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ERRATA.

MPC	Line		
8151	-27 & -25	For d'Hotel	read Dhotel
8278	-16	For 1930 DeC. W. 24	read 1930 Dec. 24

* * * * *

CORRECTED OBSERVATIONS.

The following observations correct those previously published.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Mag.	Obs.
1957 HU	1957 04	30.80585	14 31 13.67	-18 45 44.8	MPC 6456		076
1957 HU	1957 04	30.86580	14 31 10.47	-18 45 18.5	MPC 6456		076
1979 YX9 *	1979 12	25.04317	06 37 13.99	+32 37 14.5	MPC 8041	17.0	095

* * * * *

DELETED OBSERVATIONS.

The following observations are to be deleted.

Object	Date	UT	R. A. (1950)	Decl.	Reference	Obs.
1978 SR	1983 07	13.31111	20 31 12.44	-20 26 32.2	MPC 8256	688
1983 RB	1983 09	28.12986	22 36 21.18	-15 46 02.6	MPC 8200	688

* * * * *

IDENTIFICATION CHANGES.

Continuation to MPC 8216.

Object	Date	UT	R. A. (1950)	Decl.	Old desig.	Obs.
1933 SP1 *	1933 09	27.88262	22 14 25.47	-04 08 26.9	1933 SM	012
1983 RW2 *	1983 09	04.01528	01 43 31.46	+10 32 08.8	1983 TL	071
1983 RW2	1983 09	04.03958	01 43 31.18	+10 32 10.5	1983 TL	071

* * * * *

OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

046 Klet. Observer Z. Vavrova.
381 Tokyo Astronomical Observatory, Kiso Station. Observers H. Kosai,

H. Maehara and K. Hurukawa (assisted by J. Watanabe).
413 Siding Spring. 1.2-m U.K. Schmidt Telescope Unit. Observers M. Hartley and K. S. Russell.
474 Mt. John University Observatory. Observer A. C. Gilmore. Measured by P. M. Kilmartin (assisted by R. McIntosh and W. M. Kissling).
493 Calar Alto. Observer L. Kohoutek.
657 Climenhaga Observatory. Observers D. D. Balam and J. B. Tatum.
675 Palomar. 1.2-m Schmidt. Observer J. Gibson.
688 Lowell Observatory, Anderson Mesa Station. Observers B. Skiff and N. G. Thomas. Measured by E. Bowell.
707 Chamberlin Observatory, field station. Observer E. Everhart.
801 Oak Ridge Observatory. Observers R. E. McCrosky, G. Schwartz and C.-Y. Shao (assisted by C. M. Bardwell, D. W. E. Green and B. G. Marsden).
811 Maria Mitchell Observatory, Nantucket. Observer E. P. Belserene.
890 JCPM Tone Station. Observer S. Furuyama. Measured by N. Ishiyama.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Comet Russell (1981 V)					
/1981 V	1981	04 05.72839	21 07 54.45	-54 43 15.0		1	474
		Comet Bowell (1980b)					
/1980b	1983	08 13.32639	22 10 58.50	-12 26 53.2	15.5T		688
/1980b	1983	08 13.35764	22 10 57.80	-12 26 59.3			688
/1980b	1983	08 31.17465	22 03 33.38	-13 09 42.2			688
/1980b	1983	08 31.20417	22 03 32.54	-13 09 47.9			688
/1980b	1983	10 11.12639	21 52 19.74	-14 09 09.3	16.8T		688
		Periodic Comet Tempel 2					
/1982d	1983	11 09.24771	02 31 38.33	-08 50 04.0			801
		Periodic Comet Kopff					
/1982k	1983	07 05.26233	15 27 38.66	-12 19 56.7		2	657
		Comet IRAS-Araki-Alcock (1983d)					
/1983d	1983	05 05.26597	18 48 15.43	+54 46 22.0			688
/1983d	1983	05 05.27917	18 48 12.34	+54 47 36.9			688
/1983d	1983	05 05.29201	18 48 06.25	+54 48 54.3			688
/1983d	1983	05 06.24653	18 41 22.26	+56 32 55.9			688
/1983d	1983	05 06.40347	18 39 53.51	+56 53 56.5			688
/1983d	1983	05 07.18906	18 30 51.41	+58 54 55.9			688
/1983d	1983	05 07.32934	18 28 42.80	+59 21 32.0			688
/1983d	1983	05 09.28142	17 12 48.85	+69 00 13.3			688
/1983d	1983	05 09.44115	16 55 49.74	+70 09 51.1			688
/1983d	1983	05 09.44601	16 55 15.13	+70 11 57.3			688
/1983d	1983	05 10.44392	12 53 39.91	+72 57 04.1			688
/1983d	1983	05 12.15017	08 40 05.04	+14 39 26.5			688
		Periodic Comet Russell 3					
/1983i	1983	10 31.97299	20 14 29.45	-05 21 50.7			801
		Periodic Comet IRAS					
/1983j	1983	07 11.45000	01 34 31.50	-17 17 46.4			688
/1983j	1983	07 13.44663	01 36 04.20	-16 30 33.9			688
/1983j	1983	07 17.42882	01 38 49.56	-14 53 39.3			688
/1983j	1983	09 12.40139	00 59 49.61	+20 25 08.7		3	688
/1983j	1983	09 12.43194	00 59 44.73	+20 26 34.7		3	688
/1983j	1983	10 27.83223	22 52 38.97	+40 59 23.2	13.0T		046
/1983j	1983	10 27.84045	22 52 38.14	+40 59 25.2			046

/1983j	1983	10	28.15956	22	52	05.83	+41	01	45.7		657
/1983j	1983	11	04.08750	22	42	48.82	+41	40	00.3		688
/1983j	1983	11	05.03400	22	41	49.54	+41	44	05.7		801
/1983j	1983	11	05.19650	22	41	40.06	+41	44	49.3		657
/1983j	1983	11	07.60361	22	39	31.19	+41	54	14.8		381
/1983j	1983	11	08.29476	22	38	59.05	+41	56	44.5		657
/1983j	1983	11	09.96805	22	37	50.47	+42	02	32.4		801

Comet Cernis (1983l)

/1983l	1983	09	06.38542	02	12	20.39	-03	13	03.0		688
/1983l	1983	09	12.44375	02	03	37.69	-05	53	15.0		688
/1983l	1983	09	16.75556	01	56	43.88	-07	51	29.9		890
/1983l	1983	10	02.59340	01	27	18.35	-15	11	51.1		890
/1983l	1983	10	02.59688	01	27	17.98	-15	11	56.2		890
/1983l	1983	10	11.59167	01	08	49.49	-19	03	10.1		890
/1983l	1983	10	11.60069	01	08	48.38	-19	03	20.9		890
/1983l	1983	10	14.61250	01	02	34.04	-20	14	24.6		890
/1983l	1983	10	28.19375	00	35	31.19	-24	43	43.0		707
/1983l	1983	10	30.53143	00	31	11.79	-25	21	06.7		381
/1983l	1983	10	30.55341	00	31	09.34	-25	21	26.4		381
/1983l	1983	10	30.59924	00	31	04.22	-25	22	09.0		381
/1983l	1983	11	04.15764	00	23	02.55	-26	27	31.3		688
/1983l	1983	11	09.13367	00	14	57.05	-27	28	04.5		801

Periodic Comet Crommelin

/1983n	1983	09	27.86081	19	47	58.0	+18	37	26		493

Comet Shoemaker (1983p)

/1983p	1983	10	26.11622	22	24	50.47	-00	25	01.0		657
/1983p	1983	10	27.80451	22	22	52.55	-01	02	59.8	12.5T	046
/1983p	1983	10	27.81233	22	22	51.82	-01	03	08.8		046
/1983p	1983	10	28.18483	22	22	26.70	-01	11	22.8		657
/1983p	1983	10	29.05448	22	21	29.07	-01	30	21.5		811
/1983p	1983	11	01.15470	22	18	14.37	-02	36	17.0		657
/1983p	1983	11	02.74094	22	16	42.14	-03	08	38.4		046
/1983p	1983	11	02.74817	22	16	41.69	-03	08	44.3		046
/1983p	1983	11	04.07778	22	15	27.97	-03	35	12.7		688
/1983p	1983	11	05.02239	22	14	37.72	-03	53	36.3		801
/1983p	1983	11	05.16119	22	14	30.40	-03	56	19.1		657
/1983p	1983	11	07.06627	22	12	54.45	-04	32	20.8		801
/1983p	1983	11	09.98251	22	10	40.78	-05	25	08.0		801
/1983p	1983	11	26.18683	22	02	35.75	-09	28	25.9		675
/1983p	1983	11	27.08823	22	02	20.44	-09	39	43.6		675
/1983p	1983	12	09.08056	22	00	34.48	-11	50	56.0		707

Periodic Comet Harrington-Abell

/1983r	1983	12	03.48993	10	20	51.74	+19	51	02.8	4	707

Periodic Comet Wild 2

/1983s	1983	11	08.26287	04	51	07.01	+17	58	08.8		801
/1983s	1983	11	28.21181	04	33	57.91	+17	15	10.4	16.0T	688
/1983s	1983	11	28.27292	04	33	54.04	+17	15	01.2		688
/1983s	1983	12	01.30347	04	30	44.92	+17	08	08.9	16.0T	688
/1983s	1983	12	01.34028	04	30	42.86	+17	08	01.4	3	688
/1983s	1983	12	05.20000	04	26	36.07	+16	59	29.0	16.0T	688
/1983s	1983	12	05.22431	04	26	34.26	+16	59	25.1		688
/1983s	1983	12	06.18889	04	25	32.16	+16	57	19.6	15.8T	688
/1983s	1983	12	06.22569	04	25	29.73	+16	57	13.8		688
/1983s	1983	12	09.16354	04	22	20.04	+16	50	56.3		707

Periodic Comet Taylor

/1983u	1983	11	03.40347	06	58	20.23	+07	24	09.0	20 N	707
/1983u	1983	11	07.42743	07	01	40.72	+07	36	53.6	19.5N	707
/1983u	1983	11	11.53405	07	04	39.68	+07	53	10.3	19 N	675
/1983u	1983	12	02.36458	07	12	10.24	+10	23	51.3		707

Periodic Comet Hartley-IRAS

/1983v	1983	11	04.46751	21	50	49.75	-21	31	52.1		413
/1983v	1983	11	04.47793	21	50	47.49	-21	31	20.2		413
/1983v	1983	11	23.44265	21	08	27.57	-07	29	52.4		413
/1983v	1983	11	23.45654	21	08	26.49	-07	29	25.2		413
/1983v	1983	11	27.09552	21	04	00.51	-05	17	50.6	5	675
/1983v	1983	11	28.15905	21	02	51.88	-04	41	05.1	6	675
/1983v	1983	11	30.09167	21	00	56.23	-03	35	22.7	12 T 7	688
/1983v	1983	11	30.12569	21	00	54.10	-03	34	15.1		688
/1983v	1983	12	01.94263	20	59	15.84	-02	34	28.7		801
/1983v	1983	12	05.12153	20	56	45.36	-00	53	43.4		688
/1983v	1983	12	05.13333	20	56	44.90	-00	53	21.6	3	688
/1983v	1983	12	08.08576	20	54	46.87	+00	36	22.8	15 T	707
/1983v	1983	12	08.43354	20	54	33.81	+00	46	50.5		413
/1983v	1983	12	08.44743	20	54	33.81	+00	47	10.4		413

Note 1: very faint image, questionable. 2: correction to MPC 8035. 3: position uncertain. 4: poor conditions, very faint image. 5: weak image, short exposure. 6: condensation, hint of tail. 7: declination uncertain.

* * * * *

OBSERVATIONS MADE AT ZIMMERWALD BY P. WILD.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1983 SA	1983	10 27.80868	22 38 32.50	+21 52 38.9	15.5		026
1983 SA	1983	11 01.79167	22 40 25.90	+22 36 24.2			026
1983 SA	1983	11 02.80556	22 40 55.94	+22 44 28.0			026
1983 SA	1983	11 06.81042	22 43 15.84	+23 14 02.7			026
1983 SA	1983	11 08.83333	22 44 38.33	+23 27 52.0			026
1983 SA	1983	11 09.87500	22 45 23.57	+23 34 43.3	16		026
1983 VA2 *	1983	11 06.89514	02 03 22.92	+20 00 54.3	17		026
1983 VA2	1983	11 08.85139	02 01 36.77	+19 55 06.5		1	026
1983 VA2	1983	11 09.97431	02 00 37.02	+19 51 41.5			026

Note 1: images badly out of focus.

OBSERVATIONS MADE AT SONNEBERG BY B. FUHRMANN. MEASURED BY P. KROLL. COMMUNICATED BY W. WENZEL.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
19	1980	02 14.9181	10 14 56.44	+08 28 16.8	1	031
19	1980	02 19.9862	10 10 04.21	+08 57 00.1		031
19	1980	02 20.9585	10 09 08.05	+09 02 33.1		031
19	1980	02 21.9411	10 08 11.27	+09 08 12.9		031
19	1980	02 22.9452	10 07 13.66	+09 13 57.1		031
19	1980	02 23.0306	10 07 08.78	+09 14 23.6		031
19	1980	02 24.0014	10 06 13.87	+09 19 54.8		031
19	1980	03 14.9071	09 49 44.31	+11 01 59.2		031
19	1980	03 15.9514	09 49 04.43	+11 06 21.4		031
20	1981	03 27.8882	10 22 31.99	+09 21 21.9	1	031
20	1981	04 01.8889	10 20 40.07	+09 34 47.9	1	031
20	1981	04 02.8597	10 20 23.54	+09 36 55.3	1	031
20	1981	04 03.8764	10 20 08.13	+09 38 56.9	1	031
20	1981	04 06.8702	10 19 33.89	+09 44 00.5	1	031
20	1981	04 07.8209	10 19 26.39	+09 45 03.9	1	031

20		1981	04	08.8396	10	19	20.27	+09	46	27.5	1 031
20		1981	04	09.8882	10	19	15.93	+09	47	25.2	1 031
20		1981	04	23.8688	10	21	23.31	+09	42	36.5	1 031
47		1982	02	01.0250	10	20	04.11	+14	58	40.5	031
47		1982	02	02.0285	10	19	19.76	+15	02	23.1	031
47		1982	02	03.0202	10	18	35.10	+15	06	11.9	031
65		1981	01	26.8945	10	07	10.47	+10	32	39.4	031
65		1981	01	28.9966	10	05	57.23	+10	40	32.3	031
65		1981	01	29.9160	10	05	24.33	+10	44	05.8	031
65		1981	01	30.9597	10	04	45.80	+10	48	12.1	1 031
65		1981	01	31.9528	10	04	08.85	+10	52	11.6	031
65		1981	02	01.9945	10	03	29.30	+10	56	25.6	031
65		1981	02	02.9728	10	02	51.33	+11	00	31.1	031
90		1981	03	27.8882	10	22	16.31	+13	21	08.1	031
90		1981	04	01.8889	10	19	51.79	+13	31	35.4	031
90		1981	04	02.8597	10	19	26.66	+13	33	19.9	031
90		1981	04	03.8764	10	19	01.53	+13	35	01.7	1 031
90		1981	04	06.8702	10	17	53.85	+13	39	18.2	031
90		1981	04	07.8209	10	17	34.39	+13	40	27.7	031
90		1981	04	08.8396	10	17	14.68	+13	41	34.9	031
90		1981	04	09.8882	10	16	55.59	+13	42	37.1	031
96		1980	01	13.0056	10	10	37.93	+13	38	06.1	031
96		1980	01	14.0257	10	10	06.29	+13	35	20.3	031
96		1980	01	15.9806	10	09	01.09	+13	30	13.1	031
96		1980	01	18.0729	10	07	44.56	+13	25	05.3	031
96		1980	01	19.0313	10	07	07.43	+13	22	50.6	031
114		1979	03	22.9167	10	18	50.17	+10	35	03.7	031
114		1979	03	23.8986	10	18	22.36	+10	40	22.6	1 031
114		1979	03	24.9146	10	17	54.80	+10	45	41.4	031
114		1979	04	15.8500	10	14	58.82	+11	53	46.3	031
114		1979	04	19.9181	10	15	54.89	+11	56	18.7	1 031
130		1983	02	15.9514	09	49	26.26	+13	12	59.3	1 031
130		1983	02	18.0216	09	47	52.36	+13	31	48.8	1 031
159		1981	02	26.9035	10	19	47.88	+13	49	44.3	031
159		1981	02	27.9243	10	19	01.97	+13	55	59.0	031
206		1981	01	26.8945	09	58	13.39	+11	50	57.5	031
206		1981	01	28.9966	09	56	42.58	+12	02	02.9	031
206		1981	01	29.9160	09	56	01.73	+12	07	03.2	031
206		1981	02	02.9728	09	52	51.38	+12	29	26.2	031
232		1981	02	26.9035	10	15	56.38	+11	12	38.3	031
232		1981	02	27.9243	10	15	05.30	+11	21	30.2	031
232		1981	03	27.8882	09	58	13.21	+14	33	55.2	031
232		1981	03	29.9202	09	57	46.72	+14	42	16.4	031
232		1981	04	01.8889	09	57	22.05	+14	52	52.2	031
232		1981	04	02.8597	09	57	17.82	+14	55	53.9	1 031
232		1981	04	03.8764	09	57	15.17	+14	58	52.1	031
232		1981	04	06.8702	09	57	19.21	+15	06	12.4	031
232		1981	04	07.8209	09	57	24.35	+15	08	11.0	031
232		1981	04	08.8396	09	57	31.47	+15	10	01.6	031
232		1981	04	09.8882	09	57	40.51	+15	11	40.7	031
243		1983	02	15.9514	10	20	36.89	+10	06	23.6	1 031
243		1983	02	18.0216	10	18	52.71	+10	15	21.0	031
243		1983	03	03.8597	10	07	16.73	+11	14	57.2	031
243		1983	03	09.8556	10	02	40.66	+11	38	01.4	031
243		1983	03	13.8722	09	59	52.39	+11	51	53.0	031
269		1983	02	15.9514	09	59	37.16	+10	54	03.9	031
269		1983	02	18.0216	09	57	46.28	+11	07	30.4	031
275		1980	01	13.0056	10	10	20.84	+11	27	56.8	031
275		1980	01	14.0257	10	10	06.95	+11	31	44.7	031

