5		17.0	1 095
73			1977	09	18.98690	01	03	47.75	+06	56	57.0	0.3+ 3+		095
1977	RE6		1977	09	18.98690	01	04	04.58	+07	42	49.5		16.5	095
1977	RL6		1977	09	18.98690	01	05	19.92	+10	55	35.4		16.2	095
1977	RM6		1977	09	18.98690	01	06	18.20	+08	03	17.0		16.2	095
1977	RN6		1977	09	18.98690	01	06	53.53	+09	26	50.8		16.5	095
1977	RO6		1977	09	18.98690	01	07	38.99	+09	09	49.9		17.0	095
1977	RP6		1977	09	18.98690	01	07	57.31	+07	09	21.9		17.0	095
1178			1977	09	18.98690	01	10	03.64	+03	36	42.4	0.2+ 1+		1 095
1977	SV	*	1977	09	18.98690	01	10	59.53	+10	49	17.8		17.7	095
1977	SW	*	1977	09	18.98690	01	11	46.87	+03	19	39.0		16.5	1 095
1977	RR6		1977	09	18.98690	01	12	05.70	+09	49	28.7		17.0	095
1910			1977	09	18.98690	01	12	35.58	+09	59	33.0	0.2+ 2+		095
2002			1977	09	18.98690	01	12	38.13	+04	49	09.4	0.2+ 1+		095
1977	SX	*	1977	09	18.98690	01	13	14.07	+06	37	34.3		17.0	095
1977	SY	*	1977	09	18.98690	01	13	43.24	+05	50	56.8		16.5	095
1977	SZ	*	1977	09	18.98690	01	14	17.73	+03	29	16.8		17.5	1 095
1977	RV6		1977	09	18.98690	01	14	27.84	+09	53	18.5		17.0	095
1977	RS6		1977	09	18.98690	01	15	26.15	+04	24	28.2		16.5	1 095
1977	SA1	*	1977	09	18.98690	01	16	19.69	+03	08	02.8		16.5	1 095
1977	SB1	*	1977	09	18.98690	01	16	23.56	+03	34	27.7		17.0	1 095
1977	RW6		1977	09	18.98690	01	16	45.75	+07	21	11.4		17.5	095
1977	RZ6		1977	09	18.98690	01	17	04.57	+09	09	36.3		16.0	095
1977	SC1	*	1977	09	18.98690	01	18	36.26	+03	45	04.7		17.5	1 095
332			1977	09	18.98690	01	18	48.14	+06	37	32.8	0.2+ 1+		095
1059			1977	09	18.98690	01	21	13.62	+11	01	53.1	0.2+ 2+		095
1977	RC7		1977	09	18.98690	01	21	40.84	+05	39	29.6		17.0	095
1977	RB8		1977	09	18.98690	01	22	08.36	+03	58	31.2		16.0	1 095
1977	SD1	*	1977	09	18.98690	01	23	03.35	+11	41	49.0		17.0	095
1977	RE7		1977	09	18.98690	01	23	53.20	+06	20	41.4		16.0	095
1977	RH7		1977	09	18.98690	01	24	17.87	+07	34	45.0		16.5	095
1977	RF7		1977	09	18.98690	01	24	28.40	+07	46	08.5		16.5	095
1977	RG7		1977	09	18.98690	01	24	43.07	+06	22	22.4		17.0	095
1977	SE1	*	1977	09	18.98690	01	25	28.52	+12	12	02.0		17.5	1 095
954			1977	09	18.98690	01	26	22.74	+08	10	18.5	0.1+ 0		095
1977	SF1	*	1977	09	18.98690	01	28	55.67	+04	35	18.0		17.0	2 095
1309			1977	09	18.98690	01	29	53.41	+12	11	10.7	0.2+ 1+		1 095
485			1977	09	18.98690	01	30	14.72	+09	22	17.3	0.3+ 2+		095
1977	SG1	*	1977	09	18.98690	01	33	22.02	+05	35	31.2		17.5	1 095
1977	RM7		1977	09	18.98690	01	34	04.02	+08	35	07.5		17.0	095
1977	SH1	*	1977	09	18.98999	01	05	40.76	+13	11	41.4		17.0	2 095
1977	SJ1	*	1977	09	19.04912	02	10	32.01	+09	50	23.5		17.0	095
1977	SK1	*	1977	09	19.05254	01	48	15.51	+13	33	34.2		17.0	1 095
1908			1977	09	19.05254	01	50	24.77	+11	55	55.4	0.1+ 1+		1 095
1289			1977	09	19.05254	01	51	43.58	+11	15	44.2	0.1+ 2+		1 095
1977	SL1	*	1977	09	19.05254	01	54	44.68	+13	01	49.8		17.0	095
1977	TZ		1977	09	19.05254	01	56	38.47	+11	26	25.8		16.0	095
1652			1977	09	19.05254	01	56	40.37	+16	19	39.8	0.4+ 3+		095
2072			1977	09	19.05254	01	57	10.99	+10	19	20.6	0.2+ 0		095
1977	UP		1977	09	19.05254	01	57	57.05	+13	56	03.2		16.5	095
1977	SM1	*	1977	09	19.05254	01	58	34.77	+10	14	07.8		17.0	095
401			1977	09	19.05254	02	00	42.88	+10	01	48.3	0.1+ 1+		095
2151			1977	09	19.05254	02	01	14.15	+07	50	58.3		16.0	1 095
1494			1977	09	19.05254	02	01	32.48	+12	25	14.6	0.3+ 2+		095
1977	SN1	*	1977	09	19.05254	02	03	32.64	+13	54	08.4		16.5	095

1977	SO1	*	1977	09	19.05254	02	05	25.15	+14	22	58.8		17.0	095
1977	SP1	*	1977	09	19.05254	02	06	21.24	+15	04	15.1		16.5	095
1638			1977	09	19.05254	02	06	54.77	+12	51	18.7	0.3+ 1+		095
1977	SQ1	*	1977	09	19.05254	02	10	12.23	+12	18	24.2		17.0	095
1977	SR1	*	1977	09	19.05254	02	11	17.07	+14	14	15.5		17.0	095
345			1977	09	19.05254	02	13	09.32	+17	03	32.0	0.4+ 3+		095
1519			1977	09	19.05254	02	13	39.65	+15	08	08.7	0.4+ 1+		095
1438			1977	09	19.05254	02	14	03.98	+15	27	36.9			095
1977	SS1	*	1977	09	19.05254	02	16	17.07	+08	24	04.8		16.5 1	095
825			1977	09	19.05254	02	16	42.67	+08	06	09.7	0.3+ 1+	1	095
1977	ST1	*	1977	09	19.05254	02	16	54.18	+09	54	00.8		16.5	095
1977	SU1	*	1977	09	19.05254	02	16	59.50	+12	14	13.8		15.5	095
1977	SV1	*	1977	09	19.05254	02	17	00.01	+11	22	13.0		17.0	095
1913			1977	09	19.05254	02	17	21.12	+14	43	54.0			095
906			1977	09	19.05254	02	19	25.61	+08	03	28.7		1	095
461			1977	09	19.05254	02	20	08.22	+12	25	52.8			095
1977	SW1	*	1977	09	19.05254	02	20	20.66	+09	13	46.7		16.5	095
1977	SX1	*	1977	09	19.05254	02	22	32.62	+10	49	45.9		16.5	095
1375			1977	09	19.05254	02	24	16.86	+09	13	41.7		1	095
1977	SY1	*	1977	09	19.05254	02	25	18.98	+14	07	14.0		17.0	095
1977	SZ1	*	1977	09	19.05596	01	50	21.16	+09	45	47.0		17.5 1	095
1977	UQ		1977	09	19.05596	01	50	21.46	+11	20	27.5		16.5 1	095
1977	SA2	*	1977	09	19.05596	02	16	03.27	+10	45	39.4		17.0	095
1977	SB2	*	1977	09	19.05596	02	19	46.07	+13	12	38.3		17.0 1	095
1977	SC2	*	1977	09	19.90518	23	49	22.38	+05	58	37.0		16.0 1	095
1228			1977	09	19.90518	23	53	13.78	+03	32	06.6	0.0 1+	1	095
1977	RU7		1977	09	19.90518	23	54	12.97	+08	24	07.2		16.2 1	095
1977	QD1		1977	09	19.90518	23	54	33.06	+02	30	13.3		16.5	095
208			1977	09	19.90518	23	55	05.47	-00	52	16.8	0.0 1+	1	095
1977	SD2	*	1977	09	19.90518	23	55	31.88	+07	40	08.4		17.0 1	095
1977	QB1		1977	09	19.90518	23	57	01.22	+00	57	46.4		16.0	095
1977	QY2		1977	09	19.90518	23	59	16.12	+03	00	22.1		16.5 2	095
1977	QE1		1977	09	19.90518	00	00	01.16	+01	09	30.2		17.0	095
1977	SE2	*	1977	09	19.90518	00	04	14.47	+00	56	14.3		17.0	095
1977	SF2	*	1977	09	19.90518	00	04	42.67	+00	58	28.6		17.0 2	095
1977	QJ1		1977	09	19.90518	00	04	58.00	+04	38	16.4		15.5	095
1977	SG2	*	1977	09	19.90518	00	07	45.30	+00	37	34.0		17.0	095
2154			1977	09	19.90518	00	07	47.38	+00	41	31.9		17.0	095
1977	SH2	*	1977	09	19.90518	00	08	00.41	+02	28	28.4		17.0	095
1977	RW7		1977	09	19.90518	00	08	22.44	+05	04	58.4		17.0	095
1977	SJ2	*	1977	09	19.90518	00	09	09.26	+00	08	20.6		17.0 1	095
1977	QZ2		1977	09	19.90518	00	09	14.08	+06	33	19.9		15.5	095
1977	RX7		1977	09	19.90518	00	10	45.41	+02	12	21.2		16.5	095
1777			1977	09	19.90518	00	11	01.60	+03	40	22.2	0.0 0		095
1319			1977	09	19.90518	00	16	30.19	+05	50	56.2	0.0 1+		095
1328			1977	09	19.90518	00	19	24.10	+08	06	17.0	0.1+ 1+	1	095
395			1977	09	19.90518	00	19	24.26	+07	37	07.2	0.1+ 1+	1	095
1977	RY7		1977	09	19.90518	00	20	17.30	+02	03	10.3		16.2	095
41			1977	09	19.90518	00	21	16.98	+00	19	40.0	0.1+ 0		095
69			1977	09	19.90518	00	24	39.68	+03	07	40.4	0.1+ 1+	1	095
1977	RZ7		1977	09	19.90518	00	25	30.56	+02	20	42.0		16.5 1	095
2016			1977	09	19.90518	00	26	48.14	+02	29	36.2	0.1- 1+	1	095
1051			1977	09	19.90518	00	28	31.78	+01	20	50.6	0.1- 1+	1	095
1212			1977	09	19.97600	01	07	44.66	+00	06	53.0	0.1- 0	1	095
1185			1977	09	19.97600	01	08	00.56	-03	09	00.6	0.3+ 0	1	095
1178			1977	09	19.97600	01	09	24.96	+03	30	28.0	0.1+ 1+	1	095
1977	RA8		1977	09	19.97600	01	10	47.70	+02	52	46.7		16.2 1	095
1977	SK2	*	1977	09	19.97600	01	11	03.56	+02	07	31.2		17.5 3	095
2002			1977	09	19.97600	01	11	57.94	+04	41	02.8	0.3+ 1+	1	095

1977	RS6		1977	09	19.97600	01	14	46.84	+04	18	11.2			16.5	1	095
1977	SA1		1977	09	19.97600	01	15	41.01	+03	04	29.1			16.8		095
1849			1977	09	19.97600	01	19	28.16	-02	27	27.7	0.2+	1+			095
1977	SL2	*	1977	09	19.97600	01	20	36.18	+01	47	59.4			17.0		095
1977	RB8		1977	09	19.97600	01	21	28.00	+03	57	14.7			15.8	1	095
1977	SM2	*	1977	09	19.97600	01	26	03.12	-04	22	05.5			16.0	1	095
553			1977	09	19.97600	01	27	10.16	-00	27	19.4	0.4+	0			095
1977	SN2	*	1977	09	19.97600	01	28	34.09	+02	34	55.0			17.0		095
912			1977	09	19.97600	01	28	42.86	-01	14	49.4	0.1+	1-			095
1977	SO2	*	1977	09	19.97600	01	31	00.08	+00	21	30.9			17.2		095
758			1977	09	19.97600	01	32	43.43	+00	45	47.5	0.2+	0			095
1977	SP2	*	1977	09	19.97600	01	33	15.68	+00	46	09.4			17.2		095
1957			1977	09	19.97600	01	41	29.56	+00	23	25.4	0.2+	0			095
1977	SQ2	*	1977	09	19.97600	01	45	10.84	-00	56	58.6			16.0	1	095
1977	SR2	*	1977	09	19.97600	01	45	51.76	-02	58	06.1			17.0	1	095
1977	SS2	*	1977	09	19.97600	01	46	38.78	-02	06	03.4			16.5	1	095
1977	ST		1977	09	21.98266	01	01	05.29	+11	15	40.0			16.2	1	095
73			1977	09	21.98266	01	01	35.58	+06	46	28.8	0.3+	2+		1	095
1977	RE6		1977	09	21.98266	01	02	06.19	+07	29	25.0			16.5	1	095
1977	RL6		1977	09	21.98266	01	03	14.00	+10	41	26.4			16.2	1	095
1977	RM6		1977	09	21.98266	01	04	14.41	+07	52	11.4			16.2		095
1977	RN6		1977	09	21.98266	01	04	47.86	+09	14	10.5			16.5	1	095
1977	RR6		1977	09	21.98266	01	09	55.74	+09	49	00.2			17.0		095
1910			1977	09	21.98266	01	10	51.24	+09	41	39.2	0.2+	1+			095
1977	RW6		1977	09	21.98266	01	14	48.42	+07	11	33.4			17.5		095
1977	RZ6		1977	09	21.98266	01	15	01.62	+09	07	06.0			16.0		095
332			1977	09	21.98266	01	16	45.76	+06	27	54.1	0.2+	1+			095
1059			1977	09	21.98266	01	19	19.01	+10	38	20.8	0.1+	1+			095
1977	RC7		1977	09	21.98266	01	19	52.60	+05	26	28.0			17.0	1	095
1977	ST2	*	1977	09	21.98266	01	19	58.06	+05	39	17.5			17.0	1	095
1977	SU2	*	1977	09	21.98266	01	20	19.82	+07	17	50.0			16.5		095
1977	RH7		1977	09	21.98266	01	21	52.32	+07	28	50.6			16.5		095
1977	RE7		1977	09	21.98266	01	22	09.88	+06	07	16.0			16.0		095
1977	RF7		1977	09	21.98266	01	22	58.45	+07	17	38.9			16.5		095
1977	RG7		1977	09	21.98266	01	23	04.06	+06	00	14.5			17.0	1	095
1977	SV2	*	1977	09	21.98266	01	23	09.12	+13	17	34.0			17.0	1	095
954			1977	09	21.98266	01	24	36.62	+07	58	23.0	0.0	1-			095
1977	SW2	*	1977	09	21.98266	01	25	28.78	+12	59	01.5			17.0		095
1977	SX2	*	1977	09	21.98266	01	25	38.49	+12	51	38.3			16.5		095
1309			1977	09	21.98266	01	28	25.92	+11	55	06.2	0.1+	1+			095
485			1977	09	21.98266	01	28	46.12	+08	57	10.1	0.3+	2+			095
1977	RM7		1977	09	21.98266	01	32	55.47	+08	27	18.2			17.0		095
327			1977	09	21.98266	01	33	03.60	+14	04	15.4	0.2+	1+		1	095
1977	SY2	*	1977	09	21.98266	01	34	36.68	+07	37	33.4			16.5		095
93			1977	09	21.98266	01	37	58.04	+13	21	24.3	0.8+	5+		1	095
1908			1977	09	22.04203	01	48	44.22	+11	51	16.6	0.0	0		1	095
1977	UQ		1977	09	22.04203	01	48	47.14	+11	16	59.6			16.5	1	095
1977	SZ2	*	1977	09	22.04203	01	53	21.26	+14	05	48.8			17.0		095
2072			1977	09	22.04203	01	55	52.94	+10	19	40.1	0.2+	1+			095
1977	SM1		1977	09	22.04203	01	56	49.50	+10	06	58.4			17.0		095
1575			1977	09	22.04203	01	56	49.90	+15	50	30.6	0.1+	0			095
2151			1977	09	22.04203	01	59	16.27	+07	55	16.7			16.0		095
1494			1977	09	22.04203	02	00	41.74	+12	14	28.0	0.2+	1+			095
1977	SN1		1977	09	22.04203	02	02	08.68	+13	48	40.6			16.5		095
1977	SA3	*	1977	09	22.04203	02	04	14.95	+11	52	45.2			17.0		095
1977	SB3	*	1977	09	22.04203	02	05	47.73	+13	35	47.0			17.0		095
1977	SS1		1977	09	22.04203	02	14	45.32	+08	30	25.2			16.5	1	095
1977	SB2		1977	09	22.04203	02	18	07.13	+13	40	56.1			17.0		095
1616			1977	09	22.04203	02	26	49.91	+09	25	09.1				1	095

1289		1977	09	22.04377	01	50	13.14	+11	05	33.6	0.1+	1+		1 095
1977	SL1	1977	09	22.04377	01	53	17.72	+12	58	14.8			17.0	095
1977	TZ	1977	09	22.04377	01	54	39.19	+11	38	26.6			16.0	095
1652		1977	09	22.04377	01	54	50.00	+16	10	36.4	0.3+	2+		095
1977	UP	1977	09	22.04377	01	56	39.72	+13	59	55.0			17.0	095
401		1977	09	22.04377	01	59	16.90	+09	57	04.2	0.1+	0		095
1638		1977	09	22.04377	02	05	23.26	+12	42	56.6	0.2+	1+		095
1977	SP1	1977	09	22.04377	02	05	25.98	+14	57	11.7			16.5	095
1977	SC3 *	1977	09	22.04377	02	10	25.88	+15	39	29.0			17.0	095
1519		1977	09	22.04377	02	12	15.39	+15	19	48.6	0.2+	1+		095
345		1977	09	22.04377	02	12	19.18	+16	47	43.7	0.2+	2+		1 095
1438		1977	09	22.04377	02	13	16.14	+15	22	57.6				095
825		1977	09	22.04377	02	15	18.28	+07	54	36.0	0.2+	1+		1 095
1977	SV1	1977	09	22.04377	02	15	43.16	+11	15	05.1			17.0	095
1977	ST1	1977	09	22.04377	02	16	00.98	+09	47	14.3			16.5	095
1913		1977	09	22.04377	02	16	18.30	+14	41	03.1				095
1977	SU1	1977	09	22.04377	02	16	21.76	+11	57	54.7			15.5	095
906		1977	09	22.04377	02	17	59.98	+08	03	52.0				1 095
461		1977	09	22.04377	02	19	12.82	+12	19	05.8				095
1977	SW1	1977	09	22.04377	02	19	25.55	+09	06	41.0			16.5	1 095
725		1977	09	22.04377	02	21	13.95	+08	32	38.6				1 095
1375		1977	09	22.04377	02	23	13.32	+09	10	43.6				1 095
1957		1977	09	23.04357	01	39	31.33	+00	15	03.2	0.0	0		1 095
885		1977	09	23.04357	01	40	19.69	+06	23	18.7	0.0	0		1 095
1977	SD3 *	1977	09	23.04357	01	45	51.88	+03	16	36.3			16.5	095
1977	VK1	1977	09	23.04357	01	47	26.68	+00	50	23.8			16.0	095
1977	SE3 *	1977	09	23.04357	01	49	00.00	+00	17	05.9			17.0	095
2040		1977	09	23.04357	01	50	43.44	+03	16	17.7	0.1+	0	16.0	095
1977	SF3 *	1977	09	23.04357	01	50	44.17	+00	13	08.7			16.5	095
1186		1977	09	23.04357	01	51	17.47	+03	53	32.1	0.1+	0		095
1977	TR3	1977	09	23.04357	01	51	48.07	+06	39	02.1			17.5	1 095
1977	TS3	1977	09	23.04357	01	54	01.70	+04	17	46.1			16.0	095
5		1977	09	23.04357	01	57	44.61	+04	48	03.2	0.1+	0		095
1977	VM1	1977	09	23.04357	01	58	21.77	+00	45	07.7			16.0	095
1977	SG3 *	1977	09	23.04357	01	58	23.47	-01	00	53.8			17.0	1 095
1977	SH3 *	1977	09	23.04357	01	58	30.08	-00	16	34.4			16.5	095
1731		1977	09	23.04357	02	00	20.88	+05	33	38.9	0.0	0		095
154		1977	09	23.04357	02	00	26.51	+03	37	11.9	0.0	1-		095
1977	SJ3 *	1977	09	23.04357	02	00	45.34	+03	44	39.1			17.0	095
1977	SK3 *	1977	09	23.04357	02	02	42.31	+05	07	47.5			17.5	095
1977	SL3 *	1977	09	23.04357	02	03	06.85	+04	49	19.5			17.0	095
1385		1977	09	23.04357	02	03	53.59	+00	53	17.9	0.1+	1-		095
1977	SM3 *	1977	09	23.04357	02	05	03.00	+06	07	55.0			17.5	1 095
1977	SN3 *	1977	09	23.04357	02	08	40.10	-00	11	28.9			17.0	095
237		1977	09	23.04357	02	10	20.64	-00	50	09.4	0.2-	1-		095
1811		1977	09	23.04357	02	11	17.52	+06	10	24.2	0.1+	0		095
1078		1977	09	23.04357	02	14	55.33	+01	22	43.1	0.2-	2-		1 095
1388		1977	09	23.04357	02	15	15.79	+04	17	30.5	0.1+	0		095
1977	SO3 *	1977	09	23.04357	02	15	57.26	+03	09	40.2			17.0	095
1977	SP3 *	1977	09	23.04669	01	51	05.27	+00	45	10.6			17.0	095
1977	SQ3 *	1977	09	23.04669	01	59	42.29	+07	31	26.0			16.5	3 095
1319		1977	10	06.86735	00	04	03.75	+04	26	17.5	0.0	1-		1 095
395		1977	10	06.86735	00	05	52.95	+06	02	35.7	0.1-	0		1 095
1328		1977	10	06.86735	00	08	19.95	+06	29	46.4	0.0	1-		1 095
469		1977	10	06.86735	00	09	44.33	+10	55	10.4	0.1-	1-		1 095
88		1977	10	06.86735	00	11	08.33	+10	42	38.8	0.1-	1+		1 095
69		1977	10	06.86735	00	12	29.92	+01	04	51.9	0.0	1-		095
2016		1977	10	06.86735	00	14	17.37	+01	15	54.4	0.0	0		2 095
1174		1977	10	06.86735	00	15	09.03	+03	44	03.7	0.0	0		095

1977	TD4	*	1977	10	06.86735	00	15	47.98	+09	09	14.0		16.0	095
392			1977	10	06.86735	00	18	50.02	+10	47	29.1	0.1- 1-	1	095
872			1977	10	06.86735	00	22	47.60	+03	42	31.2	0.1+ 1+		095
231			1977	10	06.86735	00	24	13.43	+05	14	09.2	0.2- 2-		095
1977	TE4	*	1977	10	06.86735	00	28	29.84	+05	57	22.4		16.0	095
1977	TF4	*	1977	10	06.86735	00	30	32.70	+08	21	37.9		16.0	095
153			1977	10	06.86735	00	35	44.86	+10	30	15.2	0.1- 0	1	095
1109			1977	10	06.86735	00	37	07.06	+10	18	48.6	0.2- 1-	1	095
841			1977	10	06.86735	00	37	46.33	+06	17	09.8	0.0 0		095
229			1977	10	06.86735	00	38	13.82	+03	05	00.0	0.0 0		095
1977	TG4	*	1977	10	06.86735	00	42	04.86	+07	50	14.2		16.0	095
1481			1977	10	06.86735	00	43	00.09	+06	28	21.4	0.0 0	1	095
1977	SP1		1977	10	07.95280	01	52	54.44	+13	51	18.7		17.0	095
1977	TH4	*	1977	10	07.95280	01	53	04.29	+10	35	15.0		17.0	095
421			1977	10	07.95644	01	34	49.84	+06	15	42.3	0.3- 1-	1	095
1977	TJ4	*	1977	10	07.95644	01	36	38.23	+10	37	07.5		16.5	095
1977	TA1		1977	10	07.95644	01	37	03.91	+13	36	04.7		17.0	1 095
1908			1977	10	07.95644	01	37	20.87	+11	12	17.2	0.0 0	1	095
1289			1977	10	07.95644	01	39	35.59	+09	55	50.9	0.1+ 1+		095
1977	TZ		1977	10	07.95644	01	40	07.48	+12	29	13.6		15.5	095
1652			1977	10	07.95644	01	41	34.58	+14	54	55.8	0.3+ 2+	1	095
1977	SL1		1977	10	07.95644	01	42	10.84	+12	19	05.6		16.0	095
1977	TK4	*	1977	10	07.95644	01	42	28.98	+11	48	02.2		17.0	095
1977	TL4	*	1977	10	07.95644	01	43	35.44	+09	10	14.3		16.5	095
2072			1977	10	07.95644	01	44	43.21	+10	03	53.3	0.1- 1-		095
2151			1977	10	07.95644	01	45	16.22	+08	09	48.6		15.8	095
1977	TM4	*	1977	10	07.95644	01	46	19.50	+06	40	11.7		17.2	1 095
1977	TN4	*	1977	10	07.95644	01	48	31.80	+07	48	24.2		18.0	095
401			1977	10	07.95644	01	49	22.74	+09	21	44.6	0.1+ 1+		095
1977	TO4	*	1977	10	07.95644	01	50	11.12	+08	19	04.6		16.5	095
1494			1977	10	07.95644	01	51	26.82	+10	48	00.0	0.2+ 1+		095
1977	TP4	*	1977	10	07.95644	01	51	46.15	+15	09	39.3		17.0	095
1977	TQ4	*	1977	10	07.95644	01	51	50.00	+13	02	38.0		17.0	095
1638			1977	10	07.95644	01	54	17.36	+11	41	33.0	0.1+ 1+		095
1977	TR4	*	1977	10	07.95644	01	54	17.60	+09	15	02.5		17.0	095
1977	TS4	*	1977	10	07.95644	01	55	47.74	+12	07	07.4		17.3	095
1977	SQ1		1977	10	07.95644	01	57	04.50	+11	29	09.6		17.0	095
1977	TT4	*	1977	10	07.95644	01	58	27.47	+14	47	05.5		17.5	095
1977	TU4	*	1977	10	07.95644	01	58	50.80	+07	33	56.6		16.8	095
1977	TV4	*	1977	10	07.95644	01	59	02.58	+14	09	39.2		16.5	095
1519			1977	10	07.95644	02	01	03.72	+16	05	02.2	0.1+ 1+	1	095
1977	SS1		1977	10	07.95644	02	03	20.87	+08	57	21.4		15.8	095
345			1977	10	07.95644	02	03	44.00	+14	50	01.6	0.2+ 2+		095
825			1977	10	07.95644	02	03	51.62	+06	38	15.4	0.1+ 0	1	095
1977	TW4	*	1977	10	07.95644	02	04	14.46	+11	50	36.2		17.3	095
1977	TX4	*	1977	10	07.95644	02	04	31.89	+08	28	36.5		17.0	095
1977	TY4	*	1977	10	07.95644	02	04	46.75	+08	18	22.6		17.0	095
1438			1977	10	07.95644	02	05	32.98	+14	36	52.8	0.1+ 1+		095
1977	TZ4	*	1977	10	07.95644	02	05	41.74	+13	57	23.1		17.5	095
906			1977	10	07.95644	02	07	03.92	+07	57	18.3	0.1+ 1-		095
1913			1977	10	07.95644	02	07	18.16	+14	07	29.2	0.2+ 0		095
1977	TA5	*	1977	10	07.95644	02	07	49.37	+13	21	07.2		17.5	1 095
1977	ST1		1977	10	07.95644	02	08	00.36	+08	57	30.8		16.0	1 095
1977	SW1		1977	10	07.95644	02	11	04.71	+08	15	56.0		16.8	1 095
461			1977	10	07.95644	02	11	12.36	+11	27	31.8	0.0 1+		095
1977	SX1		1977	10	07.95644	02	11	45.54	+10	08	49.6		16.0	095
1977	TB5	*	1977	10	07.96009	01	34	44.82	+13	01	44.0		17.0	1 095
1977	TC5	*	1977	10	07.96009	01	41	51.34	+14	29	41.8		17.5	095
1977	SU1		1977	10	07.96009	02	09	08.55	+10	07	49.9		16.0	1 095