275	1980	01	15.9806	10	09	35.48	+11	39	33.1		031
275	1980	01	18.0729	10	08	54.50	+11	48	41.1		031
275	1980	01	19.0313	10	08	33.56	+11	53	06.1		031
275	1980	02	14.9181	09	50	47.90	+14	41	51.9		031
334	1981	03	27.8882	10	21	45.69	+13	23	31.4		031
334	1981	04	01.8889	10	19	49.10	+13	35	17.4		031
334	1981	04	02.8597	10	19	29.05	+13	37	18.3		031
334	1981	04	03.8764	10	19	08.90	+13	39	20.0	1	031
334	1981	04	06.8702	10	18	15.07	+13	44	35.7		031
334	1981	04	07.8209	10	17	59.79	+13	46	05.0		031
334	1981	04	08.8396	10	17	44.28	+13	47	34.4		031
334	1981	04	09.8882	10	17	28.62	+13	48	59.9		031
375	1979	03	23.8986	10	08	48.28	+10	13	18.3		031
375	1979	03	24.9146	10	08	10.30	+10	13	29.4		031
461	1979	01	26.0417	10	03	34.16	+11	14	40.5		031
470	1979	03	22.9167	10	17	35.08	+08	48	18.6	1	031
470	1979	03	23.8986	10	17	02.56	+08	55	55.2	1	031
470	1979	03	24.9146	10	16	30.33	+09	03	31.4	1	031
524	1981	03	27.8882	09	59	25.09	+08	58	45.1	1	031
524	1981	03	29.9202	09	58	30.08	+09	00	10.3	1	031
526	1981	03	27.8882	10	19	21.19	+12	00	01.5		031
526	1981	03	29.9202	10	18	34.76	+12	05	07.4		031
526	1981	04	02.8597	10	17	20.61	+12	13	22.2		031
526	1981	04	03.8764	10	17	04.73	+12	15	02.2	1	031
554	1982	01	16.9618	10	12	51.42	+09	09	52.5		031
554	1982	01	17.9757	10	12	16.15	+09	11	03.6		031
554	1982	01	18.0139	10	12	14.70	+09	11	06.8		031
554	1982	02	01.0250	10	01	17.88	+09	43	44.6		031
554	1982	02	02.0285	10	00	20.95	+09	47	03.8		031
554	1982	02	03.0202	09	59	23.70	+09	50	27.8		031
602	1982	03	15.8709	10	12	05.36	+08	53	22.2		031
602	1982	03	16.9229	10	11	20.32	+08	54	44.5	2	031
602	1982	03	23.8438	10	06	49.71	+09	02	59.7		031
602	1982	03	26.8403	10	05	06.67	+09	05	41.2	1	031
602	1982	03	27.8882	10	04	32.90	+09	06	19.1	1	031
604	1979	03	22.9167	10	18	32.58	+13	57	26.7		031
604	1979	03	24.9146	10	17	25.21	+14	00	38.2		031
615	1981	03	27.8882	10	20	16.01	+12	31	30.8		031
615	1981	03	29.9202	10	19	08.42	+12	34	51.1		031
660	1981	02	26.9035	10	22	14.78	+09	30	29.0	1	031
660	1981	02	27.9243	10	21	24.11	+09	41	51.9	1	031
660	1981	03	27.8882	10	02	53.60	+14	15	35.6		031
660	1981	03	29.9202	10	02	09.50	+14	30	27.8		031
660	1981	04	01.8889	10	01	16.56	+14	50	38.1		031
660	1981	04	02.8597	10	01	02.34	+14	56	52.6	1	031
660	1981	04	03.8764	10	00	49.07	+15	03	05.7		031
660	1981	04	06.8702	10	00	19.82	+15	20	19.3		031
660	1981	04	07.8209	10	00	13.76	+15	25	21.0		031
660	1981	04	08.8396	10	00	08.69	+15	30	35.1		031
660	1981	04	09.8882	10	00	05.50	+15	35	42.3		031
708	1981	02	26.9035	10	12	13.28	+13	26	18.7		031
708	1981	02	27.9243	10	11	17.02	+13	29	45.5		031
708	1981	03	27.8882	09	51	59.64	+14	20	23.9		031
708	1981	03	29.9202	09	51	19.18	+14	20	04.4		031
708	1981	04	01.8889	09	50	33.04	+14	18	28.7		031
708	1981	04	03.8764	09	50	10.31	+14	16	44.1		031
744	1981	01	29.9160	10	21	04.87	+10	52	47.0		031
744	1981	01	30.9597	10	20	30.18	+10	59	06.8		031
744	1981	01	31.9528	10	19	56.38	+11	05	13.6		031

744		1981	02	01.9945	10	19	19.70	+11	11	44.9	031
748		1983	02	15.9514	09	53	40.44	+09	50	24.0	031
748		1983	02	18.0216	09	52	15.08	+09	57	23.5	031
755		1981	03	27.8882	10	07	17.49	+10	18	36.5	031
755		1981	03	29.9202	10	06	30.92	+10	25	37.5	031
846		1979	03	22.9167	10	04	22.85	+11	28	20.3	031
846		1979	03	23.8986	10	03	53.00	+11	31	07.9	031
846		1979	03	24.9146	10	03	24.21	+11	33	51.1	031
1159		1979	03	22.9167	10	04	06.61	+14	30	19.7	031
1159		1979	03	23.8986	10	03	22.08	+14	28	13.7	031
1585		1979	02	20.9118	09	52	28.24	+11	23	25.0	031

Note 1: only four reference stars. 2: only three reference stars.

OBSERVATIONS MADE WITH THE 1.3-M SCHMIDT TELESCOPE AT TAUTENBURG BY F. BORNGEN, K. KIRSCH, T. LEHMANN AND M. LIEMEN. REDUCED BY BORNGEN AND KIRSCH. COMMUNICATED BY S. MARX.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
33		1983	04 16.86701	10 52 15.50	+07 55 13.7		033
33		1983	04 16.92535	10 52 14.09	+07 55 20.5	14.9	033
33		1983	05 04.85417	10 47 57.19	+08 13 53.4	16.0	033
33		1983	05 05.85833	10 47 52.72	+08 13 56.3		033
190		1983	05 04.85417	10 42 50.28	+07 47 25.5	15.2	033
190		1983	05 05.85833	10 42 58.09	+07 47 51.5		033
316		1983	01 07.76458	01 23 37.91	+06 02 08.4	14.5	033
392		1983	01 07.76458	01 23 17.35	+04 21 19.5	13.3	033
460		1983	05 04.85417	10 37 39.07	+05 42 37.8	17.6	033
460		1983	05 05.85833	10 37 49.93	+05 43 28.1		033
528		1983	01 07.76458	01 20 20.15	+05 12 52.1	13.8	033
1020		1982	10 20.97604	01 14 41.05	+05 28 44.0	15.9	033
1073		1983	04 16.86701	10 59 14.93	+08 04 31.8		033
1073		1983	04 16.92535	10 59 13.55	+08 04 37.9	18.7	033
1668		1983	04 16.86701	10 55 11.32	+08 23 31.0		033
1668		1983	04 16.92535	10 55 10.03	+08 23 40.5	18.7	033
1735		1982	11 14.93750	02 30 22.79	+29 16 26.1	14.6	033
2253		1983	04 16.86701	11 02 46.74	+09 31 47.6		033
2253		1983	04 16.92535	11 02 44.91	+09 31 58.9	18.3	033
2466		1983	04 16.86701	11 03 03.31	+08 16 44.0		033
2466		1983	04 16.92535	11 03 01.93	+08 16 54.8	17.9	033
2592		1983	05 04.85417	10 46 45.20	+06 58 25.4	17.9	033
2592		1983	05 05.85833	10 46 58.05	+06 57 45.3		033
2715		1974	10 13.96181	01 22 01.60	+08 30 02.0	15.3	033
1982	UH4 *	1982	10 20.97604	01 14 13.50	+06 47 24.4	17.2	033
1982	UJ4 *	1982	10 20.97604	01 14 39.65	+05 10 15.3	17.5	033
1982	UK4 *	1982	10 20.97604	01 15 57.89	+06 42 28.4	18.2	033
1982	UL4 *	1982	10 20.97604	01 16 02.51	+06 54 18.2	17.9	033
1982	UM4 *	1982	10 20.97604	01 16 17.63	+05 52 26.1	18.4	033
1982	UN4 *	1982	10 20.97604	01 17 06.35	+05 39 16.9	16.6	033
1982	UO4 *	1982	10 20.97604	01 17 29.58	+05 49 56.9	18.8	033
1982	UP4 *	1982	10 20.97604	01 17 54.73	+06 01 35.8	17.7	033
1982	UQ4 *	1982	10 20.97604	01 18 39.74	+06 32 03.7	19.4	033
1982	UR4 *	1982	10 20.97604	01 18 59.24	+05 58 01.4	18.2	033
1982	US4 *	1982	10 20.97604	01 19 04.32	+05 53 49.2	17.1	033
1982	UT4 *	1982	10 20.97604	01 19 20.14	+05 21 20.0	17.4	033
1982	UU4 *	1982	10 20.97604	01 19 22.61	+06 05 00.6	17.5	033
1982	UV4 *	1982	10 20.97604	01 19 42.43	+05 53 15.5	18.3	033
1982	UW4 *	1982	10 20.97604	01 19 46.85	+04 30 46.1	17.0	033
1982	UX4 *	1982	10 20.97604	01 20 03.92	+06 07 38.0	19.8	033
1982	UY4 *	1982	10 20.97604	01 20 21.03	+05 33 12.6	17.9	033
1982	UZ4 *	1982	10 20.97604	01 21 29.42	+06 35 00.0	16.3	033

1982	UA5	*	1982	10	20.97604	01	21	44.04	+05	24	42.9	16.6	033
1982	UB5	*	1982	10	20.97604	01	22	20.14	+06	33	19.4	17.8	033
1982	UC5	*	1982	10	20.97604	01	22	46.05	+05	53	53.7	19.4	033
1982	UD5	*	1982	10	20.97604	01	22	46.54	+05	54	21.9	19.8	033
1982	UE5	*	1982	10	20.97604	01	24	00.28	+06	23	30.9	19.5	033
1982	UF5	*	1982	10	20.97604	01	24	03.77	+06	50	00.4	17.4	033
1982	UG5	*	1982	10	20.97604	01	24	18.95	+05	20	13.8	17.6	033
1982	UH5	*	1982	10	20.97604	01	24	35.17	+05	04	16.7	15.6	033
1982	UJ5	*	1982	10	20.97604	01	24	38.36	+04	07	43.6	18.0	033
1982	UK5	*	1982	10	20.97604	01	24	42.59	+05	43	04.4	17.6	033
1982	UL5	*	1982	10	20.97604	01	25	28.62	+06	08	13.6	17.0	033
1982	VT1	*	1982	11	14.93750	02	27	55.64	+29	15	15.7	17.3	033
1982	VU1	*	1982	11	14.93750	02	29	37.74	+28	23	31.4	17.7	033
1982	VV1	*	1982	11	14.93750	02	31	14.26	+30	11	08.3	17.4	033
1982	VW1	*	1982	11	14.93750	02	33	18.07	+28	56	18.9	18.2	033
1982	VX1	*	1982	11	14.93750	02	37	58.48	+30	19	57.6	17.8	033
1982	VY1	*	1982	11	14.93750	02	38	54.08	+30	40	05.2	19.0	033
1983	AY2	*	1983	01	07.83056	02	30	58.04	+30	17	19.8	17.2	033
1983	AZ2	*	1983	01	07.83056	02	34	38.94	+29	17	37.9	17.4	033
1983	HG1	*	1983	04	16.86701	10	51	50.08	+07	29	13.9	17.6	033
1983	HG1		1983	04	16.92535	10	51	48.87	+07	29	10.5		033
1983	HH1	*	1983	04	16.86701	10	51	53.39	+09	30	56.7	19.2	033
1983	HH1		1983	04	16.92535	10	51	52.43	+09	31	05.9		033
1983	HJ1	*	1983	04	16.86701	10	53	08.02	+08	38	46.7	19.6	033
1983	HJ1		1983	04	16.92535	10	53	07.10	+08	38	41.6		033
1983	HK1	*	1983	04	16.86701	10	53	53.11	+09	43	28.1	19.8	033
1983	HK1		1983	04	16.92535	10	53	52.60	+09	43	16.1		033
1983	HL1	*	1983	04	16.86701	10	54	29.11	+07	27	39.1	19.8	033
1983	HL1		1983	04	16.92535	10	54	27.51	+07	27	33.0		033
1983	HM1	*	1983	04	16.86701	10	55	10.75	+09	02	11.2	18.6	033
1983	HM1		1983	04	16.92535	10	55	09.57	+09	02	16.1		033
1983	HN1	*	1983	04	16.86701	10	56	16.53	+08	49	42.8	20.5	033
1983	HO1	*	1983	04	16.86701	10	56	38.68	+09	11	51.6	18.5	033
1983	HO1		1983	04	16.92535	10	56	38.23	+09	12	02.8		033
1983	HP1	*	1983	04	16.86701	10	57	25.05	+06	52	47.3	19.5	033
1983	HP1		1983	04	16.92535	10	57	24.33	+06	52	58.1		033
1983	HQ1	*	1983	04	16.86701	10	57	58.53	+08	47	38.1	18.8	033
1983	HQ1		1983	04	16.92535	10	57	57.52	+08	47	44.6		033
1983	HR1	*	1983	04	16.86701	10	58	39.81	+08	04	20.6	18.9	033
1983	HR1		1983	04	16.92535	10	58	37.78	+08	03	54.3		033
1983	HS1	*	1983	04	16.86701	10	59	12.57	+08	08	09.2	19.5	033
1983	HS1		1983	04	16.92535	10	59	11.17	+08	08	07.7		033
1983	HT1	*	1983	04	16.86701	10	59	16.53	+09	16	46.8	19.4	033
1983	HT1		1983	04	16.92535	10	59	15.77	+09	16	51.6		033
1983	HU1	*	1983	04	16.86701	11	00	14.99	+06	46	02.4	18.7	033
1983	HU1		1983	04	16.92535	11	00	14.05	+06	46	18.1		033
1983	HV1	*	1983	04	16.86701	11	02	26.28	+08	17	04.5	19.7	033
1983	HV1		1983	04	16.92535	11	02	25.62	+08	17	11.1		033
1983	HW1	*	1983	04	16.86701	11	02	38.57	+09	05	07.5	20.2	033
1983	HW1		1983	04	16.92535	11	02	36.94	+09	05	18.3		033
1983	HX1	*	1983	04	16.86701	11	03	22.53	+08	55	05.7	20.0	033
1983	HX1		1983	04	16.92535	11	03	21.20	+08	55	11.8		033
1983	HY1	*	1983	04	16.98229	12	23	52.47	+10	55	01.9	17.8	033

OBSERVATIONS MADE AT KLET BY A. MRKOS, Z. VAVROVA AND M. MAHROVA.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
56	1983 11	08.80725	02 31 47.95	+08 32 29.8		046
56	1983 11	08.82137	02 31 47.26	+08 32 24.3		046
68	1983 11	02.80992	01 32 43.57	+06 13 23.7		046

68	1983	11	02.82404	01	32	42.86	+06	13	23.7	046
156	1983	11	03.90112	01	48	21.04	+18	03	08.0	046
156	1983	11	03.91524	01	48	20.34	+18	03	02.1	046
167	1983	11	10.96603	03	57	19.77	+17	15	55.3	046
167	1983	11	10.98015	03	57	19.04	+17	15	52.0	046
167	1983	11	12.95359	03	55	37.81	+17	09	51.0	046
167	1983	11	12.96777	03	55	37.07	+17	09	48.4	046
215	1983	10	14.00287	02	06	18.50	+12	59	01.6	046
215	1983	10	14.01936	02	06	17.56	+12	58	55.8	046
215	1983	11	02.84306	01	49	12.20	+11	39	37.6	046
215	1983	11	02.85816	01	49	11.40	+11	39	34.8	046
232	1983	10	16.06896	02	44	57.92	+07	37	01.1	046
232	1983	10	16.08476	02	44	57.18	+07	36	55.6	046
454	1983	11	07.01918	03	44	57.87	+23	28	07.9	046
454	1983	11	07.03330	03	44	57.11	+23	28	07.9	046
454	1983	11	07.98890	03	44	02.32	+23	27	21.8	046
454	1983	11	08.00302	03	44	01.42	+23	27	21.3	046
454	1983	11	08.94868	03	43	06.56	+23	26	32.7	046
454	1983	11	08.96292	03	43	05.74	+23	26	31.8	046
454	1983	11	12.90932	03	39	10.48	+23	22	21.0	046
454	1983	11	12.92344	03	39	09.57	+23	22	19.6	046
615	1983	11	06.98428	02	50	06.87	+18	39	07.5	046
615	1983	11	06.99852	02	50	05.94	+18	39	03.7	046
615	1983	11	07.95267	02	49	10.70	+18	35	44.7	046
615	1983	11	07.96691	02	49	09.83	+18	35	42.1	046
615	1983	11	08.87675	02	48	17.35	+18	32	32.8	046
615	1983	11	08.89098	02	48	16.50	+18	32	29.7	046
615	1983	11	09.83676	02	47	22.01	+18	29	09.3	046
615	1983	11	09.85100	02	47	21.12	+18	29	06.0	046
953	1983	11	08.92796	03	32	18.50	+22	55	53.5	046
953	1983	11	09.90823	03	31	19.76	+22	55	11.0	046
953	1983	11	09.92235	03	31	18.92	+22	55	10.6	046
953	1983	11	10.89566	03	30	20.23	+22	54	22.7	046
953	1983	11	10.90990	03	30	19.40	+22	54	21.9	046
1176	1983	11	09.94405	03	40	32.71	+26	55	14.6	046
1176	1983	11	09.95817	03	40	31.93	+26	55	10.8	046
1283	1983	11	03.94343	02	40	37.80	+02	08	48.2	046
1283	1983	11	03.95772	02	40	37.26	+02	08	44.1	046
1293	1983	11	06.98428	02	56	28.22	+19	03	09.7	046
1293	1983	11	06.99852	02	56	27.39	+19	03	02.1	046
1293	1983	11	07.95267	02	55	27.79	+18	54	00.7	046
1293	1983	11	07.96691	02	55	26.94	+18	53	52.2	046
1293	1983	11	08.87675	02	54	30.24	+18	45	16.3	046
1293	1983	11	08.89098	02	54	29.24	+18	45	08.3	046
1300	1983	11	07.91731	02	22	30.55	+03	09	13.5	046
1300	1983	11	07.93167	02	22	29.81	+03	09	12.5	046
1300	1983	11	08.84214	02	21	41.69	+03	08	09.6	046
1300	1983	11	08.85626	02	21	40.85	+03	08	09.3	046
1300	1983	11	09.87200	02	20	47.36	+03	07	08.7	046
1300	1983	11	09.88630	02	20	46.50	+03	07	08.0	046
1308	1983	11	03.90112	01	54	01.37	+17	36	05.7	046
1308	1983	11	03.91524	01	54	00.59	+17	36	02.1	046
1308	1983	11	06.91351	01	51	29.43	+17	25	11.6	046
1308	1983	11	06.92763	01	51	28.74	+17	25	09.0	046
1308	1983	11	07.81014	01	50	45.43	+17	21	56.4	046
1308	1983	11	07.82426	01	50	44.65	+17	21	53.1	046
1325	1983	11	09.94405	03	40	45.00	+28	37	11.0	046
1325	1983	11	09.95817	03	40	43.96	+28	37	11.8	046
1383	1983	10	14.00287	01	59	17.37	+12	08	55.4	046

1383	1983	10	14.01936	01	59	16.30	+12	08	48.7	046
1395	1983	11	06.91351	01	56	54.68	+18	24	24.2	046
1395	1983	11	06.92763	01	56	54.20	+18	24	18.9	046
1395	1983	11	07.81014	01	56	17.37	+18	18	36.7	046
1395	1983	11	07.82426	01	56	16.50	+18	18	29.5	046
1469	1983	10	16.06896	02	51	07.06	+06	57	41.6	046
1469	1983	10	16.08476	02	51	06.56	+06	57	34.4	046
1469	1983	11	02.87836	02	39	02.57	+04	39	05.4	046
1469	1983	11	02.89248	02	39	01.82	+04	38	59.0	046
1469	1983	11	03.94343	02	38	15.59	+04	31	20.2	046
1469	1983	11	03.95772	02	38	15.05	+04	31	14.4	046
1469	1983	11	06.94800	02	36	03.31	+04	10	04.6	046
1469	1983	11	06.96218	02	36	02.68	+04	09	58.3	046
1541	1983	11	10.89566	03	24	32.46	+24	36	59.3	046
1541	1983	11	10.90990	03	24	31.74	+24	36	56.6	046
1633	1983	11	10.96603	03	53	15.95	+16	57	07.2	046
1633	1983	11	10.98015	03	53	15.22	+16	57	04.4	046
1633	1983	11	12.95359	03	51	41.40	+16	52	25.2	046
1633	1983	11	12.96777	03	51	40.83	+16	52	23.7	046
1692	1983	10	14.00287	02	00	15.48	+11	41	27.1	046
1692	1983	10	14.01936	02	00	14.52	+11	41	21.1	046
1798	1983	11	07.01918	03	42	33.85	+21	14	34.3	046
1798	1983	11	07.03330	03	42	32.78	+21	14	35.8	046
1798	1983	11	07.98890	03	41	30.77	+21	16	26.3	046
1798	1983	11	08.00302	03	41	29.85	+21	16	27.7	046
1798	1983	11	08.94868	03	40	27.44	+21	18	12.1	046
1798	1983	11	08.96292	03	40	26.46	+21	18	14.2	046
1798	1983	11	12.90932	03	35	56.33	+21	24	39.1	046
1798	1983	11	12.92344	03	35	55.26	+21	24	40.0	046
1923	1983	11	06.91351	01	56	27.51	+18	21	33.9	046
1923	1983	11	06.92763	01	56	26.56	+18	21	29.9	046
1923	1983	11	07.81014	01	55	35.29	+18	18	01.3	046
1923	1983	11	07.82426	01	55	34.28	+18	17	57.8	046
2042	1983	10	13.95553	01	24	39.79	+09	40	45.5	046
2042	1983	10	13.97012	01	24	38.92	+09	40	42.3	046
2042	1983	10	14.92926	01	23	46.33	+09	38	08.7	046
2042	1983	10	14.94344	01	23	45.52	+09	38	07.1	046
2123	1983	10	13.95553	01	21	28.80	+10	13	09.4	046
2123	1983	10	13.97012	01	21	28.08	+10	13	05.8	046
2123	1983	10	14.92926	01	20	40.70	+10	08	31.4	046
2123	1983	10	14.94344	01	20	39.82	+10	08	27.3	046
2181	1983	10	13.95553	01	20	44.22	+10	17	05.9	046
2181	1983	10	13.97012	01	20	43.35	+10	17	04.7	046
2181	1983	10	14.92926	01	19	43.32	+10	16	00.7	046
2181	1983	10	14.94344	01	19	42.40	+10	16	00.1	046
2209	1983	11	10.96603	03	57	40.02	+16	17	04.1	046
2209	1983	11	10.98015	03	57	39.28	+16	17	00.9	046
2209	1983	11	12.95359	03	55	58.38	+16	11	04.6	046
2209	1983	11	12.96777	03	55	57.69	+16	11	01.5	046
2315	1983	11	08.98583	03	54	27.97	+27	54	55.6	046
2315	1983	11	09.00024	03	54	27.24	+27	54	57.0	046
2315	1983	11	10.93131	03	52	37.25	+27	58	39.6	046
2315	1983	11	10.94514	03	52	36.31	+27	58	41.1	046
2324	1983	11	06.98428	02	50	39.62	+16	57	48.5	046
2324	1983	11	06.99852	02	50	38.94	+16	57	42.2	046
2476	1983	11	03.94343	02	34	44.09	+02	53	02.2	046
2476	1983	11	03.95772	02	34	43.53	+02	53	02.3	046
2476	1983	11	06.94800	02	32	06.72	+02	50	43.9	046
2476	1983	11	06.96218	02	32	05.94	+02	50	41.8	046

2476		1983	11	07.91731	02	31	16.44	+02	50	12.3			046
2476		1983	11	07.93167	02	31	15.56	+02	50	12.0			046
2476		1983	11	08.84214	02	30	28.76	+02	49	50.0			046
2476		1983	11	08.85626	02	30	27.91	+02	49	50.1			046
2476		1983	11	09.87200	02	29	35.78	+02	49	32.5			046
2476		1983	11	09.88630	02	29	35.03	+02	49	32.3			046
2662		1983	11	03.90112	01	51	10.98	+16	17	21.0			046
2662		1983	11	03.91524	01	51	10.05	+16	17	16.3			046
2662		1983	11	06.91351	01	48	23.09	+16	04	00.4			046
2662		1983	11	06.92763	01	48	22.28	+16	03	57.6			046
2662		1983	11	07.88259	01	47	30.69	+15	59	41.5			046
2662		1983	11	07.89683	01	47	29.99	+15	59	37.1			046
2725		1983	11	07.91731	02	26	48.20	+04	21	18.5			046
2725		1983	11	07.93167	02	26	47.24	+04	21	19.6			046
2725		1983	11	08.84214	02	25	55.01	+04	22	45.1			046
2725		1983	11	08.85626	02	25	54.30	+04	22	46.2			046
2725		1983	11	09.87200	02	24	56.25	+04	24	30.8			046
2725		1983	11	09.88630	02	24	55.50	+04	24	31.6			046
2807		1983	10	13.95553	01	22	53.89	+07	01	15.6		1	046
2807		1983	10	13.97012	01	22	53.07	+07	01	15.3		1	046
2807		1983	10	14.92926	01	21	59.71	+06	58	36.2		1	046
2807		1983	10	14.94344	01	21	58.88	+06	58	34.7		1	046
2886		1983	11	10.96603	03	56	59.67	+18	22	41.5			046
2886		1983	11	10.98015	03	56	58.67	+18	22	39.8			046
2886		1983	11	12.95359	03	55	08.40	+18	17	49.1			046
2886		1983	11	12.96777	03	55	07.56	+18	17	46.8			046
1976	QN1	1983	10	13.95553	01	24	43.62	+07	05	40.2		1	046
1976	QN1	1983	10	13.97012	01	24	42.72	+07	05	35.0		1	046
1976	QN1	1983	10	14.92926	01	23	48.50	+06	59	25.6		1	046
1976	QN1	1983	10	14.94344	01	23	47.57	+06	59	18.3		1	046
1976	QN1	1983	10	15.95368	01	22	50.32	+06	52	50.6		1	046
1976	QN1	1983	10	15.96878	01	22	49.51	+06	52	43.5		1	046
1978	RU1	1983	10	13.95553	01	26	56.83	+08	02	06.6			046
1978	RU1	1983	10	13.97012	01	26	55.94	+08	02	02.4			046
1981	EO7	1983	10	13.95553	01	23	28.71	+08	01	06.2	17.0		046
1981	EO7	1983	10	13.97012	01	23	28.01	+08	00	59.6			046
1981	EO7	1983	10	15.95368	01	21	58.47	+07	37	21.0		1	046
1981	EO7	1983	10	15.96878	01	21	58.17	+07	37	12.9		1	046
1981	EH14	1983	10	16.01502	01	55	33.99	+09	49	46.3			046
1981	EH14	1983	10	16.02966	01	55	33.15	+09	49	32.6			046
1982	BH	1983	11	03.90112	01	48	50.62	+17	00	44.5			046
1982	BH	1983	11	03.91524	01	48	49.11	+17	00	50.3			046
1983	SA	1983	10	27.76595	22	38	31.82	+21	52	14.2	16.0		046
1983	SA	1983	10	27.78053	22	38	32.00	+21	52	24.0			046
1983	SA	1983	11	02.76887	22	40	54.71	+22	44	10.0			046
1983	SA	1983	11	02.78322	22	40	55.08	+22	44	16.9			046
1983	TL	1983	10	13.95553	01	20	20.12	+09	49	08.2			046
1983	TL	1983	10	13.97012	01	20	19.38	+09	49	04.7			046
1983	TL	1983	10	14.92926	01	19	30.94	+09	46	32.1			046
1983	TL	1983	10	14.94344	01	19	30.01	+09	46	31.0			046
1983	TL	1983	10	15.95368	01	18	39.02	+09	43	50.8			046
1983	TL	1983	10	15.96878	01	18	38.06	+09	43	50.3			046
1983	TR	1983	10	14.92926	01	15	14.15	+09	44	00.5			046
1983	TR	1983	10	14.94344	01	15	13.66	+09	43	53.7			046
1983	TR	1983	10	15.95368	01	14	33.07	+09	36	17.5			046
1983	TR	1983	10	15.96878	01	14	32.50	+09	36	10.2			046
1983	TT	1983	10	14.00287	01	58	29.60	+14	38	49.2			046
1983	TT	1983	10	14.01936	01	58	28.59	+14	38	45.5			046
1983	TU	1983	10	16.01502	01	50	15.96	+07	21	21.7			046

1983	TU		1983	10	16.02966	01	50	14.95	+07	21	20.7		046
1983	TU		1983	11	02.80992	01	31	50.66	+07	13	25.5		046
1983	TU		1983	11	02.82404	01	31	49.88	+07	13	25.6		046
1983	TU		1983	11	06.84192	01	28	22.98	+07	15	31.3		046
1983	TU		1983	11	06.85604	01	28	22.26	+07	15	31.5		046
1983	TU		1983	11	07.84706	01	27	35.29	+07	16	20.2		046
1983	TU		1983	11	07.86135	01	27	34.60	+07	16	20.6		046
1983	TE1	*	1983	10	05.93310	01	28	01.42	+11	31	02.7	16.8	046
1983	TE1		1983	10	05.94740	01	28	00.87	+11	30	56.0		046
1983	TE1		1983	10	07.88600	01	26	34.45	+11	14	44.1		046
1983	TE1		1983	10	07.90012	01	26	33.60	+11	14	33.9		046
1983	TE1		1983	10	13.95553	01	21	50.23	+10	21	36.7		046
1983	TE1		1983	10	13.97012	01	21	49.35	+10	21	28.1		046
1983	TE1		1983	10	14.92926	01	21	04.00	+10	12	52.3		046
1983	TE1		1983	10	14.94344	01	21	03.25	+10	12	42.5		046
1983	TF1	*	1983	10	13.95553	01	26	55.37	+07	53	02.6	16.9	046
1983	TF1		1983	10	13.97012	01	26	54.67	+07	52	52.1		046
1983	TF1		1983	10	14.92926	01	26	16.17	+07	42	39.8		046
1983	TF1		1983	10	14.94344	01	26	15.31	+07	42	32.8		046
1983	TG1		1983	10	14.00287	02	05	37.97	+14	16	42.8		046
1983	TG1	*	1983	10	14.01936	02	05	37.67	+14	16	40.6	17.0	046
1983	TH1	*	1983	10	15.95368	01	15	14.99	+08	32	07.9	17.0	046
1983	TH1		1983	10	15.96878	01	15	14.12	+08	32	13.1		046
1983	TJ1	*	1983	10	15.95368	01	20	49.02	+06	26	19.2	1	046
1983	TJ1		1983	10	15.96878	01	20	48.21	+06	26	07.6	1	046
1983	TV1		1983	11	02.80992	01	31	05.90	+09	10	51.3		046
1983	TV1		1983	11	02.82404	01	31	05.40	+09	10	48.2		046
1983	TV1		1983	11	06.84192	01	28	05.38	+08	57	13.6		046
1983	TV1		1983	11	06.85604	01	28	04.75	+08	57	11.1		046
1983	TV1		1983	11	07.84706	01	27	22.67	+08	54	00.8		046
1983	TV1		1983	11	07.86135	01	27	21.94	+08	53	57.6		046
1983	UB	*	1983	10	16.01502	01	48	14.09	+09	39	50.5	17.4	046
1983	UB		1983	10	16.02966	01	48	13.23	+09	39	44.5		046
1983	UC	*	1983	10	16.01502	01	48	58.37	+08	56	13.3	17.0	046
1983	UC		1983	10	16.02966	01	48	57.65	+08	56	10.8		046
1983	UC		1983	11	02.80992	01	30	41.89	+08	44	05.1		046
1983	UC		1983	11	02.82404	01	30	41.27	+08	44	03.0		046
1983	UC		1983	11	06.84192	01	27	07.61	+08	44	00.2		046
1983	UC		1983	11	06.85604	01	27	06.83	+08	44	00.9		046
1983	UC		1983	11	07.84706	01	26	18.04	+08	44	19.8		046
1983	UC		1983	11	07.86135	01	26	17.06	+08	44	18.0		046
1983	UD	*	1983	10	16.01502	01	53	40.75	+10	19	20.0	17.0	046
1983	UD		1983	10	16.02966	01	53	39.73	+10	19	14.5		046
1983	UE	*	1983	10	16.01502	01	55	38.88	+10	03	53.6	16.8	046
1983	UE		1983	10	16.02966	01	55	38.03	+10	03	47.0		046
1983	UF	*	1983	10	16.01502	01	57	33.47	+08	33	42.2	17.2	046
1983	UF		1983	10	16.02966	01	57	32.45	+08	33	37.2		046
1983	UG	*	1983	10	16.06896	02	52	25.63	+06	50	04.5	16.5	046
1983	UG		1983	10	16.08476	02	52	24.88	+06	50	02.3		046
1983	UG		1983	11	06.94800	02	32	24.58	+06	52	55.5		046
1983	UG		1983	11	06.96218	02	32	23.67	+06	52	57.0		046
1983	UG		1983	11	08.80725	02	30	36.18	+06	55	51.0		046
1983	UG		1983	11	08.82137	02	30	35.27	+06	55	52.1		046
1983	VY	*	1983	11	02.84306	01	40	53.73	+14	13	57.1		046
1983	VY		1983	11	02.85816	01	40	52.80	+14	13	56.3		046
1983	VZ	*	1983	11	02.84306	01	47	58.97	+13	09	56.7	16.9	046
1983	VZ		1983	11	02.85816	01	47	58.20	+13	09	52.0		046
1983	VZ		1983	11	06.87728	01	45	35.10	+12	32	18.0		046
1983	VZ		1983	11	06.89157	01	45	34.43	+12	32	09.2		046

1983	VZ		1983	11	07.88259	01	45	02.14	+12	23	13.4	046
1983	VZ		1983	11	07.89683	01	45	01.32	+12	23	04.7	046
1983	VA1	*	1983	11	03.90112	01	50	41.38	+18	49	03.8	17.0 046
1983	VA1		1983	11	03.91524	01	50	40.58	+18	49	03.4	046
1983	VB1	*	1983	11	03.90112	01	52	20.83	+17	15	52.7	17.4 046
1983	VB1		1983	11	03.91524	01	52	20.00	+17	15	54.6	046
1983	VC1	*	1983	11	03.90112	01	56	35.80	+17	39	47.4	16.7 046
1983	VC1		1983	11	03.91524	01	56	35.05	+17	39	43.2	046
1983	VC1		1983	11	06.91351	01	54	15.33	+17	27	24.7	046
1983	VC1		1983	11	06.92763	01	54	14.66	+17	27	22.0	046
1983	VC1		1983	11	07.81014	01	53	34.86	+17	23	45.8	046
1983	VC1		1983	11	07.82426	01	53	34.02	+17	23	40.7	046
1983	VD1	*	1983	11	03.94343	02	35	13.79	+03	16	18.9	16.5 046
1983	VD1		1983	11	03.95772	02	35	13.06	+03	16	19.2	046
1983	VE1	*	1983	11	06.87728	01	49	11.14	+12	52	29.3	046
1983	VE1		1983	11	06.89157	01	49	10.57	+12	52	25.0	046
1983	VE1		1983	11	07.88259	01	48	24.77	+12	46	41.4	046
1983	VE1		1983	11	07.89683	01	48	23.96	+12	46	35.4	046
1983	VF1	*	1983	11	06.87728	01	50	19.06	+13	08	26.7	046
1983	VF1		1983	11	06.89157	01	50	18.32	+13	08	23.5	046
1983	VG1	*	1983	11	06.94800	02	29	48.10	+03	03	32.4	16.8 046
1983	VG1		1983	11	06.96218	02	29	47.21	+03	03	34.7	046
1983	VG1		1983	11	07.91731	02	28	53.22	+03	03	56.6	046
1983	VG1		1983	11	07.93167	02	28	52.38	+03	03	57.4	046
1983	VG1		1983	11	09.87200	02	27	03.89	+03	05	13.4	046
1983	VG1		1983	11	09.88630	02	27	03.15	+03	05	13.8	046
1983	VH1	*	1983	11	06.94800	02	30	20.96	+03	04	54.9	16.8 046
1983	VH1		1983	11	06.96218	02	30	20.33	+03	04	54.2	046
1983	VH1		1983	11	07.91731	02	29	31.03	+03	04	36.8	046
1983	VH1		1983	11	07.93167	02	29	30.09	+03	04	37.2	046
1983	VH1		1983	11	08.84214	02	28	43.44	+03	04	27.1	046
1983	VH1		1983	11	08.85626	02	28	42.64	+03	04	26.1	046
1983	VH1		1983	11	09.87200	02	27	50.75	+03	04	23.7	046
1983	VJ1	*	1983	11	06.98428	02	50	03.22	+20	50	55.5	16.8 046
1983	VJ1		1983	11	06.99852	02	50	02.36	+20	50	53.3	046
1983	VJ1		1983	11	07.95267	02	49	13.16	+20	49	04.4	046
1983	VJ1		1983	11	07.96691	02	49	12.38	+20	49	02.0	046
1983	VJ1		1983	11	08.87675	02	48	26.12	+20	47	18.3	046
1983	VJ1		1983	11	08.89098	02	48	25.45	+20	47	16.7	046
1983	VJ1		1983	11	09.83676	02	47	37.35	+20	45	25.6	046
1983	VJ1		1983	11	09.85100	02	47	36.60	+20	45	23.3	046
1983	VK1	*	1983	11	06.98428	02	50	59.72	+18	08	56.6	16.8 046
1983	VK1		1983	11	06.99852	02	50	58.76	+18	08	55.6	046
1983	VK1		1983	11	07.95267	02	49	53.77	+18	07	57.8	046
1983	VK1		1983	11	07.96691	02	49	52.65	+18	07	58.3	046
1983	VK1		1983	11	08.87675	02	48	50.66	+18	06	59.4	046
1983	VK1		1983	11	08.89098	02	48	49.77	+18	07	00.4	046
1983	VK1		1983	11	09.83676	02	47	45.30	+18	05	56.2	046
1983	VK1		1983	11	09.85100	02	47	44.27	+18	05	55.7	046
1983	VL1	*	1983	11	06.98428	02	54	09.02	+18	08	18.5	17.2 046
1983	VL1		1983	11	06.99852	02	54	08.35	+18	08	13.7	046
1983	VL1		1983	11	07.95267	02	53	17.51	+18	04	23.1	046
1983	VL1		1983	11	07.96691	02	53	16.54	+18	04	18.6	046
1983	VL1		1983	11	08.87675	02	52	27.95	+18	00	38.5	046
1983	VL1		1983	11	08.89098	02	52	27.09	+18	00	35.4	046
1983	VL1		1983	11	09.83676	02	51	36.41	+17	56	40.9	046
1983	VL1		1983	11	09.85100	02	51	35.73	+17	56	39.4	046
1983	VM1	*	1983	11	06.98428	02	55	23.16	+21	20	15.8	17.3 046
1983	VM1		1983	11	06.99852	02	55	22.42	+21	20	14.5	046