1977	TD5	*	1977	10	07.96009	02	10	10.85	+08	25	35.7		17.3	1 095
1977	TE5	*	1977	10	08.02821	02	38	27.76	+11	27	48.7		16.5	6 095
1977	TF5	*	1977	10	08.02821	02	42	41.41	+09	34	13.2		17.0	2 095
1977	TG5	*	1977	10	08.02821	02	47	02.48	+08	44	24.0		16.5	6 095
57			1977	10	08.03322	02	33	55.22	+10	09	58.5	0.2+ 1+		1 095
377			1977	10	08.03322	02	36	42.64	+15	08	42.5	0.2+ 2+		1 095
2194			1977	10	08.03322	02	37	05.96	+10	56	28.8		16.5	1 095
956			1977	10	08.03322	02	37	34.62	+12	14	40.6	0.3+ 1+		095
1977	TH5	*	1977	10	08.03322	02	39	06.00	+12	14	59.1		16.0	095
715			1977	10	08.03322	02	40	00.51	+09	27	44.6	0.0 1-		095
1977	TJ5	*	1977	10	08.03322	02	42	06.60	+09	17	11.6		16.5	095
1977	TK5	*	1977	10	08.03322	02	43	08.28	+08	56	18.6		17.0	095
1247			1977	10	08.03322	02	43	45.89	+13	51	43.3	0.1+ 1+		095
1977	TL5	*	1977	10	08.03322	02	44	32.92	+06	36	30.2		16.5	6 095
1773			1977	10	08.03322	02	47	05.70	+10	21	36.2	0.3+ 1+		095
853			1977	10	08.03322	02	50	32.58	+08	53	33.0	0.2+ 1+		095
1977	TM5	*	1977	10	08.03322	02	56	22.83	+09	27	37.0		16.5	095
1889			1977	10	08.03322	02	57	13.31	+09	59	36.6	0.1+ 0		095
1410			1977	10	08.03322	02	57	46.56	+05	54	46.4	0.2+ 1+		1 095
470			1977	10	08.03322	02	58	03.70	+09	23	10.5	0.4- 1-		095
1208			1977	10	08.03322	03	00	33.55	+09	54	19.4	0.1+ 0		095
1977	TN5	*	1977	10	08.03322	03	07	59.59	+09	20	25.0		16.0	095
2150			1977	10	08.03822	02	54	01.46	+09	00	24.6		15.5	6 095
1977	TO5	*	1977	10	08.03822	02	58	48.47	+12	16	24.9		16.0	095
1425			1977	10	08.03822	03	06	53.14	+07	37	07.2	0.3+ 1+		095
1977	TP5	*	1977	10	08.79568	23	42	57.63	-00	44	19.6		17.5	3 095
1977	TQ5	*	1977	10	08.80037	23	40	11.10	+01	06	38.9		17.0	1 095
208			1977	10	08.80037	23	40	46.58	-02	13	41.3	0.2- 1-		1 095
1977	TR5	*	1977	10	08.80037	23	42	08.35	+01	31	20.4		17.0	1 095
1977	TS5	*	1977	10	08.80037	23	47	27.32	+03	50	59.7		15.0	095
1977	RW7		1977	10	08.80037	23	50	48.53	+03	56	50.1		17.0	095
1977	QZ2		1977	10	08.80037	23	52	16.50	+06	36	12.9		15.0	1 095
1977	RV		1977	10	08.80037	23	53	09.60	-01	25	31.5		15.5	095
1777			1977	10	08.80037	23	54	52.66	+02	15	20.3	0.1- 1-		095
1977	RX7		1977	10	08.80037	23	55	11.72	-00	45	51.5		16.0	095
1319			1977	10	08.80037	00	02	43.07	+04	16	22.8	0.1- 1-		095
1269			1977	10	08.80037	00	02	52.98	-02	36	49.0	0.2- 0		1 095
395			1977	10	08.80037	00	04	26.10	+05	51	25.2	0.2- 1-		095
1977	RY7		1977	10	08.80037	00	04	54.71	+00	35	25.2		16.5	095
1977	TZ2		1977	10	08.80037	00	05	28.07	-02	30	24.4		17.0	1 095
1977	TT5	*	1977	10	08.80037	00	06	04.78	+02	53	48.2		16.8	095
1328			1977	10	08.80037	00	07	07.58	+06	18	12.8	0.1- 1-		1 095
41			1977	10	08.80037	00	07	22.90	-02	20	51.7	0.1- 1-		1 095
1977	RZ7		1977	10	08.80037	00	08	45.26	+01	27	54.3		17.0	095
1977	TU5	*	1977	10	08.80037	00	09	19.11	+03	53	07.4		16.5	095
69			1977	10	08.80037	00	11	08.73	+00	51	04.8	0.2- 1-		095
2016			1977	10	08.80037	00	12	54.70	+01	07	48.5	0.0 0		095
1977	TV5	*	1977	10	08.80037	00	13	20.12	+05	18	30.5		16.5	095
1174			1977	10	08.80037	00	13	30.61	+03	41	09.4	0.1- 1+		095
178			1977	10	08.80037	00	13	37.59	-00	52	50.7	0.0 1-		095
1977	TW5	*	1977	10	08.80037	00	13	46.66	+01	00	53.0		17.0	095
1051			1977	10	08.80037	00	16	47.14	-02	16	38.3	0.3- 1-		1 095
1977	TX5	*	1977	10	08.80506	00	02	37.54	+06	04	37.3		17.0	095
1977	TY5	*	1977	10	08.87798	00	26	15.12	-07	22	58.1		16.5	2 095
1977	TZ5	*	1977	10	08.87798	00	44	01.11	-04	09	48.2		16.5	3 095
363			1977	10	08.88372	00	22	40.18	-06	25	08.6	0.1+ 0		095
1094			1977	10	08.88372	00	22	42.80	-12	48	43.8	0.1- 3-		1 095
1248			1977	10	08.88372	00	24	00.32	-12	20	52.2	0.4- 4-		1 095
1977	TA6	*	1977	10	08.88372	00	29	42.13	-06	21	23.3		16.0	095

1977	TB6	*	1977	10	08.88372	00	34	18.90	-11	01	58.0			16.5		095
488			1977	10	08.88372	00	35	59.26	-12	57	59.4	0.2-	3-		1	095
1977	TC6	*	1977	10	08.88372	00	36	44.87	-05	50	49.2			17.0		095
1977	TD6	*	1977	10	08.88372	00	37	01.59	-05	35	53.8			16.0		095
558			1977	10	08.88372	00	37	27.66	-05	51	21.1	0.0	1-			095
597			1977	10	08.88372	00	38	36.00	-06	48	07.7	0.3-	4-			095
1977	TE6	*	1977	10	08.88372	00	40	45.32	-05	46	41.4			16.5		095
1977	TF6	*	1977	10	08.88372	00	44	41.02	-10	04	46.0			16.5		095
1890			1977	10	08.88372	00	46	15.86	-08	46	40.2	0.0	2-			095
1977	TG6	*	1977	10	08.88372	00	48	11.51	-09	16	28.2			16.0		095
381			1977	10	08.88372	00	48	12.16	-12	20	02.2	0.1-	2-		1	095
1185			1977	10	08.88372	00	50	14.80	-04	42	07.9	0.1-	2-			095
129			1977	10	08.88372	00	52	04.12	-10	06	26.2	0.0	2-			095
1977	TH6	*	1977	10	08.88372	00	55	28.38	-07	18	05.2			17.0	1	095
1977	TJ6	*	1977	10	08.88372	00	55	31.31	-05	00	51.6			17.0	1	095
1237			1977	10	08.88372	00	55	34.60	-06	54	56.6	0.0	2-		1	095
1977	TK6	*	1977	10	08.96444	02	00	50.92	+00	27	49.8			17.0		095
1977	TL6	*	1977	10	08.96981	01	33	38.92	-02	55	53.3			16.0	1	095
1977	VK1		1977	10	08.96981	01	34	43.15	+00	45	07.8			15.5	1	095
1977	TM6	*	1977	10	08.96981	01	37	00.96	-05	24	17.2			15.8	1	095
1977	TN6	*	1977	10	08.96981	01	37	03.46	+00	15	16.6			15.5		095
1977	TO6	*	1977	10	08.96981	01	38	33.65	-03	42	58.1			17.0		095
2040			1977	10	08.96981	01	38	44.85	+02	50	38.5	0.1+	0	16.0		095
1977	TP6	*	1977	10	08.96981	01	41	09.94	-01	31	44.8			17.0		095
1977	SF3		1977	10	08.96981	01	41	24.80	-01	52	21.0			16.0		095
1977	TS3		1977	10	08.96981	01	45	01.00	+03	04	06.2			15.8		095
1977	SG3		1977	10	08.96981	01	45	49.90	-01	45	21.9			16.0		095
1977	SH3		1977	10	08.96981	01	46	03.77	-01	03	10.0			16.0		095
1977	TQ6	*	1977	10	08.96981	01	46	03.88	-03	10	41.6			17.2		095
1977	VM1		1977	10	08.96981	01	46	45.08	+00	19	02.8			16.0		095
5			1977	10	08.96981	01	46	50.28	+03	10	02.1	0.0	0			095
154			1977	10	08.96981	01	48	29.44	+03	24	42.0	0.1+	0		1	095
1977	TR6	*	1977	10	08.96981	01	50	36.10	+02	05	23.0			16.5		095
1731			1977	10	08.96981	01	51	12.10	+04	05	23.7	0.1+	1-		1	095
1977	TS6	*	1977	10	08.96981	01	53	13.22	+02	09	03.8			16.5		095
1385			1977	10	08.96981	01	53	56.20	-00	38	15.3	0.2+	1-			095
1977	SN3		1977	10	08.96981	01	58	11.27	-00	57	22.0			16.5		095
237			1977	10	08.96981	01	59	18.54	-01	58	32.2	0.1-	3-			095
1078			1977	10	08.96981	02	03	36.16	-00	05	23.8	0.1-	3-		1	095
1388			1977	10	08.96981	02	04	28.65	+03	46	40.0	0.2+	0		1	095
1977	TT6	*	1977	10	08.96981	02	05	02.42	+01	29	05.8			16.5	1	095
1977	TU6	*	1977	10	08.96981	02	08	16.66	-00	53	57.0			16.5	1	095
1186			1977	10	08.97518	01	39	09.17	+03	28	16.7	0.0	1-			095
122			1977	10	09.05382	03	04	31.87	+15	52	11.6	0.2+	1+		1	095
341			1977	10	09.05382	03	21	55.64	+19	41	29.6	0.2+	0			095
609			1977	10	09.05382	03	24	06.84	+13	45	19.5	0.2+	1+		1	095
279			1977	10	09.05382	03	30	22.85	+17	36	01.0	0.1+	1+			095
49			1977	10	09.05382	03	32	11.43	+23	44	24.0	0.5+	1+		1	095
468			1977	10	09.05382	03	34	35.21	+19	29	05.5	0.3-	1-			095
1977	TV6	*	1977	10	09.83963	00	07	29.22	-20	14	33.6			16.5	2	095
1977	TW6	*	1977	10	09.84484	23	47	33.78	-16	53	04.6			16.5	1	095
1977	TX6	*	1977	10	09.84484	23	53	11.32	-18	02	10.7			16.0		095
1975	BU		1977	10	09.84484	00	00	45.82	-20	55	13.6					095
1977	TY6	*	1977	10	09.84484	00	01	37.12	-14	25	33.6			15.0		095
1977	TZ6	*	1977	10	09.84484	00	09	33.74	-12	58	16.7			15.5	1	095
1771			1977	10	09.84484	00	10	12.00	-17	42	36.2	0.1-	3-			095
1753			1977	10	09.84484	00	11	34.62	-13	54	35.8	0.0	2-			095
630			1977	10	09.84484	00	11	52.18	-20	45	43.6	0.1-	3-			095
1847			1977	10	09.84484	00	15	20.29	-16	56	54.6	0.2-	3-			095

680		1977	10	09.84484	00	22	07.98	-14	59	33.8	0.4-	6-		1 095
1094		1977	10	09.85005	00	21	58.02	-12	56	54.3	0.0	3-		1 095
1977	TA7 *	1977	10	09.92988	00	49	26.19	-03	53	38.2			17.5	3 095
1849		1977	10	09.92988	01	03	59.09	-03	25	59.0	0.1+	1-		095
1841		1977	10	09.93683	00	45	33.40	+02	47	41.4	0.0	0		1 095
1977	TB7 *	1977	10	09.93683	00	45	43.26	+01	38	43.6			17.0	1 095
127		1977	10	09.93683	00	47	12.68	+00	41	03.7	0.2-	2-		1 095
1178		1977	10	09.93683	00	54	22.38	+01	16	32.0	0.0	0		095
1977	TC7 *	1977	10	09.93683	00	55	44.84	-00	58	24.4			17.0	095
2002		1977	10	09.93683	00	55	59.43	+01	46	00.5	0.0	1-		095
1212		1977	10	09.93683	00	56	40.25	-01	24	45.6	0.2-	2-		095
1977	RA8	1977	10	09.93683	00	56	41.84	+01	19	13.0			16.2	095
1977	RS6	1977	10	09.93683	00	58	37.05	+02	02	06.5			16.5	095
1977	SA1	1977	10	09.93683	00	58	46.36	+01	42	38.0			16.5	095
1465		1977	10	09.93683	01	03	04.39	-00	16	09.8			17.5	095
1977	TD7 *	1977	10	09.93683	01	03	15.38	+01	33	24.6			17.5	095
1977	SL2	1977	10	09.93683	01	04	29.04	+01	08	51.3			17.5	095
1977	RB8	1977	10	09.93683	01	05	36.30	+03	25	06.0			16.0	095
1977	RC7	1977	10	09.93683	01	07	07.15	+04	00	20.9			16.5	1 095
1977	RE7	1977	10	09.93683	01	09	30.24	+04	36	07.8			16.0	1 095
553		1977	10	09.93683	01	09	36.70	-02	00	46.2	0.1+	2-		095
1977	RG7	1977	10	09.93683	01	10	52.98	+03	33	50.7			16.5	095
1977	TE7 *	1977	10	09.93683	01	11	44.22	+04	14	16.1			16.5	1 095
912		1977	10	09.93683	01	12	09.95	-01	42	01.2	0.0	1-		095
1977	TF7 *	1977	10	09.93683	01	13	05.16	+03	31	13.8			17.5	095
1977	TG7 *	1977	10	09.93683	01	14	36.65	+04	02	54.4			17.5	1 095
758		1977	10	09.93683	01	19	45.29	-00	51	37.6	0.1+	1-		1 095
1977	TH7 *	1977	10	09.94377	00	47	43.55	+00	15	42.2			17.5	3 095
1185		1977	10	09.94377	00	49	09.80	-04	46	14.3	0.0	2-		3 095
1977	TJ7 *	1977	10	10.01685	02	48	35.59	+18	25	02.6			17.0	2 095
1977	TK7 *	1977	10	10.01685	02	48	46.40	+19	27	52.8			17.0	2 095
595		1977	10	10.02284	02	26	09.86	+18	29	01.5	0.2+	1+		1 095
1977	TL7 *	1977	10	10.02284	02	29	17.59	+24	13	42.8			16.0	1 095
1977	TV3	1977	10	10.02284	02	31	37.66	+17	04	14.7			16.0	095
1977	TZ3	1977	10	10.02284	02	34	27.60	+18	54	28.7			16.5	095
1977	TY3	1977	10	10.02284	02	35	07.52	+21	22	05.7			16.0	095
377		1977	10	10.02284	02	35	32.34	+14	56	58.4	0.2+	1+		1 095
403		1977	10	10.02284	02	37	35.14	+22	36	08.0	0.2+	2+		095
1977	TM7 *	1977	10	10.02284	02	44	13.78	+21	11	38.6			17.0	095
1418		1977	10	10.02284	02	44	23.06	+24	15	50.4	0.4+	3+		1 095
1396		1977	10	10.02284	02	44	33.11	+20	11	33.6	0.4+	3+		095
440		1977	10	10.02284	02	49	42.28	+19	12	21.2	0.4+	1+		095
1960		1977	10	10.02284	02	50	34.68	+19	22	43.0	0.3+	2+		095
1977	TN7 *	1977	10	10.02284	02	52	37.66	+23	27	30.5			16.2	095
1977	TO7 *	1977	10	10.02284	02	53	18.20	+18	11	47.8			16.5	095
1858		1977	10	10.02284	02	55	28.73	+18	51	57.8	0.3+	1+		095
1949		1977	10	10.02284	02	55	44.64	+23	38	45.2	0.3+	3+		1 095
1121		1977	10	10.02284	03	02	19.59	+23	53	03.8	0.3+	2+		1 095
122		1977	10	10.02284	03	04	02.27	+15	49	36.2	0.1+	1+		1 095
244		1977	10	10.02883	02	29	08.76	+14	50	29.5	0.4+	2+		1 095
395		1977	10	10.82071	00	02	58.07	+05	39	50.9	0.1-	0		095
1328		1977	10	10.82071	00	05	54.02	+06	06	09.2	0.0	1-		095
69		1977	10	10.82071	00	09	45.42	+00	36	50.4	0.1-	0		095
178		1977	10	10.82071	00	11	55.24	-01	01	57.2	0.1-	1-		1 095
872		1977	10	10.82071	00	19	51.44	+03	13	50.2	0.1+	0		095
231		1977	10	10.82071	00	21	03.75	+04	58	50.2	0.2-	1-		095
981		1977	10	10.82071	00	21	45.92	+00	09	14.0	0.1-	1-		095
1059		1977	10	10.87938	01	04	51.62	+07	47	45.6	0.0	0		095
1977	TB1	1977	10	10.87938	01	28	35.73	+12	12	40.7			16.5	1 095

1910		1977	10	10.88458	00	58	06.65	+07	31	55.2	0.0	0		095
1977	RZ6	1977	10	10.88458	00	59	55.18	+08	36	31.9			16.0	095
332		1977	10	10.88458	01	01	23.92	+05	14	33.8	0.0	0	1	095
1977	TP7 *	1977	10	10.88458	01	03	23.38	+06	34	18.2			16.5	095
1977	TQ7 *	1977	10	10.88458	01	04	08.85	+06	40	45.9			16.5	095
954		1977	10	10.88458	01	11	08.88	+06	29	40.6	0.2-	0		095
823		1977	10	10.88458	01	15	54.96	+13	51	04.0	0.0	1+	1	095
485		1977	10	10.88458	01	16	14.20	+05	51	30.4	0.1+	1-	1	095
1309		1977	10	10.88458	01	16	38.72	+09	50	07.6	0.0	0		095
327		1977	10	10.88458	01	17	19.46	+13	29	58.0	0.0	1+		095
93		1977	10	10.88458	01	21	41.02	+12	50	44.8	0.7+	6+		095
1977	TR7 *	1977	10	10.88458	01	24	36.12	+10	54	07.9			16.5	1 095
1977	VY	1977	10	10.88458	01	27	28.89	+08	25	37.0			16.5	1 095
1977	TS7 *	1977	10	10.88979	01	08	40.88	+12	26	08.7			16.5	2 095
1977	SX2	1977	10	10.88979	01	17	35.92	+08	07	03.9			16.5	2 095
1062		1977	10	10.88979	01	23	07.73	+14	43	21.1	0.1+	0	1	095
1845		1977	10	10.96756	02	09	43.52	-02	04	13.1	0.0	0	1	095
1977	TT7 *	1977	10	10.96756	02	15	16.14	+02	18	58.2			16.0	095
1148		1977	10	10.96756	02	16	17.67	-01	32	24.3	0.1+	1-		095
1977	TU7 *	1977	10	10.96756	02	20	09.80	-01	07	03.2			16.0	095
1977	TV7 *	1977	10	10.96756	02	25	04.24	+00	03	58.4			16.0	095
1055		1977	10	10.96756	02	26	19.54	+04	50	44.8	0.2+	0		095
1977	TW7 *	1977	10	10.96756	02	30	33.68	+05	40	08.0			16.0	1 095
903		1977	10	10.96756	02	32	30.92	+01	20	53.6	0.1+	0		095
1294		1977	10	10.96756	02	32	36.83	+01	01	10.6	0.0	3-		095
1947		1977	10	10.96756	02	35	42.38	-00	09	04.7	0.2+	0		095
482		1977	10	10.96756	02	37	56.33	+03	41	03.3	0.0	0		095
629		1977	10	10.96756	02	38	52.68	+03	36	40.4	0.0	0		095
170		1977	10	11.72367	22	29	05.60	+09	53	19.7	0.2-	0		095
1499		1977	10	11.72367	22	36	53.97	+10	12	09.9	0.3-	1-		095
1977	TX7 *	1977	10	11.72367	22	48	37.75	+03	11	56.0			16.5	3 095
170		1977	10	12.77924	22	28	38.18	+09	48	35.8	0.2-	1+		095
1499		1977	10	12.77924	22	36	47.40	+10	01	51.8	0.1-	0		095
1977	TY7 *	1977	10	12.77924	22	38	33.94	+09	16	29.5			16.5	095
1243		1977	10	12.77924	22	59	03.41	+12	16	31.6	0.1-	0	1	095
1977	TX7	1977	10	12.78201	22	47	58.06	+03	06	16.9			16.5	3 095
1977	TZ7 *	1977	10	12.78201	22	58	34.69	+08	57	39.2			16.5	3 095
395		1977	10	12.82848	00	01	33.46	+05	28	26.8	0.0	1-		095
1328		1977	10	12.82848	00	04	43.19	+05	54	13.9	0.0	1-		095
69		1977	10	12.82848	00	08	24.77	+00	22	54.5	0.1-	0	1	095
1977	TA8 *	1977	10	13.91213	01	28	34.25	+08	54	17.3			17.5	095
1977	TB8 *	1977	10	13.91213	01	37	44.91	+08	43	44.7			17.5	095
825		1977	10	13.91213	01	58	14.29	+06	05	49.2	0.0	0	1	095
1977	TC8 *	1977	10	13.91213	02	02	55.04	+09	29	05.9			16.5	1 095
2175		1977	10	13.91386	01	24	44.60	+12	01	43.6			17.0	1 095
1977	VY	1977	10	13.91386	01	24	55.53	+08	13	30.8			16.5	1 095
1977	TD8 *	1977	10	13.91386	01	25	55.20	+09	02	12.6			17.0	1 095
1977	UQ	1977	10	13.91386	01	31	06.59	+10	15	43.7			17.0	1 095
1908		1977	10	13.91386	01	32	22.75	+10	52	55.7	0.1+	0		095
1977	TA1	1977	10	13.91386	01	32	46.40	+12	54	51.6			16.5	095
1977	TZ	1977	10	13.91386	01	33	28.35	+12	42	28.5			15.8	095
1977	SZ1	1977	10	13.91386	01	34	23.50	+08	33	06.5			17.2	095
1289		1977	10	13.91386	01	34	52.10	+09	25	06.7	0.0	0		095
1977	SL1	1977	10	13.91386	01	36	59.62	+11	57	18.4			17.0	095
1977	TE8 *	1977	10	13.91386	01	38	25.27	+06	33	24.2			17.0	1 095
2151		1977	10	13.91386	01	38	55.43	+08	12	32.5			15.8	095
2072		1977	10	13.91386	01	39	09.78	+09	52	03.5	0.2-	2-		095
401		1977	10	13.91386	01	44	58.49	+09	05	27.1	0.1+	0		095
1494		1977	10	13.91386	01	46	25.96	+10	06	06.6	0.0	0		095

1638		1977	10	13.91386	01	49	14.23	+11	13	03.1	0.0	0	095
1977	TF8	* 1977	10	13.91386	01	57	58.32	+09	05	17.5		15.8	095
345		1977	10	13.91386	01	59	04.59	+13	53	21.9	0.0	0	1 095
1438		1977	10	13.91386	02	01	28.85	+14	11	41.2	0.1+	1+	1 095
906		1977	10	13.91386	02	01	50.90	+07	52	25.6	0.0	1-	1 095
1913		1977	10	13.91386	02	02	45.10	+13	47	53.1	0.0	0	1 095
1977	ST1	1977	10	13.91386	02	03	50.10	+08	34	33.0		16.2	1 095
1977	SU1	1977	10	13.91386	02	05	05.70	+09	19	21.2		16.0	1 095
1977	TG8	* 1977	10	13.91560	01	38	36.04	+15	01	37.6		17.5	1 095
885		1977	10	17.92365	01	23	25.50	+04	12	19.5	0.1-	1-	1 095
1977	UQ	1977	10	17.92538	01	27	20.86	+10	00	28.7		16.5	1 095
1977	TZ	1977	10	17.92538	01	28	50.08	+12	49	52.4		16.0	1 095
1908		1977	10	17.92538	01	28	57.58	+10	39	04.3	0.0	0	095
421		1977	10	17.92538	01	29	13.81	+04	18	00.4	0.5-	4-	3 095
1977	UY	* 1977	10	17.92538	01	29	23.50	+11	54	32.3		17.5	1 095
1977	UZ	* 1977	10	17.92538	01	31	26.56	+07	49	59.8		17.0	095
1289		1977	10	17.92538	01	31	36.57	+09	03	51.3	0.0	0	095
1977	TB8	1977	10	17.92538	01	33	09.00	+08	24	21.7		16.5	095
1977	SL1	1977	10	17.92538	01	33	22.69	+11	41	14.5		16.5	2 095
2151		1977	10	17.92538	01	34	29.69	+08	14	05.4		15.0	095
2072		1977	10	17.92538	01	35	12.67	+09	43	03.7	0.2-	2-	095
401		1977	10	17.92538	01	41	54.62	+08	54	05.7	0.0	0	095
1977	UA1	* 1977	10	17.92538	01	42	12.67	+06	44	24.3		17.5	095
1494		1977	10	17.92538	01	42	49.45	+09	36	32.4	0.0	0	095
1977	UB1	* 1977	10	17.92538	01	42	56.23	+07	35	53.9		17.2	095
1977	UC1	* 1977	10	17.92538	01	43	06.15	+08	55	26.3		17.0	095
1638		1977	10	17.92538	01	45	43.02	+10	52	58.3	0.1-	0	095
1977	SQ1	1977	10	17.92538	01	48	13.40	+10	41	28.1		17.0	095
825		1977	10	17.92538	01	54	13.83	+05	44	00.7	0.0	1-	095
345		1977	10	17.92538	01	55	40.38	+13	12	23.6	0.1+	1-	095
906		1977	10	17.92538	01	58	08.28	+07	48	57.3	0.0	1-	1 095
1438		1977	10	17.92538	01	58	31.45	+13	52	56.7	0.0	1+	1 095
1977	UD1	* 1977	10	17.92538	01	59	14.10	+09	48	47.6		17.0	1 095
1977	UE1	* 1977	10	17.92538	01	59	21.30	+10	52	55.7		17.0	1 095
1913		1977	10	17.92538	01	59	27.80	+13	33	04.5	0.1+	0	16.2	1 095
1977	ST1	1977	10	17.92538	02	00	47.74	+08	18	28.4		16.0	1 095
1977	SU1	1977	10	17.92538	02	02	06.97	+08	45	38.3		15.5	1 095
1977	TC1	1977	10	17.92712	01	26	02.20	+11	38	16.0		17.0	1 095
1977	SZ1	1977	10	17.92712	01	30	45.75	+08	20	49.7		16.5	2 095
1977	UF1	* 1977	10	17.92712	01	33	34.61	+11	04	43.1		17.0	095
1977	UG1	* 1977	10	17.92712	01	35	58.70	+13	39	42.4		17.0	3 095
1977	UH1	* 1977	10	17.92712	01	37	03.40	+10	48	09.7		17.0	095
1977	UJ1	* 1977	10	17.92712	01	45	24.04	+13	38	17.7		17.0	1 095
228		1977	10	18.00916	03	35	48.95	+24	18	44.9	0.4+	2+	1 095
429		1977	10	18.00916	03	44	53.06	+18	38	11.4	2.0+	1+	095
1977	UK1	* 1977	10	18.00916	03	45	56.96	+23	17	35.6		16.2	095
1082		1977	10	18.00916	03	48	17.70	+17	22	26.2	0.1+	0	1 095
496		1977	10	18.00916	03	48	38.24	+18	09	23.0	0.3+	1+	095
1977	UL1	* 1977	10	18.00916	03	49	19.43	+19	24	24.2		16.5	095
604		1977	10	18.00916	03	50	43.05	+24	06	34.2	0.1+	1+	095
1590		1977	10	18.00916	03	52	04.10	+20	13	24.4	0.4-	1-	095
374		1977	10	18.00916	03	53	57.26	+18	05	06.9	0.0	1+	095
1977	UM1	* 1977	10	18.00916	03	55	53.86	+22	01	27.0		16.8	095
1421		1977	10	18.00916	03	57	50.08	+22	25	31.0	0.1-	0	095
1977	UN1	* 1977	10	18.00916	04	07	21.12	+20	53	53.7		16.8	095
1977	UO1	* 1977	10	18.00916	04	08	24.52	+22	46	29.8		16.2	095
300		1977	10	18.00916	04	10	06.71	+21	13	07.8	0.2+	1+	095
975		1977	10	18.00916	04	11	00.28	+21	53	39.3	0.5+	2+	095
937		1977	10	18.00916	04	17	29.53	+22	58	04.9	0.5+	2+	1 095