1983	VM1		1983	11	07.95267	02	54	32.39	+21	14	29.6	046
1983	VM1		1983	11	07.96691	02	54	31.75	+21	14	27.1	046
1983	VM1		1983	11	08.87675	02	53	43.99	+21	08	51.4	046
1983	VM1		1983	11	08.89098	02	53	42.98	+21	08	52.5	046
1983	VM1		1983	11	09.83676	02	52	53.75	+21	03	00.7	046
1983	VM1		1983	11	09.85100	02	52	53.09	+21	02	53.7	046
1983	VN1	*	1983	11	07.01918	03	38	36.51	+23	57	43.7	17.2 046
1983	VN1		1983	11	07.03330	03	38	35.73	+23	57	43.4	046
1983	VN1		1983	11	07.98890	03	37	39.69	+23	55	26.3	046
1983	VN1		1983	11	08.00302	03	37	38.93	+23	55	24.9	046
1983	VO1	*	1983	11	07.01918	03	40	17.72	+23	40	09.0	17.0 046
1983	VO1		1983	11	07.03330	03	40	16.68	+23	40	08.4	046
1983	VO1		1983	11	07.98890	03	39	16.86	+23	37	40.2	046
1983	VO1		1983	11	08.00302	03	39	15.95	+23	37	40.6	046
1983	VO1		1983	11	12.90932	03	33	54.61	+23	23	11.3	046
1983	VO1		1983	11	12.92344	03	33	53.74	+23	23	07.5	046
1983	VP1	*	1983	11	07.01918	03	43	27.39	+22	36	39.5	16.2 046
1983	VP1		1983	11	07.03330	03	43	26.58	+22	36	35.3	046
1983	VP1		1983	11	07.98890	03	42	39.27	+22	30	36.7	046
1983	VP1		1983	11	08.00302	03	42	38.61	+22	30	32.5	046
1983	VP1		1983	11	08.94868	03	41	51.02	+22	24	31.6	046
1983	VP1		1983	11	08.96292	03	41	50.48	+22	24	26.6	046
1983	VP1		1983	11	12.90932	03	38	27.70	+21	58	42.3	046
1983	VP1		1983	11	12.92344	03	38	27.02	+21	58	36.5	046
1983	VR1	*	1983	11	07.95267	02	47	28.75	+20	07	01.9	15.8 046
1983	VR1		1983	11	07.96691	02	47	28.03	+20	06	59.0	046
1983	VR1		1983	11	08.87675	02	46	47.13	+20	03	22.6	046
1983	VR1		1983	11	08.89098	02	46	46.43	+20	03	18.1	046
1983	VR1		1983	11	09.83676	02	46	03.90	+19	59	30.6	046
1983	VR1		1983	11	09.85100	02	46	03.04	+19	59	27.3	046
1983	VS1	*	1983	11	08.87675	02	48	46.52	+21	03	16.6	17.2 046
1983	VS1		1983	11	08.89098	02	48	45.59	+21	03	11.4	046
1983	VS1		1983	11	09.83676	02	47	47.39	+21	01	46.0	046
1983	VT1	*	1983	11	08.87675	02	54	12.02	+21	12	38.1	17.3 046
1983	VT1		1983	11	08.89098	02	54	11.00	+21	12	41.4	046
1983	VU1	*	1983	11	08.92796	03	27	47.79	+24	21	42.4	1 046
1983	VU1		1983	11	09.90823	03	26	45.16	+24	14	47.9	17.0 046
1983	VU1		1983	11	09.92235	03	26	44.43	+24	14	44.0	046
1983	VU1		1983	11	10.89566	03	25	42.11	+24	07	43.1	046
1983	VU1		1983	11	10.90990	03	25	41.15	+24	07	35.9	046
1983	VV1	*	1983	11	08.92796	03	31	53.28	+23	27	54.6	16.9 046
1983	VV1		1983	11	09.90823	03	31	03.22	+23	25	42.5	046
1983	VV1		1983	11	09.92235	03	31	02.43	+23	25	40.9	046
1983	VV1		1983	11	10.89566	03	30	12.16	+23	23	22.9	046
1983	VV1		1983	11	10.90990	03	30	11.32	+23	23	21.2	046
1983	VW1		1983	11	08.98583	03	45	35.83	+29	10	44.7	17.0 046
1983	VW1		1983	11	09.00024	03	45	35.00	+29	10	31.9	046
1983	VW1		1983	11	09.94405	03	44	46.40	+28	54	24.2	046
1983	VW1		1983	11	09.95817	03	44	45.68	+28	54	10.9	046
1983	VW1		1983	11	10.93131	03	43	54.82	+28	37	21.2	046
1983	VW1		1983	11	10.94514	03	43	54.15	+28	37	10.1	046
1983	VX1	*	1983	11	08.98583	03	45	55.47	+28	52	04.0	17.2 046
1983	VX1		1983	11	09.00024	03	45	54.74	+28	51	59.6	046
1983	VX1		1983	11	09.94405	03	45	00.79	+28	49	15.3	046
1983	VX1		1983	11	09.95817	03	44	59.90	+28	49	12.6	046
1983	VX1		1983	11	10.93131	03	44	03.57	+28	46	11.0	046
1983	VX1		1983	11	10.94514	03	44	02.53	+28	46	09.1	046
1983	VY1	*	1983	11	09.90823	03	24	27.71	+21	57	47.6	16.8 046
1983	VY1		1983	11	09.92235	03	24	27.03	+21	57	41.8	046

1983 VY1		1983	11	10.89566	03	23	37.94	+21	51	24.8	046
1983 VZ1	*	1983	11	12.90932	03	33	44.19	+23	40	08.1	046
1983 VZ1		1983	11	12.92344	03	33	43.23	+23	40	05.2	046
2525 P-L		1983	10	16.01502	01	53	59.73	+09	55	41.4	046
2525 P-L		1983	10	16.02966	01	53	58.76	+09	55	38.8	046

Note 1: at edge of plate.

OBSERVATIONS MADE AT THE BULGARIAN NATIONAL OBSERVATORY, SMOLYAN, BY V. SHKODROV, V. IVANOVA AND A. THINTHAROVA.

Object		Date	UT	R. A. (1950)			Decl.			N	Obs.
1983 PA		1983	09 04.84219	20	50	28.76	+22	54	22.9	1	071
1983 PA		1983	09 04.85608	20	50	27.88	+22	54	26.8	1	071
1983 SB		1983	09 30.79462	23	25	48.70	+01	00	05.0		071
1983 SB		1983	09 30.80851	23	25	48.31	+01	00	01.2		071
1983 SB		1983	09 30.84461	23	25	45.20	+00	59	51.6		071
1983 SB		1983	11 09.87743	23	23	07.76	-01	33	14.6		071
1983 SB		1983	11 09.89132	23	23	08.41	-01	33	07.3		071
1983 SB		1983	11 10.71285	23	23	38.26	-01	32	34.5		071
1983 SC		1983	09 10.96528	23	43	16.94	+01	59	48.7		071
1983 SC		1983	09 11.04170	23	43	13.09	+01	59	36.3		071
1983 SC		1983	10 28.82569	23	10	34.95	-00	10	10.2		071
1983 SC		1983	10 28.86250	23	10	34.68	-00	10	13.9		071
1983 SC		1983	10 28.87639	23	10	34.09	-00	10	12.3		071
1983 SG		1983	09 28.84306	23	41	17.68	+01	25	57.1		071
1983 SG		1983	09 28.85695	23	41	17.01	+01	25	49.2		071
1983 SG		1983	09 28.86250	23	41	16.84	+01	25	48.6		071
1983 SG		1983	09 28.87639	23	41	16.00	+01	25	45.8		071
1983 SG		1983	09 28.88750	23	41	15.22	+01	25	39.7		071
1983 SG		1983	09 28.90347	23	41	14.61	+01	25	37.6		071
1983 SG		1983	09 30.94375	23	39	34.80	+01	16	36.2		071
1983 SG		1983	09 30.95764	23	39	34.19	+01	16	30.1		071
1983 SL	*	1983	09 28.74653	23	31	28.45	+03	56	42.9		071
1983 SL		1983	09 28.82014	23	31	25.17	+03	56	30.1		071
1983 SL		1983	09 29.73472	23	30	43.25	+03	53	36.7		071
1983 SL		1983	09 29.74861	23	30	42.58	+03	53	30.7		071
1983 SM	*	1983	09 28.75347	23	38	27.15	+02	10	28.6		071
1983 SM		1983	09 28.79097	23	38	25.12	+02	10	00.0		071
1983 SM		1983	09 28.80486	23	38	24.54	+02	09	54.9		071
1983 SM		1983	09 28.82014	23	38	23.58	+02	09	43.0		071
1983 SM		1983	09 28.83402	23	38	22.80	+02	09	31.7		071
1983 SM		1983	09 29.83333	23	37	35.68	+01	58	57.8		071
1983 SM		1983	09 29.84722	23	37	35.20	+01	58	50.2		071
1983 SM		1983	09 29.90139	23	37	32.47	+01	58	15.9		071
1983 SM		1983	09 30.90393	23	36	45.48	+01	47	37.3		071
1983 SM		1983	09 30.93693	23	36	43.99	+01	47	16.3		071

Note 1: correction to MPC 8092.

OBSERVATIONS MADE AT THE CRIMEAN ASTROPHYSICAL OBSERVATORY BY N. S. CHERNYKH, L. I. CHERNYKH, T. M. SMIRNOVA, L. V. ZHURAVLEVA AND L. G. KARACHKINA.

Object		Date	UT	R. A. (1950)			Decl.			Mag.	N	Obs.
1358		1980	01 22.84219	06	39	18.57	+26	21	26.2			095
1953		1979	12 18.07770	06	32	32.27	+24	27	18.9			095
1980 BK6	*	1980	01 22.84219	06	38	40.96	+28	28	47.0	17.5	1	095
1980 BL6	*	1980	01 22.84219	06	38	42.25	+26	17	22.6	17.0		095
1981 RW2	*	1981	09 02.87142	22	05	07.44	-04	31	23.4	16.0	1	095
1981 RW2		1981	09 05.85972	22	02	52.63	-04	45	37.5	16.0		095
1981 RW2		1981	09 23.77543	21	52	11.75	-06	06	10.6	16.0		095
1981 RW2		1981	09 25.76829	21	51	23.75	-06	13	55.6	16.0	1	095

Note 1: near edge of plate.

OBSERVATIONS MADE AT GEISEI BY T. SEKI. IN PART FROM NIHONDAIRA OBS. CIRC. NO. 1454.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 VC		1983 11	01.69028	02 42 09.60	+20 17 59.8		372
1983 VC		1983 11	06.60556	02 37 03.59	+19 50 11.7		372
1983 VD		1983 11	06.60556	02 36 59.00	+20 05 41.6		372
1983 VD		1983 11	07.66398	02 35 56.85	+20 00 08.9		372
1983 WB	*	1983 11	28.64444	04 17 24.2	+19 30 05	16	372
1983 WB		1983 11	30.51493	04 15 37.5	+19 31 19		372
1983 XA	*	1983 12	02.62326	04 10 28.25	+19 43 12.6	17	372
1983 XA		1983 12	02.63159	04 10 27.67	+19 43 11.7		372

OBSERVATION MADE AT THE TOKYO OBSERVATORY'S KISO STATION BY H. KOSAI AND K. HURUKAWA.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
46	1982 11	14.62791	03 38 19.49	+16 01 55.4	11.5	381
46	1982 11	14.67027	03 38 16.84	+16 01 43.8	11.5	381
46	1982 12	13.57374	03 14 12.04	+14 29 17.6	12.0	381
46	1982 12	14.53486	03 13 42.74	+14 27 51.0	12.0	381
46	1982 12	14.57861	03 13 41.33	+14 27 47.1	12.0	381
141	1982 12	12.58336	02 52 33.15	+36 47 58.1	12.0	381
141	1982 12	12.63138	02 52 31.84	+36 47 31.2	12.0	381
141	1982 12	14.48833	02 51 49.85	+36 30 30.8	12.0	381
268	1982 12	13.57374	03 27 17.43	+15 49 25.3	14.0	381
268	1982 12	14.53486	03 26 40.39	+15 47 55.4	14.0	381
268	1982 12	14.57861	03 26 38.71	+15 47 51.5	14.0	381
423	1982 12	13.55013	03 00 00.97	+13 27 22.6	13.0	381
423	1982 12	13.59596	02 59 59.41	+13 27 26.8	13.0	381
423	1982 12	14.51124	02 59 28.79	+13 28 36.3	13.0	381
423	1982 12	14.55631	02 59 27.20	+13 28 38.7	13.0	381
528	1982 11	14.54180	01 24 11.10	+02 06 51.5	15.0	381
528	1982 11	14.58277	01 24 09.69	+02 06 53.3	15.0	381
566	1982 12	13.57374	03 28 13.10	+16 39 09.2	13.5	381
566	1982 12	14.53486	03 27 38.75	+16 38 40.2	13.5	381
566	1982 12	14.57861	03 27 37.08	+16 38 39.1	13.5	381
873	1982 11	14.54180	01 10 34.10	+00 31 51.3	16.5	381
873	1982 11	14.58277	01 10 32.83	+00 31 46.3	16.5	381
894	1983 06	10.50912	11 01 31.37	+04 18 30.7	17.0	381
1011	1982 11	14.54180	01 17 22.56	-01 45 53.0	16.0	381
1011	1982 11	14.58277	01 17 20.59	-01 45 59.0	16.0	381
1048	1982 11	14.54180	01 21 24.38	-01 21 48.8	15.0	381
1048	1982 11	14.58277	01 21 22.68	-01 21 44.4	15.0	381
1248	1982 12	13.57374	03 24 42.39	+14 32 58.4	14.5	381
1248	1982 12	14.53486	03 24 01.56	+14 34 24.9	14.5	381
1248	1982 12	14.57861	03 23 59.73	+14 34 28.9	14.5	381
1475	1982 12	13.57374	03 25 48.51	+12 27 40.7	16.0	381
1475	1982 12	14.53486	03 25 20.27	+12 25 34.6	16.0	381
1475	1982 12	14.57861	03 25 18.93	+12 25 27.9	16.0	381
1683	1982 12	12.58336	02 49 56.37	+35 25 21.9	17.0	381
1683	1982 12	12.63138	02 49 54.61	+35 25 01.1	17.0	381
1683	1982 12	14.48833	02 48 51.98	+35 12 04.4	17.0	381
1772	1982 11	14.54180	01 12 54.85	-00 08 07.6	17.5	381
1772	1982 11	14.58277	01 12 53.38	-00 08 09.1	17.5	381
1896	1982 11	14.62791	03 21 20.10	+14 56 36.0	16.5	381
1896	1982 11	14.67027	03 21 17.43	+14 56 23.0	16.5	381
1896	1982 12	14.51124	02 59 56.21	+13 28 16.6	17.5	381
1896	1982 12	14.55631	02 59 55.32	+13 28 15.4	17.5	381
2060	1982 11	14.62791	03 33 27.65	+15 50 18.8	19.0	381
2060	1982 11	14.67027	03 33 27.10	+15 50 16.6	19.0	381

2060		1982	12	13.57374	03	27	33.33	+15	27	41.2	19.0	381
2060		1982	12	14.53486	03	27	22.86	+15	27	02.6	19.0	381
2060		1982	12	14.57861	03	27	22.43	+15	27	01.8	19.0	381
2219		1982	11	14.62791	03	20	40.17	+14	05	51.4	15.5	381
2219		1982	11	14.67027	03	20	37.83	+14	05	48.6	15.5	381
2219		1982	12	13.55013	02	59	04.84	+14	04	42.3	16.0	381
2219		1982	12	13.59596	02	59	03.40	+14	04	45.6	16.0	381
2219		1982	12	14.51124	02	58	36.67	+14	05	43.5	16.0	381
2219		1982	12	14.55631	02	58	35.28	+14	05	45.4	16.0	381
2338		1982	11	14.54180	01	14	49.63	+02	53	19.1	17.0	381
2338		1982	11	14.58277	01	14	48.26	+02	53	15.4	17.0	381
2496		1982	11	14.62791	03	22	49.86	+16	53	23.0	16.5	381
2496		1982	11	14.67027	03	22	46.92	+16	53	10.9	16.5	381
2496		1982	12	13.55013	02	56	35.05	+15	11	25.7	17.0	381
2496		1982	12	13.59596	02	56	33.53	+15	11	21.7	17.0	381
2496		1982	12	14.51124	02	56	05.55	+15	09	43.7	17.0	381
2496		1982	12	14.55631	02	56	04.13	+15	09	38.5	17.0	381
2573		1982	11	14.62791	03	28	49.37	+18	43	20.4	17.0	381
2573		1982	11	14.67027	03	28	46.86	+18	43	19.2	17.0	381
2664		1982	12	14.53486	03	29	07.19	+13	00	49.7	17.0	381
2664		1982	12	14.57861	03	29	05.70	+13	00	46.8	17.0	381
2840		1982	11	14.62791	03	39	56.49	+18	30	12.7	17.0	381
2840		1982	11	14.67027	03	39	53.44	+18	30	13.8	17.0	381
2882		1982	11	14.62791	03	24	27.93	+19	05	25.2	17.0	381
2882		1982	11	14.67027	03	24	25.68	+19	05	16.8	17.0	381
1970	AF1	1982	12	13.57374	03	14	25.99	+16	42	53.7	17.0	381
1970	AF1	1982	12	14.53486	03	13	46.73	+16	37	39.0	17.0	381
1970	AF1	1982	12	14.57861	03	13	44.98	+16	37	24.8	17.0	381
1977	DK3	1982	11	14.54180	01	18	57.22	-00	02	54.1	16.5	381
1977	DK3	1982	11	14.58277	01	18	55.62	-00	02	57.9	16.5	381
1979	YB	1982	11	14.60707	03	41	17.66	+46	10	40.3	17.5	381
1979	YB	1982	11	14.65082	03	41	13.71	+46	10	05.7	17.5	381
1979	YB	1982	11	20.73139	03	32	05.52	+44	34	45.0	17.5	381
1979	YB	1982	12	12.58336	03	04	39.07	+36	12	19.6	17.5	381
1979	YB	1982	12	12.63138	03	04	36.54	+36	11	04.1	17.5	381
1979	YB	1982	12	14.48833	03	03	08.65	+35	21	42.0	17.5	381
1982	TK	1982	11	14.54180	01	09	35.72	+02	44	46.9	16.5	381
1982	TK	1982	11	14.58277	01	09	34.72	+02	44	49.6	16.5	381
1982	VA	1982	11	20.73139	03	33	36.70	+46	38	02.5	17.0	381
1982	VM	1982	11	14.62791	03	34	39.15	+18	57	33.5	17.5	381
1982	VM	1982	11	14.67027	03	34	36.62	+18	57	28.5	17.5	381
1982	VZ	1982	12	13.55013	02	57	24.92	+14	09	23.6	17.0	381
1982	VZ	1982	12	13.59596	02	57	23.75	+14	09	21.4	17.0	381
1982	VZ	1982	12	14.51124	02	57	01.77	+14	08	40.0	17.0	381
1982	VZ	1982	12	14.55631	02	57	00.65	+14	08	37.3	17.0	381
1982	VB1	1982	11	14.62791	03	19	49.64	+16	29	06.8	17.0	381
1982	VB1	1982	11	14.67027	03	19	46.91	+16	28	46.2	17.0	381
1982	VB1	1982	12	13.55013	02	58	18.89	+13	32	39.8	18.0	381
1982	VB1	1982	12	13.59596	02	58	17.78	+13	32	30.0	18.0	381
1982	VB1	1982	12	14.51124	02	57	58.95	+13	29	11.5	18.0	381
1982	VB1	1982	12	14.55631	02	57	57.89	+13	29	01.2	18.0	381
1982	VZ1 *	1982	11	14.54180	01	09	49.56	-02	27	30.3	17.0	381
1982	VZ1	1982	11	14.58277	01	09	48.19	-02	27	25.4	17.0	381
1982	VA2 *	1982	11	14.54180	01	11	05.28	+01	13	28.1	18.5	381
1982	VA2	1982	11	14.58277	01	11	04.35	+01	13	34.1	18.5	381
1982	VB2 *	1982	11	14.54180	01	12	58.47	+02	17	19.8	17.5	381
1982	VB2	1982	11	14.58277	01	12	56.98	+02	17	22.0	17.5	381
1982	VC2 *	1982	11	14.54180	01	13	12.19	-02	04	06.3	18.5	381
1982	VC2	1982	11	14.58277	01	13	10.42	-02	04	09.9	18.5	381