1977	UP1	*	1977	10	18.01394	03	38	17.00	+21	22	11.4		16.2	3 095
1563			1977	10	18.01394	03	43	19.84	+18	03	26.6	0.3+ 0		095
1977	UQ1	*	1977	10	18.01394	04	03	50.00	+26	00	16.6		16.5	3 095
1977	UR1	*	1977	10	18.85080	00	12	44.84	-21	13	14.1		16.5	2 095
31			1977	10	18.85427	23	51	51.47	-22	08	53.8	0.2- 3-		1 095
1977	TY6		1977	10	18.85427	23	54	10.32	-13	48	03.3		15.5	1 095
1977	TV6		1977	10	18.85427	00	00	08.04	-20	13	44.8		17.0	095
1771			1977	10	18.85427	00	04	12.18	-17	45	00.9	0.2- 3-		095
1753			1977	10	18.85427	00	05	09.92	-13	52	44.0	0.1- 2-		1 095
630			1977	10	18.85427	00	05	12.28	-21	00	42.0	0.3- 4-		095
1847			1977	10	18.85427	00	08	50.18	-17	14	13.6	0.3- 3-		095
680			1977	10	18.85427	00	14	29.76	-14	30	46.4	0.5- 5-		095
1094			1977	10	18.85427	00	15	33.91	-13	59	15.2	0.2- 3-		1 095
1977	US1	*	1977	10	18.85774	23	56	38.75	-17	18	53.3		16.0	2 095
1731			1977	10	18.91174	01	44	06.32	+03	09	28.9	0.0 2-		095
1385			1977	10	18.91174	01	45	52.70	-01	29	38.3	0.0 2-		095
1078			1977	10	18.91174	01	53	59.46	-00	57	14.8	0.2- 4-		095
421			1977	10	18.91356	01	28	39.15	+04	06	32.6	0.5- 1-		1 095
1186			1977	10	18.91356	01	30	21.34	+03	13	56.8	0.0 1-		1 095
5			1977	10	18.91356	01	38	19.02	+02	06	49.5	0.0 1-		095
154			1977	10	18.91356	01	39	51.80	+03	17	57.4	0.0 1-		095
237			1977	10	18.91356	01	50	46.26	-02	34	05.4	0.2- 3-		095
153			1977	11	06.82672	00	20	46.20	+07	57	59.8			1 095
73			1977	11	06.82672	00	26	52.94	+03	50	40.0	0.2- 0		095
332			1977	11	06.82672	00	42	01.44	+03	48	58.0	0.3- 2-		095
1059			1977	11	06.82672	00	47	05.42	+04	02	28.6	0.3- 3-		095
485			1977	11	06.82672	00	57	38.86	+01	27	48.9	0.3- 2-		1 095
1977	VD2	*	1977	11	06.88852	02	33	13.58	+17	03	47.0		17.2	2 095
1977	VE2	*	1977	11	06.89026	02	12	31.38	+18	05	10.6		16.8	1 095
403			1977	11	06.89026	02	15	28.12	+19	50	04.6	0.1- 0		095
1977	VF2	*	1977	11	06.89026	02	22	49.60	+15	54	38.5		16.2	095
1960			1977	11	06.89026	02	22	54.96	+18	52	09.6	0.0 0		095
1977	VG2	*	1977	11	06.89026	02	23	26.75	+18	37	34.0		16.8	095
440			1977	11	06.89026	02	23	31.46	+17	15	41.6	0.2- 1+		095
1977	VH2	*	1977	11	06.89026	02	24	13.94	+16	31	33.4		16.2	095
1977	VJ2	*	1977	11	06.89026	02	24	42.74	+18	48	02.6		17.0	095
1977	VK2	*	1977	11	06.89026	02	26	33.22	+15	55	02.4		17.0	095
1977	VL2	*	1977	11	06.89026	02	30	29.42	+19	19	29.4		16.0	095
1858			1977	11	06.89026	02	32	17.73	+17	03	20.1	0.0 0		095
122			1977	11	06.89026	02	44	50.43	+14	13	15.6	0.1- 0		1 095
1977	VM2	*	1977	11	06.89026	02	47	16.68	+14	25	23.9		16.5	1 095
1977	VN2	*	1977	11	06.89201	02	23	28.10	+18	44	34.4		17.5	2 095
1977	VO2	*	1977	11	06.89201	02	33	07.90	+22	13	24.0		17.5	3 095
556			1977	12	11.79574	01	03	52.51	+13	55	27.7			1 095
154			1977	12	11.79574	01	07	25.36	+04	39	42.4			095
1977	XF	*	1977	12	11.79574	01	20	06.36	+11	04	12.0		16.0	095
906			1977	12	11.79574	01	23	37.24	+08	37	57.8			095
345			1977	12	11.79574	01	29	00.04	+06	01	35.0			1 095

Note 1: near edge of plate. 2: measurement uncertain. 3 = 1 + 2. 4: fast-moving object. 6 = 2 + 4.

OBSERVATIONS MADE AT GEISEI BY T. SEKI. FROM ORIENT. ASTRON. ASSOC. COMET BULL. NO. 194.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
/1979l	1980 01	30.46427	03 05 52.7	-17 54 12	6.3T	372
/1979l	1980 01	30.48267	03 05 57.7	-17 47 25		372
/1979l	1980 02	05.45142	03 22 01.0	+04 09 23	6.6T	372
/1979l	1980 02	06.48715	03 23 34.98	+06 11 01.2		372
/1979l	1980 02	06.49549	03 23 35.71	+06 11 55.2		372

OBSERVATIONS MADE AT THE TOKYO ASTRONOMICAL OBSERVATORY, KISO STATION, BY H. MAEHARA, H. KOSAI, T. URATA, K. HURUKAWA AND Y. TANAKA. MEASURED BY KOSAI.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1979 YB		1979 12	30.76116	05 44 07.19	+15 37 54.4	16.0		381
1979 YB		1979 12	30.76794	05 44 05.93	+15 37 36.6			381
1979 YB		1980 01	14.49043	05 25 39.06	+08 36 09.1	16.0		381
1979 YB		1980 01	14.51813	05 25 37.25	+08 35 23.6			381
1979 YB		1980 01	14.58487	05 25 33.25	+08 33 41.7			381
1979 YB		1980 01	14.60556	05 25 32.05	+08 33 06.9			381
1980 CA	*	1980 02	09.55916	09 14 19.86	+37 53 21.6	18	1	381
1980 CA		1980 02	09.61332	09 14 16.67	+37 53 27.7			381
1980 CA		1980 02	10.49040	09 13 20.44	+37 55 09.4	18		381

Note 1: discoverers Kosai, Hurukawa and Tanaka.

OBSERVATIONS MADE AT MT. STROMLO OBSERVATORY (CODE 414) AND BY D. HERALD AT KAMBAH (CODE 415).

Object	Date	UT	R. A. (1950)	Decl.	Obs.
/1979l	1980 01	08.71545	16 07 34.37	-44 01 23.7	415
/1979l	1980 01	08.71750	16 07 34.53	-44 01 31.8	415
/1979l	1980 01	08.71819	16 07 34.44	-44 01 37.7	415
/1979l	1980 01	10.72253	16 08 40.65	-46 07 14.9	415
/1979l	1980 01	10.72302	16 08 40.84	-46 07 21.7	415
/1979l	1980 01	10.72344	16 08 40.78	-46 07 22.6	415
/1979l	1980 01	14.71118	16 15 32.22	-52 03 04.9	415
/1979l	1980 01	14.72722	16 15 34.99	-52 04 54.9	415
/1979l	1980 01	15.71378	16 19 00.14	-54 06 16.7	415
/1979l	1980 01	15.71736	16 19 01.60	-54 06 34.9	415
/1979l	1980 01	24.50174	01 02 40.6	-72 44 32.4	415
/1979l	1980 01	28.45000	02 53 00.16	-32 53 35.6	415
/1979l	1980 01	28.45660	02 53 03.36	-32 50 07.7	415
3	1979 12	07.66389	07 46 32.22	+00 46 21.0	414
3	1979 12	07.66840	07 46 32.14	+00 46 20.1	414
9	1979 12	07.68222	09 34 12.64	+20 24 22.7	414
9	1979 12	07.68389	09 34 12.65	+20 24 22.9	414
9	1979 12	07.68569	09 34 12.72	+20 24 22.8	414
9	1979 12	07.68736	09 34 12.76	+20 24 23.2	414

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

Object	Date	UT	R. A. (1950)	Decl.	Obs.
246	1979 09	16.87326	20 19 37.54	-11 22 17.9	494
2201	1979 12	21.8265	01 47 50.35	+11 18 39.3	494
2201	1979 12	24.7750	01 29 25.08	+10 02 58.1	494
2201	1979 12	24.8316	01 29 02.96	+10 01 26.6	494

OBSERVATION MADE AT HEIDELBERG BY G. KLARE AND M. ROSA.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
/1979l	1980 02	08.74400	03 26 30.0	+09 42 35	024

OBSERVATION MADE AT GOTTINGEN BY W. LANDGRAF.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
/1979l	1980 02	01.86141	03 14 31.16	-06 09 10.1	528

OBSERVATIONS MADE WITH THE 1.5-M REFLECTOR AT MOUNT WILSON BY L. E. CUNNINGHAM. MEASURED BY J. GIBSON AND A. G. MOWBRAY.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
/1951 VIII	1951 02	03.53227	14 39 28.80	-01 18 28.7	19.7N		672
/1951 VIII	1951 02	03.55484	14 39 29.98	-01 18 26.8			672

/1951 VIII	1951	02	04.55311	14	40	23.83	-01	17	19.0		672
/1951 VIII	1951	02	05.48124	14	41	13.40	-01	16	09.3		672
/1951 VIII	1951	03	04.51217	14	59	32.10	+00	12	23.9	19 N	672
/1951 VIII	1951	03	04.53526	14	59	32.63	+00	12	31.5		672
/1951 VIII	1951	05	01.39524	14	41	12.15	+07	43	15.5		672
/1951 VIII	1951	05	02.41120	14	40	10.54	+07	49	47.5		672
/1951 VIII	1951	05	02.41728	14	40	10.15	+07	49	49.9		672
/1951 VIII	1951	07	07.27197	14	06	47.99	+03	09	21.9		672
/1951 VIII	1951	07	07.28030	14	06	48.14	+03	09	15.0		672
/1951 VIII	1951	07	09.23586	14	07	53.05	+02	42	20.1		672
/1951 VIII	1951	07	09.24141	14	07	53.22	+02	42	14.4	17 N	672
/1951 VIII	1951	08	04.20777	14	34	14.55	-04	08	48.4		672
/1951 VIII	1951	08	04.21593	14	34	15.18	-04	08	58.6		672
/1951 VIII	1951	08	06.20278	14	37	08.72	-04	43	31.4	17 N	672
/1951 VIII	1951	08	07.18819	14	38	37.44	-05	00	47.2		672
/1951 VIII	1951	08	07.19375	14	38	37.93	-05	00	53.1	16.5N	672
/1951 VIII	1951	08	10.19948	14	43	19.36	-05	53	57.6	16.7N	672
/1951 VIII	1951	08	10.20191	14	43	19.55	-05	54	00.3		672
/1951 VIII	1951	09	01.16283	15	25	34.66	-12	32	05.9	16 N	672
/1951 VIII	1951	09	01.16613	15	25	35.07	-12	32	09.2		672
/1951 VIII	1951	09	29.12956	16	39	26.05	-20	27	57.9	16 T	672
/1951 VIII	1951	09	29.13199	16	39	26.56	-20	28	00.1		672
/1951 VIII	1951	10	29.11558	18	21	13.1	-25	57	07	15.5T 1	672
1950 DB	1950	06	20.20174	11	29	34.25	+21	16	41.9		672
1950 DB	1950	06	20.20869	11	29	34.78	+21	16	37.9		672
1950 DB	1951	07	09.28620	17	30	40.09	-03	24	45.0		672
1950 YC *	1950	12	16.52742	13	45	58.42	+00	14	46.0	18 2	672
1950 YC	1950	12	16.54304	13	45	59.48	+00	14	42.7		672

Note 1: uncondensed; tail streamers near p.a. 330 . 2: discoverer Gibson.

OBSERVATIONS MADE AT THE TABLE MOUNTAIN OBSERVATORY BY J. CHILD AND M. WEIR. MEASURED BY J. GIBSON.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1980 AA	1980	01 20.27083	07 47 28.22	+21 07 58.9	673
1980 AA	1980	01 20.27986	07 47 31.12	+21 07 22.2	673

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT PALOMAR.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1951 WO2	1953	01 09.31736	08 18 09.27	+08 24 13.3		1	675
1951 WO2	1953	01 09.33889	08 18 08.32	+08 24 20.1		1	675
1951 WO2	1971	04 22.35243	12 22 11.13	+14 52 43.0		2	675
1951 WO2	1978	07 12.42188	19 04 42.49	-05 53 53.2	19	3	675
1951 WO2	1978	07 12.43229	19 04 41.84	-05 53 57.1		3	675
1951 WO2	1978	07 13.26997	19 04 03.71	-05 58 44.2		3	675
1953 AM *	1953	01 09.31736	08 17 24.06	+08 25 44.2	14	1	675
1953 AM	1953	01 09.33889	08 17 22.89	+08 25 53.9		1	675
1978 TB	1979	11 22.28750	02 54 32.45	+22 16 46.3	19.5	4	675
1978 TB	1979	11 24.29236	02 53 30.04	+22 12 28.9		4	675
1979 WM *	1979	11 22.40521	04 37 16.00	+28 26 32.1	16	4	675
1979 WM	1979	11 24.40590	04 36 07.57	+28 21 51.2		4	675
1979 WM	1979	11 25.42118	04 35 32.54	+28 19 25.2		4	675
1979 WM	1979	12 12.29306	04 25 45.53	+27 33 24.7	15.5	5	675
1980 CB *	1980	02 04.16111	05 01 39.33	+09 57 27.1	16	6	675
1980 CB	1980	02 05.17466	05 01 34.98	+10 03 47.0	16	6	675
1980 CB	1980	02 07.28800	05 01 30.90	+10 17 03.7	18	6	675

Note 1: measured by J. Gibson on Sky Survey prints. 2: observer A. R. Sandage, measurer Gibson. 3: observers E. Helin and E. Shoemaker, measurer Gibson. 4: observer C. T. Kowal. 5: observer S. J. Bus. 6: observers Helin and S. Dunbar.

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY. MEASURED BY M. L. KANTZ. COMMUNICATED BY H. L. GICLAS.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1930 XO	1930	12 13.19236	03 26 12.60	+24 23 54.4	690
1930 XO	1930	12 16.19444	03 25 21.17	+24 00 25.3	690
1930 XQ	1930	12 14.20069	03 25 53.44	+24 15 57.9	690
1931 RN	1931	10 13.21875	00 24 05.55	-01 35 58.9	690
1931 RN	1931	10 17.24444	00 21 09.51	-02 06 46.4	690
1931 TK	1931	10 12.34722	01 42 10.30	+05 57 44.8	690
1931 TK	1931	10 14.28854	01 39 59.39	+06 04 40.4	690
1931 TK	1931	10 17.29514	01 36 32.73	+06 15 30.5	690

OBSERVATIONS MADE AT THE GOETHE LINK OBSERVATORY, MEASURED AT INDIANA UNIVERSITY, REDUCED AT THE SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1950 BZ	1950	01 28.41386	08 56 57.45	+17 44 31.1	760
1950 BZ	1950	01 28.43400	08 56 56.09	+17 44 37.7	760
1950 CC	1950	02 08.15644	07 05 40.39	+21 39 26.8	760
1950 CC	1950	02 08.18074	07 05 39.55	+21 39 29.2	760
1950 CD	1950	02 08.15644	07 10 56.26	+20 06 56.9	760
1950 CD	1950	02 08.18074	07 10 55.54	+20 07 04.1	760
1950 CF	1950	02 08.15644	07 24 12.94	+22 48 54.1	760
1950 CF	1950	02 08.18074	07 24 11.87	+22 49 01.7	760
1950 DC1	1950	02 20.30211	08 58 53.96	+10 48 11.5	760
1950 DC1	1950	02 20.36807	08 58 51.74	+10 48 22.0	760
1950 DD1	1950	02 21.14304	07 31 09.81	+29 12 33.9	760
1950 DD1	1950	02 21.19721	07 31 08.14	+29 12 35.2	760
1950 EM	1950	03 15.13332	10 57 17.80	+09 28 25.7	760
1950 EM	1950	03 15.17569	10 57 15.55	+09 28 29.0	760
1950 EN	1950	03 15.13332	10 56 28.67	+08 39 18.6	760
1950 EN	1950	03 15.17569	10 56 26.81	+08 39 31.6	760
1950 EO	1950	03 15.13332	11 00 18.08	+08 27 24.7	760
1950 EO	1950	03 15.17569	11 00 16.00	+08 27 52.9	760
1950 ER	1950	03 15.13332	10 50 19.57	+06 16 31.3	760
1950 ER	1950	03 15.17569	10 50 17.10	+06 16 36.6	760
1950 HK	1950	04 16.09685	10 27 52.16	+10 20 06.1	760
1950 HK	1950	04 16.19478	10 27 51.84	+10 20 18.5	760
1950 HL	1950	04 16.09685	10 42 50.46	+10 12 29.4	760
1950 HL	1950	04 16.19478	10 42 49.38	+10 12 37.3	760
1950 HM	1950	04 16.09685	10 24 27.51	+06 37 10.4	760
1950 HM	1950	04 16.19478	10 24 26.26	+06 37 05.5	760
1950 HN	1950	04 16.09685	10 44 45.66	+06 50 26.0	760
1950 HN	1950	04 16.19478	10 44 43.86	+06 50 43.9	760
1950 HO	1950	04 16.09685	10 46 54.79	+12 10 01.2	760
1950 HO	1950	04 16.19478	10 46 54.90	+12 10 16.4	760
1950 HQ	1950	04 16.28298	11 10 48.39	+08 41 09.7	760
1950 HQ	1950	04 16.30729	11 10 47.71	+08 41 07.2	760
1950 HR	1950	04 16.28298	11 02 27.00	+08 34 51.2	760
1950 HR	1950	04 16.30729	11 02 26.74	+08 34 52.2	760
1950 HS	1950	04 16.28298	11 05 24.47	+06 03 40.2	760
1950 HS	1950	04 16.30729	11 05 23.67	+06 03 41.6	760
1950 HT	1950	04 16.28298	11 16 20.58	+03 44 24.3	760
1950 HT	1950	04 16.30729	11 16 19.94	+03 44 35.5	760
1950 JQ	1950	05 15.28162	15 27 45.84	-12 12 53.7	760
1950 LK	1950	06 06.17996	14 34 25.98	-10 50 23.3	760
1950 LK	1950	06 06.24835	14 34 24.02	-10 50 09.6	760
1950 LL	1950	06 06.17996	14 37 30.44	-15 47 55.4	760
1950 LL	1950	06 06.24835	14 37 28.35	-15 47 47.9	760
1950 OF	1950	07 16.26526	21 06 57.76	+13 00 23.1	760

1950	OF	1950	07	16.32081	21	06	55.91	+13	00	39.8	760
1955	XM	1955	12	12.12465	04	19	46.00	+19	08	29.8	760
1955	XM	1955	12	12.16421	04	19	44.11	+19	08	28.2	760
1965	VE	1965	11	01.32500	01	58	20.91	+03	59	01.7	760
1965	VE	1965	11	01.36944	01	58	18.92	+03	58	57.0	760

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, E. FOGELIN AND B. G. MARSDEN).

Object	Date	UT	R. A. (1950)			Decl.			Mag.	Obs.
/1974 II	1979	01 24.27719	07	02	19.79	+27	31	35.7		801
/1977 X	1978	07 03.30164	23	58	30.18	+03	30	15.7		801
/1977 XI	1979	08 31.26525	23	17	25.86	-00	48	42.7		801
/1978 IV	1978	12 01.36898	08	30	56.11	+16	12	03.5		801
/1978 VIII	1978	12 28.21583	05	44	00.33	+08	28	11.6		801
/1978 XIV	1978	12 02.03375	23	58	24.32	+06	46	17.8		801
/1978 XIV	1978	12 30.07968	00	22	19.35	+10	12	41.3		801
/1978 XIX	1978	12 29.39014	09	37	55.53	+33	36	31.9		801
/1978 XXIV	1979	08 18.30072	00	25	50.51	-01	18	28.7		801
/1979i	1980	01 25.24499	07	19	20.17	+28	17	41.2		801
/1979i	1980	01 26.24227	07	16	26.55	+27	34	53.4		801
/1979l	1980	02 06.07615	03	22	58.91	+05	24	53.1		801
986	1978	12 29.14639	04	12	57.31	+14	03	52.4	14	801
1522	1978	11 27.12200	02	46	51.60	+14	47	21.8		801
1522	1979	01 19.06377	02	42	29.26	+16	50	02.5		801
1772	1978	12 07.17752	01	13	21.29	+01	10	43.6		801
2142	1978	07 02.15541	15	18	16.87	-17	20	57.6		801
2169	1978	10 31.32295	05	05	58.35	+22	33	01.0		801
2169	1978	11 01.23650	05	05	36.28	+22	32	57.3		801
2169	1978	11 26.22612	04	47	36.74	+22	19	10.8		801
2187	1979	08 17.25428	23	22	01.31	-12	27	28.8		801
2200	1979	12 12.06022	01	15	48.69	+13	25	18.5		801
2201	1980	01 12.96962	23	06	41.41	-01	15	20.4		801
2202	1980	01 21.22968	06	52	34.77	+05	12	43.3		801
2203	1980	01 14.01992	02	14	20.07	+13	44	21.3		801
2205	1980	01 14.15543	06	20	00.85	+11	32	40.4		801
2206	1980	01 14.09449	06	11	42.25	+32	32	22.4		801
2207	1979	10 22.26852	04	51	35.72	+14	29	26.8		801
2210	1980	01 21.12845	04	13	20.99	+18	32	47.1		801
2210	1980	02 05.06897	04	17	51.83	+19	10	38.3		801
A915 TA	1980	01 21.19551	05	55	54.52	+15	33	30.0		801
A915 TA	1980	01 25.21588	05	53	29.88	+15	41	03.5		801
1939 QB	1980	01 13.25561	08	02	57.12	+13	11	45.8		801
1941 SZ	1980	01 17.13497	06	30	20.95	+15	47	49.6		801
1941 SA1	1980	01 20.28792	09	36	45.19	+24	49	14.9		801
1955 RX	1980	01 20.41816	10	33	00.26	+03	28	34.1		801
1964 VX2	1978	11 26.12284	04	47	14.59	+21	28	10.2		801
1968 BC	1980	01 13.01326	00	34	32.41	-06	34	38.6		801
1970 LD	1980	01 13.39770	10	50	25.22	+08	27	33.6		801
1970 LD	1980	01 13.44042	10	50	24.61	+08	27	37.8		801
1975 AK	1980	01 13.14588	05	50	50.23	+23	25	59.6		801
1975 BU	1980	01 25.41902	12	38	14.19	+10	24	00.0		801
1975 RB	1980	01 21.30115	08	20	11.04	+22	23	06.9		801
1975 RB	1980	01 22.14030	08	19	07.50	+22	24	17.7		801
1976 DD	1980	01 13.29106	10	22	06.29	+21	18	44.8		801
1976 DD	1980	01 16.32531	10	19	11.48	+20	43	19.7		801
1976 DD	1980	01 20.31887	10	14	40.94	+19	54	30.2		801
1976 EA	1980	01 26.36042	13	59	10.12	-12	46	05.3		801
1976 GC8	1980	01 25.30865	09	37	25.22	+18	20	33.3		801

1977	GA		1978	12	29.14639	04	12	09.06	+14	10	49.0	801
1977	GA		1980	01	22.16589	07	54	06.88	-15	53	51.2	801
1977	HC		1980	01	13.09057	04	34	11.97	+10	50	16.8	801
1977	HD		1978	12	20.01793	01	21	20.05	+32	51	49.7	801
1977	HD		1978	12	27.97420	01	21	52.86	+32	30	17.2	801
1977	HD		1979	12	15.19213	08	56	52.35	+51	26	40.6	801
1977	OH		1980	01	13.38442	10	52	02.67	+07	33	28.8	801
1977	OH		1980	01	13.41707	10	52	02.08	+07	33	35.1	801
1977	RO		1980	01	21.34399	10	16	30.77	-04	16	08.2	801
1977	TJ3		1980	01	17.10762	05	10	42.70	-08	05	53.9	801
1977	TJ3		1980	01	22.05949	05	09	06.63	-07	56	37.0	801
1977	TL3		1980	01	13.11928	05	39	18.69	+08	32	08.9	801
1977	VD		1979	02	23.37769	13	37	53.48	-05	35	16.8	801
1978	RB		1978	12	30.00144	23	31	13.73	+03	08	03.1	801
1978	RB		1979	12	19.41381	09	43	00.87	+29	44	40.3	801
1978	RB		1980	01	13.22597	09	27	39.73	+31	35	27.4	801
1978	RC		1980	01	14.12389	06	20	34.08	+38	32	57.3	801
1978	SB		1978	12	30.03488	00	06	12.07	+00	10	43.2	801
1978	SB		1980	01	21.01941	02	20	39.32	+19	57	47.8	801
1978	SB		1980	01	22.01247	02	20	42.64	+19	57	11.0	801
1978	TA		1978	11	27.04266	23	51	36.59	+40	04	09.2	801
1978	TB		1980	01	21.08355	02	40	34.18	+20	49	41.9	801
1978	VT		1980	01	25.38139	11	36	51.61	+04	46	57.8	801
1978	YC	*	1978	12	29.14639	04	12	25.37	+14	17	51.8	16 801
1979	VA		1980	01	14.06061	04	06	23.79	+20	56	03.0	801
1980	BA	*	1980	01	21.30115	08	21	38.24	+22	21	16.6	17 801
1980	BA		1980	01	22.14030	08	20	48.98	+22	27	48.0	801
1980	BA		1980	01	25.27419	08	17	42.33	+22	51	39.4	801
1980	BA		1980	01	26.27263	08	16	43.35	+22	59	05.7	801
1980	BB	*	1980	01	25.27419	08	19	29.36	+22	48	58.8	18 801
1980	BB		1980	01	26.27263	08	18	34.12	+22	52	33.6	801
1980	BC	*	1980	01	21.08355	02	40	47.35	+20	46	30.0	19.5 801
1980	BD	*	1980	01	25.30865	09	37	22.59	+18	33	29.9	18 801
1980	BE	*	1980	01	21.34399	10	15	34.79	-04	13	47.4	18 801
2528	P-L		1979	08	18.20789	20	50	39.42	-22	00	16.0	801