1982	VD2	*	1982	11	14.54180	01	13	51.59	-02	04	27.3	19.0	381
1982	VD2		1982	11	14.58277	01	13	50.25	-02	04	23.3	19.0	381
1982	VE2	*	1982	11	14.54180	01	16	38.79	+02	17	44.5	18.0	381
1982	VE2		1982	11	14.58277	01	16	37.30	+02	17	46.7	18.0	381
1982	VF2	*	1982	11	14.54180	01	19	36.90	+00	53	52.5	18.5	381
1982	VF2		1982	11	14.58277	01	19	35.46	+00	53	54.6	18.5	381
1982	VG2	*	1982	11	14.54180	01	22	26.80	+00	06	09.1	17.5	381
1982	VG2		1982	11	14.58277	01	22	25.25	+00	06	08.0	17.5	381
1982	VH2	*	1982	11	14.54180	01	23	27.64	-01	36	57.1	18.0	381
1982	VH2		1982	11	14.58277	01	23	26.23	-01	36	57.1	18.0	381
1982	VJ2	*	1982	11	14.54180	01	24	14.22	-00	52	57.1	17.0	381
1982	VJ2		1982	11	14.58277	01	24	12.81	-00	52	58.3	17.0	381
1982	VK2	*	1982	11	14.54180	01	26	01.03	+00	01	25.7	18.5	381
1982	VK2		1982	11	14.58277	01	25	59.66	+00	01	11.1	18.5	381
1982	VL2	*	1982	11	14.54180	01	26	52.27	+00	25	36.0	18.5	381
1982	VL2		1982	11	14.58277	01	26	50.69	+00	25	32.0	18.5	381
1982	VM2	*	1982	11	14.60707	03	37	01.02	+42	19	07.6	18.0	381
1982	VM2		1982	11	14.65082	03	36	57.36	+42	18	23.7	18.0	381
1982	VN2	*	1982	11	14.60707	03	39	45.00	+42	57	41.1	17.5	381
1982	VN2		1982	11	14.65082	03	39	41.68	+42	57	40.2	17.5	381
1982	VN2		1982	11	20.73139	03	32	25.16	+42	46	53.3	17.5	381
1982	VO2	*	1982	11	14.60707	03	40	06.81	+44	33	52.1	18.0	381
1982	VO2		1982	11	14.65082	03	40	04.55	+44	33	45.0	18.0	381
1982	VP2	*	1982	11	14.60707	03	40	22.92	+43	37	17.6	18.5	381
1982	VP2		1982	11	14.65082	03	40	19.67	+43	37	13.3	18.5	381
1982	VQ2	*	1982	11	14.60707	03	42	08.30	+44	29	03.9	17.5	381
1982	VQ2		1982	11	14.65082	03	42	05.60	+44	28	55.1	17.5	381
1982	VQ2		1982	11	20.73139	03	34	47.74	+44	13	56.9	17.5	381
1982	VR2	*	1982	11	14.60707	03	50	20.46	+47	20	29.9	18.0	381
1982	VR2		1982	11	14.65082	03	50	17.13	+47	20	35.5	18.0	381
1982	VS2	*	1982	11	14.62791	03	20	20.78	+15	41	59.3	18.5	381
1982	VS2		1982	11	14.67027	03	20	18.16	+15	41	50.1	18.5	381
1982	VS2		1982	12	13.55013	02	57	07.70	+14	33	03.6	18.5	381
1982	VS2		1982	12	13.59596	02	57	06.20	+14	33	00.8	18.5	381
1982	VS2		1982	12	14.51124	02	56	38.79	+14	32	04.1	18.5	381
1982	VS2		1982	12	14.55631	02	56	37.45	+14	32	02.1	18.5	381
1982	VT2	*	1982	11	14.62791	03	20	53.62	+18	16	43.7	18.0	381
1982	VT2		1982	11	14.67027	03	20	50.38	+18	16	51.1	18.0	381
1982	VU2	*	1982	11	14.62791	03	21	01.30	+17	28	04.4	17.0	381
1982	VU2		1982	11	14.67027	03	20	58.68	+17	28	04.2	17.0	381
1982	VU2		1982	12	13.55013	02	54	26.59	+17	39	42.4	18.5	381
1982	VU2		1982	12	13.59596	02	54	24.71	+17	39	44.2	18.5	381
1982	VU2		1982	12	14.51124	02	53	49.21	+17	40	33.4	18.5	381
1982	VU2		1982	12	14.55631	02	53	47.54	+17	40	38.6	18.5	381
1982	VV2	*	1982	11	14.62791	03	21	02.35	+16	35	36.2	17.0	381
1982	VV2		1982	11	14.67027	03	20	59.94	+16	35	28.6	17.0	381
1982	VV2		1982	12	13.55013	02	58	59.87	+15	37	15.3	18.5	381
1982	VV2		1982	12	13.59596	02	58	58.38	+15	37	11.5	18.5	381
1982	VV2		1982	12	14.51124	02	58	29.82	+15	36	13.2	18.5	381
1982	VV2		1982	12	14.55631	02	58	28.42	+15	36	10.7	18.5	381
1982	VW2	*	1982	11	14.62791	03	21	52.04	+19	27	20.8	18.0	381
1982	VW2		1982	11	14.67027	03	21	49.36	+19	27	20.8	18.0	381
1982	VX2	*	1982	11	14.62791	03	22	18.61	+17	05	59.5	18.0	381
1982	VX2		1982	11	14.67027	03	22	16.67	+17	05	53.6	18.0	381
1982	VX2		1982	12	13.55013	03	04	52.55	+16	10	58.1	19.0	381
1982	VX2		1982	12	13.59596	03	04	51.26	+16	10	55.4	19.0	381
1982	VX2		1982	12	14.51124	03	04	25.62	+16	09	37.4	19.0	381
1982	VX2		1982	12	14.55631	03	04	24.19	+16	09	34.3	19.0	381
1982	VY2	*	1982	11	14.62791	03	22	37.44	+14	01	01.1	18.0	381

1982	VY2		1982	11	14.67027	03	22	35.13	+14	00	53.3	18.0	381
1982	VY2		1982	12	13.55013	03	00	50.23	+12	59	41.9	18.5	381
1982	VY2		1982	12	13.59596	03	00	48.78	+12	59	39.7	18.5	381
1982	VY2		1982	12	14.51124	03	00	20.97	+12	58	57.5	18.5	381
1982	VY2		1982	12	14.55631	03	00	19.60	+12	58	55.0	18.5	381
1982	VZ2	*	1982	11	14.62791	03	22	37.46	+19	23	14.1	18.5	381
1982	VZ2		1982	11	14.67027	03	22	34.34	+19	23	15.3	18.5	381
1982	VA3	*	1982	11	14.62791	03	22	44.82	+15	52	54.5	18.5	381
1982	VA3		1982	11	14.67027	03	22	42.10	+15	52	44.3	18.5	381
1982	VB3	*	1982	11	14.62791	03	22	47.92	+18	30	02.3	18.0	381
1982	VB3		1982	11	14.67027	03	22	45.18	+18	29	58.7	18.0	381
1982	VC3	*	1982	11	14.62791	03	22	55.37	+14	11	41.4	18.5	381
1982	VC3		1982	11	14.67027	03	22	52.56	+14	11	39.5	18.0	381
1982	VC3		1982	12	13.55013	02	58	38.15	+14	21	17.9	18.5	381
1982	VC3		1982	12	13.59596	02	58	36.84	+14	21	22.8	18.5	381
1982	VC3		1982	12	14.51124	02	58	11.72	+14	22	55.1	18.5	381
1982	VC3		1982	12	14.55631	02	58	10.43	+14	22	59.2	18.5	381
1982	VD3	*	1982	11	14.62791	03	23	02.94	+14	51	01.8	17.5	381
1982	VD3		1982	11	14.67027	03	23	00.01	+14	51	02.2	17.5	381
1982	VD3		1982	12	13.55013	02	56	27.81	+15	18	50.4	18.0	381
1982	VD3		1982	12	13.59596	02	56	26.25	+15	18	55.9	18.0	381
1982	VD3		1982	12	14.51124	02	55	58.18	+15	21	08.8	18.0	381
1982	VD3		1982	12	14.55631	02	55	56.69	+15	21	14.2	18.0	381
1982	VE3	*	1982	11	14.62791	03	23	31.23	+17	46	45.9	18.5	381
1982	VE3		1982	11	14.67027	03	23	28.94	+17	46	31.5	18.5	381
1982	VF3	*	1982	11	14.62791	03	23	41.85	+14	05	25.7	18.5	381
1982	VF3		1982	11	14.67027	03	23	39.51	+14	05	14.7	18.5	381
1982	VF3		1982	12	13.55013	03	03	17.52	+12	45	12.9	18.0	381
1982	VF3		1982	12	13.59596	03	03	16.05	+12	45	09.0	18.0	381
1982	VF3		1982	12	14.51124	03	02	51.40	+12	43	59.6	18.0	381
1982	VF3		1982	12	14.55631	03	02	50.12	+12	43	55.6	18.0	381
1982	VG3	*	1982	11	14.62791	03	23	49.85	+18	34	46.2	18.5	381
1982	VG3		1982	11	14.67027	03	23	47.40	+18	34	33.8	18.5	381
1982	VH3	*	1982	11	14.62791	03	24	10.34	+14	46	41.5	17.5	381
1982	VH3		1982	11	14.67027	03	24	07.72	+14	46	14.5	17.5	381
1982	VJ3	*	1982	11	14.62791	03	24	12.82	+18	42	53.0	18.0	381
1982	VJ3		1982	11	14.67027	03	24	10.43	+18	42	38.3	18.0	381
1982	VK3	*	1982	11	14.62791	03	24	26.80	+15	44	37.0	18.5	381
1982	VK3		1982	11	14.67027	03	24	24.82	+15	44	29.9	18.5	381
1982	VK3		1982	12	13.55013	03	04	06.32	+14	35	50.3	18.0	381
1982	VK3		1982	12	13.59596	03	04	04.89	+14	35	46.7	18.0	381
1982	VK3		1982	12	14.51124	03	03	37.25	+14	34	26.9	18.0	381
1982	VK3		1982	12	14.55631	03	03	35.82	+14	34	23.1	18.0	381
1982	VL3	*	1982	11	14.62791	03	24	28.57	+16	06	00.5	18.5	381
1982	VL3		1982	11	14.67027	03	24	26.45	+16	05	50.1	18.5	381
1982	VM3	*	1982	11	14.62791	03	24	40.03	+16	55	56.8	18.5	381
1982	VM3		1982	11	14.67027	03	24	37.18	+16	55	45.2	18.5	381
1982	VN3	*	1982	11	14.62791	03	24	49.54	+14	12	18.6	18.5	381
1982	VN3		1982	11	14.67027	03	24	47.03	+14	12	15.1	18.5	381
1982	VN3		1982	12	13.55013	03	03	23.72	+14	20	38.5	18.5	381
1982	VN3		1982	12	13.59596	03	03	22.52	+14	20	43.7	18.5	381
1982	VN3		1982	12	14.51124	03	03	03.15	+14	22	38.6	18.5	381
1982	VN3		1982	12	14.55631	03	03	02.15	+14	22	42.6	18.5	381
1982	VO3	*	1982	11	14.62791	03	24	49.79	+15	57	42.8	17.5	381
1982	VO3		1982	11	14.67027	03	24	47.57	+15	57	35.8	17.5	381
1982	VO3		1982	12	13.55013	03	04	05.04	+15	08	44.9	18.0	381
1982	VO3		1982	12	13.59596	03	04	03.72	+15	08	43.4	18.0	381
1982	VO3		1982	12	14.51124	03	03	38.98	+15	08	12.3	18.0	381
1982	VO3		1982	12	14.55631	03	03	37.71	+15	08	11.4	18.0	381

1982	VP3	*	1982	11	14.62791	03	24	52.85	+15	22	49.8	17.5	381
1982	VP3		1982	11	14.67027	03	24	50.32	+15	22	49.2	17.5	381
1982	VP3		1982	12	13.55013	03	00	32.77	+15	40	55.8	18.0	381
1982	VP3		1982	12	13.59596	03	00	31.06	+15	40	58.8	18.0	381
1982	VP3		1982	12	14.51124	02	59	57.64	+15	42	12.4	18.0	381
1982	VP3		1982	12	14.55631	02	59	55.95	+15	42	15.9	18.0	381
1982	VQ3	*	1982	11	14.62791	03	24	57.56	+18	32	35.8	18.5	381
1982	VQ3		1982	11	14.67027	03	24	54.94	+18	32	26.3	18.5	381
1982	VR3	*	1982	11	14.62791	03	25	03.77	+18	19	09.6	18.5	381
1982	VR3		1982	11	14.67027	03	25	01.68	+18	18	54.7	18.5	381
1982	VS3	*	1982	11	14.62791	03	25	06.18	+15	45	39.4	17.5	381
1982	VS3		1982	11	14.67027	03	25	04.42	+15	44	25.5	17.5	381
1982	VT3	*	1982	11	14.62791	03	25	46.38	+18	43	07.6	17.5	381
1982	VT3		1982	11	14.67027	03	25	43.86	+18	43	21.5	17.5	381
1982	VU3	*	1982	11	14.62791	03	25	50.06	+17	34	27.9	18.0	381
1982	VU3		1982	11	14.67027	03	25	46.92	+17	34	36.0	18.0	381
1982	VV3	*	1982	11	14.62791	03	26	02.81	+14	35	31.5	18.5	381
1982	VV3		1982	11	14.67027	03	26	00.58	+14	34	56.8	18.5	381
1982	VW3	*	1982	11	14.62791	03	26	12.37	+19	17	48.6	18.5	381
1982	VW3		1982	11	14.67027	03	26	09.51	+19	17	35.8	18.5	381
1982	VX3	*	1982	11	14.62791	03	26	24.56	+15	47	33.0	17.5	381
1982	VX3		1982	11	14.67027	03	26	22.37	+15	47	23.7	17.5	381
1982	VX3		1982	12	13.55013	03	05	40.90	+14	34	28.3	18.0	381
1982	VX3		1982	12	13.59596	03	05	39.45	+14	34	24.1	18.0	381
1982	VX3		1982	12	14.51124	03	05	12.12	+14	33	02.6	18.0	381
1982	VX3		1982	12	14.55631	03	05	10.70	+14	32	58.3	18.0	381
1982	VY3	*	1982	11	14.62791	03	27	01.08	+16	05	18.4	17.5	381
1982	VY3		1982	11	14.67027	03	26	58.18	+16	05	14.1	17.5	381
1982	VY3		1982	12	13.55013	02	58	59.43	+15	35	09.3	18.5	381
1982	VY3		1982	12	13.59596	02	58	57.69	+15	35	08.9	18.5	381
1982	VY3		1982	12	14.51124	02	58	21.99	+15	35	10.3	18.5	381
1982	VY3		1982	12	14.55631	02	58	20.12	+15	35	09.5	18.5	381
1982	VZ3	*	1982	11	14.62791	03	27	17.50	+18	04	27.3	18.5	381
1982	VZ3		1982	11	14.67027	03	27	15.20	+18	04	17.4	18.5	381
1982	VA4	*	1982	11	14.62791	03	27	18.25	+18	42	49.0	18.5	381
1982	VA4		1982	11	14.67027	03	27	15.83	+18	42	40.9	18.5	381
1982	VB4	*	1982	11	14.62791	03	27	24.96	+18	18	42.6	18.0	381
1982	VB4		1982	11	14.67027	03	27	22.19	+18	18	38.2	18.0	381
1982	VB4		1982	12	13.55013	03	00	53.76	+17	29	46.8	18.5	381
1982	VB4		1982	12	13.59596	03	00	51.94	+17	29	43.5	18.5	381
1982	VB4		1982	12	14.51124	03	00	18.30	+17	28	57.2	18.5	381
1982	VB4		1982	12	14.55631	03	00	16.63	+17	28	57.1	18.5	381
1982	VC4	*	1982	11	14.62791	03	28	17.75	+16	24	21.3	18.0	381
1982	VC4		1982	11	14.67027	03	28	15.76	+16	24	14.7	18.0	381
1982	VC4		1982	12	13.55013	03	07	32.03	+15	11	51.5	19.0	381
1982	VC4		1982	12	13.59596	03	07	30.56	+15	11	48.0	19.0	381
1982	VC4		1982	12	14.51124	03	07	01.22	+15	10	14.4	19.0	381
1982	VC4		1982	12	14.55631	03	06	59.80	+15	10	10.4	19.0	381
1982	VD4	*	1982	11	14.62791	03	28	21.77	+14	19	46.8	18.5	381
1982	VD4		1982	11	14.67027	03	28	19.47	+14	19	29.1	18.5	381
1982	VE4	*	1982	11	14.62791	03	28	22.33	+14	08	15.2	17.5	381
1982	VE4		1982	11	14.67027	03	28	19.30	+14	08	06.8	17.5	381
1982	VE4		1982	12	13.55013	03	00	45.03	+13	14	46.1	18.0	381
1982	VE4		1982	12	13.59596	03	00	43.29	+13	14	45.6	18.0	381
1982	VE4		1982	12	14.51124	03	00	09.97	+13	14	32.8	18.0	381
1982	VE4		1982	12	14.55631	03	00	08.30	+13	14	32.5	18.0	381
1982	VF4	*	1982	11	14.62791	03	28	32.05	+15	27	38.5	17.0	381
1982	VF4		1982	11	14.67027	03	28	29.43	+15	27	20.1	17.0	381
1982	VF4		1982	12	13.55013	03	07	18.42	+13	16	12.0	17.5	381