OBSERVATIONS MADE WITH THE MAKSUTOV ASTROGRAPH AT THE UNIVERSITY OF CHILE, CERRO EL ROBLE STATION, BY C. TORRES. MEASURED BY M. WISCHNJEWSKY AND C. TORRES.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
/1979e	1979	10 18.03107	18 32 29.36	-00 53 51.9		1	805
/1979e	1979	10 18.06579	18 32 29.62	-00 53 43.3	18 T		805
/1979e	1979	10 20.04565	18 32 49.40	-00 46 49.7		2	805
/1979e	1979	10 21.03315	18 33 00.23	-00 43 23.0		2	805
/1979e	1979	10 22.03835	18 33 12.00	-00 39 50.4		2	805
255	1979	10 20.11313	02 13 13.11	+18 36 48.9			805
255	1979	10 21.08940	02 12 17.90	+18 35 25.4			805
255	1979	10 23.07550	02 10 24.26	+18 32 21.0			805
255	1979	10 23.34911	02 10 08.09	+18 31 53.6			805
414	1979	09 25.20124	02 05 33.34	-01 19 00.9			805
414	1979	09 25.29708	02 05 30.63	-01 19 28.4			805
414	1979	10 23.25953	01 48 10.29	-03 23 46.6			805
414	1979	10 23.32689	01 48 07.36	-03 24 01.2			805
523	1979	10 23.07550	02 26 54.43	+19 41 48.6			805
523	1979	10 23.34911	02 26 41.00	+19 40 34.3			805
631	1979	10 20.11313	02 11 02.25	+19 25 36.2			805
631	1979	10 21.08940	02 10 16.16	+19 16 10.1			805
631	1979	10 23.07550	02 08 41.34	+18 56 37.2			805

631		1979	10	23.34911	02	08	27.86	+18	53	52.8	805
979		1979	12	17.18981	02	11	31.60	+13	39	12.7	805
979		1979	12	18.18148	02	11	28.46	+13	35	57.0	805
979		1979	12	19.17522	02	11	26.67	+13	32	45.8	805
979		1979	12	20.18008	02	11	26.15	+13	29	43.1	805
1650		1979	12	17.18981	02	13	07.22	+11	20	34.1	805
1650		1979	12	18.18148	02	12	55.74	+11	19	32.3	805
1650		1979	12	19.17522	02	12	45.64	+11	18	37.6	805
1650		1979	12	20.18008	02	12	37.15	+11	17	53.4	805
1691		1979	12	17.18981	02	12	32.45	+12	02	08.1	805
1691		1979	12	18.18148	02	12	30.23	+12	02	07.4	805
1691		1979	12	19.17522	02	12	29.48	+12	02	16.1	805
1691		1979	12	20.18008	02	12	30.33	+12	02	36.3	805
1796		1979	10	18.03107	18	31	22.94	-02	15	56.6	805
1796		1979	10	18.06579	18	31	24.89	-02	16	08.7	17 805
1796		1979	10	20.04565	18	33	15.49	-02	26	08.1	805
1796		1979	10	21.03315	18	34	11.61	-02	30	59.1	805
2201		1979	12	17.18981	02	14	57.62	+13	03	50.4	805
2201		1979	12	18.17661	02	09	22.77	+12	43	04.6	805
2201		1979	12	18.17939	02	09	21.83	+12	43	00.4	805
2201		1979	12	18.18217	02	09	20.89	+12	42	57.0	805
2201		1979	12	19.17036	02	03	38.98	+12	21	24.1	805
2201		1979	12	19.17314	02	03	37.97	+12	21	18.4	805
2201		1979	12	19.17592	02	03	36.93	+12	21	15.1	805
2201		1979	12	20.17244	01	57	45.13	+11	58	45.3	805
2201		1979	12	20.17522	01	57	44.15	+11	58	42.0	805
2201		1979	12	20.17834	01	57	43.39	+11	58	33.1	805
2203		1979	12	18.18148	02	04	37.13	+12	39	44.7	805
2203		1979	12	19.17522	02	04	40.07	+12	40	36.0	805
2203		1979	12	20.18008	02	04	44.32	+12	41	35.3	805
1979	SZ *	1979	09	25.20124	01	58	03.27	+01	46	36.8	20 805
1979	SZ	1979	09	25.29708	01	58	00.03	+01	45	48.2	805
1979	UH1 *	1979	10	21.26926	01	35	36.51	-02	18	34.0	18 805
1979	UH1	1979	10	23.25953	01	33	59.96	-02	23	29.3	805
1979	UJ1 *	1979	10	21.26926	01	37	00.72	-00	26	27.8	17.5 805
1979	UJ1	1979	10	23.25953	01	35	24.05	-00	32	26.8	805
1979	UJ1	1979	10	23.32689	01	35	20.81	-00	32	38.0	805
1979	UK1 *	1979	10	21.26926	01	40	03.52	-01	18	13.8	16.5 805
1979	UK1	1979	10	23.25953	01	38	43.04	-01	31	46.3	805
1979	UK1	1979	10	23.32689	01	38	40.18	-01	32	11.4	805
1979	UL1 *	1979	10	21.26926	01	41	43.76	-01	30	18.4	18.5 805
1979	UL1	1979	10	23.25953	01	40	14.42	-01	46	31.9	805
1979	UL1	1979	10	23.32689	01	40	11.21	-01	47	05.2	805
1979	UM1 *	1979	10	21.26926	01	42	51.85	-03	22	49.8	17.5 805
1979	UM1	1979	10	23.25953	01	41	50.56	-03	29	01.0	805
1979	UM1	1979	10	23.32689	01	40	56.72	-03	29	11.8	805
1979	UN1 *	1979	10	21.26926	01	43	39.65	-02	26	35.0	18.5 805
1979	UN1	1979	10	23.25953	01	41	59.49	-02	40	25.9	805
1979	UN1	1979	10	23.32689	01	41	55.93	-02	40	53.7	805
1979	UO1 *	1979	10	21.26926	01	44	10.08	+00	04	42.1	17.5 805
1979	UO1	1979	10	23.25953	01	42	29.35	-00	08	51.1	805
1979	UO1	1979	10	23.32689	01	42	25.85	-00	09	17.9	805
1979	UP1 *	1979	10	21.26926	01	50	23.27	-02	05	51.5	19 805
1979	UP1	1979	10	23.25953	01	48	26.00	-02	11	03.6	805
1979	UP1	1979	10	23.32689	01	48	21.98	-02	11	13.1	805
1979	UQ1 *	1979	10	23.25953	01	52	09.35	-03	07	51.3	18.5 805
1979	UQ1	1979	10	23.32689	01	52	05.43	-03	08	09.3	805

Note 1: poor image through clouds. 2: faint nebulous image some 8" wide.

OBSERVATIONS MADE AT THE WALLACE OBSERVATORY, WESTFORD, UNDER THE DIRECTION OF J. L. ELLIOT.

Object	Date UT	R. A. (1950)	Decl.	N Obs.
2118	1980 01 25.34421	09 06 43.85	+21 09 41.6	1 810
2118	1980 01 25.41730	09 06 39.07	+21 09 46.2	1 810

Note 1: observatory code 810, Long. and Parallax 288.52, -314, -287 (see MPC 4766).

OBSERVATION MADE AT THE WOOLSTON OBSERVATORY BY H. B. RIDLEY. MEASURED BY R. L. WATERFIELD.

Object	Date UT	R. A. (1950)	Decl.	Mag.	N Obs.
/1979i	1979 11 13.02008	12 23 22.87	+54 48 19.1	13.5T	1 993

Note 1: very diffuse coma, diameter 60".

* * * * *

ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are B = C. M. Bardwell, F = E. Fogelin, K = G. R. Kastel', M = B. G. Marsden, P = O. Kippes, Q = K. Hurukawa. See also MPC 4499.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
A906 VB	11.5	061126	36.09	134.05	218.30	21.88	0.2036	3.2606	15	3		B
A908 SA	15.0	081006	24.37	131.56	178.56	5.82	0.4196	2.4646	14	9		B
A908 SB	12.0	081006	335.40	184.95	214.00	8.20	0.1824	3.0665	13	6		B
A908 SC	13.5	081006	329.75	162.77	242.76	3.46	0.1471	2.2881	13	6		B
A916 PA		160805	18.50	132.39	155.58	6.99	0.1667	2.9545	8	4		B
A917 SG		170929	5.44	175.34	184.91	10.21	0.2657	2.6843	22	4	1	B
A917 XC	12.0	171218	60.11	316.80	42.56	2.69	0.0935	2.8428	23	5		B
A918 RC	13.0	180904	19.62	33.16	294.21	3.54	0.0972	2.5917	11	3		B
A919 SB	14.5	190919	15.51	333.66	356.44	5.20	0.2493	2.3077	9	4		B
A921 SA		211107	14.34	341.39	12.95	10.32	0.1152	3.0207	54	6		B
A922 VB	13.5	221122	35.55	297.00	44.47	7.88	0.2740	2.6904	8	4		B
A924 EG	14.5	240316	350.02	59.04	128.64	0.95	0.1593	2.3609	31	5	1	B
1925 VF	13.5	251126	338.13	54.39	38.74	3.91	0.1486	2.4888	8	3	1	B
1926 GC	14.0	260415	348.65	160.25	48.32	6.94	0.1016	2.2369	13	6	1	B
1931 UG	12.5	311026	356.34	38.32	357.83	16.76	0.0915	3.2155	103	5		M
1931 VP	15.0	311115	65.94	292.95	19.84	22.03	0.2066	1.9168	34	4		B
1932 BN	13.0	320223	245.82	322.87	333.92	15.90	0.4260	2.2585	14	3		M
1932 CN	14.0	320223	57.28	4.67	78.77	7.77	0.0729	2.4164	34	4		B
1933 FK		330418	0.44	137.91	46.27	14.54	0.3085	3.0323	25	7	1	B
1933 GA		330418	252.90	297.87	27.15	23.44	0.1538	3.1208	9	6		B
1933 SR		330925	285.68	97.39	343.89	7.50	0.0444	2.2806	10	4		B
1934 RR	14.5	340920	350.46	205.76	167.89	3.26	0.1834	2.3845	31	5		B
1935 FF	12.5	350408	326.47	14.60	196.04	9.98	0.0626	3.0187	8	5		B
1936 EA		360313	17.50	221.96	255.87	3.72	0.2208	2.4288	39	0		B
1937 AC	13.0	370127	343.28	186.70	321.52	14.12	0.0920	2.5491	36	6		B
1938 DV1		380303	172.41	279.53	73.43	1.63	0.1610	2.7231	10	3		B
1939 DG	13.5	390226	36.41	270.92	206.54	2.96	0.2014	2.6441	32	5		B
1940 AC	13.0	400112	37.95	332.16	103.54	3.03	0.0774	2.8719	24	4		B
1969 UC	12.5	691026	230.39	151.53	26.63	2.41	0.0754	2.8202	21	3	1	M
1976 GL8	15.0	760412	308.51	354.94	272.10	6.56	0.1586	2.5583	21	6	2	M
1976 GN8	13.5	760412	88.08	149.64	311.06	9.60	0.0782	3.0090	21	6	2	M
1977 NK	14.9	770805	20.05	151.68	131.28	6.28	0.2021	2.3258	35	4		K
1977 NQ	13.1	770805	342.26	304.78	33.97	0.97	0.1426	3.1992	35	3		K
1977 NR	14.8	770805	347.64	335.11	359.69	2.09	0.2260	2.3768	35	4		K
1977 PE1	14.6	770825	342.35	127.31	231.12	4.61	0.1773	2.7807	26	3		K

1977	PL1	12.7	770825	1.08	41.89	290.86	6.32	0.1187	2.5793	26	3	K
1977	PO1	11.4	770825	8.35	4.37	316.91	13.25	0.2468	3.9375	26	3	K
1977	PP1	14.2	770825	338.31	162.31	198.81	5.00	0.1034	2.7473	26	3	K
1977	PW1	11.9	770825	238.19	181.79	284.66	9.83	0.0640	3.1708	26	3	K
1977	PY1	13.8	770825	31.57	85.46	208.27	6.06	0.1563	2.5581	26	3	K
1977	PZ1	14.1	770825	27.37	345.14	306.66	5.86	0.2361	2.5395	26	3	K
1977	PA2	14.8	770825	73.65	333.51	280.69	5.77	0.0777	2.2107	26	3	K
1977	QB1	14.6	770825	11.19	143.58	185.90	4.14	0.2239	2.4391	32	6	K
1977	QC1	14.5	770914	29.39	335.97	333.91	7.82	0.2252	2.4387	25	5	M
1977	QD1	13.1	770825	334.74	68.82	313.80	2.51	0.0906	2.9031	32	6	K
1977	QE1	12.0	770914	31.79	124.96	186.43	6.00	0.1996	4.0286	32	6	M
1977	QJ1	14.0	770914	356.59	24.26	337.94	5.04	0.1484	2.3406	32	6	M
1977	QY2	14.7	770914	6.46	354.91	352.48	13.11	0.1841	2.5595	29	3	K
1977	QZ2	14.0	770914	356.09	23.07	342.29	8.24	0.2480	2.7274	48	5	M
1977	QP4	14.7	770825	350.09	222.76	118.78	1.60	0.1972	2.1815	25	5	K
1977	QA5	14.3	770825	305.00	348.94	44.92	3.39	0.1191	2.1937	21	3	K
1977	QC5	14.6	770914	14.48	244.94	69.04	3.96	0.1956	2.3764	27	3	K
1977	QD5	14.1	770825	49.70	143.62	119.10	4.47	0.1613	2.2747	21	3	K
1977	RV	13.6	770914	32.24	299.60	8.09	10.16	0.2184	2.3495	32	7	K
1977	RC4	12.3	770914	43.39	75.81	200.15	0.97	0.1483	3.1398	11	3	K
1977	RD4	14.1	770914	24.21	152.80	147.50	8.61	0.2085	2.3742	11	3	K
1977	RL6	12.5	770914	52.68	48.00	234.00	3.62	0.3171	3.2157	11	3	K
1977	RM6	12.6	770914	46.61	317.25	340.62	1.23	0.2440	3.2010	11	3	K
1977	RN6	14.6	770914	21.20	81.11	254.80	1.27	0.1761	2.4780	11	3	K
1977	RR6	15.3	770914	356.97	15.42	355.39	4.75	0.1684	2.4271	11	3	K
1977	RS6	14.1	771004	43.50	167.11	154.16	3.36	0.0999	2.4544	29	4	K
1977	RW6	13.8	770914	283.84	87.36	22.59	2.54	0.1989	2.8736	11	3	K
1977	RZ6	12.2	771004	13.87	350.90	8.81	9.29	0.0743	3.1736	30	4	K
1977	RC7	13.0	771004	57.02	176.62	128.12	2.06	0.1319	3.1405	29	4	M
1977	RE7	12.9	771004	30.14	185.10	146.16	2.05	0.1980	3.1070	29	4	K
1977	RG7	13.2	771004	261.45	304.54	185.77	12.08	0.1416	2.8479	29	4	K
1977	RH7	14.6	770914	40.81	287.24	18.33	4.43	0.2328	2.4418	11	3	K
1977	RX7	14.9	771004	320.92	229.78	185.37	5.15	0.1350	2.2370	27	3	K
1977	RY7	14.3	771004	17.03	335.24	5.81	0.84	0.1869	2.5588	27	3	K
1977	RA8	12.9	771004	326.14	323.92	97.69	2.76	0.1874	3.1123	27	3	K
1977	RB8	11.6	771004	161.19	187.04	26.09	13.13	0.0208	3.1313	27	4	K
1977	SA1	14.9	771004	326.26	2.26	55.96	3.40	0.1523	2.4016	21	3	K
1977	SS1	12.9	771004	347.71	7.63	32.51	17.95	0.1193	3.1960	19	3	K
1977	SU1	13.5	771004	6.68	182.23	192.96	7.42	0.1471	2.7111	29	5	K
1977	TB1	16.0	771024	4.52	35.15	343.92	2.04	0.2344	2.3562	96	0	M
1977	TS3	13.0	771004	3.03	260.57	113.83	4.21	0.2459	3.0976	20	3	M
1977	UP	16.0	771024	21.14	1.37	357.86	3.37	0.1507	2.1765	53	0	M
1977	UQ	14.5	771024	33.98	316.08	13.62	2.26	0.2631	2.5707	84	0	M
1977	VY	14.0	771024	354.36	359.02	31.69	2.32	0.0769	2.8368	86	0	M
1977	VK1	12.5	771024	353.69	350.16	41.09	14.20	0.1501	3.1002	49	6	M
1977	VM1	14.5	771024	346.85	345.44	59.48	7.30	0.1805	2.2390	49	6	M
1979	TA	16.0	791014	359.92	65.60	300.52	2.31	0.2370	2.4896	8	8 3	M
1979	WM	9.0	791123	243.39	291.44	266.33	17.50	0.1302	5.1955	20	4	M
1979	YB	15.5	800102	330.73	239.53	266.42	26.38	0.2792	2.1403	28	0	Q
1980	AB	15.0	800122	18.01	338.28	120.15	17.02	0.2122	2.5462	8	6	F
1980	BA	15.5	800122	19.90	345.72	107.59	6.09	0.1721	2.4035	5	4	M
1980	CB	12.5	800211	207.84	113.12	138.58	13.69	0.1445	2.5587	3	3	M

Note 1: the identifications A917 SG = 1949 QZ1 (MPC 1450), A924 EG = 1962 XF1 (MPC 2805), 1925 VF = 1933 UT (AN 251, 399), 1926 GC = 1946 FB (MPC 1361), 1926 GC = 1941 WE = 1950 NC1 = 1953 JD (MPC 2326), 1933 FK = 1953 JC (MPC 2566) and 1969 UC = 1971 DU (MPC 4091) do not seem to be valid. 2: double designations 1976 GL8 = 1976 HR (P), 1976 GN8 = 1976 HU (P). 3: e assumed.

ORBITAL ELEMENTS BY D. K. YEOMANS AND J. G. WILLIAMS, JET PROPULSION LABORATORY.

(2211)* 1951 WO2

Discovered 1951 Nov. 26 by L. E. Cunningham at Mt. Wilson. The 1953 observations were located on the basis of an ephemeris by J. G. Williams, the 1971 and 1978 observations on the basis of one by D. K. Yeomans.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	111.19173		(1950.0)	P	Q
n	0.17438869	Peri.	194.28726	+0.93600708	+0.31020548
a	3.1729058	Node	146.15048	-0.28644508	+0.94592758
e	0.0963842	Incl.	17.37339	-0.20454820	+0.09483446
P	5.65	B(1,0)	14.0		

Residuals in seconds of arc

511126	672	0.4+	1.6+	511223	672	0.3-	1.4-	530109	675	0.6-	0.2-
511126	672	0.6+	1.7+	520219	672	0.4-	1.0+	710422	675	0.4+	0.5-
511222	672	0.2+	1.7-	520219	672	0.7+	2.2+	780712	675	0.7+	0.1-
511222	672	0.4+	1.3-	520220	672	0.3-	0.6+	780712	675	1.6-	0.5-
511223	672	0.1-	1.0-	530109	675	0.8-	0.6-	780713	675	0.6-	0.3-
511223	672	0.4-	1.1-								

* * * * *

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

(2212)* 1978 SB

Discovered 1978 Sept. 27 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	274.13056		(1950.0)	P	Q
n	0.30974593	Peri.	208.00912	-0.56291485	+0.82080709
a	2.1633775	Node	28.06150	-0.71454165	-0.42432820
e	0.8351175	Incl.	11.89559	-0.41539992	-0.38238893
P	3.18	B(1,0)	15.2		

Residuals in seconds of arc

780927	095	0.8-	0.5-	781008	801	(11.5+	6.4-)	781010	046	0.7-	1.0-
781001	095	1.0+	0.4-	781008	805	2.4+	0.8-	781011	046	0.9+	1.2-
781001	095	0.7+	0.2-	781008	095	0.9-	1.0-	781011	801	4.7-	0.8+
781002	095	0.0	0.5+	781008	095	0.8-	1.7-	781024	095	0.6-	1.0-
781003	095	0.1-	2.3+	781008	046	0.8-	1.6+	781024	095	0.5-	0.5-
781003	095	0.7+	1.1+	781008	046	0.8-	2.1+	781029	095	1.3-	0.2+
781006	675	1.0+	2.7+	781009	805	0.5+	0.8-	781031	046	0.2+	0.7-
781006	675	1.7+	1.7-	781009	805	0.3+	0.7-	781031	046	0.5+	0.5-
781007	805	0.1+	1.0-	781009	056	4.0-	1.8+	781102	095	0.2+	0.1-
781007	688	1.4+	2.9-	781009	095	2.2-	0.2-	781104	095	0.1-	0.6-
781007	675	0.2-	0.0	781009	046	2.5+	1.7-	781120	095	2.2-	0.8+
781007	095	0.9-	1.2-	781009	046	0.3+	1.2-	781230	801	1.0-	1.0+
781007	095	0.6-	1.5-	781010	801	1.3-	3.0+	791031	801	2.8-	0.7+
781007	046	(10.2+	5.2-)	781010	675	1.9-	1.0+	800121	801	3.1+	1.6-
781007	046	1.2+	0.3-	781010	688	0.2+	3.8-	800122	801	2.0+	1.1+

1975 BU

G. R. Kastel’ has derived an orbit from the 1975 and 1977 observations.

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

M	42.94822		(1950.0)	P	Q
n	0.21129865	Peri.	69.83707	-0.90066322	+0.36874267
a	2.7917237	Node	131.04072	-0.41387823	-0.88911922
e	0.1129462	Incl.	17.74330	+0.13232749	-0.27110116
P	4.66	B(1,0)	12.3		

Residuals in seconds of arc

750112 330	1.2+	2.9-	750314 095	0.3+	0.1-	750405 095	2.6-	1.5+
750118 095	3.5+	2.5-	750316 095	(2.6+	4.2-)	750407 095	2.5-	1.0+
750118 330	3.1+	2.8+	750330 095	0.7-	0.5+	771009 095	0.2-	0.7+
750120 095	(1.4+	5.2+)	750404 095	0.2-	1.1-	800125 801	0.3-	1.2-
750304 095	1.8-	1.8+	750404 095	1.7-	0.5+			

1976 DD
Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M 57.60696		(1950.0)		P	Q
n 0.23679883	Peri.	211.08685	-0.95010032		-0.04427433
a 2.5875209	Node	322.25956	+0.26110387		-0.65450314
e 0.2649209	Incl.	30.29703	-0.17068728		-0.75476182
P 4.16	B(1,0)	15.9			

Residuals in seconds of arc

760227 809	0.5-	0.6+	760326 809	1.0-	0.7+	760429 809	0.4+	0.5+
760227 809	0.5+	2.2+	760326 809	0.5-	0.4+	760524 809	2.1+	1.3-
760320 809	1.1-	0.6-	760327 809	1.9-	0.1+	760524 809	5.0-	0.5-
760320 809	1.4-	0.7-	760327 809	0.4-	0.1+	800113 801	2.4+	2.0+
760322 809	0.6-	0.2+	760425 809	2.3+	1.7+	800116 801	2.8+	1.9+
760322 809	2.1+	0.6+	760426 809	0.9+	1.2-	800120 801	3.7-	4.0-
760325 809	1.2-	0.2+	760428 809	0.1-	0.8-			
760325 809	0.8+	0.6+	760429 809	0.1+	1.0-			

* * * * *

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

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

(603) Timandra = 1967 EJ = 1975 EA2 = 1977 RW7
Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M 165.62476		(1950.0)		P	Q
n 0.24311585	Peri.	156.97047	-0.76971169		-0.63713856
a 2.5424975	Node	343.25975	+0.56195662		-0.64650948
e 0.1691206	Incl.	7.97852	+0.30290041		-0.41961881
P 4.05	B(1,0)	13.6			

Residuals in seconds of arc

060217 803	0.6+	4.1+	670308 095	1.3+	2.2+	770912 095	1.4+	0.5-
060218 803	2.9+	1.6+	750308 095	1.7-	2.4-	770919 095	0.4-	0.0
060224 803	2.7+	3.1-	750312 095	1.7+	0.0	771008 095	1.0-	0.5+
060318 803	4.6-	0.1-	750315 095	1.4-	0.1-			

(2213)* 1935 SO1 = 1958 XM = 1974 RB

Discovered 1935 Sept. 24 by E. Delporte at Uccle. The key identification 1935 SO1 = 1974 RB is by E. Bowell (MPC 4414).
Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M 333.81843		(1950.0)		P	Q
n 0.30247360	Peri.	221.57787	+0.97638063		+0.20273488
a 2.1979159	Node	126.57278	-0.16539921		+0.92379755
e 0.2272549	Incl.	5.33674	-0.13901069		+0.32480248
P 3.26	B(1,0)	14.5			

Residuals in seconds of arc

350924 012	3.8+	1.4-	351021 012	4.5-	0.6-	740910 095	0.5-	2.0+
350929 012	2.7+	4.2-	351023 012	2.2+	1.6+	740912 095	0.6-	1.1+
351001 012	0.6-	0.1+	581204 330	0.5+	0.2-	790204 801	0.1+	0.5+
351019 012	2.1-	1.2+	581205 330	0.6-	1.1+			

(2214)* 1953 GF = 2519 P-L = 1977 RF7

Discovered 1953 Apr. 7 by K. Reinmuth at Heidelberg.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

		(1950.0)	P	Q
M	238.50099			
n	0.17302855	Peri. 131.07093	+0.76403451	+0.64404782
a	3.1895117	Node 189.06479	-0.64033923	+0.74976000
e	0.2513663	Incl. 14.00448	-0.07884755	+0.15186290
P	5.70	B(1,0) 12.9		

Residuals in seconds of arc

530407	024	7.1+	1.6-	600928	675	0.6+	0.5+	601026	675	1.0-	0.1-
530412	024	0.6-	0.8+	600929	675	0.6+	1.2+	770911	095	0.7-	0.4+
530419	024	6.6-	0.2+	601017	675	0.1+	0.4-	770918	095	0.9+	1.8+
600924	675	0.4+	2.5-	601022	675	1.4-	1.0-	770921	095	0.0	1.7-
600926	675	0.6+	1.4+	601025	675	0.1+	0.1-				

(2215)* 1964 VX2

Discovered 1964 Nov. 12 at the Purple Mountain Observatory. The recoveries in 1975 and 1978 were made on the basis of calculations at the Purple Mountain Observatory (Acta Astron. Sinica 18, No. 2).