1982	VF4		1982	12	13.57374	03	07	18.09	+13	16	09.0	18.0	381
1982	VF4		1982	12	13.59596	03	07	17.39	+13	16	07.1	17.5	381
1982	VF4		1982	12	14.51124	03	07	02.49	+13	14	38.5	17.5	381
1982	VF4		1982	12	14.53486	03	07	02.16	+13	14	35.3	18.0	381
1982	VF4		1982	12	14.55631	03	07	01.69	+13	14	35.0	17.5	381
1982	VF4		1982	12	14.57861	03	07	01.30	+13	14	32.4	18.0	381
1982	VG4	*	1982	11	14.62791	03	28	57.68	+16	15	19.5	18.5	381
1982	VG4		1982	11	14.67027	03	28	54.99	+16	15	06.2	18.5	381
1982	VG4		1982	12	13.55013	03	02	33.34	+13	54	54.3	19.0	381
1982	VG4		1982	12	13.59596	03	02	31.60	+13	54	44.4	19.0	381
1982	VG4		1982	12	14.51124	03	01	59.66	+13	51	53.5	19.0	381
1982	VG4		1982	12	14.55631	03	01	57.99	+13	51	45.9	19.0	381
1982	VH4	*	1982	11	14.62791	03	29	12.96	+18	06	32.5	18.0	381
1982	VH4		1982	11	14.67027	03	29	10.77	+18	06	16.8	18.0	381
1982	VJ4	*	1982	11	14.62791	03	29	45.65	+15	17	01.1	18.0	381
1982	VJ4		1982	11	14.67027	03	29	43.35	+15	16	46.2	18.5	381
1982	VK4	*	1982	11	14.62791	03	29	54.92	+15	47	05.7	17.5	381
1982	VK4		1982	11	14.67027	03	29	52.11	+15	47	11.1	17.5	381
1982	VK4		1982	12	13.55013	03	01	57.35	+17	15	01.0	18.0	381
1982	VK4		1982	12	13.59596	03	01	55.58	+17	15	09.9	18.0	381
1982	VK4		1982	12	14.51124	03	01	21.89	+17	18	24.0	18.0	381
1982	VK4		1982	12	14.55631	03	01	20.10	+17	18	34.5	18.0	381
1982	VL4	*	1982	11	14.62791	03	29	58.91	+15	05	29.8	18.0	381
1982	VL4		1982	11	14.67027	03	29	56.26	+15	05	35.8	18.0	381
1982	VL4		1982	12	13.55013	03	04	18.61	+16	27	06.7	18.5	381
1982	VL4		1982	12	13.59596	03	04	16.76	+16	27	16.8	18.5	381
1982	VL4		1982	12	14.51124	03	03	43.90	+16	30	26.2	18.5	381
1982	VL4		1982	12	14.55631	03	03	42.25	+16	30	35.9	18.5	381
1982	VM4	*	1982	11	14.62791	03	30	20.39	+16	58	48.7	18.0	381
1982	VM4		1982	11	14.67027	03	30	17.98	+16	58	16.4	18.0	381
1982	VN4	*	1982	11	14.62791	03	30	20.78	+17	56	50.5	18.5	381
1982	VN4		1982	11	14.67027	03	30	18.21	+17	56	40.2	18.5	381
1982	VO4	*	1982	11	14.62791	03	31	08.29	+19	13	30.0	19.0	381
1982	VO4		1982	11	14.67027	03	31	06.00	+19	13	23.9	19.0	381
1982	VP4	*	1982	11	14.62791	03	31	18.75	+16	48	31.7	17.0	381
1982	VP4		1982	11	14.67027	03	31	16.15	+16	48	35.0	17.0	381
1982	VQ4	*	1982	11	14.62791	03	31	35.51	+18	02	11.0	18.5	381
1982	VQ4		1982	11	14.67027	03	31	32.91	+18	02	05.5	18.5	381
1982	VR4	*	1982	11	14.62791	03	31	44.41	+15	34	08.1	17.5	381
1982	VR4		1982	11	14.67027	03	31	42.18	+15	33	59.4	17.5	381
1982	VR4		1982	12	13.57374	03	10	32.44	+14	22	03.5	17.5	381
1982	VR4		1982	12	14.53486	03	10	04.71	+14	20	53.4	17.5	381
1982	VR4		1982	12	14.57861	03	10	03.41	+14	20	50.1	17.5	381
1982	VS4	*	1982	11	14.62791	03	31	57.35	+18	47	56.1	19.0	381
1982	VS4		1982	11	14.67027	03	31	57.24	+18	48	10.0	19.0	381
1982	VT4	*	1982	11	14.62791	03	32	09.50	+18	40	14.6	19.0	381
1982	VT4		1982	11	14.67027	03	32	07.16	+18	40	11.0	19.0	381
1982	VU4	*	1982	11	14.62791	03	32	21.82	+14	11	56.6	17.0	381
1982	VU4		1982	11	14.67027	03	32	19.07	+14	11	44.2	17.0	381
1982	VU4		1982	12	13.55013	03	08	04.20	+12	44	42.9	18.5	381
1982	VU4		1982	12	13.59596	03	08	02.36	+12	44	37.9	18.5	381
1982	VU4		1982	12	14.51124	03	07	31.66	+12	43	27.1	18.5	381
1982	VU4		1982	12	14.53486	03	07	31.11	+12	43	24.8	18.5	381
1982	VU4		1982	12	14.55631	03	07	30.09	+12	43	23.6	18.5	381
1982	VU4		1982	12	14.57861	03	07	29.34	+12	43	22.7	18.5	381
1982	VV4	*	1982	11	14.62791	03	33	39.44	+17	42	02.4	18.0	381
1982	VV4		1982	11	14.67027	03	33	37.38	+17	41	57.7	18.0	381
1982	VW4	*	1982	11	14.62791	03	34	04.91	+15	15	21.7	18.5	381
1982	VW4		1982	11	14.67027	03	34	02.35	+15	15	13.2	18.5	381

1982	VX4	*	1982	11	14.62791	03	34	29.12	+14	19	31.6	18.0	381
1982	VX4		1982	11	14.67027	03	34	26.29	+14	19	18.3	18.0	381
1982	VY4	*	1982	11	14.62791	03	34	40.63	+18	40	31.7	19.0	381
1982	VY4		1982	11	14.67027	03	34	38.71	+18	40	22.5	19.0	381
1982	VZ4	*	1982	11	14.62791	03	34	40.92	+17	23	23.5	17.5	381
1982	VZ4		1982	11	14.67027	03	34	38.26	+17	23	10.3	17.5	381
1982	VZ4		1982	12	13.55013	03	09	23.70	+15	11	00.8	18.0	381
1982	VZ4		1982	12	13.57374	03	09	22.83	+15	10	55.3	18.0	381
1982	VZ4		1982	12	13.59596	03	09	22.01	+15	10	51.7	18.0	381
1982	VZ4		1982	12	14.51124	03	08	49.05	+15	07	51.9	18.0	381
1982	VZ4		1982	12	14.53486	03	08	48.18	+15	07	46.5	18.0	381
1982	VZ4		1982	12	14.55631	03	08	47.48	+15	07	43.3	18.0	381
1982	VZ4		1982	12	14.57861	03	08	46.55	+15	07	39.0	18.0	381
1982	VA5	*	1982	11	14.62791	03	34	58.15	+17	37	01.6	18.5	381
1982	VA5		1982	11	14.67027	03	34	55.50	+17	36	59.4	18.5	381
1982	VB5	*	1982	11	14.62791	03	36	13.13	+18	32	43.6	17.5	381
1982	VB5		1982	11	14.67027	03	36	09.99	+18	32	40.8	17.5	381
1982	VC5	*	1982	11	14.62791	03	36	19.29	+18	56	31.0	18.5	381
1982	VC5		1982	11	14.67027	03	36	16.66	+18	56	25.8	18.5	381
1982	VD5	*	1982	11	14.62791	03	36	22.05	+18	36	37.1	17.5	381
1982	VD5		1982	11	14.67027	03	36	19.43	+18	36	21.9	17.5	381
1982	VD5		1982	12	13.57374	03	12	13.91	+15	58	37.2	17.5	381
1982	VD5		1982	12	14.53486	03	11	47.43	+15	55	06.5	17.5	381
1982	VD5		1982	12	14.57861	03	11	46.04	+15	54	57.1	17.5	381
1982	VE5	*	1982	11	14.62791	03	36	53.86	+16	30	15.1	18.0	381
1982	VE5		1982	11	14.67027	03	36	51.77	+16	30	07.6	18.0	381
1982	VF5	*	1982	11	14.62791	03	36	58.18	+14	59	52.2	17.5	381
1982	VF5		1982	11	14.67027	03	36	55.83	+14	59	37.5	17.5	381
1982	VF5		1982	12	13.57374	03	14	31.05	+12	54	01.8	18.5	381
1982	VF5		1982	12	14.53486	03	14	03.17	+12	51	40.5	18.5	381
1982	VF5		1982	12	14.57861	03	14	01.83	+12	51	34.9	18.5	381
1982	VG5	*	1982	11	14.62791	03	37	46.19	+17	26	18.8	18.5	381
1982	VG5		1982	11	14.67027	03	37	43.97	+17	26	17.7	18.5	381
1982	VH5	*	1982	11	14.62791	03	38	07.79	+14	15	49.5	18.0	381
1982	VH5		1982	11	14.67027	03	38	05.10	+14	15	46.2	18.0	381
1982	VH5		1982	12	13.57374	03	13	38.35	+14	11	01.7	18.0	381
1982	VH5		1982	12	14.53486	03	13	10.52	+14	12	45.0	18.0	381
1982	VH5		1982	12	14.57861	03	13	09.16	+14	12	50.0	18.0	381
1982	VJ5	*	1982	11	14.62791	03	38	13.17	+18	23	49.3	18.0	381
1982	VJ5		1982	11	14.67027	03	38	10.22	+18	23	46.9	18.0	381
1982	VK5	*	1982	11	14.62791	03	38	24.75	+17	57	58.7	18.5	381
1982	VK5		1982	11	14.67027	03	38	21.99	+17	57	42.6	18.5	381
1982	VL5	*	1982	11	14.62791	03	38	30.75	+18	10	46.3	18.5	381
1982	VL5		1982	11	14.67027	03	38	28.38	+18	10	36.6	18.5	381
1982	VL5		1982	12	13.57374	03	15	05.21	+16	37	57.9	18.5	381
1982	VL5		1982	12	14.53486	03	14	31.59	+16	35	42.0	18.5	381
1982	VL5		1982	12	14.57861	03	14	30.06	+16	35	35.7	18.5	381
1982	VM5	*	1982	11	14.62791	03	39	02.82	+18	41	19.0	18.0	381
1982	VM5		1982	11	14.67027	03	38	59.94	+18	41	05.2	18.0	381
1982	VM5		1982	12	13.57374	03	11	10.50	+16	09	19.4	18.5	381
1982	VM5		1982	12	14.51124	03	10	33.88	+16	05	40.6	19.0	381
1982	VM5		1982	12	14.53486	03	10	33.02	+16	05	32.5	18.5	381
1982	VM5		1982	12	14.55631	03	10	32.17	+16	05	30.1	19.0	381
1982	VM5		1982	12	14.57861	03	10	31.24	+16	05	22.6	18.5	381
1982	VN5	*	1982	11	14.62791	03	39	40.50	+18	57	55.2	18.0	381
1982	VN5		1982	11	14.67027	03	39	38.07	+18	57	57.8	18.0	381
1982	VO5	*	1982	11	14.62791	03	40	20.40	+16	47	01.0	18.5	381
1982	VO5		1982	11	14.67027	03	40	17.54	+16	46	59.9	18.5	381
1982	VP5	*	1982	11	14.62791	03	40	34.70	+14	32	55.5	19.0	381

1982	VP5		1982	11	14.67027	03	40	31.91	+14	32	53.3	19.0	381
1982	VQ5	*	1982	11	14.62791	03	40	50.88	+18	14	37.2	19.0	381
1982	VQ5		1982	11	14.67027	03	40	50.63	+18	15	01.8	19.0	381
1982	VR5	*	1982	11	14.62791	03	42	30.35	+17	25	44.3	18.0	381
1982	VR5		1982	11	14.67027	03	42	27.88	+17	25	22.9	18.0	381
1982	XA		1982	11	14.62791	03	42	45.59	+17	28	36.6	16.5	381
1982	XA		1982	11	14.67027	03	42	42.93	+17	28	17.1	16.5	381
1982	XA		1982	12	13.57374	03	18	35.47	+14	34	17.1	16.5	381
1982	XA		1982	12	14.53486	03	18	07.93	+14	30	35.6	16.5	381
1982	XA		1982	12	14.57861	03	18	06.60	+14	30	25.8	16.5	381
1982	XL	*	1982	12	12.58336	03	00	18.64	+34	50	43.5	18.0	381
1982	XL		1982	12	12.63138	03	00	16.86	+34	50	14.3	18.0	381
1982	XL		1982	12	14.48833	02	59	13.93	+34	32	45.2	18.0	381
1982	XM	*	1982	12	12.60909	02	51	39.25	+47	08	25.8	17.5	381
1982	XM		1982	12	12.65499	02	51	36.93	+47	07	43.1	17.5	381
1982	XN	*	1982	12	13.55013	02	47	49.94	+15	24	21.7	18.5	381
1982	XN		1982	12	13.59596	02	47	48.94	+15	24	19.6	18.5	381
1982	XN		1982	12	14.51124	02	47	28.14	+15	23	32.0	18.5	381
1982	XN		1982	12	14.55631	02	47	26.96	+15	23	30.0	18.5	381
1982	XO	*	1982	12	13.55013	02	48	10.00	+17	48	13.2	18.0	381
1982	XO		1982	12	13.59596	02	48	09.46	+17	47	48.2	18.0	381
1982	XO		1982	12	14.51124	02	48	00.45	+17	39	23.6	18.0	381
1982	XO		1982	12	14.55631	02	47	59.88	+17	38	59.9	18.0	381
1982	XP	*	1982	12	13.55013	02	49	11.31	+12	57	06.4	18.0	381
1982	XP		1982	12	13.59596	02	49	09.93	+12	57	01.9	18.0	381
1982	XP		1982	12	14.51124	02	48	45.05	+12	55	39.7	18.0	381
1982	XP		1982	12	14.55631	02	48	43.65	+12	55	36.4	18.0	381
1982	XQ	*	1982	12	13.55013	02	49	26.37	+17	15	56.8	18.5	381
1982	XQ		1982	12	13.59596	02	49	25.62	+17	15	31.0	18.5	381
1982	XQ		1982	12	14.51124	02	49	12.50	+17	07	03.7	18.5	381
1982	XQ		1982	12	14.55631	02	49	11.77	+17	06	39.3	18.5	381
1982	XR	*	1982	12	13.55013	02	49	27.49	+15	12	00.2	18.5	381
1982	XR		1982	12	13.59596	02	49	26.13	+15	11	54.1	18.5	381
1982	XR		1982	12	14.51124	02	49	01.68	+15	09	55.4	18.5	381
1982	XR		1982	12	14.55631	02	49	00.30	+15	09	49.1	18.5	381
1982	XS	*	1982	12	13.55013	02	49	32.22	+16	08	17.4	18.5	381
1982	XS		1982	12	13.59596	02	49	31.05	+16	08	11.1	18.5	381
1982	XS		1982	12	14.51124	02	49	08.48	+16	06	38.2	18.5	381
1982	XS		1982	12	14.55631	02	49	07.42	+16	06	33.1	18.5	381
1982	XT	*	1982	12	13.55013	02	49	41.76	+16	47	58.7	19.0	381
1982	XT		1982	12	13.59596	02	49	40.68	+16	47	56.0	19.0	381
1982	XU	*	1982	12	13.55013	02	49	45.25	+16	30	33.7	19.0	381
1982	XU		1982	12	13.59596	02	49	43.64	+16	30	35.8	19.0	381
1982	XV	*	1982	12	13.55013	02	49	57.96	+12	29	00.5	18.0	381
1982	XV		1982	12	13.59596	02	49	56.43	+12	28	57.2	18.0	381
1982	XV		1982	12	14.51124	02	49	27.43	+12	28	15.2	18.0	381
1982	XV		1982	12	14.55631	02	49	25.78	+12	28	14.0	18.0	381
1982	XW	*	1982	12	13.55013	02	50	38.25	+17	16	17.3	19.0	381
1982	XW		1982	12	13.59596	02	50	37.11	+17	16	19.3	19.0	381
1982	XW		1982	12	14.51124	02	50	15.30	+17	17	16.6	19.0	381
1982	XW		1982	12	14.55631	02	50	12.91	+17	17	25.0	19.0	381
1982	XX	*	1982	12	13.55013	02	50	43.18	+14	10	10.9	18.0	381
1982	XX		1982	12	13.59596	02	50	41.81	+14	10	09.6	18.0	381
1982	XX		1982	12	14.51124	02	50	16.94	+14	09	23.5	18.0	381
1982	XX		1982	12	14.55631	02	50	15.62	+14	09	21.4	18.0	381
1982	XY	*	1982	12	13.55013	02	51	01.65	+13	33	33.9	17.0	381
1982	XY		1982	12	13.59596	02	50	59.90	+13	33	38.3	17.0	381
1982	XY		1982	12	14.51124	02	50	27.84	+13	35	04.2	17.0	381
1982	XY		1982	12	14.55631	02	50	26.10	+13	35	08.3	17.0	381

1982	XZ	*	1982	12	13.55013	02	51	13.36	+17	23	44.9	18.5	381
1982	XZ		1982	12	13.59596	02	51	12.15	+17	23	41.7	18.5	381
1982	XZ		1982	12	14.51124	02	50	51.64	+17	22	58.6	18.5	381
1982	XZ		1982	12	14.55631	02	50	50.59	+17	22	57.0	18.5	381
1982	XA1	*	1982	12	13.55013	02	51	17.11	+13	47	12.8	18.5	381
1982	XA1		1982	12	13.59596	02	51	15.44	+13	47	13.5	18.5	381
1982	XA1		1982	12	14.51124	02	50	46.23	+13	47	45.2	18.5	381
1982	XA1		1982	12	14.55631	02	50	44.76	+13	47	46.4	18.5	381
1982	XB1	*	1982	12	13.55013	02	51	23.13	+17	01	16.2	18.5	381
1982	XB1		1982	12	13.59596	02	51	22.21	+17	01	22.0	18.5	381
1982	XB1		1982	12	14.51124	02	51	05.75	+17	03	16.1	18.5	381
1982	XB1		1982	12	14.55631	02	51	04.79	+17	03	21.8	18.5	381
1982	XC1	*	1982	12	13.55013	02	51	33.69	+13	00	09.4	18.5	381
1982	XC1		1982	12	13.59596	02	51	32.26	+12	59	55.4	18.5	381
1982	XC1		1982	12	14.51124	02	51	03.89	+12	55	03.3	18.5	381
1982	XC1		1982	12	14.55631	02	51	02.53	+12	54	49.7	18.5	381
1982	XD1	*	1982	12	13.55013	02	51	42.79	+14	19	43.0	18.5	381
1982	XD1		1982	12	13.59596	02	51	41.57	+14	19	39.8	18.5	381
1982	XD1		1982	12	14.51124	02	51	20.78	+14	18	52.5	18.5	381
1982	XD1		1982	12	14.55631	02	51	19.69	+14	18	50.0	18.5	381
1982	XE1	*	1982	12	13.55013	02	51	44.67	+16	45	49.9	17.5	381
1982	XE1		1982	12	13.59596	02	51	43.27	+16	45	45.4	17.5	381
1982	XE1		1982	12	14.51124	02	51	16.43	+16	44	13.1	17.5	381
1982	XE1		1982	12	14.55631	02	51	15.05	+16	44	08.7	17.5	381
1982	XF1	*	1982	12	13.55013	02	51	52.07	+15	04	44.0	18.5	381
1982	XF1		1982	12	13.59596	02	51	50.71	+15	04	50.8	18.5	381
1982	XF1		1982	12	14.51124	02	51	21.67	+15	07	19.8	18.5	381
1982	XF1		1982	12	14.55631	02	51	20.14	+15	07	27.6	18.5	381
1982	XG1	*	1982	12	13.55013	02	52	09.85	+15	11	57.7	18.5	381
1982	XG1		1982	12	13.59596	02	52	08.57	+15	11	54.3	18.5	381
1982	XG1		1982	12	14.51124	02	51	42.26	+15	10	37.9	18.5	381
1982	XG1		1982	12	14.55631	02	51	40.82	+15	10	33.3	18.5	381
1982	XH1	*	1982	12	13.55013	02	52	36.68	+16	30	15.3	17.5	381
1982	XH1		1982	12	13.59596	02	52	35.38	+16	30	20.4	17.5	381
1982	XH1		1982	12	14.51124	02	52	10.03	+16	31	47.2	17.5	381
1982	XH1		1982	12	14.55631	02	52	08.67	+16	31	51.7	17.5	381
1982	XJ1	*	1982	12	13.55013	02	52	45.83	+16	03	47.9	18.5	381
1982	XJ1		1982	12	13.59596	02	52	43.96	+16	03	54.0	18.5	381
1982	XK1	*	1982	12	13.55013	02	52	51.02	+13	52	29.4	17.5	381
1982	XK1		1982	12	13.59596	02	52	49.13	+13	52	42.4	17.5	381
1982	XK1		1982	12	14.51124	02	52	15.83	+13	57	13.5	17.5	381
1982	XK1		1982	12	14.55631	02	52	14.05	+13	57	26.8	17.5	381
1982	XL1	*	1982	12	13.55013	02	54	01.77	+17	26	16.7	18.5	381
1982	XL1		1982	12	13.59596	02	54	00.31	+17	26	15.1	18.5	381
1982	XL1		1982	12	14.51124	02	53	32.10	+17	25	53.4	18.5	381
1982	XL1		1982	12	14.55631	02	53	30.71	+17	25	52.9	18.5	381
1982	XM1	*	1982	12	13.55013	02	54	29.30	+15	08	59.9	18.5	381
1982	XM1		1982	12	14.51124	02	53	55.36	+15	06	18.9	18.5	381
1982	XM1		1982	12	14.55631	02	53	53.70	+15	06	11.8	18.5	381
1982	XN1	*	1982	12	13.55013	02	54	40.37	+15	22	40.7	18.5	381
1982	XN1		1982	12	13.59596	02	54	39.08	+15	22	40.5	18.5	381
1982	XN1		1982	12	14.51124	02	54	14.49	+15	22	34.3	18.5	381
1982	XN1		1982	12	14.55631	02	54	13.26	+15	22	33.1	18.5	381
1982	XO1	*	1982	12	13.55013	02	54	54.30	+16	20	19.3	18.5	381
1982	XO1		1982	12	13.59596	02	54	52.96	+16	20	14.8	18.5	381
1982	XO1		1982	12	14.51124	02	54	26.22	+16	19	08.5	18.5	381
1982	XO1		1982	12	14.55631	02	54	24.85	+16	19	05.9	18.5	381
1982	XP1	*	1982	12	13.55013	02	55	04.77	+15	36	36.4	18.0	381
1982	XP1		1982	12	13.59596	02	55	03.22	+15	36	36.8	18.0	381