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

		(1950.0)	P	Q
M	175.54455			
n	0.21132569	Peri. 331.66640	+0.72918450	-0.66124553
a	2.7914799	Node 70.85272	+0.65776341	+0.60623159
e	0.2649139	Incl. 10.74930	+0.18877834	+0.44185699
P	4.66	B(1,0) 12.8		

Residuals in seconds of arc

641112	330	3.5-	2.6+	750401	330	2.4+	0.8+	781229	801	0.0	0.2+
641130	330	0.0	0.7+	750403	330	0.0	0.3+	790329	801	0.9+	1.6+
641229	330	1.1+	0.5-	750411	330	2.4-	0.1+				
650103	330	3.1+	3.2-	781126	801	0.5-	0.4-				

(2216)* 1971 LF = 1959 CG1 = 1970 FK = 1975 ES2 = 1977 RB4

Discovered 1971 June 12 by T. Smirnova at the Crimean Astrophysical Observatory. The identification 1971 LF = 1975 EL2 (NOC 1042) is invalid.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

		(1950.0)	P	Q
M	218.69211			
n	0.18738460	Peri. 183.56499	+0.93450889	+0.34802694
a	3.0244526	Node 155.65225	-0.32191013	+0.91584787
e	0.0945330	Incl. 10.42991	-0.15187823	+0.20024965
P	5.26	B(1,0) 12.5		

Residuals in seconds of arc

590203	024	0.5-	2.8-	710615	095	1.9-	1.4+	770912	095	0.8-	1.6-
590208	024	1.3+	1.4+	710627	095	0.5+	3.2-	770918	095	0.1-	0.4+
700331	095	6.1-	1.3-	750308	095	3.8+	0.8+				
710612	095	3.3+	2.1+	770907	095	0.3+	1.1-				

(2217)* 1971 SK2 = 1958 FJ = 1959 NP = 1970 LD = 1976 OB1 = 1977 TH5

Discovered 1971 Sept. 26 by T. Smirnova at the Crimean Astrophysical Observatory. The key identifications 1971 SK2 = 1970 LD = 1976 OB1 are by T. Urata (MPC 5037). The identification 1971 SK2 = 1977 TH5 was found independently by B. G. Marsden.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

		(1950.0)	P	Q
M	287.56614			
n	0.17460487	Peri. 165.02706	+0.38856638	+0.92091452
a	3.1702863	Node 127.82877	-0.84927032	+0.37080011
e	0.1484470	Incl. 2.21584	-0.35742983	+0.12009880
P	5.64	B(1,0) 12.2		

Residuals in seconds of arc

580324 024	0.6+	1.9+	710926 095	3.6-	3.2+	771008 095	1.0-	0.5-
590710 760	0.3+	1.4+	711013 095	1.4+	0.9-	800113 801	0.7+	0.0
590710 760	0.1+	1.0-	711014 095	2.0+	1.1-	800113 801	0.0	0.7-
700610 095	0.6-	0.9-	711015 095	0.7+	0.5-			
700706 095	1.0-	0.8-	760729 095	0.5+	1.2+			

(2218)* 1975 AK = 1975 BG1 = 1970 ED1

Discovered 1975 Jan. 10 by P. Wild at the Zimmerwald Station of the Astronomical Institute, Berne University. The identifications are by B. G. Marsden.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	90.69158		(1950.0)	P	Q
n	0.18515624	Peri.	324.23680	+0.46905329	-0.84525975
a	3.0486705	Node	96.51091	+0.85830036	+0.36798009
e	0.1590468	Incl.	14.93008	+0.20810937	+0.38746175
P	5.32	B(1,0)	12.9		

Residuals in seconds of arc

700313 095	0.3+	0.2+	750207 026	0.2+	0.1+	791121 801	0.1+	0.6-
750110 026	0.0	1.3+	750210 026	0.8+	0.1+	791218 801	0.4+	0.7-
750111 026	0.1+	1.8+	750218 026	0.9-	0.8-	800113 801	0.6-	1.3+
750119 095	0.6+	3.6-	750218 026	1.2-	0.7-			

(2219)* 1975 LU = 1952 JC = 1965 VE = 1965 WX = 1971 UM3 = 1974 HD

Discovered 1975 June 13 at the El Leoncito Station of the Felix Aguilar Observatory, University of Cuyo. The key identifications 1975 LU = 1971 UM3 = 1974 HD are by T. Urata (NOC 1070).

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	268.25982		(1950.0)	P	Q
n	0.17638521	Peri.	301.49038	+0.96364436	-0.23570634
a	3.1489174	Node	72.39991	+0.26710026	+0.86190523
e	0.1206020	Incl.	7.58545	-0.00685596	+0.44895644
P	5.59	B(1,0)	12.0		

Residuals in seconds of arc

520503 839	1.0+	2.8-	740420 026	0.8+	2.1-	750701 808	0.2+	0.6+
520503 839	1.4-	0.6-	740422 026	0.4-	1.3-	750701 808	0.9-	1.0-
651101 760	0.4+	0.7-	750613 808	0.9+	0.1+	750707 808	1.5+	0.5+
651101 760	3.3+	1.0-	750613 808	0.2+	0.3+	750707 808	0.8-	0.3+
651120 760	0.9-	3.3-	750615 808	0.2+	0.5-	750712 808	0.3+	0.2+
651120 760	1.9-	0.9-	750615 808	0.2-	0.5+	750712 808	0.5-	0.4-
711029 095	2.1+	2.0-	750617 808	0.1+	0.9-			
740419 026	4.1-	0.2-	750617 808	0.1-	0.1-			

(2220)* 1975 VB

Discovered 1975 Nov. 4 by E. Helin at Palomar.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	350.27419		(1950.0)	P	Q
n	0.17694127	Peri.	278.78939	+0.97154326	-0.23253329
a	3.1423167	Node	94.66606	+0.23118582	+0.88951636
e	0.1755778	Incl.	2.59221	+0.05154416	+0.39330511
P	5.57	B(1,0)	13.2		

Residuals in seconds of arc

751102 095	2.7+	1.4-	751107 095	(5.3+	0.9-)	760205 801	1.3-	0.0
751104 675	0.4-	1.3+	751201 095	2.3-	0.9+	770217 801	0.7-	2.1-
751105 675	0.4-	1.8+	751202 801	0.5+	0.3+	770317 801	0.5+	0.9-
751106 675	1.5-	0.9-	751203 095	4.2+	1.2-	780309 801	3.2+	0.8-
751107 675	1.0-	3.5+	751204 801	1.9-	1.1+	780410 801	1.5-	7.3+
751107 675	0.8-	1.3-	751229 801	(9.6-	7.4+)	780501 801	0.4+	1.1-

(2221)* 1976 QC

Discovered 1976 Aug. 25 at the Harvard College Observatory, Agassiz Station.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	34.10909	(1950.0)	P	Q	
n	0.23643285	Peri.	80.26017	+0.80349071	+0.55399638
a	2.5901853	Node	245.79008	-0.59531542	+0.74679964
e	0.1389205	Incl.	13.82389	-0.00149373	+0.36793790
P	4.17	B(1,0)	14.3		

Residuals in seconds of arc

760825	801	0.7+	0.7+	760925	801	1.0+	0.4+	780131 801 1.4- 0.5+
760826	801	0.7-	0.1-	761024	801	0.7+	0.4-	790421 801 0.0 0.1+
760830	801	0.2+	0.3-	761117	801	0.7-	0.4+	
760922	801	1.3-	0.2-	780112	801	1.4+	0.5-	

(2222)* 1977 ST1 = 1933 UO = 1940 AG = 1951 AD1 = 1961 XN = 1966 UR = 1976 OM

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

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	177.59638	(1950.0)	P	Q	
n	0.17987098	Peri.	338.99785	+0.28097837	-0.95866212
a	3.1081024	Node	94.66187	+0.88677984	+0.24144166
e	0.1792457	Incl.	2.58333	+0.36697773	+0.15057514
P	5.48	B(1,0)	12.5		

Residuals in seconds of arc

331020	012	0.8-	3.1-	661020	095	1.4+	0.3+	771007 095 1.0- 0.3-
331117	012	0.3-	1.0+	661113	095	2.1+	2.0-	771013 095 2.9- 0.1+
400113	053	(12.5+	16.1+)X	760727	095	0.0	5.0+	771017 095 0.9- 0.3+
510105	711	1.3+	5.4+ Y	770919	095	0.5+	0.9+	
611206	760	(79.1-	9.7+)X	770922	095	0.9+	0.1+	

(2223)* 1977 TL3

Discovered 1977 Oct. 4 at the Purple Mountain Observatory.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	203.75841	(1950.0)	P	Q	
n	0.08457544	Peri.	55.99690	+0.09167507	+0.97950421
a	5.1401196	Node	220.46982	-0.98021749	+0.05703859
e	0.0127198	Incl.	16.04137	-0.17541192	+0.19317895
P	11.65	B(1,0)	9.8		

Residuals in seconds of arc

771004	330	0.4-	0.7-	781028	330	0.1+	1.1-	791027 801 1.0- 3.5+
771010	330	1.6+	1.8+	781126	330	1.5+	2.0+	791118 330 0.7- 0.4-
771016	330	0.8+	0.9-	781130	330	(3.9-	7.4+)	791121 801 0.8+ 0.5-
771101	330	0.2-	1.0+	781205	330	1.4-	0.1+	791212 801 0.1+ 1.1-
771108	330	1.8-	1.2-	791026	801	(0.2+	9.9-)	800113 801 0.8+ 1.2-

(2224)* 2528 P-L = 1975 VO4

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels. The identification was also independently found by E. Bowell (MPC 4415) and by H. Oishi.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	116.96204	(1950.0)	P	Q	
n	0.20164840	Peri.	245.05526	+0.43954498	+0.89748558
a	2.8800909	Node	51.06870	-0.80629594	+0.41206302
e	0.0482665	Incl.	2.67682	-0.39583716	+0.15723774
P	4.89	B(1,0)	13.1		

Residuals in seconds of arc

600924	675	0.7-	0.1-		601025	675	0.4+	0.8+		751203	095	4.0+	2.6-
600926	675	0.5+	0.1-		601026	675	0.6-	1.1+		790818	801	0.8+	1.2+
600928	675	0.5+	0.0		751102	095	0.3-	0.3-		790916	801	0.3+	1.3-
600929	675	0.2-	0.1-		751106	095	3.0-	3.9-		790917	801	0.2+	0.6+
601017	675	0.0	0.3+		751107	095	2.1+	2.0+					
601022	675	0.6-	1.0+		751201	095	0.5-	0.8+					

(2225)* 6546 P-L = 1975 VU = 1979 SE

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels. The identification 6546 P-L = 1975 VU was independently found by H. Oishi. The identification 6546 P-L = 1979 SE is by O. Kippes.

Epoch 1980 Dec. 27.0 ET = JDE 2444600.5

M	341.67802		(1950.0)	P	Q
n	0.20463168	Peri.	7.15163	-0.08822725	-0.99447441
a	2.8520303	Node	87.92161	+0.91101623	-0.10365620
e	0.0300295	Incl.	3.26353	+0.40282177	+0.01661463
P	4.82	B(1,0)	13.2		

Residuals in seconds of arc

600924	675	0.3+	0.8-		601026	675	0.2-	0.1+		790919	801	1.3+	0.0
600926	675	0.6+	0.6-		751101	095	1.2-	2.4+		790921	801	2.5-	1.7+
600927	675	0.8+	0.3-		751107	095	4.4-	1.5+		790927	801	1.2-	0.6+
600928	675	1.4+	0.4+		751201	095	4.3+	5.0-		791023	801	0.6+	1.6-
601017	675	0.1-	0.1+		751202	095	1.1+	2.1+		791026	801	0.2+	0.5+
601022	675	1.6-	0.3-		790916	801	0.9+	0.7+					
601024	675	0.2-	0.7-		790918	801	0.6+	0.0					

1942 VW = 1977 SW1

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

M	207.81801		(1950.0)	P	Q
n	0.19571553	Peri.	324.60467	+0.58622813	-0.80808662
a	2.9380108	Node	89.43718	+0.75592923	+0.51997654
e	0.1158983	Incl.	3.30961	+0.29138905	+0.27680392
P	5.04	B(1,0)	13.0		

Residuals in seconds of arc

421106	062	1.6+	2.9+		421204	062	0.5-	0.6+		770919	095	1.5-	0.2+
421113	062	2.1-	1.8+		421211	062	0.2-	1.6+		770922	095	3.9+	0.5+
421203	062	0.7-	0.8+		421211	062	2.4-	1.9+		771007	095	0.1+	2.1+

1953 GE = 1953 GR1 = 1976 GE2 = 1976 JG

The identification 1953 GE = 1976 GE2 is by E. Bowell. The double designations 1953 GE = 1953 GR1 (MPC 1227) and 1976 GE2 = 1976 JG are by O. Kippes.

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

M	36.23358		(1950.0)	P	Q
n	0.25684951	Peri.	205.03929	-0.20496330	+0.97698560
a	2.4510439	Node	53.18742	-0.88507760	-0.15923884
e	0.1514323	Incl.	4.23121	-0.41788477	-0.14192299
P	3.84	B(1,0)	14.0		

Residuals in seconds of arc

530407	210(52.0-	75.0-)X		530416	210(20.2+	58.2-)X		760404	095	0.3+	0.2+
530407	024	3.3-	0.9-	530419	024	1.5-	0.6+	760502	095	0.8-	0.3+
530412	024	3.4+	0.1-	760401	095	0.1+	0.1+				

1964 TA1 = 1977 SL1
Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M	277.66550		(1950.0)		P		Q				
n	0.22848959	Peri.	12.66088		+0.98130736		-0.19244378				
a	2.6498785	Node	358.43324		+0.17278679		+0.88360959				
e	0.1010899	Incl.	2.35165		+0.08473838		+0.42684830				
P	4.31	B(1,0)	13.5								

Residuals in seconds of arc

641008	330	0.3-	0.6-	641109	330	0.3-	0.1-	771007	095	0.5-	0.6-
641030	330	0.7+	0.6+	770919	095	0.1-	1.5+	771013	095	0.1-	0.8+
641101	330	0.4-	0.7+	770922	095	0.5+	1.1-	771017	095	0.5+	1.0-

1971 QX1 = 1974 CU = 1977 SF3
Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M	182.45837		(1950.0)		P		Q				
n	0.18880723	Peri.	269.91385		+0.38068713		-0.92177033				
a	3.0092470	Node	157.27086		+0.90595309		+0.35583750				
e	0.0952443	Incl.	10.98109		+0.18527359		+0.15401017				
P	5.22	B(1,0)	13.0								

Residuals in seconds of arc

710816	808	0.6-	3.3+	710824	808	1.7+	1.8+	770923	095	0.1-	0.0
710818	808	3.8-	4.4+	710826	808	0.8-	0.2+	771008	095	1.6-	1.2-
710818	808	0.2-	0.7+	740214	095	2.0+	3.1-				

1975 DA = 1976 OQ
The identification is by T. Urata (NOC 1069).
Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M	77.82531		(1950.0)		P		Q				
n	0.23064161	Peri.	291.15058		-0.59579837		+0.75574606				
a	2.6333695	Node	299.33134		-0.57115492		-0.63662459				
e	0.0992091	Incl.	18.16544		-0.56462939		-0.15348297				
P	4.27	B(1,0)	13.8								

Residuals in seconds of arc

750216	808	1.5-	0.4+	750219	808	0.5-	0.3+	750308	808	0.3+	1.0+
750216	808	1.1-	0.6+	750307	808	0.6-	0.2-	750308	808	0.1+	0.7+
750217	808	0.5-	1.9+	750307	808	0.7-	0.2+	760727	095	0.0	0.4+
750217	808	1.1-	1.1+	750307	808	0.3-	1.2+	760728	095	1.2+	0.5+
750218	808	0.1+	0.8+	750307	808	2.3-	1.2+	760801	095	1.2-	1.0+
750218	808	2.2-	0.9+	750308	808	0.2+	0.0				

1977 RF
Epoch 1980 Dec. 27.0 ET = JDE 2444600.5 (J-P)

M	60.59722		(1950.0)		P		Q				
n	0.29843490	Peri.	299.38054		-0.03906928		+0.99907659				
a	2.2177053	Node	328.36516		-0.90451509		-0.04296276				
e	0.1379676	Incl.	1.95313		-0.42464812		-0.00040679				
P	3.30	B(1,0)	14.5								

Residuals in seconds of arc

770909	801	2.2-	0.8+	770918	095	1.8-	0.1+	771207	801	2.5-	2.3+
770911	801	0.2+	1.2-	771007	801	0.9+	0.7-	771211	801	0.8+	0.9-
770912	801	0.7+	1.2-	771016	801	0.7-	1.4-	781125	801	0.5+	0.2-
770915	801	2.7+	1.5+	771111	801	1.1+	0.9+	790120	801	0.5-	0.2-

6567 P-L = 1978 VZ4
The identification is by O. Kippes.

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

M	19.66036	(1950.0)	P	Q	
n	0.23028093	Peri. 39.91747	-0.65014079	+0.75978844	
a	2.6361185	Node 189.53593	-0.70629228	-0.60733434	
e	0.1401315	Incl. 2.14582	-0.28012169	-0.23209162	
P	4.28	B(1,0) 14.6			

Residuals in seconds of arc

600924	675	0.2-	0.1+	601022	675	0.2-	0.3+	781107	675	0.0	0.6+
600926	675	0.6-	1.3-	601024	675	0.1-	0.9+	781108	675	0.0	0.1-
600927	675	1.2+	0.0	601026	675	0.8+	0.9+	781129	675	0.2-	0.6-
600928	675	0.2+	0.8-	781105	675	0.6-	1.3-	781130	675	0.2-	0.1-
601017	675	0.5-	0.5+	781106	675	0.7+	0.0				

* * * * *

EPHEMERIDES.

(2201) 1947 XC Elements MPC 5176

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980	03 22	20 43.83	-17 32.0	0.944	0.859	52.4	66.9	17.8
1980	04 01	21 04.69	-16 36.6					
1980	04 11	21 23.07	-15 40.0	1.092	1.091	62.6	54.7	18.3
1980	04 21	21 38.53	-14 49.3					
1980	05 01	21 50.85	-14 09.4	1.152	1.324	75.3	47.4	18.7
1980	05 11	21 59.88	-13 44.3					
1980	05 21	22 05.32	-13 37.7	1.148	1.545	91.1	40.9	18.9
1980	05 31	22 06.84	-13 52.6					
1980	06 10	22 04.10	-14 30.9	1.110	1.751	110.9	32.8	18.9
1980	06 20	21 56.81	-15 32.7					
1980	06 30	21 45.06	-16 54.2	1.086	1.942	135.0	21.7	18.8
1980	07 10	21 29.48	-18 27.1					
1980	07 20	21 11.45	-19 59.8	1.129	2.119	162.4	8.4	18.8
1980	07 30	20 52.98	-21 20.6					
1980	08 09	20 36.07	-22 22.1	1.280	2.283	168.9	4.9	19.1
1980	08 19	20 22.25	-23 02.7					
1980	08 29	20 12.31	-23 24.6	1.541	2.435	144.6	13.9	19.9
1980	09 08	20 06.29	-23 31.9					
1980	09 18	20 03.89	-23 28.0	1.883	2.576	123.4	19.0	20.6

Periodic Comet Borrelly Elements MPC 5126

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		m2
1980	05 01	22 23.14	-35 10.3	3.188	3.124	-0.81	-2.5	20.5
1980	05 11	22 36.94	-35 35.2					
1980	05 21	22 50.28	-36 12.8	2.811	2.993	-0.97	-3.7	20.0
1980	05 31	23 03.06	-37 05.3					
1980	06 10	23 15.13	-38 14.9	2.449	2.859	-1.18	-5.0	19.5
1980	06 20	23 26.25	-39 43.5					
1980	06 30	23 36.15	-41 32.4	2.120	2.721	-1.46	-6.4	19.0
1980	07 10	23 44.45	-43 41.9					
1980	07 20	23 50.61	-46 10.2	1.844	2.580	-1.87	-7.4	18.4
1980	07 30	23 54.05	-48 52.8					
1980	08 09	23 54.02	-51 41.9	1.634	2.435	-2.40	-7.2	17.9
1980	08 19	23 49.80	-54 25.4					
1980	08 29	23 41.06	-56 48.1	1.498	2.289	-2.96	-4.6	17.5
1980	09 08	23 28.17	-58 33.9					
1980	09 18	23 12.74	-59 28.5	1.428	2.141	-3.16	-0.4	17.1
1980	09 28	22 57.49	-59 24.5					

1980 10 08	22 45.18	-58 22.3	1.404	1.993	-2.81	+2.5	16.7	
1980 10 18	22 37.82	-56 27.7						
1980 10 28	22 36.05	-53 48.9	1.403	1.848	-2.29	+2.0	16.4	
1980 11 07	22 39.54	-50 32.9						
1980 11 17	22 47.55	-46 44.4	1.408	1.709	-1.89	-1.4	16.1	
1980 11 27	22 59.19	-42 26.4						
1980 12 07	23 13.65	-37 40.5	1.413	1.580	-1.63	-6.7	15.7	
1980 12 17	23 30.35	-32 27.9						
1980 12 27	23 48.76	-26 50.4	1.420	1.469	-1.46	-13.3	15.4	
1981 01 06	00 08.59	-20 50.8						
1981 01 16	00 29.65	-14 33.1	1.439	1.383	-1.36	-19.9	15.2	
1981 01 26	00 51.84	-08 03.5						
1981 02 05	01 15.19	-01 29.0	1.482	1.331	-1.32	-25.3	15.1	
1981 02 15	01 39.80	+05 02.0						
1981 02 25	02 05.82	+11 20.7	1.558	1.321	-1.37	-28.0	15.2	
1981 03 07	02 33.47	+17 18.5						
1981 03 17	03 02.96	+22 47.8	1.670	1.352	-1.51	-27.4	15.4	
1981 03 27	03 34.42	+27 41.5						
1981 04 06	04 07.94	+31 54.0	1.816	1.422	-1.74	-23.8	15.8	
1981 04 16	04 43.37	+35 20.9						
1981 04 26	05 20.33	+37 59.6	1.989	1.521	-1.98	-18.1	16.3	
1981 05 06	05 58.23	+39 49.2						
1981 05 16	06 36.29	+40 51.5	2.185	1.642	-2.07	-11.5	16.9	
1981 05 26	07 13.65	+41 10.0						
1981 06 05	07 49.63	+40 50.2	2.398	1.777	-1.95	-5.6	17.4	
1981 06 15	08 23.70	+39 58.6						
1981 06 25	08 55.60	+38 41.8	2.620	1.919	-1.68	-1.3	17.9	
1981 07 05	09 25.26	+37 06.1						
1981 07 15	09 52.78	+35 17.2	2.843	2.066	-1.38	+1.4	18.4	

Periodic Comet Stephan-Oterma — Elements MPC 4658

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		m2	
1980 05 01	00 18.74	-14 00.5	3.641	2.996	-0.64	-5.1	20.6	
1980 05 11	00 33.81	-12 42.9						
1980 05 21	00 49.15	-11 26.9	3.288	2.824	-0.76	-6.4	20.1	
1980 05 31	01 04.75	-10 13.1						
1980 06 10	01 20.63	-09 01.8	2.918	2.651	-0.90	-7.9	19.6	
1980 06 20	01 36.78	-07 53.9						
1980 06 30	01 53.21	-06 49.6	2.543	2.481	-1.09	-9.8	19.0	
1980 07 10	02 09.90	-05 49.5						
1980 07 20	02 26.82	-04 54.0	2.176	2.314	-1.33	-12.1	18.3	
1980 07 30	02 43.93	-04 03.0						
1980 08 09	03 01.17	-03 16.6	1.829	2.153	-1.67	-15.2	17.6	
1980 08 19	03 18.43	-02 34.1						
1980 08 29	03 35.60	-01 54.3	1.509	2.001	-2.12	-19.1	16.9	
1980 09 08	03 52.49	-01 14.9						
1980 09 18	04 08.85	-00 32.8	1.225	1.863	-2.74	-24.0	16.1	
1980 09 28	04 24.42	+00 17.3						
1980 10 08	04 38.85	+01 22.2	0.981	1.745	-3.60	-30.0	15.4	
1980 10 18	04 51.69	+02 51.1						
1980 10 28	05 02.52	+04 55.4	0.786	1.653	-4.72	-36.5	14.7	
1980 11 07	05 10.88	+07 46.9						
1980 11 17	05 16.45	+11 34.9	0.649	1.594	-5.97	-42.2	14.1	
1980 11 27	05 19.29	+16 19.2						
1980 12 07	05 19.90	+21 43.9	0.591	1.574	-6.85	-45.5	13.8	
1980 12 17	05 19.50	+27 17.3						
1980 12 27	05 19.83	+32 23.0	0.627	1.595	-6.83	-44.3	14.0	
1981 01 06	05 22.52	+36 35.2						
1981 01 16	05 28.80	+39 44.9	0.751	1.654	-6.11	-36.8	14.6	

1981 01 26	05 39.04	+41 55.4					
1981 02 05	05 52.92	+43 15.2	0.942	1.747	-5.18	-25.9	15.3
1981 02 15	06 09.80	+43 53.2					
1981 02 25	06 28.80	+43 57.8	1.188	1.866	-4.25	-15.7	16.1
1981 03 07	06 49.10	+43 35.3					
1981 03 17	07 10.09	+42 51.1	1.478	2.004	-3.39	-7.9	16.9
1981 03 27	07 31.21	+41 49.8					
1981 04 06	07 52.11	+40 34.9	1.805	2.156	-2.65	-2.7	17.6
1981 04 16	08 12.56	+39 09.5					
1981 04 26	08 32.42	+37 36.3	2.160	2.317	-2.04	+0.4	18.3
1981 05 06	08 51.61	+35 57.2					
1981 05 16	09 10.13	+34 14.0	2.532	2.484	-1.58	+2.1	19.0
1981 05 26	09 27.95	+32 28.2					
1981 06 05	09 45.14	+30 40.9	2.911	2.655	-1.23	+3.0	19.6
1981 06 15	10 01.71	+28 53.0					
1981 06 25	10 17.69	+27 05.5	3.285	2.827	-0.97	+3.2	20.1
1981 07 05	10 33.15	+25 19.1					
1981 07 15	10 48.12	+23 34.2	3.640	3.000	-0.78	+3.2	20.6

Periodic Comet Smirnova-Chernykh (1975 VII) Elements MPC 4830

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1980 05 01	00 40.47	-01 34.9	5.584	4.760	32.1	6.5	20.5	
1980 05 11	00 48.68	-00 46.5						
1980 05 21	00 56.51	-00 02.1	5.387	4.753	46.9	9.0	20.4	
1980 05 31	01 03.88	+00 37.8						
1980 06 10	01 10.69	+01 12.8	5.133	4.746	62.2	10.9	20.3	
1980 06 20	01 16.84	+01 42.1						
1980 06 30	01 22.21	+02 05.4	4.839	4.738	78.2	12.1	20.2	
1980 07 10	01 26.70	+02 22.1						
1980 07 20	01 30.16	+02 31.8	4.528	4.729	95.2	12.4	20.0	
1980 07 30	01 32.50	+02 34.2						
1980 08 09	01 33.60	+02 29.2	4.224	4.719	113.4	11.4	19.9	
1980 08 19	01 33.38	+02 16.7						
1980 08 29	01 31.83	+01 57.3	3.962	4.709	133.0	9.0	19.7	
1980 09 08	01 28.99	+01 32.0						
1980 09 18	01 24.98	+01 02.1	3.775	4.698	153.8	5.4	19.6	
1980 09 28	01 20.04	+00 29.7						
1980 10 08	01 14.51	-00 02.8	3.694	4.686	172.2	1.7	19.5	
1980 10 18	01 08.77	-00 32.8						
1980 10 28	01 03.27	-00 57.7	3.734	4.674	158.7	4.4	19.6	
1980 11 07	00 58.39	-01 15.5						
1980 11 17	00 54.47	-01 24.8	3.887	4.660	137.2	8.3	19.6	
1980 11 27	00 51.76	-01 24.8						
1980 12 07	00 50.39	-01 15.4	4.125	4.647	116.3	11.0	19.7	
1980 12 17	00 50.42	-00 57.1						
1980 12 27	00 51.80	-00 30.5	4.413	4.632	96.7	12.2	19.9	
1981 01 06	00 54.48	+00 03.3						
1981 01 16	00 58.34	+00 43.5	4.713	4.617	78.4	12.0	20.0	
1981 01 26	01 03.27	+01 29.0						
1981 02 05	01 09.14	+02 18.8	4.994	4.601	61.2	10.8	20.1	
1981 02 15	01 15.83	+03 11.9						
1981 02 25	01 23.22	+04 07.6	5.230	4.585	45.1	8.8	20.2	

Periodic Comet Honda-Mrkos-Pajdusakova Elements MPC 5128

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		m1
1980 05 01	04 26.25	+16 13.4	1.418	0.703	-4.39	+3.7	11.2	
1980 05 06	04 59.90	+16 18.5						
1980 05 11	05 32.31	+16 05.5	1.435	0.821	-4.07	+8.1	12.6	
1980 05 16	06 03.16	+15 36.8						