1982	XP1		1982	12	14.51124	02	54	32.72	+15	36	25.6	18.0	381
1982	XP1		1982	12	14.55631	02	54	31.26	+15	36	24.9	18.0	381
1982	XQ1	*	1982	12	13.55013	02	55	41.38	+14	21	51.9	18.5	381
1982	XQ1		1982	12	13.59596	02	55	40.05	+14	21	48.1	18.5	381
1982	XQ1		1982	12	14.51124	02	55	13.39	+14	20	16.5	18.5	381
1982	XQ1		1982	12	14.55631	02	55	12.09	+14	20	11.5	18.5	381
1982	XR1	*	1982	12	13.55013	02	56	17.66	+16	38	33.9	19.0	381
1982	XR1		1982	12	13.59596	02	56	16.48	+16	38	33.1	19.0	381
1982	XR1		1982	12	14.51124	02	55	55.19	+16	39	15.1	19.0	381
1982	XR1		1982	12	14.55631	02	55	54.12	+16	39	18.5	19.0	381
1982	XS1	*	1982	12	13.55013	02	57	14.05	+15	59	33.8	18.5	381
1982	XS1		1982	12	13.59596	02	57	12.69	+15	59	25.9	18.5	381
1982	XS1		1982	12	14.51124	02	56	47.88	+15	57	22.1	18.5	381
1982	XS1		1982	12	14.55631	02	56	46.60	+15	57	15.9	18.5	381
1982	XT1	*	1982	12	13.55013	02	59	31.86	+13	31	18.0	18.5	381
1982	XT1		1982	12	13.59596	02	59	30.33	+13	31	24.8	18.5	381
1982	XT1		1982	12	14.51124	02	59	00.86	+13	34	25.1	18.5	381
1982	XT1		1982	12	14.55631	02	58	59.42	+13	34	33.1	18.5	381
1982	XU1	*	1982	12	13.55013	02	59	59.85	+13	24	07.3	18.5	381
1982	XU1		1982	12	13.59596	02	59	58.58	+13	23	54.4	18.5	381
1982	XU1		1982	12	14.51124	02	59	37.69	+13	19	36.5	18.5	381
1982	XU1		1982	12	14.55631	02	59	36.45	+13	19	21.0	18.5	381
1982	XV1	*	1982	12	13.55013	03	00	10.13	+13	07	17.9	17.0	381
1982	XV1		1982	12	13.59596	03	00	08.59	+13	07	22.4	17.0	381
1982	XV1		1982	12	14.51124	02	59	38.17	+13	08	49.3	17.0	381
1982	XV1		1982	12	14.55631	02	59	36.55	+13	08	52.7	17.0	381
1982	XW1	*	1982	12	13.55013	03	02	17.57	+12	19	19.1	18.5	381
1982	XW1		1982	12	13.59596	03	02	16.06	+12	19	18.7	18.5	381
1982	XW1		1982	12	14.51124	03	01	48.90	+12	19	09.9	18.5	381
1982	XW1		1982	12	14.55631	03	01	47.54	+12	19	09.1	18.5	381
1982	XX1	*	1982	12	13.55013	03	02	22.92	+16	13	19.0	18.5	381
1982	XX1		1982	12	13.59596	03	02	21.17	+16	13	32.6	18.5	381
1982	XX1		1982	12	14.51124	03	01	50.33	+16	18	08.2	18.5	381
1982	XX1		1982	12	14.55631	03	01	48.68	+16	18	21.7	18.5	381
1982	XY1	*	1982	12	13.55013	03	02	59.44	+12	40	25.9	18.0	381
1982	XY1		1982	12	13.59596	03	02	57.72	+12	40	27.8	18.0	381
1982	XY1		1982	12	14.51124	03	02	25.94	+12	41	14.1	18.0	381
1982	XY1		1982	12	14.55631	03	02	24.32	+12	41	16.5	18.0	381
1982	XZ1	*	1982	12	13.55013	03	03	02.77	+15	18	39.2	18.5	381
1982	XZ1		1982	12	13.59596	03	03	00.96	+15	18	50.2	18.5	381
1982	XZ1		1982	12	14.51124	03	02	27.81	+15	22	09.5	18.5	381
1982	XZ1		1982	12	14.55631	03	02	26.15	+15	22	19.0	18.5	381
1982	XA2	*	1982	12	13.55013	03	05	00.37	+12	16	10.4	17.0	381
1982	XA2		1982	12	13.59596	03	04	58.75	+12	16	13.0	17.0	381
1982	XA2		1982	12	14.51124	03	04	28.56	+12	17	12.5	17.0	381
1982	XA2		1982	12	14.55631	03	04	27.04	+12	17	15.9	17.0	381
1982	XB2	*	1982	12	13.55013	03	07	01.00	+12	58	23.0	17.5	381
1982	XB2		1982	12	13.59596	03	06	59.49	+12	58	21.2	17.5	381
1982	XB2		1982	12	14.51124	03	06	31.96	+12	57	50.7	17.5	381
1982	XB2		1982	12	14.53486	03	06	31.38	+12	57	48.8	18.0	381
1982	XB2		1982	12	14.55631	03	06	30.58	+12	57	49.4	17.5	381
1982	XB2		1982	12	14.57861	03	06	29.91	+12	57	50.6	18.0	381
1982	XC2	*	1982	12	13.55013	03	07	12.92	+16	59	52.5	19.0	381
1982	XC2		1982	12	13.59596	03	07	11.09	+16	59	39.7	19.0	381
1982	XC2		1982	12	14.51124	03	06	37.64	+16	55	22.2	19.0	381
1982	XC2		1982	12	14.55631	03	06	35.97	+16	55	10.2	19.0	381
1982	XD2	*	1982	12	13.55013	03	07	21.36	+15	22	40.9	18.5	381
1982	XD2		1982	12	13.59596	03	07	19.82	+15	22	29.8	18.5	381
1982	XD2		1982	12	14.51124	03	06	58.70	+15	21	59.3	18.5	381

1982	XD2		1982	12	14.55631	03	06	56.69	+15	22	14.6	18.5	381
1982	XE2	*	1982	12	13.55013	03	07	34.76	+12	50	32.0	18.0	381
1982	XE2		1982	12	13.59596	03	07	33.30	+12	50	29.9	18.0	381
1982	XE2		1982	12	14.51124	03	07	07.21	+12	49	51.3	18.0	381
1982	XE2		1982	12	14.53486	03	07	06.66	+12	49	49.5	18.5	381
1982	XE2		1982	12	14.55631	03	07	05.84	+12	49	49.7	18.0	381
1982	XE2		1982	12	14.57861	03	07	05.25	+12	49	49.9	18.5	381
1982	XF2	*	1982	12	13.55013	03	07	40.58	+15	16	47.8	18.5	381
1982	XF2		1982	12	13.59596	03	07	38.56	+15	17	01.7	18.5	381
1982	XF2		1982	12	14.51124	03	06	50.28	+15	18	12.9	18.5	381
1982	XF2		1982	12	14.55631	03	06	48.86	+15	18	02.2	18.5	381
1982	XG2	*	1982	12	13.55013	03	07	55.01	+14	04	51.7	17.5	381
1982	XG2		1982	12	13.59596	03	07	53.73	+14	04	43.6	17.5	381
1982	XG2		1982	12	14.51124	03	07	29.22	+14	02	19.3	17.5	381
1982	XG2		1982	12	14.53486	03	07	28.64	+14	02	15.1	17.5	381
1982	XG2		1982	12	14.55631	03	07	28.10	+14	02	13.4	17.5	381
1982	XG2		1982	12	14.57861	03	07	27.46	+14	02	10.3	17.5	381
1982	XH2	*	1982	12	13.55013	03	08	33.48	+13	26	15.6	18.0	381
1982	XH2		1982	12	14.51124	03	08	15.75	+13	24	22.9	18.0	381
1982	XH2		1982	12	14.53486	03	08	15.20	+13	24	22.0	18.5	381
1982	XH2		1982	12	14.55631	03	08	14.56	+13	24	22.6	18.0	381
1982	XH2		1982	12	14.57861	03	08	13.93	+13	24	21.5	18.5	381
1982	XJ2	*	1982	12	13.55013	03	08	56.47	+17	06	05.5	19.0	381
1982	XJ2		1982	12	13.59596	03	08	55.29	+17	05	48.7	19.0	381
1982	XJ2		1982	12	14.51124	03	08	31.27	+17	00	26.7	19.0	381
1982	XJ2		1982	12	14.55631	03	08	30.08	+17	00	10.6	19.0	381
1982	XK2	*	1982	12	13.57374	03	07	00.41	+12	58	21.5	18.0	381
1982	XL2	*	1982	12	13.57374	03	07	34.17	+12	50	30.5	18.5	381
1982	XM2	*	1982	12	13.57374	03	07	54.33	+14	04	47.4	17.5	381
1982	XN2	*	1982	12	13.57374	03	08	41.38	+13	24	44.6	18.5	381
1982	XO2	*	1982	12	13.57374	03	09	11.52	+12	44	06.7	18.5	381
1982	XO2		1982	12	14.53486	03	08	56.92	+12	39	53.7	18.5	381
1982	XO2		1982	12	14.57861	03	08	55.38	+12	39	32.8	18.5	381
1982	XP2	*	1982	12	13.57374	03	09	56.03	+12	19	07.8	18.0	381
1982	XP2		1982	12	14.53486	03	09	26.23	+12	20	36.3	18.0	381
1982	XP2		1982	12	14.57861	03	09	24.81	+12	20	39.6	18.0	381
1982	XQ2	*	1982	12	13.57374	03	11	23.55	+12	31	01.4	19.0	381
1982	XQ2		1982	12	14.53486	03	10	47.49	+12	34	00.1	19.0	381
1982	XQ2		1982	12	14.57861	03	10	45.82	+12	34	09.3	19.0	381
1982	XR2	*	1982	12	13.57374	03	11	33.95	+15	56	52.9	16.5	381
1982	XR2		1982	12	14.53486	03	10	55.80	+16	02	37.0	16.5	381
1982	XR2		1982	12	14.57861	03	10	54.10	+16	02	52.8	16.5	381
1982	XS2	*	1982	12	13.57374	03	11	34.17	+14	54	20.7	17.5	381
1982	XS2		1982	12	14.53486	03	10	55.37	+15	01	20.8	17.5	381
1982	XS2		1982	12	14.57861	03	10	53.49	+15	01	39.3	17.5	381
1982	XT2	*	1982	12	13.57374	03	13	10.70	+13	28	55.5	18.5	381
1982	XT2		1982	12	14.53486	03	12	42.29	+13	33	23.7	18.5	381
1982	XT2		1982	12	14.57861	03	12	40.91	+13	33	35.6	18.5	381
1982	XU2	*	1982	12	13.57374	03	14	12.35	+13	47	54.2	18.5	381
1982	XU2		1982	12	14.53486	03	13	37.47	+13	49	37.7	18.5	381
1982	XU2		1982	12	14.57861	03	13	35.94	+13	49	43.5	18.5	381
1982	XV2	*	1982	12	13.57374	03	14	47.70	+13	37	05.7	19.0	381
1982	XV2		1982	12	14.53486	03	14	11.70	+13	39	16.2	19.0	381
1982	XV2		1982	12	14.57861	03	14	09.96	+13	39	22.9	19.0	381
1982	XW2	*	1982	12	13.57374	03	15	22.73	+16	39	49.3	17.0	381
1982	XW2		1982	12	14.53486	03	14	48.31	+16	46	30.3	17.0	381
1982	XW2		1982	12	14.57861	03	14	46.73	+16	46	48.1	17.0	381
1982	XX2	*	1982	12	13.57374	03	15	59.67	+14	48	14.2	18.0	381
1982	XX2		1982	12	14.53486	03	15	17.29	+14	51	12.0	18.0	381

1982	XX2		1982	12	14.57861	03	15	15.36	+14	51	19.6	18.0	381
1982	XY2	*	1982	12	13.57374	03	17	09.80	+17	28	51.3	18.5	381
1982	XY2		1982	12	14.53486	03	16	30.27	+17	33	02.0	18.5	381
1982	XY2		1982	12	14.57861	03	16	28.59	+17	33	14.7	18.5	381
1982	XZ2	*	1982	12	13.57374	03	17	43.86	+13	44	54.5	19.0	381
1982	XZ2		1982	12	14.53486	03	17	09.39	+13	46	14.2	19.0	381
1982	XZ2		1982	12	14.57861	03	17	07.76	+13	46	18.8	19.0	381
1982	XA3	*	1982	12	13.57374	03	17	58.88	+14	43	56.2	18.0	381
1982	XA3		1982	12	14.53486	03	17	25.69	+14	43	40.9	18.0	381
1982	XA3		1982	12	14.57861	03	17	24.17	+14	43	41.3	18.0	381
1982	XB3	*	1982	12	13.57374	03	18	28.59	+16	29	53.9	19.0	381
1982	XB3		1982	12	14.53486	03	17	47.53	+16	30	15.4	19.0	381
1982	XB3		1982	12	14.57861	03	17	45.79	+16	30	17.0	19.0	381
1982	XC3	*	1982	12	13.57374	03	18	39.72	+17	04	47.6	18.5	381
1982	XC3		1982	12	14.53486	03	18	06.29	+16	58	26.1	18.5	381
1982	XC3		1982	12	14.57861	03	18	04.71	+16	58	08.8	18.5	381
1982	XD3	*	1982	12	13.57374	03	18	42.96	+13	56	39.0	18.0	381
1982	XD3		1982	12	14.53486	03	18	23.33	+13	52	00.2	18.0	381
1982	XD3		1982	12	14.57861	03	18	22.26	+13	51	46.1	18.0	381
1982	XE3	*	1982	12	13.57374	03	18	54.39	+14	18	32.6	18.5	381
1982	XE3		1982	12	14.53486	03	18	16.53	+14	15	21.6	18.0	381
1982	XE3		1982	12	14.57861	03	18	14.76	+14	15	12.5	18.5	381
1982	XF3	*	1982	12	13.57374	03	19	11.26	+12	39	13.1	19.0	381
1982	XF3		1982	12	14.53486	03	18	45.08	+12	38	38.0	19.0	381
1982	XF3		1982	12	14.57861	03	18	43.71	+12	38	35.4	19.0	381
1982	XG3	*	1982	12	13.57374	03	19	34.36	+12	57	56.6	19.0	381
1982	XG3		1982	12	14.53486	03	18	56.33	+12	55	23.7	19.0	381
1982	XG3		1982	12	14.57861	03	18	54.79	+12	55	19.1	19.0	381
1982	XH3	*	1982	12	13.57374	03	19	42.98	+15	16	01.1	18.0	381
1982	XH3		1982	12	14.53486	03	19	08.78	+15	17	27.7	18.0	381
1982	XH3		1982	12	14.57861	03	19	07.27	+15	17	31.7	18.0	381
1982	XJ3	*	1982	12	13.57374	03	20	00.52	+12	20	18.3	18.5	381
1982	XJ3		1982	12	14.53486	03	19	20.38	+12	25	19.8	18.5	381
1982	XJ3		1982	12	14.57861	03	19	18.59	+12	25	31.8	18.5	381
1982	XK3	*	1982	12	13.57374	03	20	09.35	+12	12	36.1	18.5	381
1982	XK3		1982	12	14.53486	03	19	23.19	+12	13	59.3	18.5	381
1982	XK3		1982	12	14.57861	03	19	21.07	+12	14	02.2	18.5	381
1982	XL3	*	1982	12	13.57374	03	20	29.04	+12	10	28.6	19.0	381
1982	XL3		1982	12	14.53486	03	19	50.79	+12	09	20.7	19.0	381
1982	XL3		1982	12	14.57861	03	19	49.02	+12	09	20.0	19.0	381
1982	XM3	*	1982	12	13.57374	03	20	50.45	+16	31	09.2	18.5	381
1982	XM3		1982	12	14.53486	03	20	01.69	+16	31	08.1	18.5	381
1982	XM3		1982	12	14.57861	03	19	59.45	+16	31	06.9	18.5	381
1982	XN3	*	1982	12	13.57374	03	21	02.01	+17	09	34.6	18.5	381
1982	XN3		1982	12	14.53486	03	20	31.75	+17	03	54.2	18.5	381
1982	XN3		1982	12	14.57861	03	20	30.26	+17	03	39.7	18.5	381
1982	XO3	*	1982	12	13.57374	03	22	25.14	+15	34	08.2	18.5	381
1982	XO3		1982	12	14.53486	03	21	53.04	+15	32	35.7	18.5	381
1982	XO3		1982	12	14.57861	03	21	51.35	+15	32	31.7	18.5	381
1982	XP3	*	1982	12	13.57374	03	22	34.29	+15	27	41.8	18.5	381
1982	XP3		1982	12	14.53486	03	21	53.15	+15	31	01.0	18.5	381
1982	XP3		1982	12	14.57861	03	21	51.13	+15	31	11.2	18.5	381
1982	XQ3	*	1982	12	13.57374	03	23	25.74	+13	38	43.1	18.5	381
1982	XQ3		1982	12	14.53486	03	22	46.84	+13	38	07.9	18.5	381
1982	XQ3		1982	12	14.57861	03	22	44.95	+13	38	08.1	18.5	381
1982	XR3	*	1982	12	13.57374	03	23	30.71	+15	43	47.1	17.5	381
1982	XR3		1982	12	14.53486	03	22	55.69	+15	41	20.5	17.5	381
1982	XR3		1982	12	14.57861	03	22	53.96	+15	41	14.5	17.5	381
1982	XS3	*	1982	12	13.57374	03	24	01.49	+16	58	03.3	19.0	381