1980 05 21	06 32.25	+14 55.3	1.497	0.953	-3.60	+10.9	14.0
1980 05 26	06 59.45	+14 03.9					
1980 05 31	07 24.74	+13 05.4	1.597	1.089	-3.07	+12.0	15.3
1980 06 05	07 48.19	+12 02.2					
1980 06 10	08 09.90	+10 56.1	1.727	1.223	-2.57	+11.8	16.4
1980 06 15	08 30.01	+09 48.5					
1980 06 20	08 48.66	+08 40.6	1.878	1.355	-2.14	+10.9	17.5
1980 06 25	09 06.00	+07 33.1					
1980 06 30	09 22.17	+06 26.4	2.044	1.484	-1.78	+9.7	18.5
1980 07 05	09 37.30	+05 20.8					
1980 07 10	09 51.52	+04 16.6	2.217	1.609	-1.49	+8.5	19.4
1980 07 15	10 04.93	+03 13.8					
1980 07 20	10 17.63	+02 12.4	2.394	1.729	-1.26	+7.3	20.2

Periodic Comet Kearns-Kwee — Elements MPC 5129

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		m2
1980 06 30	23 01.69	-02 58.2	3.627	4.124	-0.45	-3.9	20.5
1980 07 10	23 01.55	-02 39.1					
1980 07 20	22 59.88	-02 28.5	3.291	4.039	-0.50	-4.4	20.1
1980 07 30	22 56.68	-02 26.9					
1980 08 09	22 52.02	-02 34.2	3.026	3.953	-0.54	-4.7	19.9
1980 08 19	22 46.14	-02 49.9					
1980 08 29	22 39.40	-03 12.3	2.862	3.866	-0.56	-4.9	19.7
1980 09 08	22 32.29	-03 39.2					
1980 09 18	22 25.38	-04 07.7	2.814	3.778	-0.54	-4.9	19.5
1980 09 28	22 19.24	-04 34.8					
1980 10 08	22 14.36	-04 57.7	2.876	3.689	-0.51	-4.6	19.5
1980 10 18	22 11.10	-05 14.1					
1980 10 28	22 09.67	-05 22.2	3.023	3.599	-0.47	-4.3	19.5
1980 11 07	22 10.13	-05 21.3					
1980 11 17	22 12.46	-05 10.6	3.218	3.508	-0.44	-4.1	19.5
1980 11 27	22 16.54	-04 50.2					
1980 12 07	22 22.22	-04 20.3	3.425	3.416	-0.42	-3.9	19.5
1980 12 17	22 29.34	-03 41.0					
1980 12 27	22 37.73	-02 52.9	3.617	3.324	-0.42	-3.8	19.5
1981 01 06	22 47.22	-01 56.4					
1981 01 16	22 57.69	-00 52.2	3.773	3.232	-0.43	-3.9	19.5
1981 01 26	23 09.00	+00 19.2					
1981 02 05	23 21.05	+01 37.2	3.880	3.141	-0.45	-4.0	19.4

Periodic Comet Schwassmann-Wachmann 2 (1979k) — Elements HBAA 1980, 98

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1980 06 30	03 42.75	+16 40.1	3.464	2.774	40.8	13.8	19.1
1980 07 10	03 59.06	+17 27.9					
1980 07 20	04 15.41	+18 09.0	3.205	2.699	51.9	17.2	18.8
1980 07 30	04 31.70	+18 43.3					
1980 08 09	04 47.82	+19 10.5	2.921	2.625	63.2	20.2	18.5
1980 08 19	05 03.63	+19 30.6					
1980 08 29	05 18.98	+19 43.7	2.619	2.553	75.1	22.5	18.2
1980 09 08	05 33.70	+19 50.3					
1980 09 18	05 47.54	+19 51.0	2.312	2.484	87.7	23.8	17.8
1980 09 28	06 00.25	+19 46.7					
1980 10 08	06 11.56	+19 38.9	2.010	2.419	101.7	23.9	17.4
1980 10 18	06 21.11	+19 28.9					
1980 10 28	06 28.54	+19 18.9	1.729	2.358	117.5	21.9	16.9
1980 11 07	06 33.47	+19 10.7					
1980 11 17	06 35.56	+19 06.6	1.489	2.303	135.8	17.4	16.5
1980 11 27	06 34.63	+19 08.3					
1980 12 07	06 30.74	+19 16.7	1.314	2.254	157.0	9.8	16.1

1980 12 17	06 24.37	+19 31.8					
1980 12 27	06 16.52	+19 52.6	1.231	2.213	176.3	1.6	15.9
1981 01 06	06 08.53	+20 17.3					
1981 01 16	06 01.85	+20 44.3	1.248	2.179	154.9	11.0	15.9
1981 01 26	05 57.70	+21 12.4					
1981 02 05	05 56.78	+21 40.5	1.354	2.155	133.5	19.4	16.0
1981 02 15	05 59.40	+22 07.4					
1981 02 25	06 05.44	+22 31.8	1.520	2.140	115.4	24.7	16.2
1981 03 07	06 14.56	+22 51.9					
1981 03 17	06 26.40	+23 06.0	1.721	2.135	100.2	27.3	16.5
1981 03 27	06 40.48	+23 12.4					
1981 04 06	06 56.38	+23 09.7	1.940	2.140	87.3	27.8	16.7
1981 04 16	07 13.73	+22 56.8					
1981 04 26	07 32.16	+22 33.0	2.165	2.155	75.9	26.9	17.0
1981 05 06	07 51.37	+21 57.9					
1981 05 16	08 11.11	+21 11.4	2.391	2.179	65.7	25.0	17.3
1981 05 26	08 31.13	+20 14.1					
1981 06 05	08 51.28	+19 06.5	2.611	2.212	56.2	22.4	17.5
1981 06 15	09 11.42	+17 49.4					
1981 06 25	09 31.41	+16 23.9	2.821	2.254	47.0	19.3	17.8
1981 07 05	09 51.22	+14 51.0					
1981 07 15	10 10.77	+13 12.0	3.017	2.303	38.0	15.8	18.0

6567 P-L Elements MPC 5225

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 02 11	11 34.03	+01 03.9	1.568	2.457	147.3	12.5	17.8
1980 02 21	11 28.52	+01 44.3					
1980 03 02	11 21.11	+02 39.0	1.446	2.430	171.0	3.7	17.3
1980 03 12	11 12.73	+03 41.8					
1980 03 22	11 04.50	+04 44.8	1.430	2.404	164.2	6.5	17.4
1980 04 01	10 57.59	+05 40.3					
1980 04 11	10 52.84	+06 22.2	1.514	2.379	141.2	15.3	17.7
1980 04 21	10 50.76	+06 47.3					
1980 05 01	10 51.50	+06 54.3	1.671	2.357	121.2	21.4	18.1
1980 05 11	10 54.92	+06 43.7					
1980 05 21	11 00.79	+06 16.9	1.871	2.336	104.3	24.8	18.4
1980 05 31	11 08.78	+05 35.5					
1980 06 10	11 18.57	+04 41.2	2.087	2.318	89.8	26.0	18.6
1980 06 20	11 29.90	+03 35.6					
1980 06 30	11 42.51	+02 20.3	2.304	2.302	77.1	25.5	18.8

1975 BU Elements MPC 5218

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 02 11	12 43.49	+12 59.0	1.725	2.512	133.9	16.4	15.9
1980 02 21	12 43.16	+14 56.0					
1980 03 02	12 40.24	+17 02.3	1.585	2.501	151.5	10.9	15.5
1980 03 12	12 35.05	+19 07.6					
1980 03 22	12 28.28	+20 59.8	1.541	2.492	157.8	8.7	15.4
1980 04 01	12 20.93	+22 28.0					
1980 04 11	12 14.08	+23 25.2	1.597	2.485	144.9	13.4	15.6
1980 04 21	12 08.69	+23 49.1					
1980 05 01	12 05.43	+23 41.5	1.736	2.480	127.4	18.8	15.9
1980 05 11	12 04.62	+23 06.5					
1980 05 21	12 06.28	+22 09.1	1.927	2.477	111.0	22.4	16.2
1980 05 31	12 10.27	+20 53.9					
1980 06 10	12 16.33	+19 25.0	2.147	2.476	96.5	24.0	16.5
1980 06 20	12 24.19	+17 45.6					
1980 06 30	12 33.59	+15 58.4	2.377	2.478	83.6	24.1	16.7

(2215) 1964 VX2 Elements MPC 5220

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 02 11	12 57.45	+08 31.0	2.448	3.172	129.8	13.8	17.6
1980 02 21	12 54.19	+09 20.8					
1980 03 02	12 48.85	+10 16.4	2.311	3.212	150.6	8.7	17.3
1980 03 12	12 41.80	+11 12.4					
1980 03 22	12 33.64	+12 03.3	2.275	3.250	165.5	4.4	17.2
1980 04 01	12 25.14	+12 43.4					
1980 04 11	12 17.08	+13 08.9	2.355	3.285	154.0	7.7	17.4
1980 04 21	12 10.14	+13 18.0					
1980 05 01	12 04.85	+13 10.4	2.538	3.319	134.1	12.6	17.7
1980 05 11	12 01.45	+12 47.7					
1980 05 21	12 00.02	+12 11.7	2.795	3.350	114.9	15.9	18.0
1980 05 31	12 00.50	+11 24.6					
1980 06 10	12 02.74	+10 28.6	3.093	3.378	97.5	17.3	18.3
1980 06 20	12 06.54	+09 25.2					
1980 06 30	12 11.71	+08 16.2	3.402	3.404	81.5	17.2	18.5
1980 07 10	12 18.06	+07 02.7					
1980 07 20	12 25.42	+05 45.7	3.700	3.428	66.8	15.8	18.7

1977 UQ Elements MPC 5217

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 02 11	13 16.11	-07 32.9	2.432	3.055	-0.76	+5.2	19.2
1980 02 21	13 14.99	-07 30.0					
1980 03 02	13 11.57	-07 13.8	2.178	3.020	-0.86	+5.9	18.9
1980 03 12	13 05.96	-06 44.9					
1980 03 22	12 58.50	-06 04.8	2.008	2.983	-0.93	+6.5	18.5
1980 04 01	12 49.85	-05 17.2					
1980 04 11	12 40.83	-04 26.8	1.950	2.943	-0.94	+6.7	18.3
1980 04 21	12 32.33	-03 39.3					
1980 05 01	12 25.18	-02 59.8	2.006	2.900	-0.87	+6.3	18.6
1980 05 11	12 19.97	-02 32.0					
1980 05 21	12 17.01	-02 18.1	2.150	2.856	-0.78	+5.7	18.8
1980 05 31	12 16.40	-02 18.9					
1980 06 10	12 18.06	-02 33.8	2.349	2.808	-0.69	+5.1	19.1
1980 06 20	12 21.83	-03 01.8					
1980 06 30	12 27.50	-03 41.6	2.568	2.759	-0.64	+4.7	19.2
1980 07 10	12 34.85	-04 31.7					
1980 07 20	12 43.69	-05 30.8	2.782	2.707	-0.60	+4.4	19.4

1977 QZ2 Elements MPC 5217

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 02 11	13 28.48	-14 17.0	2.860	3.399	-0.58	+4.5	19.3
1980 02 21	13 27.22	-14 38.0					
1980 03 02	13 23.86	-14 47.3	2.609	3.393	-0.64	+5.0	19.0
1980 03 12	13 18.51	-14 44.1					
1980 03 22	13 11.47	-14 28.4	2.438	3.384	-0.69	+5.5	18.7
1980 04 01	13 03.29	-14 01.3					
1980 04 11	12 54.64	-13 25.5	2.376	3.373	-0.70	+5.9	18.4
1980 04 21	12 46.30	-12 44.8					
1980 05 01	12 38.98	-12 03.8	2.433	3.359	-0.66	+5.8	18.7
1980 05 11	12 33.22	-11 27.0					
1980 05 21	12 29.36	-10 57.7	2.590	3.342	-0.60	+5.4	19.0
1980 05 31	12 27.55	-10 38.5					
1980 06 10	12 27.74	-10 30.3	2.814	3.324	-0.53	+4.9	19.2
1980 06 20	12 29.84	-10 33.5					
1980 06 30	12 33.68	-10 47.7	3.071	3.302	-0.49	+4.4	19.4
1980 07 10	12 39.07	-11 11.9					
1980 07 20	12 45.83	-11 45.3	3.332	3.279	-0.46	+4.0	19.6

1977 VK1 Elements MPC 5217

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 02 11	13 29.04	+01 29.2	2.897	3.502	-0.52	+5.8	17.9
1980 02 21	13 27.52	+01 43.6					
1980 03 02	13 24.03	+02 05.6	2.685	3.514	-0.58	+6.4	17.6
1980 03 12	13 18.72	+02 32.8					
1980 03 22	13 11.93	+03 02.2	2.562	3.526	-0.62	+6.7	17.3
1980 04 01	13 04.18	+03 29.8					
1980 04 11	12 56.13	+03 52.0	2.552	3.535	-0.62	+6.6	17.3
1980 04 21	12 48.45	+04 05.6					
1980 05 01	12 41.76	+04 08.5	2.658	3.544	-0.59	+6.2	17.6
1980 05 11	12 36.51	+03 59.7					
1980 05 21	12 32.98	+03 39.4	2.858	3.551	-0.54	+5.7	17.8
1980 05 31	12 31.27	+03 08.2					
1980 06 10	12 31.36	+02 27.4	3.120	3.557	-0.49	+5.2	18.1
1980 06 20	12 33.14	+01 38.2					
1980 06 30	12 36.47	+00 41.8	3.410	3.561	-0.44	+4.8	18.3
1980 07 10	12 41.17	-00 20.5					
1980 07 20	12 47.09	-01 27.8	3.700	3.564	-0.41	+4.5	18.5

1971 QX1 Elements MPC 5224

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 02 11	14 21.32	-05 24.1	2.763	3.179	106.0	17.4	18.1
1980 02 21	14 24.40	-04 54.7					
1980 03 02	14 25.43	-04 13.3	2.519	3.193	125.1	14.7	17.9
1980 03 12	14 24.35	-03 21.0					
1980 03 22	14 21.19	-02 20.2	2.334	3.207	145.7	10.1	17.6
1980 04 01	14 16.20	-01 14.4					
1980 04 11	14 09.84	-00 08.3	2.242	3.219	164.6	4.7	17.4
1980 04 21	14 02.69	+00 52.9					
1980 05 01	13 55.51	+01 44.0	2.261	3.231	161.1	5.8	17.4
1980 05 11	13 48.97	+02 21.5					
1980 05 21	13 43.66	+02 43.0	2.387	3.241	141.5	11.2	17.7
1980 05 31	13 40.00	+02 48.3					
1980 06 10	13 38.17	+02 38.2	2.596	3.251	122.1	15.3	18.0
1980 06 20	13 38.23	+02 14.4					
1980 06 30	13 40.11	+01 39.0	2.856	3.260	104.4	17.6	18.2
1980 07 10	13 43.69	+00 54.1					
1980 07 20	13 48.81	+00 01.6	3.137	3.268	88.3	18.1	18.5

1977 VY Elements MPC 5217

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 02 11	14 25.16	-13 50.0	2.681	3.051	-0.74	+4.2	19.0
1980 02 21	14 28.54	-14 10.1					
1980 03 02	14 29.78	-14 20.2	2.417	3.053	-0.83	+4.7	18.7
1980 03 12	14 28.73	-14 19.9					
1980 03 22	14 25.39	-14 08.8	2.203	3.055	-0.93	+5.3	18.4
1980 04 01	14 19.93	-13 47.7					
1980 04 11	14 12.81	-13 17.9	2.075	3.055	-0.99	+5.9	18.1
1980 04 21	14 04.67	-12 42.2					
1980 05 01	13 56.35	-12 04.3	2.055	3.055	-0.99	+6.1	18.0
1980 05 11	13 48.68	-11 28.7					
1980 05 21	13 42.37	-10 59.4	2.147	3.053	-0.92	+5.9	18.3
1980 05 31	13 37.93	-10 39.6					
1980 06 10	13 35.59	-10 30.9	2.328	3.051	-0.82	+5.4	18.6
1980 06 20	13 35.41	-10 34.0					
1980 06 30	13 37.33	-10 48.6	2.567	3.047	-0.74	+4.8	18.9
1980 07 10	13 41.17	-11 13.6					
1980 07 20	13 46.75	-11 47.7	2.833	3.043	-0.67	+4.3	19.1

1942 VW Elements MPC 5223

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980	02 11	14 48.93	-12 51.7	2.952	3.229	97.3	17.6	18.3
1980	02 21	14 53.05	-13 02.9					
1980	03 02	14 55.22	-13 05.1	2.682	3.239	115.9	16.0	18.1
1980	03 12	14 55.28	-12 58.5					
1980	03 22	14 53.15	-12 43.1	2.454	3.248	136.3	12.2	17.8
1980	04 01	14 48.93	-12 19.8					
1980	04 11	14 42.91	-11 50.1	2.303	3.256	158.5	6.5	17.5
1980	04 21	14 35.56	-11 16.2					
1980	05 01	14 27.59	-10 41.3	2.258	3.263	175.6	1.3	17.1
1980	05 11	14 19.74	-10 09.1					
1980	05 21	14 12.72	-09 42.8	2.327	3.269	154.4	7.7	17.6
1980	05 31	14 07.13	-09 25.2					
1980	06 10	14 03.33	-09 17.9	2.495	3.273	133.0	13.1	17.9
1980	06 20	14 01.49	-09 21.5					
1980	06 30	14 01.66	-09 35.8	2.733	3.276	113.7	16.5	18.1
1980	07 10	14 03.72	-09 59.7					
1980	07 20	14 07.54	-10 32.1	3.007	3.278	96.3	17.9	18.4

(2222) 1977 ST1 Elements MPC 5222

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980	02 11	14 57.37	-14 14.6	3.224	3.452	94.9	16.5	18.1
1980	02 21	15 01.25	-14 25.7					
1980	03 02	15 03.28	-14 28.7	2.958	3.476	113.6	15.1	17.9
1980	03 12	15 03.33	-14 23.5					
1980	03 22	15 01.34	-14 10.3	2.732	3.499	134.1	11.8	17.7
1980	04 01	14 57.39	-13 49.7					
1980	04 11	14 51.76	-13 22.7	2.580	3.520	156.2	6.6	17.4
1980	04 21	14 44.86	-12 51.2					
1980	05 01	14 37.30	-12 17.9	2.534	3.540	177.0	0.8	17.0
1980	05 11	14 29.74	-11 45.7					
1980	05 21	14 22.83	-11 17.6	2.604	3.559	157.3	6.3	17.5
1980	05 31	14 17.13	-10 56.4					
1980	06 10	14 12.99	-10 43.8	2.778	3.576	135.8	11.4	17.7
1980	06 20	14 10.62	-10 40.7					
1980	06 30	14 10.08	-10 47.2	3.027	3.592	116.1	14.7	18.0
1980	07 10	14 11.30	-11 02.7					
1980	07 20	14 14.19	-11 26.3	3.319	3.606	98.2	16.2	18.3

1953 GE Elements MPC 5223

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980	02 11	14 50.75	-13 22.6	1.884	2.227	96.7	26.1	17.7
1980	02 21	15 01.16	-14 10.8					
1980	03 02	15 09.57	-14 49.9	1.626	2.199	112.1	24.7	17.3
1980	03 12	15 15.55	-15 20.1					
1980	03 22	15 18.66	-15 41.3	1.397	2.173	129.7	20.7	16.9
1980	04 01	15 18.58	-15 53.5					
1980	04 11	15 15.20	-15 57.1	1.221	2.149	150.1	13.4	16.4
1980	04 21	15 08.75	-15 52.8					
1980	05 01	15 00.03	-15 42.4	1.125	2.129	173.1	3.2	15.9
1980	05 11	14 50.27	-15 29.0					
1980	05 21	14 40.96	-15 17.3	1.123	2.111	162.9	8.1	16.1
1980	05 31	14 33.50	-15 12.1					
1980	06 10	14 28.83	-15 17.3	1.209	2.098	140.9	17.8	16.4
1980	06 20	14 27.43	-15 34.9					
1980	06 30	14 29.37	-16 05.3	1.360	2.088	122.2	24.3	16.8
1980	07 10	14 34.44	-16 47.0					
1980	07 20	14 42.35	-17 38.2	1.550	2.082	106.6	27.9	17.2

1964 TA1 Elements MPC 5224

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 02 11	15 13.67	-19 22.7	2.728	2.898	89.8	19.9	18.4
1980 02 21	15 20.75	-19 58.7					
1980 03 02	15 25.93	-20 27.6	2.442	2.890	106.9	19.2	18.2
1980 03 12	15 28.94	-20 49.0					
1980 03 22	15 29.52	-21 02.4	2.181	2.880	125.8	16.3	17.9
1980 04 01	15 27.52	-21 06.9					
1980 04 11	15 22.99	-21 02.0	1.977	2.869	147.0	11.0	17.5
1980 04 21	15 16.19	-20 47.2					
1980 05 01	15 07.74	-20 23.1	1.860	2.858	169.8	3.6	17.1
1980 05 11	14 58.50	-19 51.8					
1980 05 21	14 49.45	-19 16.7	1.852	2.844	165.7	5.0	17.2
1980 05 31	14 41.57	-18 42.4					
1980 06 10	14 35.56	-18 13.0	1.950	2.830	143.3	12.4	17.5
1980 06 20	14 31.87	-17 51.9					
1980 06 30	14 30.68	-17 41.3	2.129	2.815	123.0	17.6	17.8
1980 07 10	14 31.94	-17 41.7					
1980 07 20	14 35.52	-17 52.6	2.356	2.799	105.1	20.5	18.1

(2213) 1935 SO1 Elements MPC 5219

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 02 11	15 14.75	-12 03.8	2.311	2.536	91.4	22.9	18.9
1980 02 21	15 23.55	-12 13.6					
1980 03 02	15 30.48	-12 12.7	2.014	2.501	107.7	22.2	18.5
1980 03 12	15 35.20	-12 00.9					
1980 03 22	15 37.32	-11 38.4	1.741	2.462	125.9	19.1	18.1
1980 04 01	15 36.56	-11 05.7					
1980 04 11	15 32.78	-10 24.3	1.521	2.421	146.4	13.2	17.6
1980 04 21	15 26.09	-09 36.6					
1980 05 01	15 17.04	-08 46.8	1.383	2.376	167.3	5.3	17.2
1980 05 11	15 06.56	-08 00.3					
1980 05 21	14 55.90	-07 22.9	1.347	2.330	161.8	7.8	17.2
1980 05 31	14 46.37	-07 00.1					
1980 06 10	14 39.00	-06 54.7	1.407	2.281	140.0	16.6	17.4
1980 06 20	14 34.47	-07 07.9					
1980 06 30	14 33.06	-07 38.5	1.538	2.229	120.2	23.2	17.7
1980 07 10	14 34.72	-08 24.3					
1980 07 20	14 39.29	-09 22.6	1.706	2.177	103.3	27.0	18.0

(2219) 1975 LU Elements MPC 5221

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 03 02	15 49.20	-15 42.0	3.119	3.472	102.5	16.2	17.5
1980 03 12	15 51.97	-15 50.1					
1980 03 22	15 52.76	-15 53.0	2.833	3.460	121.6	14.2	17.3
1980 04 01	15 51.49	-15 50.9					
1980 04 11	15 48.17	-15 44.3	2.600	3.448	142.3	10.2	17.0
1980 04 21	15 42.93	-15 33.8					
1980 05 01	15 36.16	-15 20.6	2.453	3.434	164.5	4.5	16.7
1980 05 11	15 28.40	-15 06.1					
1980 05 21	15 20.32	-14 52.2	2.415	3.419	171.2	2.6	16.5
1980 05 31	15 12.67	-14 41.1					
1980 06 10	15 06.07	-14 34.8	2.491	3.404	149.2	8.8	16.8
1980 06 20	15 01.03	-14 35.0					
1980 06 30	14 57.86	-14 42.8	2.661	3.387	128.3	13.6	17.1
1980 07 10	14 56.69	-14 58.2					
1980 07 20	14 57.53	-15 21.2	2.893	3.370	109.4	16.5	17.3
1980 07 30	15 00.28	-15 50.9					
1980 08 09	15 04.79	-16 26.4	3.155	3.352	92.3	17.6	17.5

1977 TB1 Elements MPC 5217

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 03 22	17 33.49	-25 34.3	2.373	2.685	-1.02	+0.7	20.5
1980 04 01	17 40.71	-25 47.5					
1980 04 11	17 45.69	-25 59.4	2.075	2.646	-1.20	+0.4	20.2
1980 04 21	17 48.06	-26 10.6					
1980 05 01	17 47.54	-26 21.1	1.811	2.605	-1.42	+0.5	19.7
1980 05 11	17 43.95	-26 30.0					
1980 05 21	17 37.33	-26 35.8	1.610	2.561	-1.62	+1.1	19.3
1980 05 31	17 28.12	-26 36.3					
1980 06 10	17 17.19	-26 29.9	1.501	2.515	-1.71	+2.1	18.7
1980 06 20	17 05.76	-26 16.0					
1980 06 30	16 55.23	-25 56.5	1.498	2.467	-1.63	+3.0	19.0
1980 07 10	16 46.77	-25 34.6					
1980 07 20	16 41.20	-25 14.1	1.588	2.417	-1.44	+3.1	19.3
1980 07 30	16 38.93	-24 57.9					
1980 08 09	16 39.97	-24 47.5	1.742	2.365	-1.25	+2.7	19.6
1980 08 19	16 44.18	-24 43.0					
1980 08 29	16 51.28	-24 43.4	1.928	2.312	-1.12	+2.0	19.8

1975 DA Elements MPC 5224

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 04 11	18 43.10	-39 08.9	1.973	2.388	101.7	24.3	17.9
1980 04 21	18 51.48	-39 13.1					
1980 05 01	18 56.62	-39 15.6	1.756	2.396	117.7	21.9	17.6
1980 05 11	18 58.16	-39 15.3					
1980 05 21	18 55.84	-39 09.5	1.574	2.407	135.9	17.0	17.3
1980 05 31	18 49.75	-38 53.7					
1980 06 10	18 40.43	-38 22.8	1.458	2.419	155.6	10.0	17.0
1980 06 20	18 28.93	-37 32.5					
1980 06 30	18 16.80	-36 21.8	1.433	2.433	166.3	5.7	16.8
1980 07 10	18 05.64	-34 54.2					
1980 07 20	17 56.78	-33 16.3	1.511	2.448	150.7	11.7	17.1
1980 07 30	17 51.04	-31 36.1					
1980 08 09	17 48.65	-29 59.8	1.678	2.465	131.1	18.1	17.5
1980 08 19	17 49.54	-28 31.0					
1980 08 29	17 53.39	-27 11.3	1.906	2.483	113.1	22.0	17.9
1980 09 08	17 59.78	-25 59.8					
1980 09 18	18 08.37	-24 55.2	2.170	2.501	97.1	23.5	18.2

1977 RF Elements MPC 5224

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 04 11	18 23.48	-26 00.5	1.402	1.930	105.5	30.0	17.4
1980 04 21	18 35.60	-26 02.6					
1980 05 01	18 44.82	-26 04.3	1.203	1.919	120.2	27.0	16.9
1980 05 11	18 50.68	-26 07.7					
1980 05 21	18 52.71	-26 13.9	1.039	1.913	137.7	20.8	16.5
1980 05 31	18 50.72	-26 22.3					
1980 06 10	18 44.91	-26 30.9	0.930	1.912	158.5	11.2	16.0
1980 06 20	18 36.08	-26 36.1					
1980 06 30	18 25.78	-26 34.5	0.899	1.915	176.1	2.1	15.6
1980 07 10	18 15.85	-26 25.0					
1980 07 20	18 08.07	-26 09.0	0.954	1.922	154.7	13.1	16.1
1980 07 30	18 03.68	-25 49.4					
1980 08 09	18 03.17	-25 29.0	1.082	1.934	134.5	21.9	16.6
1980 08 19	18 06.53	-25 09.2					
1980 08 29	18 13.42	-24 49.6	1.263	1.949	117.7	27.3	17.1
1980 09 08	18 23.32	-24 29.2					
1980 09 18	18 35.77	-24 06.1	1.476	1.968	103.3	29.8	17.5

(603) Timandra Elements MPC 5219

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 04 11	18 57.29	-31 53.2	2.364	2.700	98.5	21.5	18.1
1980 04 21	19 03.59	-32 13.2					
1980 05 01	19 07.22	-32 37.0	2.140	2.731	115.6	19.4	17.9
1980 05 11	19 07.94	-33 04.3					
1980 05 21	19 05.55	-33 33.8	1.953	2.761	134.8	15.1	17.6
1980 05 31	19 00.09	-34 02.4					
1980 06 10	18 51.88	-34 26.0	1.834	2.789	155.3	8.8	17.3
1980 06 20	18 41.62	-34 40.1					
1980 06 30	18 30.41	-34 41.4	1.812	2.815	168.5	4.1	17.2
1980 07 10	18 19.47	-34 28.9					
1980 07 20	18 09.99	-34 04.1	1.896	2.840	153.1	9.3	17.5
1980 07 30	18 02.85	-33 30.7					
1980 08 09	17 58.52	-32 52.6	2.075	2.862	132.8	15.1	17.8
1980 08 19	17 57.14	-32 13.2					
1980 08 29	17 58.59	-31 34.6	2.320	2.883	114.1	18.7	18.2
1980 09 08	18 02.60	-30 57.8					
1980 09 18	18 08.88	-30 22.7	2.601	2.902	97.1	20.1	18.5

(2196) 1965 BC Elements MPC 5132

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 04 11	18 55.68	-13 39.3	3.157	3.427	97.1	16.9	16.6
1980 04 21	18 59.64	-12 57.0					
1980 05 01	19 01.74	-12 15.6	2.896	3.439	114.6	15.5	16.3
1980 05 11	19 01.89	-11 36.6					
1980 05 21	19 00.06	-11 01.5	2.675	3.451	133.5	12.3	16.1
1980 05 31	18 56.35	-10 31.9					
1980 06 10	18 51.02	-10 08.9	2.527	3.462	153.0	7.7	15.9
1980 06 20	18 44.45	-09 53.8					
1980 06 30	18 37.24	-09 47.0	2.477	3.474	166.6	3.9	15.7
1980 07 10	18 30.01	-09 48.5					
1980 07 20	18 23.41	-09 57.8	2.537	3.485	155.2	7.0	15.9
1980 07 30	18 18.02	-10 13.7					
1980 08 09	18 14.22	-10 34.6	2.696	3.496	135.9	11.6	16.1
1980 08 19	18 12.27	-10 59.0					
1980 08 29	18 12.27	-11 25.2	2.931	3.507	117.0	14.9	16.4
1980 09 08	18 14.17	-11 51.5					
1980 09 18	18 17.89	-12 16.6	3.210	3.518	99.5	16.4	16.6

1979 DK Elements MPC 4771

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 04 11	18 58.15	-25 37.9	2.481	2.798	-0.93	-3.3	17.7
1980 04 21	19 04.22	-25 19.7					
1980 05 01	19 07.89	-25 02.7	2.239	2.816	-1.03	-3.8	17.4
1980 05 11	19 08.99	-24 47.5					
1980 05 21	19 07.37	-24 34.4	2.033	2.834	-1.16	-4.2	17.1
1980 05 31	19 03.09	-24 22.5					
1980 06 10	18 56.42	-24 10.9	1.895	2.852	-1.28	-4.1	16.8
1980 06 20	18 47.94	-23 58.2					
1980 06 30	18 38.50	-23 43.2	1.853	2.869	-1.33	-3.5	16.3
1980 07 10	18 29.09	-23 25.8					
1980 07 20	18 20.72	-23 06.6	1.920	2.886	-1.28	-2.8	16.9
1980 07 30	18 14.19	-22 46.7					
1980 08 09	18 09.98	-22 27.6	2.085	2.902	-1.15	-2.3	17.2
1980 08 19	18 08.33	-22 10.0					
1980 08 29	18 09.24	-21 54.3	2.320	2.918	-1.01	-2.1	17.6
1980 09 08	18 12.52	-21 39.9					
1980 09 18	18 17.97	-21 26.3	2.597	2.933	-0.88	-2.1	17.9

1977 CB Elements MPC 4829

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 04 11	18 52.13	+00 46.4	1.553	1.935	96.0	31.0	16.4
1980 04 21	19 01.66	+01 34.0					
1980 05 01	19 08.48	+02 14.8	1.362	1.946	109.5	29.2	16.1
1980 05 11	19 12.25	+02 43.2					
1980 05 21	19 12.56	+02 52.3	1.187	1.955	125.3	25.0	15.7
1980 05 31	19 09.20	+02 33.9					
1980 06 10	19 02.23	+01 40.6	1.052	1.963	143.5	17.9	15.3
1980 06 20	18 52.12	+00 06.7					
1980 06 30	18 40.02	-02 07.8	0.987	1.969	158.9	10.7	15.0
1980 07 10	18 27.50	-04 55.2					
1980 07 20	18 16.30	-08 02.3	1.015	1.974	152.7	13.6	15.1
1980 07 30	18 07.90	-11 13.6					
1980 08 09	18 03.15	-14 16.8	1.135	1.978	133.9	21.7	15.6
1980 08 19	18 02.37	-17 04.0					
1980 08 29	18 05.48	-19 31.7	1.318	1.980	115.8	27.3	16.0
1980 09 08	18 12.11	-21 39.0					
1980 09 18	18 21.87	-23 26.0	1.537	1.980	100.2	30.0	16.4

1979 FE Elements MPC 4717

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 04 11	19 11.19	-13 38.0	2.285	2.548	-1.02	+2.8	17.9
1980 04 21	19 19.34	-13 28.5					
1980 05 01	19 25.45	-13 24.6	2.016	2.532	-1.17	+2.8	17.5
1980 05 11	19 29.27	-13 28.9					
1980 05 21	19 30.50	-13 44.3	1.772	2.516	-1.37	+3.0	17.2
1980 05 31	19 28.96	-14 13.1					
1980 06 10	19 24.61	-14 56.8	1.581	2.499	-1.58	+3.2	16.8
1980 06 20	19 17.64	-15 55.2					
1980 06 30	19 08.66	-17 06.0	1.473	2.481	-1.72	+3.8	16.3
1980 07 10	18 58.58	-18 24.6					
1980 07 20	18 48.62	-19 45.9	1.469	2.462	-1.71	+4.5	16.4
1980 07 30	18 40.01	-21 04.6					
1980 08 09	18 33.70	-22 17.2	1.565	2.443	-1.56	+5.0	16.8
1980 08 19	18 30.35	-23 21.9					
1980 08 29	18 30.21	-24 17.9	1.738	2.423	-1.37	+4.9	17.1
1980 09 08	18 33.20	-25 05.0					
1980 09 18	18 39.14	-25 43.3	1.954	2.404	-1.21	+4.3	17.4

1979 DF Elements MPC 4771

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 05 01	19 58.42	-35 54.5	2.331	2.773	-1.07	-1.9	18.0
1980 05 11	20 03.43	-36 53.2					
1980 05 21	20 05.62	-38 00.5	2.129	2.805	-1.22	-2.6	17.8
1980 05 31	20 04.73	-39 14.4					
1980 06 10	20 00.63	-40 30.7	1.978	2.836	-1.41	-2.9	17.5
1980 06 20	19 53.42	-41 43.4					
1980 06 30	19 43.63	-42 44.9	1.908	2.866	-1.56	-2.2	17.4
1980 07 10	19 32.22	-43 28.4					
1980 07 20	19 20.47	-43 49.4	1.937	2.894	-1.59	-0.8	17.4
1980 07 30	19 09.78	-43 47.3					
1980 08 09	19 01.26	-43 25.2	2.065	2.920	-1.46	+0.3	17.7
1980 08 19	18 55.65	-42 47.7					
1980 08 29	18 53.22	-42 00.1	2.273	2.946	-1.27	+0.6	18.0
1980 09 08	18 53.88	-41 06.6					
1980 09 18	18 57.40	-40 09.9	2.533	2.969	-1.09	+0.4	18.3
1980 09 28	19 03.40	-39 11.7					
1980 10 08	19 11.50	-38 12.5	2.818	2.991	-0.94	-0.2	18.6

(2184) Fujian Elements MPC 5035

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 01	19 59.01	-18 13.7	2.833	3.201	102.2	17.9	17.2
1980 05 11	20 02.85	-17 44.9					
1980 05 21	20 04.67	-17 20.6	2.550	3.179	120.0	16.0	16.9
1980 05 31	20 04.37	-17 01.6					
1980 06 10	20 01.90	-16 48.6	2.314	3.157	139.6	12.0	16.6
1980 06 20	19 57.35	-16 41.9					
1980 06 30	19 51.02	-16 40.9	2.156	3.135	160.9	6.1	16.3
1980 07 10	19 43.42	-16 44.7					
1980 07 20	19 35.25	-16 52.0	2.100	3.112	173.7	2.1	16.0
1980 07 30	19 27.34	-17 01.1					
1980 08 09	19 20.47	-17 10.8	2.154	3.090	152.7	8.7	16.3
1980 08 19	19 15.29	-17 20.1					
1980 08 29	19 12.22	-17 27.9	2.302	3.068	131.7	14.2	16.6
1980 09 08	19 11.47	-17 33.6					
1980 09 18	19 13.05	-17 36.5	2.516	3.046	112.5	17.7	16.8
1980 09 28	19 16.86	-17 35.9					
1980 10 08	19 22.69	-17 31.1	2.764	3.025	95.3	19.2	17.1

1964 TX1 Elements MPC 4643

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 01	20 02.19	-23 47.8	3.104	3.466	102.6	16.5	19.4
1980 05 11	20 05.65	-23 52.3					
1980 05 21	20 07.18	-24 03.2	2.802	3.432	120.8	14.7	19.2
1980 05 31	20 06.63	-24 20.5					
1980 06 10	20 03.96	-24 43.7	2.550	3.397	140.7	10.9	18.8
1980 06 20	19 59.20	-25 11.4					
1980 06 30	19 52.64	-25 41.4	2.379	3.361	162.1	5.3	18.5
1980 07 10	19 44.75	-26 10.7					
1980 07 20	19 36.21	-26 36.5	2.313	3.323	172.6	2.3	18.2
1980 07 30	19 27.84	-26 56.3					
1980 08 09	19 20.42	-27 09.0	2.359	3.285	151.4	8.5	18.5
1980 08 19	19 14.64	-27 14.5					
1980 08 29	19 10.98	-27 13.5	2.501	3.246	130.2	13.7	18.8
1980 09 08	19 09.65	-27 06.9					
1980 09 18	19 10.71	-26 55.6	2.707	3.206	110.9	17.0	19.0
1980 09 28	19 14.06	-26 40.3					
1980 10 08	19 19.51	-26 21.0	2.946	3.166	93.3	18.4	19.2

(2140) 1970 PE Elements MPC 4775

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 01	20 04.60	-19 36.2	2.681	3.041	101.2	19.0	17.2
1980 05 11	20 08.93	-19 04.3					
1980 05 21	20 11.14	-18 36.9	2.410	3.030	118.8	17.0	16.9
1980 05 31	20 11.10	-18 14.7					
1980 06 10	20 08.73	-17 58.3	2.184	3.019	138.3	12.9	16.6
1980 06 20	20 04.11	-17 47.7					
1980 06 30	19 57.54	-17 42.3	2.033	3.008	159.8	6.7	16.3
1980 07 10	19 49.55	-17 41.0					
1980 07 20	19 40.90	-17 42.4	1.982	2.996	175.3	1.6	15.9
1980 07 30	19 32.48	-17 44.9					
1980 08 09	19 25.14	-17 47.4	2.041	2.984	153.8	8.6	16.3
1980 08 19	19 19.56	-17 49.0					
1980 08 29	19 16.20	-17 49.2	2.195	2.973	132.6	14.5	16.6
1980 09 08	19 15.26	-17 47.5					
1980 09 18	19 16.74	-17 43.3	2.415	2.961	113.4	18.1	16.9
1980 09 28	19 20.52	-17 35.9					
1980 10 08	19 26.36	-17 24.7	2.670	2.949	96.2	19.7	17.1

(2175) 1977 TY Elements MPC 4930

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 01	19 52.69	-17 20.6	1.687	2.158	103.5	27.0	18.4
1980 05 11	20 02.10	-16 27.0					
1980 05 21	20 09.17	-15 35.7	1.429	2.109	118.5	24.9	18.0
1980 05 31	20 13.56	-14 49.2					
1980 06 10	20 14.91	-14 10.3	1.206	2.060	135.8	20.1	17.4
1980 06 20	20 12.95	-13 41.7					
1980 06 30	20 07.72	-13 25.5	1.041	2.012	155.9	11.9	16.9
1980 07 10	19 59.65	-13 22.7					
1980 07 20	19 49.73	-13 32.7	0.953	1.965	172.6	3.8	16.4
1980 07 30	19 39.54	-13 52.8					
1980 08 09	19 30.70	-14 19.5	0.954	1.921	154.9	12.9	16.6
1980 08 19	19 24.68	-14 48.7					
1980 08 29	19 22.40	-15 16.8	1.032	1.881	134.2	22.6	17.0
1980 09 08	19 24.13	-15 40.7					
1980 09 18	19 29.80	-15 57.6	1.160	1.844	116.7	29.1	17.3
1980 09 28	19 39.03	-16 05.4					
1980 10 08	19 51.33	-16 02.1	1.315	1.813	102.3	32.6	17.6

(2136) 1933 OC Elements MPC 4774

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 01	20 16.89	-11 13.9	2.702	2.987	96.4	19.6	17.8
1980 05 11	20 22.15	-10 47.2					
1980 05 21	20 25.47	-10 27.7	2.447	2.995	113.3	18.1	17.5
1980 05 31	20 26.71	-10 17.5					
1980 06 10	20 25.77	-10 18.1	2.227	3.003	132.0	14.6	17.3
1980 06 20	20 22.66	-10 31.0					
1980 06 30	20 17.60	-10 56.3	2.072	3.010	152.6	9.0	17.0
1980 07 10	20 10.98	-11 33.4					
1980 07 20	20 03.39	-12 19.9	2.010	3.018	171.4	2.9	16.7
1980 07 30	19 55.65	-13 12.6					
1980 08 09	19 48.55	-14 07.9	2.057	3.026	159.2	6.8	16.9
1980 08 19	19 42.81	-15 02.1					
1980 08 29	19 38.99	-15 52.4	2.206	3.034	138.2	12.8	17.2
1980 09 08	19 37.37	-16 36.8					
1980 09 18	19 38.06	-17 13.9	2.431	3.042	118.5	16.9	17.5
1980 09 28	19 40.99	-17 43.1					
1980 10 08	19 46.00	-18 04.1	2.702	3.050	100.7	18.8	17.8

(2131) 1975 RA Elements MPC 4741

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 01	21 10.09	-45 11.8	1.456	1.827	94.0	33.4	16.4
1980 05 11	21 23.80	-43 52.0					
1980 05 21	21 33.53	-42 29.9	1.231	1.800	106.3	32.7	16.0
1980 05 31	21 38.67	-41 04.3					
1980 06 10	21 38.42	-39 31.3	1.014	1.774	121.9	29.1	15.4
1980 06 20	21 31.88	-37 43.1					
1980 06 30	21 18.47	-35 26.2	0.831	1.750	142.5	20.7	14.8
1980 07 10	20 58.48	-32 24.1					
1980 07 20	20 33.80	-28 24.6	0.721	1.729	168.5	6.7	14.1
1980 07 30	20 08.09	-23 34.2					
1980 08 09	19 45.29	-18 22.9	0.727	1.711	158.6	12.5	14.3
1980 08 19	19 28.11	-13 27.9					
1980 08 29	19 17.46	-09 13.1	0.840	1.696	132.8	25.9	14.9
1980 09 08	19 12.88	-05 44.1					
1980 09 18	19 13.53	-02 55.0	1.014	1.686	113.2	33.2	15.4
1980 09 28	19 18.44	-00 35.8					
1980 10 08	19 26.76	+01 23.1	1.211	1.680	98.5	36.0	15.9

1977 QX Elements MPC 4927

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 05 01	20 43.81	-16 27.1	2.245	2.483	-1.00	-3.2	18.8
1980 05 11	20 52.54	-15 50.3					
1980 05 21	20 59.27	-15 20.4	1.985	2.475	-1.14	-4.0	18.5
1980 05 31	21 03.76	-14 59.4					
1980 06 10	21 05.73	-14 49.6	1.745	2.465	-1.33	-4.8	18.1
1980 06 20	21 04.92	-14 52.7					
1980 06 30	21 01.25	-15 09.4	1.552	2.452	-1.54	-5.5	17.7
1980 07 10	20 54.84	-15 38.9					
1980 07 20	20 46.15	-16 18.7	1.437	2.438	-1.71	-5.6	17.3
1980 07 30	20 36.08	-17 04.0					
1980 08 09	20 25.81	-17 49.8	1.421	2.422	-1.72	-4.9	17.3
1980 08 19	20 16.60	-18 31.0					
1980 08 29	20 09.57	-19 04.3	1.506	2.405	-1.58	-3.9	17.6
1980 09 08	20 05.37	-19 27.9					
1980 09 18	20 04.34	-19 41.4	1.670	2.385	-1.37	-3.2	18.0
1980 09 28	20 06.43	-19 44.8					
1980 10 08	20 11.40	-19 38.4	1.881	2.364	-1.19	-2.9	18.3

6521 P-L Elements MPC 5011

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 21	20 53.75	-14 00.7	1.780	2.300	107.7	24.8	18.6
1980 05 31	20 59.80	-13 31.6					
1980 06 10	21 03.36	-13 13.8	1.537	2.270	124.4	21.7	18.2
1980 06 20	21 04.10	-13 09.9					
1980 06 30	21 01.86	-13 21.8	1.338	2.240	143.8	15.6	17.7
1980 07 10	20 56.66	-13 50.0					
1980 07 20	20 48.86	-14 33.0	1.210	2.210	166.0	6.4	17.3
1980 07 30	20 39.36	-15 26.3					
1980 08 09	20 29.41	-16 23.8	1.175	2.179	169.2	5.0	17.1
1980 08 19	20 20.44	-17 18.9					
1980 08 29	20 13.77	-18 06.4	1.235	2.149	146.2	15.2	17.5
1980 09 08	20 10.20	-18 42.9					
1980 09 18	20 10.15	-19 07.0	1.370	2.120	125.7	22.6	17.8
1980 09 28	20 13.57	-19 18.2					
1980 10 08	20 20.17	-19 16.4	1.549	2.091	108.4	27.0	18.2
1980 10 18	20 29.58	-19 01.7					
1980 10 28	20 41.37	-18 34.1	1.750	2.065	93.6	28.7	18.4

1977 VM1 Elements MPC 5217

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 05 21	21 09.94	-23 40.6	1.854	2.354	-1.39	-4.9	18.3
1980 05 31	21 17.32	-23 57.1					
1980 06 10	21 22.29	-24 27.8	1.599	2.315	-1.66	-6.4	17.8
1980 06 20	21 24.44	-25 13.9					
1980 06 30	21 23.44	-26 14.8	1.389	2.275	-2.01	-7.6	17.4
1980 07 10	21 19.12	-27 27.4					
1980 07 20	21 11.61	-28 45.1	1.248	2.234	-2.33	-7.4	16.9
1980 07 30	21 01.61	-29 58.2					
1980 08 09	20 50.35	-30 56.8	1.200	2.192	-2.45	-5.6	16.8
1980 08 19	20 39.47	-31 33.0					
1980 08 29	20 30.62	-31 44.0	1.245	2.150	-2.27	-3.6	17.0
1980 09 08	20 24.95	-31 31.5					
1980 09 18	20 23.08	-30 59.2	1.363	2.108	-1.95	-2.7	17.3
1980 09 28	20 25.08	-30 11.1					
1980 10 08	20 30.63	-29 10.4	1.526	2.067	-1.65	-2.9	17.6
1980 10 18	20 39.30	-27 58.7					
1980 10 28	20 50.59	-26 37.2	1.708	2.027	-1.43	-3.7	17.9

1973 SD Elements MPC 4644

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 21	21 47.96	-38 08.0	2.173	2.590	102.6	22.4	20.6
1980 05 31	21 55.30	-38 25.1					
1980 06 10	21 59.97	-38 53.2	1.899	2.536	117.7	20.8	20.2
1980 06 20	22 01.45	-39 31.7					
1980 06 30	21 59.28	-40 17.2	1.663	2.479	134.0	17.2	19.8
1980 07 10	21 53.08	-41 04.0					
1980 07 20	21 42.79	-41 42.5	1.491	2.421	149.3	12.4	19.4
1980 07 30	21 29.02	-42 01.1					
1980 08 09	21 13.12	-41 48.9	1.406	2.360	154.2	10.8	19.2
1980 08 19	20 57.08	-40 59.5					
1980 08 29	20 43.01	-39 34.3	1.418	2.298	141.8	15.8	19.2
1980 09 08	20 32.42	-37 40.3					
1980 09 18	20 26.07	-35 27.3	1.513	2.235	123.9	21.9	19.4
1980 09 28	20 24.01	-33 03.9					
1980 10 08	20 25.84	-30 36.1	1.663	2.172	106.6	26.2	19.7
1980 10 18	20 31.05	-28 06.9					
1980 10 28	20 39.07	-25 37.5	1.839	2.108	91.2	28.1	19.9

(2188) 1976 UL4 Elements MPC 5036

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 21	21 40.47	-12 53.5	2.367	2.679	96.6	22.0	17.5
1980 05 31	21 47.69	-12 20.9					
1980 06 10	21 53.01	-11 58.1	2.110	2.669	112.5	20.6	17.2
1980 06 20	21 56.20	-11 47.1					
1980 06 30	21 57.09	-11 49.4	1.884	2.661	130.6	16.9	16.9
1980 07 10	21 55.58	-12 05.7					
1980 07 20	21 51.71	-12 35.6	1.718	2.654	151.2	10.6	16.5
1980 07 30	21 45.82	-13 16.6					
1980 08 09	21 38.49	-14 04.8	1.638	2.648	173.9	2.3	16.1
1980 08 19	21 30.57	-14 55.0					
1980 08 29	21 23.08	-15 41.5	1.662	2.644	162.8	6.5	16.3
1980 09 08	21 16.92	-16 20.0					
1980 09 18	21 12.82	-16 47.3	1.785	2.641	140.7	13.9	16.7
1980 09 28	21 11.21	-17 02.2					
1980 10 08	21 12.17	-17 04.4	1.984	2.640	120.9	19.0	17.0
1980 10 18	21 15.64	-16 54.2					
1980 10 28	21 21.39	-16 32.4	2.229	2.640	103.3	21.5	17.3

1979 BA Elements MPC 5008

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 05 21	21 48.37	+11 05.2	1.884	2.085	-1.13	+11.1	19.6
1980 05 31	21 57.46	+11 06.8					
1980 06 10	22 04.78	+10 46.7	1.600	2.049	-1.40	+12.8	19.2
1980 06 20	22 09.95	+09 56.3					
1980 06 30	22 12.55	+08 25.0	1.319	2.009	-1.77	+14.7	18.7
1980 07 10	22 12.10	+05 59.5					
1980 07 20	22 08.14	+02 25.0	1.073	1.965	-2.24	+16.8	18.1
1980 07 30	22 00.43	-02 29.1					
1980 08 09	21 49.15	-08 40.4	0.914	1.919	-2.64	+19.9	17.3
1980 08 19	21 35.19	-15 42.7					
1980 08 29	21 20.37	-22 47.4	0.892	1.870	-2.67	+24.3	17.4
1980 09 08	21 06.87	-29 06.0					
1980 09 18	20 56.78	-34 11.3	1.001	1.819	-2.30	+26.6	17.9
1980 09 28	20 51.46	-38 01.1					
1980 10 08	20 51.36	-40 46.5	1.183	1.767	-1.89	+25.5	18.3
1980 10 18	20 56.39	-42 40.5					
1980 10 28	21 06.04	-43 54.5	1.378	1.715	-1.65	+22.8	18.7

(2111) 1969 LG Elements MPC 4608

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 21	21 51.82	-05 23.4	2.779	2.981	91.4	19.8	16.3
1980 05 31	21 58.26	-04 44.9					
1980 06 10	22 03.09	-04 15.4	2.496	2.962	107.4	19.1	16.1
1980 06 20	22 06.11	-03 57.2					
1980 06 30	22 07.17	-03 52.4	2.238	2.944	125.2	16.4	15.8
1980 07 10	22 06.18	-04 02.8					
1980 07 20	22 03.14	-04 29.6	2.033	2.925	145.1	11.5	15.4
1980 07 30	21 58.27	-05 12.5					
1980 08 09	21 51.96	-06 09.7	1.911	2.907	166.5	4.7	15.1
1980 08 19	21 44.85	-07 17.3					
1980 08 29	21 37.77	-08 30.0	1.895	2.889	167.4	4.4	15.0
1980 09 08	21 31.50	-09 41.9					
1980 09 18	21 26.77	-10 47.6	1.986	2.872	145.6	11.4	15.3
1980 09 28	21 24.08	-11 43.2					
1980 10 08	21 23.68	-12 26.1	2.164	2.855	124.9	16.7	15.6
1980 10 18	21 25.63	-12 55.3					
1980 10 28	21 29.81	-13 10.7	2.396	2.839	106.2	19.6	15.9

(2221) 1976 QC Elements MPC 5222

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 21	21 45.82	+00 18.1	1.998	2.254	90.9	26.7	18.2
1980 05 31	21 55.26	+02 30.5					
1980 06 10	22 02.85	+04 40.5	1.772	2.243	103.8	26.1	17.9
1980 06 20	22 08.30	+06 45.1					
1980 06 30	22 11.35	+08 40.5	1.568	2.236	118.2	23.6	17.6
1980 07 10	22 11.80	+10 22.3					
1980 07 20	22 09.51	+11 44.7	1.404	2.231	133.9	19.2	17.2
1980 07 30	22 04.66	+12 41.7					
1980 08 09	21 57.70	+13 08.3	1.300	2.230	149.0	13.6	16.9
1980 08 19	21 49.50	+13 01.3					
1980 08 29	21 41.24	+12 22.5	1.276	2.233	155.1	11.0	16.8
1980 09 08	21 34.11	+11 17.9					
1980 09 18	21 29.14	+09 56.8	1.340	2.238	145.1	14.9	17.0
1980 09 28	21 26.99	+08 29.9					
1980 10 08	21 27.85	+07 06.3	1.480	2.247	129.0	20.2	17.4
1980 10 18	21 31.70	+05 53.1					
1980 10 28	21 38.26	+04 54.6	1.677	2.259	113.0	23.9	17.7

(2197) 1965 YN Elements MPC 5132

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 21	22 11.61	-13 54.4	3.377	3.522	89.8	16.7	17.3
1980 05 31	22 16.72	-13 34.3					
1980 06 10	22 20.33	-13 22.9	3.083	3.513	106.8	16.1	17.0
1980 06 20	22 22.27	-13 21.1					
1980 06 30	22 22.43	-13 29.5	2.816	3.504	125.4	13.7	16.8
1980 07 10	22 20.72	-13 48.1					
1980 07 20	22 17.17	-14 16.0	2.606	3.493	145.8	9.4	16.5
1980 07 30	22 11.96	-14 51.3					
1980 08 09	22 05.44	-15 31.1	2.485	3.482	167.7	3.6	16.2
1980 08 19	21 58.11	-16 11.7					
1980 08 29	21 50.64	-16 49.4	2.475	3.469	168.2	3.4	16.2
1980 09 08	21 43.70	-17 20.6					
1980 09 18	21 37.92	-17 43.1	2.577	3.456	146.0	9.4	16.5
1980 09 28	21 33.78	-17 55.4					
1980 10 08	21 31.54	-17 57.3	2.770	3.441	124.9	13.8	16.7
1980 10 18	21 31.33	-17 49.1					
1980 10 28	21 33.10	-17 31.3	3.022	3.425	105.6	16.2	16.9

(2194) 1940 GE Elements MPC 5131

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 05 21	22 07.14	-21 32.6	2.131	2.413	93.5	24.7	17.6
1980 05 31	22 16.88	-21 24.0					
1980 06 10	22 24.63	-21 28.1	1.896	2.417	108.5	23.5	17.3
1980 06 20	22 30.06	-21 46.8					
1980 06 30	22 32.88	-22 20.7	1.685	2.421	125.5	20.0	17.0
1980 07 10	22 32.80	-23 09.3					
1980 07 20	22 29.63	-24 09.6	1.523	2.423	144.5	14.1	16.7
1980 07 30	22 23.49	-25 15.9					
1980 08 09	22 14.85	-26 20.2	1.438	2.424	162.5	7.2	16.4
1980 08 19	22 04.62	-27 13.2					
1980 08 29	21 54.11	-27 47.3	1.451	2.425	160.0	8.2	16.4
1980 09 08	21 44.66	-27 58.4					
1980 09 18	21 37.41	-27 46.1	1.561	2.425	140.9	15.2	16.7
1980 09 28	21 33.06	-27 13.2					
1980 10 08	21 31.83	-26 23.4	1.746	2.424	121.7	20.5	17.1
1980 10 18	21 33.64	-25 20.3					
1980 10 28	21 38.19	-24 06.7	1.976	2.422	104.4	23.4	17.4

(2220) 1975 VB Elements MPC 5221

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 10	22 18.45	-12 32.6	2.343	2.812	106.9	20.2	17.8
1980 06 20	22 23.15	-12 19.1					
1980 06 30	22 25.84	-12 17.6	2.080	2.782	124.2	17.6	17.4
1980 07 10	22 26.34	-12 29.3					
1980 07 20	22 24.55	-12 54.1	1.868	2.753	143.7	12.6	17.0
1980 07 30	22 20.57	-13 30.5					
1980 08 09	22 14.71	-14 15.4	1.734	2.727	165.3	5.4	16.7
1980 08 19	22 07.55	-15 04.0					
1980 08 29	21 59.96	-15 50.6	1.701	2.702	170.6	3.5	16.5
1980 09 08	21 52.86	-16 29.9					
1980 09 18	21 47.16	-16 57.7	1.772	2.679	148.3	11.4	16.8
1980 09 28	21 43.53	-17 11.9					
1980 10 08	21 42.32	-17 11.8	1.928	2.658	127.6	17.3	17.1
1980 10 18	21 43.67	-16 57.8					
1980 10 28	21 47.48	-16 30.8	2.142	2.640	109.2	20.8	17.4
1980 11 07	21 53.50	-15 51.9					
1980 11 17	22 01.50	-15 02.0	2.384	2.625	92.8	22.1	17.7

1972 HW Elements MPC 4229

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 10	22 30.55	-00 27.1	2.273	2.639	99.6	22.3	18.3
1980 06 20	22 34.91	+00 09.7					
1980 06 30	22 37.16	+00 32.5	2.037	2.652	116.5	20.1	18.0
1980 07 10	22 37.10	+00 39.0					
1980 07 20	22 34.63	+00 26.6	1.838	2.663	135.9	15.4	17.7
1980 07 30	22 29.85	-00 06.0					
1980 08 09	22 23.05	-00 58.3	1.707	2.672	157.4	8.4	17.4
1980 08 19	22 14.84	-02 07.8					
1980 08 29	22 06.10	-03 28.9	1.675	2.678	171.7	3.1	17.1
1980 09 08	21 57.81	-04 54.5					
1980 09 18	21 50.89	-06 17.2	1.751	2.682	152.2	10.0	17.5
1980 09 28	21 46.05	-07 30.6					
1980 10 08	21 43.66	-08 30.7	1.923	2.683	130.7	16.4	17.8
1980 10 18	21 43.85	-09 15.3					
1980 10 28	21 46.53	-09 43.7	2.158	2.682	111.2	20.2	18.2
1980 11 07	21 51.47	-09 56.5					
1980 11 17	21 58.41	-09 54.5	2.424	2.679	93.9	21.6	18.5

1977 UP — Elements MPC 5217

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 06 10	22 16.71	-14 56.3	1.401	1.970	-1.87	-12.3	18.9
1980 06 20	22 26.26	-14 09.5					
1980 06 30	22 33.27	-13 34.6	1.191	1.941	-2.25	-15.4	18.4
1980 07 10	22 37.35	-13 13.9					
1980 07 20	22 38.06	-13 09.0	1.018	1.915	-2.74	-18.6	17.9
1980 07 30	22 35.26	-13 19.3					
1980 08 09	22 29.09	-13 41.8	0.903	1.893	-3.20	-20.5	17.4
1980 08 19	22 20.32	-14 10.5					
1980 08 29	22 10.39	-14 36.9	0.868	1.875	-3.32	-19.7	17.1
1980 09 08	22 01.02	-14 53.3					
1980 09 18	21 53.89	-14 54.3	0.919	1.861	-2.99	-17.1	17.5
1980 09 28	21 50.15	-14 37.6					
1980 10 08	21 50.19	-14 03.8	1.041	1.852	-2.48	-14.6	18.0
1980 10 18	21 53.97	-13 14.0					
1980 10 28	22 01.10	-12 09.9	1.209	1.849	-2.03	-12.9	18.4
1980 11 07	22 11.03	-10 52.8					
1980 11 17	22 23.28	-09 24.0	1.405	1.850	-1.70	-11.7	18.8

(2167) 1971 LA — Elements MPC 4832

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 10	22 38.55	-01 47.8	2.610	2.934	98.3	20.0	17.8
1980 06 20	22 41.90	-01 00.3					
1980 06 30	22 43.27	-00 23.5	2.365	2.950	115.6	18.1	17.5
1980 07 10	22 42.53	+00 00.8					
1980 07 20	22 39.59	+00 10.8	2.158	2.965	134.9	14.0	17.3
1980 07 30	22 34.56	+00 05.4					
1980 08 09	22 27.72	-00 15.2	2.022	2.977	156.0	8.0	17.0
1980 08 19	22 19.61	-00 49.8					
1980 08 29	22 10.98	-01 35.0	1.985	2.987	170.9	3.1	16.7
1980 09 08	22 02.67	-02 26.2					
1980 09 18	21 55.48	-03 18.3	2.060	2.994	153.6	8.6	17.0
1980 09 28	21 50.06	-04 06.4					
1980 10 08	21 46.78	-04 46.8	2.234	2.999	132.3	14.3	17.4
1980 10 18	21 45.82	-05 17.0					
1980 10 28	21 47.14	-05 35.7	2.477	3.002	112.6	17.8	17.7
1980 11 07	21 50.56	-05 42.6					
1980 11 17	21 55.89	-05 37.6	2.755	3.002	94.7	19.2	17.9

(2147) Kharadze — Elements MPC 4777

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 10	23 03.89	-06 20.8	2.983	3.221	94.2	18.3	18.3
1980 06 20	23 09.35	-06 09.3					
1980 06 30	23 13.24	-06 09.8	2.699	3.208	111.1	17.2	18.1
1980 07 10	23 15.42	-06 23.4					
1980 07 20	23 15.72	-06 51.1	2.448	3.196	129.8	14.1	17.8
1980 07 30	23 14.11	-07 32.7					
1980 08 09	23 10.64	-08 27.1	2.261	3.183	150.6	9.0	17.5
1980 08 19	23 05.55	-09 31.3					
1980 08 29	22 59.29	-10 40.9	2.167	3.171	172.4	2.4	17.1
1980 09 08	22 52.46	-11 50.5					
1980 09 18	22 45.80	-12 54.3	2.185	3.158	162.6	5.5	17.3
1980 09 28	22 40.04	-13 47.5					
1980 10 08	22 35.73	-14 27.0	2.310	3.145	140.4	11.7	17.6
1980 10 18	22 33.30	-14 51.1					
1980 10 28	22 32.93	-14 59.9	2.517	3.133	119.9	16.0	17.9
1980 11 07	22 34.64	-14 54.1					
1980 11 17	22 38.32	-14 35.0	2.773	3.120	101.2	18.1	18.1

(2106) 1936 UF Elements MPC 4607

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 10	22 56.90	-04 52.4	2.332	2.627	95.2	22.6	17.5
1980 06 20	23 04.49	-04 23.7					
1980 06 30	23 10.36	-04 08.2	2.064	2.607	111.0	21.4	17.1
1980 07 10	23 14.29	-04 08.0					
1980 07 20	23 16.01	-04 25.2	1.826	2.587	128.8	17.8	16.8
1980 07 30	23 15.40	-05 01.0					
1980 08 09	23 12.42	-05 55.0	1.644	2.569	149.4	11.6	16.4
1980 08 19	23 07.30	-07 04.8					
1980 08 29	23 00.55	-08 25.2	1.547	2.550	172.1	3.1	16.0
1980 09 08	22 52.99	-09 48.8					
1980 09 18	22 45.62	-11 07.3	1.554	2.533	163.6	6.4	16.1
1980 09 28	22 39.43	-12 13.3					
1980 10 08	22 35.21	-13 02.0	1.661	2.517	141.0	14.5	16.4
1980 10 18	22 33.43	-13 30.9					
1980 10 28	22 34.29	-13 40.0	1.845	2.502	120.7	20.0	16.8
1980 11 07	22 37.70	-13 30.6					
1980 11 17	22 43.45	-13 04.4	2.072	2.489	103.0	22.8	17.1

1973 FF1 Elements MPC 5032

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	23 45.40	-02 17.3	2.670	3.051	102.2	19.0	17.5
1980 07 10	23 48.19	-01 35.8					
1980 07 20	23 49.03	-01 04.5	2.423	3.060	120.0	16.7	17.2
1980 07 30	23 47.78	-00 44.3					
1980 08 09	23 44.43	-00 35.4	2.222	3.068	139.9	12.3	17.0
1980 08 19	23 39.07	-00 37.8					
1980 08 29	23 32.08	-00 50.0	2.100	3.076	162.0	5.8	16.7
1980 09 08	23 24.02	-01 09.6					
1980 09 18	23 15.63	-01 33.1	2.084	3.084	173.7	2.1	16.4
1980 09 28	23 07.75	-01 56.4					
1980 10 08	23 01.09	-02 15.7	2.181	3.092	150.9	9.0	16.8
1980 10 18	22 56.23	-02 27.9					
1980 10 28	22 53.47	-02 30.8	2.374	3.099	129.3	14.4	17.2
1980 11 07	22 52.90	-02 23.4					
1980 11 17	22 54.47	-02 05.3	2.631	3.106	109.7	17.4	17.5
1980 11 27	22 58.01	-01 36.9					
1980 12 07	23 03.29	-00 58.7	2.919	3.113	91.9	18.4	17.7

(2145) Blaauw Elements MPC 4776

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	23 50.23	+16 23.1	3.257	3.468	93.3	17.0	17.4
1980 07 10	23 53.16	+17 32.6					
1980 07 20	23 54.44	+18 33.3	2.993	3.470	109.7	16.0	17.2
1980 07 30	23 53.94	+19 23.2					
1980 08 09	23 51.62	+19 59.6	2.762	3.470	127.2	13.5	16.9
1980 08 19	23 47.54	+20 19.9					
1980 08 29	23 41.94	+20 22.2	2.594	3.470	145.1	9.6	16.7
1980 09 08	23 35.24	+20 05.5					
1980 09 18	23 28.00	+19 30.2	2.517	3.469	158.2	6.2	16.5
1980 09 28	23 20.92	+18 39.4					
1980 10 08	23 14.65	+17 37.4	2.547	3.468	153.1	7.5	16.6
1980 10 18	23 09.76	+16 29.9					
1980 10 28	23 06.64	+15 23.0	2.682	3.466	136.0	11.5	16.8
1980 11 07	23 05.46	+14 21.4					
1980 11 17	23 06.27	+13 29.1	2.897	3.463	117.2	14.7	17.0
1980 11 27	23 08.99	+12 48.5					
1980 12 07	23 13.44	+12 20.6	3.161	3.459	99.3	16.3	17.3

1931 TV Elements MPC 4780

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	23 41.03	+02 47.8	1.794	2.226	101.1	26.6	17.1
1980 07 10	23 47.99	+03 40.1					
1980 07 20	23 52.61	+04 16.4	1.595	2.246	116.9	23.8	16.8
1980 07 30	23 54.64	+04 34.1					
1980 08 09	23 53.88	+04 30.8	1.430	2.267	135.5	18.3	16.5
1980 08 19	23 50.33	+04 05.3					
1980 08 29	23 44.32	+03 18.3	1.325	2.290	157.2	9.8	16.1
1980 09 08	23 36.54	+02 13.5					
1980 09 18	23 28.04	+00 58.0	1.310	2.313	175.6	1.9	15.8
1980 09 28	23 20.06	-00 19.1					
1980 10 08	23 13.65	-01 28.9	1.398	2.338	154.1	10.7	16.3
1980 10 18	23 09.60	-02 24.5					
1980 10 28	23 08.28	-03 01.9	1.574	2.363	132.6	18.0	16.8
1980 11 07	23 09.71	-03 20.0					
1980 11 17	23 13.72	-03 19.3	1.812	2.388	113.7	22.3	17.2
1980 11 27	23 20.00	-03 01.4					
1980 12 07	23 28.22	-02 28.3	2.084	2.413	97.1	23.9	17.6

2509 P-L Elements MPC 4830

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	23 39.43	-07 27.9	1.554	2.073	105.6	28.2	17.7
1980 07 10	23 48.45	-06 31.7					
1980 07 20	23 55.13	-05 48.2	1.345	2.055	120.3	25.3	17.3
1980 07 30	23 59.10	-05 18.6					
1980 08 09	00 00.03	-05 04.0	1.172	2.041	137.9	19.4	16.8
1980 08 19	23 57.73	-05 04.0					
1980 08 29	23 52.40	-05 16.2	1.058	2.033	158.8	10.3	16.4
1980 09 08	23 44.68	-05 35.8					
1980 09 18	23 35.73	-05 56.1	1.027	2.031	175.9	2.0	16.0
1980 09 28	23 27.05	-06 09.8					
1980 10 08	23 20.02	-06 11.3	1.089	2.034	153.9	12.5	16.5
1980 10 18	23 15.69	-05 57.0					
1980 10 28	23 14.56	-05 26.1	1.230	2.043	133.1	20.8	17.0
1980 11 07	23 16.64	-04 39.3					
1980 11 17	23 21.71	-03 38.0	1.429	2.057	115.4	25.7	17.4
1980 11 27	23 29.38	-02 24.2					
1980 12 07	23 39.23	-00 59.8	1.661	2.076	100.2	27.8	17.8

1977 VD Elements MPC 4932

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	23 59.41	-06 52.0	1.865	2.285	100.7	25.9	17.7
1980 07 10	00 06.55	-06 20.5					
1980 07 20	00 11.40	-06 03.5	1.646	2.289	116.6	23.4	17.4
1980 07 30	00 13.62	-06 01.9					
1980 08 09	00 12.96	-06 16.1	1.460	2.294	135.2	18.1	17.0
1980 08 19	00 09.26	-06 45.0					
1980 08 29	00 02.71	-07 24.8	1.336	2.298	156.7	10.0	16.7
1980 09 08	23 53.87	-08 10.1					
1980 09 18	23 43.76	-08 53.1	1.301	2.302	173.1	3.0	16.3
1980 09 28	23 33.70	-09 26.2					
1980 10 08	23 24.96	-09 43.8	1.369	2.305	153.2	11.3	16.8
1980 10 18	23 18.57	-09 42.9					
1980 10 28	23 15.08	-09 23.2	1.526	2.308	131.6	18.8	17.2
1980 11 07	23 14.61	-08 46.2					
1980 11 17	23 17.03	-07 54.0	1.742	2.311	112.6	23.3	17.6
1980 11 27	23 22.04	-06 48.7					
1980 12 07	23 29.27	-05 32.4	1.989	2.312	96.1	25.1	17.9

6561 P-L Elements MPC 4415

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	00 01.88	-06 24.5	2.044	2.436	100.0	24.3	18.5
1980 07 10	00 08.50	-05 53.5					
1980 07 20	00 13.02	-05 35.8	1.787	2.413	116.1	22.2	18.2
1980 07 30	00 15.12	-05 32.4					
1980 08 09	00 14.52	-05 44.0	1.563	2.388	134.7	17.6	17.8
1980 08 19	00 10.99	-06 09.9					
1980 08 29	00 04.64	-06 47.4	1.402	2.361	156.1	10.0	17.3
1980 09 08	23 55.87	-07 31.7					
1980 09 18	23 45.58	-08 15.9	1.331	2.333	173.7	2.7	16.9
1980 09 28	23 35.03	-08 52.0					
1980 10 08	23 25.54	-09 13.9	1.365	2.303	153.6	11.1	17.2
1980 10 18	23 18.25	-09 17.6					
1980 10 28	23 13.86	-09 02.0	1.489	2.272	131.5	19.1	17.6
1980 11 07	23 12.61	-08 28.0					
1980 11 17	23 14.46	-07 37.4	1.672	2.241	112.2	24.1	17.9
1980 11 27	23 19.13	-06 32.3					
1980 12 07	23 26.26	-05 14.7	1.883	2.209	95.6	26.4	18.2

1979 KN Elements MPC 4927

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 06 30	00 06.92	-03 43.1	2.552	2.873	-0.87	-3.4	18.8
1980 07 10	00 13.32	-03 42.5					
1980 07 20	00 18.00	-03 56.6	2.291	2.863	-0.98	-4.0	18.5
1980 07 30	00 20.76	-04 26.3					
1980 08 09	00 21.44	-05 11.8	2.066	2.854	-1.10	-4.7	18.2
1980 08 19	00 19.93	-06 12.1					
1980 08 29	00 16.34	-07 24.2	1.908	2.846	-1.22	-5.2	17.9
1980 09 08	00 10.97	-08 43.2					
1980 09 18	00 04.38	-10 02.3	1.844	2.839	-1.28	-5.2	17.6
1980 09 28	23 57.36	-11 14.1					
1980 10 08	23 50.74	-12 12.1	1.889	2.833	-1.25	-4.7	17.8
1980 10 18	23 45.33	-12 51.8					
1980 10 28	23 41.73	-13 11.2	2.034	2.827	-1.14	-4.0	18.1
1980 11 07	23 40.26	-13 10.6					
1980 11 17	23 41.04	-12 51.5	2.250	2.823	-1.01	-3.5	18.4
1980 11 27	23 44.00	-12 16.2					
1980 12 07	23 48.96	-11 27.3	2.506	2.820	-0.89	-3.2	18.7

1976 YP7 Elements MPC 4833

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	00 11.44	+01 39.2	2.653	2.917	94.7	20.3	18.1
1980 07 10	00 17.30	+02 12.4					
1980 07 20	00 21.46	+02 33.8	2.384	2.908	111.1	19.0	17.8
1980 07 30	00 23.72	+02 42.2					
1980 08 09	00 23.90	+02 36.5	2.145	2.899	129.6	15.6	17.5
1980 08 19	00 21.92	+02 16.0					
1980 08 29	00 17.85	+01 41.4	1.967	2.890	150.6	9.9	17.2
1980 09 08	00 12.00	+00 54.8					
1980 09 18	00 04.90	-00 00.1	1.881	2.881	173.7	2.2	16.8
1980 09 28	23 57.33	-00 57.7					
1980 10 08	23 50.13	-01 52.1	1.904	2.873	162.5	6.0	17.0
1980 10 18	23 44.11	-02 37.7					
1980 10 28	23 39.89	-03 10.5	2.032	2.864	139.8	12.9	17.3
1980 11 07	23 37.81	-03 28.3					
1980 11 17	23 38.02	-03 30.4	2.240	2.856	119.2	17.6	17.6
1980 11 27	23 40.46	-03 17.4					
1980 12 07	23 44.94	-02 50.5	2.494	2.848	100.8	19.9	17.9

1964 VD Elements MPC 4538

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	00 00.62	+00 04.7	1.846	2.225	97.8	26.9	18.2
1980 07 10	00 10.02	+01 23.1					
1980 07 20	00 17.61	+02 32.1	1.597	2.190	112.0	25.5	17.8
1980 07 30	00 23.05	+03 29.9					
1980 08 09	00 25.97	+04 14.3	1.375	2.158	128.5	21.6	17.4
1980 08 19	00 26.03	+04 43.3					
1980 08 29	00 23.14	+04 55.5	1.204	2.129	148.1	14.5	16.9
1980 09 08	00 17.43	+04 50.3					
1980 09 18	00 09.55	+04 29.8	1.107	2.104	170.3	4.6	16.4
1980 09 28	00 00.65	+03 58.6					
1980 10 08	23 52.10	+03 24.0	1.103	2.083	164.6	7.3	16.5
1980 10 18	23 45.28	+02 53.7					
1980 10 28	23 41.20	+02 34.8	1.190	2.067	142.2	17.1	16.8
1980 11 07	23 40.33	+02 31.3					
1980 11 17	23 42.76	+02 45.2	1.346	2.056	122.7	23.9	17.3
1980 11 27	23 48.25	+03 16.4					
1980 12 07	23 56.44	+04 03.5	1.544	2.050	106.1	27.5	17.6

1979 KL Elements MPC 4927

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1980 06 30	00 06.78	-01 29.8	2.374	2.693	-0.97	-3.7	18.0
1980 07 10	00 14.16	-01 19.2					
1980 07 20	00 19.86	-01 23.7	2.097	2.663	-1.12	-4.4	17.7
1980 07 30	00 23.65	-01 45.1					
1980 08 09	00 25.29	-02 24.4	1.854	2.634	-1.29	-5.2	17.3
1980 08 19	00 24.60	-03 21.8					
1980 08 29	00 21.59	-04 35.3	1.672	2.605	-1.46	-6.0	16.9
1980 09 08	00 16.49	-06 00.7					
1980 09 18	00 09.83	-07 31.1	1.579	2.576	-1.56	-6.1	16.5
1980 09 28	00 02.46	-08 57.6					
1980 10 08	23 55.35	-10 11.8	1.593	2.549	-1.53	-5.4	16.7
1980 10 18	23 49.46	-11 06.8					
1980 10 28	23 45.54	-11 39.1	1.705	2.523	-1.39	-4.5	17.0
1980 11 07	23 44.03	-11 48.2					
1980 11 17	23 45.08	-11 35.4	1.888	2.499	-1.23	-3.8	17.3
1980 11 27	23 48.61	-11 03.1					
1980 12 07	23 54.41	-10 14.2	2.109	2.476	-1.08	-3.5	17.6

2524 P-L Elements MPC 4539

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	23 56.44	+02 38.6	1.871	2.245	97.7	26.7	18.2
1980 07 10	00 06.03	+03 36.8					
1980 07 20	00 13.86	+04 21.8	1.624	2.216	112.1	25.2	17.9
1980 07 30	00 19.60	+04 51.0					
1980 08 09	00 22.93	+05 01.7	1.405	2.188	128.8	21.2	17.4
1980 08 19	00 23.54	+04 51.4					
1980 08 29	00 21.38	+04 18.9	1.237	2.164	148.7	14.0	17.0
1980 09 08	00 16.61	+03 25.3					
1980 09 18	00 09.86	+02 14.6	1.144	2.143	171.6	3.9	16.5
1980 09 28	00 02.19	+00 55.1					
1980 10 08	23 54.88	-00 23.1	1.147	2.126	164.2	7.3	16.6
1980 10 18	23 49.16	-01 29.8					
1980 10 28	23 45.97	-02 17.4	1.242	2.113	141.6	17.0	17.0
1980 11 07	23 45.72	-02 42.5					
1980 11 17	23 48.52	-02 44.1	1.407	2.104	121.9	23.5	17.4
1980 11 27	23 54.16	-02 24.0					
1980 12 07	00 02.30	-01 44.5	1.613	2.099	105.2	26.9	17.8

1969 RY Elements MPC 4415

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	00 09.43	+16 51.9	2.546	2.725	89.0	21.9	16.9
1980 07 10	00 16.80	+18 10.1					
1980 07 20	00 22.51	+19 18.2	2.302	2.725	103.5	21.3	16.7
1980 07 30	00 26.31	+20 13.6					
1980 08 09	00 28.01	+20 53.5	2.077	2.727	119.9	18.8	16.4
1980 08 19	00 27.46	+21 14.6					
1980 08 29	00 24.69	+21 13.5	1.895	2.731	138.1	14.3	16.1
1980 09 08	00 19.94	+20 48.0					
1980 09 18	00 13.73	+19 57.3	1.786	2.737	156.6	8.4	15.8
1980 09 28	00 06.86	+18 43.8					
1980 10 08	00 00.21	+17 13.3	1.775	2.745	162.7	6.2	15.8
1980 10 18	23 54.67	+15 33.9					
1980 10 28	23 50.94	+13 54.9	1.870	2.755	146.6	11.4	16.0
1980 11 07	23 49.39	+12 24.2					
1980 11 17	23 50.20	+11 07.6	2.056	2.766	127.0	16.6	16.4
1980 11 27	23 53.31	+10 08.4					
1980 12 07	23 58.50	+09 27.5	2.303	2.779	108.6	19.6	16.7

1938 CG Elements MPC 5010

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	00 04.15	-01 02.2	1.855	2.227	97.4	26.9	18.2
1980 07 10	00 13.87	-00 26.3					
1980 07 20	00 21.81	-00 05.6	1.604	2.197	112.0	25.4	17.8
1980 07 30	00 27.63	-00 02.7					
1980 08 09	00 30.96	-00 19.7	1.381	2.168	129.1	21.3	17.4
1980 08 19	00 31.46	-00 58.2					
1980 08 29	00 28.98	-01 57.7	1.209	2.139	149.2	14.0	16.9
1980 09 08	00 23.65	-03 14.8					
1980 09 18	00 16.03	-04 42.3	1.113	2.111	170.9	4.3	16.4
1980 09 28	00 07.24	-06 09.5					
1980 10 08	23 58.62	-07 24.9	1.114	2.085	161.1	8.9	16.5
1980 10 18	23 51.57	-08 19.1					
1980 10 28	23 47.14	-08 46.9	1.205	2.059	138.8	18.5	16.9
1980 11 07	23 45.84	-08 47.3					
1980 11 17	23 47.80	-08 22.2	1.361	2.036	119.3	25.1	17.3
1980 11 27	23 52.82	-07 34.8					
1980 12 07	00 00.54	-06 28.6	1.553	2.015	102.8	28.5	17.6

1974 UB Elements MPC 4611

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1980 06 30	01 03.86	-28 21.0	2.114	2.421	94.8	24.7	18.4
1980 07 10	01 11.85	-28 22.1					
1980 07 20	01 17.61	-28 38.2	1.830	2.351	107.9	24.3	18.0
1980 07 30	01 20.61	-29 08.8					
1980 08 09	01 20.20	-29 51.9	1.565	2.275	122.4	22.1	17.6
1980 08 19	01 15.62	-30 42.9					
1980 08 29	01 06.24	-31 32.4	1.343	2.195	137.4	18.1	17.1
1980 09 08	00 51.77	-32 06.5					
1980 09 18	00 32.71	-32 07.1	1.194	2.112	147.6	14.8	16.6
1980 09 28	00 10.83	-31 16.9					
1980 10 08	23 48.78	-29 27.5	1.145	2.025	141.6	17.8	16.5
1980 10 18	23 29.33	-26 43.2					
1980 10 28	23 14.38	-23 18.6	1.195	1.936	124.1	25.1	16.7
1980 11 07	23 04.59	-19 30.6					
1980 11 17	22 59.82	-15 32.3	1.315	1.845	105.6	31.1	16.9
1980 11 27	22 59.44	-11 31.7					
1980 12 07	23 02.74	-07 32.5	1.464	1.754	89.3	34.2	17.1