1982	XS3		1982	12	14.53486	03	23	29.04	+16	55	34.9	19.0	381
1982	XS3		1982	12	14.57861	03	23	28.18	+16	55	23.2	19.0	381
1982	XT3	*	1982	12	13.57374	03	25	13.22	+15	23	31.9	16.5	381
1982	XT3		1982	12	14.53486	03	24	36.76	+15	22	48.7	16.5	381
1982	XT3		1982	12	14.57861	03	24	35.04	+15	22	47.4	16.5	381
1982	XU3	*	1982	12	13.57374	03	26	00.10	+14	31	54.4	17.0	381
1982	XU3		1982	12	14.53486	03	25	27.73	+14	26	44.2	17.0	381
1982	XU3		1982	12	14.57861	03	25	26.17	+14	26	31.1	17.0	381
1982	XV3	*	1982	12	13.57374	03	26	46.45	+15	47	38.6	19.0	381
1982	XV3		1982	12	14.53486	03	26	09.01	+15	45	48.0	19.0	381
1982	XV3		1982	12	14.57861	03	26	07.60	+15	45	42.2	19.0	381
1982	XW3	*	1982	12	13.57374	03	27	27.47	+14	57	46.3	18.5	381
1982	XW3		1982	12	14.53486	03	26	47.96	+15	00	28.7	18.5	381
1982	XW3		1982	12	14.57861	03	26	46.22	+15	00	38.1	18.5	381
1982	XX3	*	1982	12	13.57374	03	27	37.03	+14	26	03.8	18.5	381
1982	XX3		1982	12	14.53486	03	26	55.78	+14	25	31.7	18.5	381
1982	XX3		1982	12	14.57861	03	26	53.82	+14	25	31.2	18.5	381
1982	XY3	*	1982	12	13.57374	03	27	46.91	+14	53	23.6	18.0	381
1982	XY3		1982	12	14.53486	03	27	01.31	+14	50	42.2	18.0	381
1982	XY3		1982	12	14.57861	03	26	59.19	+14	50	35.8	18.0	381
1982	XZ3	*	1982	12	13.57374	03	28	09.19	+16	03	53.4	17.5	381
1982	XZ3		1982	12	14.53486	03	27	31.88	+15	56	51.4	17.5	381
1982	XZ3		1982	12	14.57861	03	27	30.11	+15	56	33.2	17.5	381
1982	XA4	*	1982	12	13.57374	03	28	15.22	+15	00	45.2	18.5	381
1982	XA4		1982	12	14.53486	03	27	35.83	+14	58	33.9	18.5	381
1982	XA4		1982	12	14.57861	03	27	33.97	+14	58	29.5	18.5	381
1982	XB4	*	1982	12	13.57374	03	28	26.48	+15	25	56.2	18.0	381
1982	XB4		1982	12	14.53486	03	27	52.85	+15	19	59.8	18.0	381
1982	XB4		1982	12	14.57861	03	27	51.27	+15	19	45.3	18.0	381
1982	XC4	*	1982	12	13.57374	03	28	27.33	+12	06	39.3	18.5	381
1982	XC4		1982	12	14.53486	03	27	50.05	+12	05	50.0	18.5	381
1982	XC4		1982	12	14.57861	03	27	48.15	+12	05	45.7	18.5	381
1982	XD4	*	1982	12	13.57374	03	28	34.19	+15	52	54.0	17.5	381
1982	XD4		1982	12	14.53486	03	27	58.23	+15	51	20.3	17.5	381
1982	XD4		1982	12	14.57861	03	27	56.54	+15	51	16.4	17.5	381
1982	XE4	*	1982	12	13.57374	03	29	18.60	+13	37	15.7	18.0	381
1982	XE4		1982	12	14.53486	03	28	37.96	+13	41	28.1	18.0	381
1982	XE4		1982	12	14.57861	03	28	36.06	+13	41	39.4	18.0	381
1982	XF4	*	1982	12	13.57374	03	29	27.60	+15	33	03.4	18.0	381
1982	XF4		1982	12	14.53486	03	28	44.04	+15	32	28.7	18.0	381
1982	XF4		1982	12	14.57861	03	28	41.94	+15	32	26.5	18.0	381
1982	XG4	*	1982	12	13.57374	03	30	04.90	+16	59	53.7	17.0	381
1982	XG4		1982	12	14.53486	03	29	30.72	+16	53	17.4	17.0	381
1982	XG4		1982	12	14.57861	03	29	29.11	+16	52	58.5	17.0	381
1982	XH4	*	1982	12	13.57374	03	30	42.01	+15	42	55.4	18.0	381
1982	XH4		1982	12	14.53486	03	30	07.46	+15	38	36.1	18.0	381
1982	XH4		1982	12	14.57861	03	30	05.83	+15	38	24.5	18.0	381
1982	XJ4	*	1982	12	14.51124	02	48	01.87	+13	31	45.8	18.5	381
1982	XJ4		1982	12	14.55631	02	48	01.31	+13	31	30.9	18.5	381
1982	XK4	*	1982	12	14.51124	02	58	49.35	+12	57	54.2	19.0	381
1982	XK4		1982	12	14.55631	02	58	47.92	+12	57	51.8	19.0	381
1982	XL4	*	1982	12	14.51124	03	00	37.00	+13	27	31.9	18.5	381
1982	XL4		1982	12	14.55631	03	00	35.65	+13	27	30.1	18.5	381
1982	XM4	*	1982	12	14.51124	03	01	20.38	+13	13	43.3	19.0	381
1982	XM4		1982	12	14.55631	03	01	18.92	+13	13	42.6	19.0	381
1982	XN4	*	1982	12	14.51124	03	10	37.59	+16	46	29.1	19.0	381
1982	XN4		1982	12	14.55631	03	10	36.12	+16	46	26.1	19.0	381
1982	XO4	*	1982	12	14.53486	03	17	30.64	+13	43	06.4	18.0	381
1982	XO4		1982	12	14.57861	03	17	29.00	+13	42	49.8	18.0	381

1982 XP4 *	1982 12 14.53486	03 21 02.72	+12 07 18.5		19.0		381
1982 XP4	1982 12 14.57861	03 21 00.52	+12 07 14.8		19.0		381
1982 XQ4 *	1982 12 14.53486	03 28 57.27	+13 17 50.4		18.0		381
1982 XQ4	1982 12 14.57861	03 28 55.47	+13 17 44.0		18.0		381
1983 TB	1983 11 07.56994	21 53 06.45	+32 37 00.1				381
1983 TB	1983 11 07.58365	21 53 09.24	+32 36 22.6				381

OBSERVATIONS MADE WITH THE 1.2-M U.K. SCHMIDT TELESCOPE AT SIDING SPRING BY K. S. RUSSELL.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1983 VA	1983 11 11.47681	21 23 35.56	-56 27 54.6		413
1983 VA	1983 11 11.49764	21 23 29.52	-56 27 36.4		413

OBSERVATIONS MADE AT THE CENTRO ASTRONOMICO DE YEBES BY M. DE PASCUAL, J. GARCIA, C. CABANAS, AND F. SANCHEZ.

Object	Date	UT	R. A. (1950)	Decl.	N Obs.
5	1983 04 08.90801	10 26 27.83	+14 34 28.3		491
5	1983 04 08.91217	10 26 27.82	+14 34 28.0		491
5	1983 04 08.91609	10 26 27.77	+14 34 28.6		491
5	1983 04 09.95687	10 26 28.87	+14 35 23.2		491
5	1983 04 09.96033	10 26 28.85	+14 35 23.3		491
5	1983 04 09.96380	10 26 29.05	+14 35 22.8		491
18	1983 03 07.86633	10 47 18.11	+11 13 53.8		491
18	1983 03 07.86980	10 47 17.91	+11 13 55.4		491
18	1983 03 07.87326	10 47 17.71	+11 13 57.4		491
18	1983 03 08.99726	10 46 15.67	+11 23 57.4		491
18	1983 03 09.00072	10 46 15.47	+11 23 59.0		491
18	1983 03 09.00419	10 46 15.27	+11 24 00.6		491
18	1983 03 09.99695	10 45 21.10	+11 32 43.4		491
18	1983 03 10.00146	10 45 20.86	+11 32 45.9		491
18	1983 03 10.00596	10 45 20.59	+11 32 48.1		491
18	1983 04 08.90801	10 25 46.82	+14 39 01.4		491
18	1983 04 08.91217	10 25 46.75	+14 39 02.0		491
18	1983 04 08.91609	10 25 46.67	+14 39 03.0		491
18	1983 04 09.95687	10 25 27.63	+14 42 26.4		491
18	1983 04 09.96033	10 25 27.55	+14 42 27.1		491
18	1983 04 09.96380	10 25 27.51	+14 42 27.5		491
18	1983 05 10.89525	10 28 19.91	+14 55 21.6		491
18	1983 05 10.89871	10 28 20.02	+14 55 21.8		491
18	1983 05 10.90217	10 28 20.10	+14 55 21.2		491
18	1983 05 18.91599	10 32 29.44	+14 35 17.4		491
18	1983 05 18.91945	10 32 29.54	+14 35 16.1		491
25	1983 04 08.98972	12 54 17.58	-16 41 24.8		491
25	1983 04 08.99803	12 54 17.12	-16 41 17.8		491
25	1983 04 10.06109	12 53 20.81	-16 25 44.0		491
25	1983 04 10.06525	12 53 20.60	-16 25 40.7		491
25	1983 04 10.06941	12 53 20.37	-16 25 37.2		491
25	1983 05 10.91204	12 32 24.45	-08 31 19.3		491
25	1983 05 10.91550	12 32 24.34	-08 31 16.2		491
25	1983 05 10.91897	12 32 24.25	-08 31 13.7		491
25	1983 05 18.92655	12 30 35.19	-06 46 47.6		491
25	1983 05 18.93070	12 30 35.15	-06 46 44.3		491
25	1983 05 18.93486	12 30 35.08	-06 46 41.6		491
117	1983 04 13.01619	12 58 01.36	-19 17 50.4		491
117	1983 04 14.02178	12 57 05.79	-19 15 57.4		491
148	1983 03 07.84302	07 02 20.02	+10 39 07.4		491
148	1983 03 07.84648	07 02 20.09	+10 39 10.3		491
148	1983 03 07.84994	07 02 20.08	+10 39 12.5		491
148	1983 03 08.83024	07 02 34.90	+10 50 09.0		491

148		1983	03	08.83439	07	02	34.95	+10	50	11.4	491
148		1983	03	08.83855	07	02	35.00	+10	50	14.8	491
148		1983	03	09.83236	07	02	51.42	+11	01	11.3	491
148		1983	03	09.83652	07	02	51.45	+11	01	14.3	491
148		1983	03	09.84067	07	02	51.54	+11	01	17.4	491
148		1983	04	08.89363	07	21	43.96	+15	21	52.1	491
148		1983	04	08.89779	07	21	44.18	+15	21	53.7	491
148		1983	04	08.90194	07	21	44.36	+15	21	55.1	491
148		1983	04	12.89379	07	25	31.99	+15	46	20.1	491
148		1983	04	12.89725	07	25	32.23	+15	46	22.0	491
148		1983	04	12.90078	07	25	32.44	+15	46	22.8	491
235		1983	03	08.91057	09	53	50.73	+26	37	17.2	491
235		1983	03	09.90958	09	53	05.81	+26	38	58.4	491
608		1983	04	13.01619	12	57	37.31	-20	35	26.9	1 491
608		1983	04	14.02178	12	56	49.76	-20	30	42.1	491
704		1983	04	09.00462	13	32	46.42	-33	57	45.6	491
704		1983	04	09.01016	13	32	46.26	-33	57	45.8	491
704		1983	04	09.01570	13	32	45.86	-33	57	44.6	491
704		1983	04	10.01469	13	31	56.44	-33	54	32.3	491
704		1983	04	10.01954	13	31	56.17	-33	54	32.1	491
704		1983	04	10.02439	13	31	55.95	-33	54	31.3	491
704		1983	05	10.92381	13	08	11.89	-30	53	41.0	491
704		1983	05	10.92728	13	08	11.75	-30	53	39.2	491
704		1983	05	10.93143	13	08	11.62	-30	53	37.4	491
704		1983	05	18.95183	13	04	00.59	-29	51	43.4	491
704		1983	05	18.95529	13	04	00.68	-29	51	41.7	491
971		1983	03	07.94136	13	11	46.40	+15	26	18.6	491
971		1983	03	08.97810	13	11	06.85	+15	33	48.1	491
971		1983	03	09.97572	13	10	27.31	+15	40	56.5	491
1461		1983	03	07.94136	13	12	05.23	+15	06	34.2	491
1461		1983	03	08.97810	13	11	34.60	+15	14	15.0	491
1461		1983	03	09.97572	13	11	03.92	+15	21	36.7	491
1842		1983	04	09.05032	14	43	17.71	-07	01	24.6	491
1842		1983	04	10.04655	14	42	43.59	-06	54	05.8	491
1842		1983	04	12.96737	14	40	54.28	-06	32	16.0	491
1842		1983	04	13.96568	14	40	13.93	-06	24	43.5	491
2364		1983	03	08.91057	09	54	27.36	+28	29	42.5	491
2364		1983	03	09.90958	09	53	42.39	+28	29	51.8	491
1980	TB5	1983	04	13.01619	12	50	48.95	-20	06	42.3	1 491
1980	TB5	1983	04	14.02178	12	49	37.92	-20	07	58.1	491
1981	LA	1983	03	07.90154	11	31	52.95	+53	21	25.4	491
1981	LA	1983	03	08.94624	11	30	34.88	+53	29	25.5	491
1981	LA	1983	03	09.94490	11	29	20.11	+53	36	16.2	491
1981	LA	1983	04	08.94540	11	02	28.37	+51	43	45.0	491
1981	LA	1983	04	09.99287	11	02	11.26	+51	30	50.5	1 491
1981	LA	1983	04	12.92374	11	01	39.62	+50	52	28.0	491

Note 1: image extremely diffuse and difficult to measure.

OBSERVATIONS MADE AT GOTTINGEN BY W. LANDGRAF.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
2	1983 08	08.89565	18 24 27.11	+18 12 27.1	528
2	1983 08	08.89988	18 24 27.01	+18 12 24.2	528
2	1983 08	08.90329	18 24 26.89	+18 12 22.4	528

OBSERVATIONS MADE AT LINZ BY E. MEYER. COMMUNICATED BY F. FREVERT.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
2468	1983 09	07.88056	23 15 44.65	+04 28 26.8	540
2468	1983 09	07.89097	23 15 44.07	+04 28 21.7	540
2468	1983 09	07.90139	23 15 43.58	+04 28 16.6	540

2468		1983	09	07.91181	23	15	43.07	+04	28	11.6	540
2468		1983	09	08.89028	23	14	55.57	+04	20	13.9	540
2468		1983	09	08.90069	23	14	55.17	+04	20	10.3	540
2468		1983	09	08.91111	23	14	54.59	+04	20	05.6	540
2468		1983	09	08.92153	23	14	54.06	+04	19	59.8	540
2468		1983	10	05.89757	22	56	50.93	+00	23	10.6	540
2468		1983	10	05.91161	22	56	50.57	+00	23	04.9	540
2468		1983	10	05.92569	22	56	50.24	+00	22	57.8	540
2468		1983	10	05.93924	22	56	49.84	+00	22	49.9	540

OBSERVATIONS MADE AT THE OSSERVATORIO S. VITTORE.

Object		Date	UT	R. A. (1950)			Decl.			Mag.	Obs.
1537		1983	11 05.95903	02	38	06.47	+16	23	12.1	15.0	552
1537		1983	11 05.97708	02	38	05.58	+16	23	05.9		552
1537		1983	11 08.90069	02	35	54.77	+16	04	53.0	15.0	552
1537		1983	11 08.91167	02	35	54.12	+16	04	48.4		552
1537		1983	11 09.91042	02	35	10.28	+15	58	40.7	15.0	552
1537		1983	11 09.93125	02	35	09.48	+15	58	33.0		552
1537		1983	11 10.94722	02	34	25.09	+15	52	18.6	15.0	552
1537		1983	11 10.96806	02	34	24.22	+15	52	10.8		552
1690		1980	12 08.96875	05	58	10.29	+12	11	03.6	15.5	552
1690		1980	12 08.98681	05	58	09.34	+12	10	59.1		552
1690		1980	12 12.93125	05	54	45.66	+11	54	18.7	15.6	552
1690		1980	12 12.94653	05	54	44.91	+11	54	14.8		552
2133		1981	01 02.88889	06	28	50.06	+27	20	48.4	17.3	552
2133		1981	01 02.90486	06	28	48.97	+27	20	52.9		552
1982	JA	1983	11 05.92222	01	52	50.50	-00	08	13.8	17.3	552
1982	JA	1983	11 05.93819	01	52	49.59	-00	08	11.0		552
1982	JA	1983	11 10.89792	01	48	23.26	-00	07	39.8	17.3	552
1982	JA	1983	11 10.92361	01	48	21.91	-00	07	38.8		552
1983	TC	1983	11 05.86319	23	46	06.77	+09	15	45.6	16.4	552
1983	TC	1983	11 05.88681	23	46	06.98	+09	15	32.0		552
1983	TC	1983	11 10.85347	23	47	13.95	+08	33	23.4	16.5	552
1983	TC	1983	11 10.87361	23	47	14.35	+08	33	13.5		552
1983	VE *	1983	11 05.95903	02	39	06.60	+16	16	13.2	15.0	552
1983	VE	1983	11 05.97708	02	39	05.61	+16	16	04.8		552
1983	VE	1983	11 08.90069	02	36	54.84	+15	55	12.9	15.0	552
1983	VE	1983	11 08.91167	02	36	54.07	+15	55	06.0		552
1983	VE	1983	11 09.91042	02	36	10.03	+15	48	02.1	15.0	552
1983	VE	1983	11 09.93125	02	36	09.10	+15	47	50.4		552
1983	VE	1983	11 10.94722	02	35	24.50	+15	40	39.9	15.0	552
1983	VE	1983	11 10.96806	02	35	23.57	+15	40	30.7		552

OBSERVATIONS MADE AT REINTAL BY F. SEILER. COMMUNICATED BY F. FREVERT.

Object	Date	UT	R. A. (1950)			Decl.			Obs.
2	1983	08 27.86667	18	19	57.37	+14	33	49.6	556
2	1983	08 27.87361	18	19	57.33	+14	33	44.5	556
2	1983	08 27.88056	18	19	57.29	+14	33	38.6	556
2	1983	08 27.88750	18	19	57.22	+14	33	34.3	556
2	1983	09 02.81042	18	20	03.70	+13	22	19.5	556
2	1983	09 02.83125	18	20	03.78	+13	22	04.6	556
2	1983	09 02.83819	18	20	03.75	+13	21	59.9	556
2	1983	09 02.84514	18	20	03.80	+13	21	53.8	556
2	1983	09 02.86597	18	20	03.89	+13	21	39.4	556
2	1983	09 02.87292	18	20	03.95	+13	21	33.9	556
2	1983	09 02.87986	18	20	03.92	+13	21	29.1	556
2	1983	09 08.80764	18	20	53.27	+12	10	31.7	556
2	1983	09 08.81458	18	20	53.35	+12	10	26.4	556
2	1983	09 08.82153	18	20	53.46	+12	10	20.9	556

2	1983 09 08.84236	18 20 53.67	+12 10 06.7			556
2	1983 09 08.84931	18 20 53.80	+12 10 01.2			556
2	1983 09 28.77917	18 28 28.79	+08 24 11.4			556
2	1983 09 28.78611	18 28 28.97	+08 24 07.9			556
682	1983 10 02.81389	23 59 04.85	+02 27 49.1			556
682	1983 10 02.82083	23 59 04.42	+02 27 47.8			556
682	1983 10 02.83472	23 59 03.91	+02 27 35.6			556
682	1983 10 02.84861	23 59 03.32	+02 27 28.9			556
1034	1983 10 02.85972	23 57 54.88	+08 23 32.7			556
1034	1983 10 02.86667	23 57 54.55	+08 23 29.9			556
1034	1983 10 02.88056	23 57 53.81	+08 23 27.8			556
1034	1983 10 04.83125	23 56 21.97	+08 14 20.2			556
1034	1983 10 04.83819	23 56 21.64	+08 14 18.8			556
1034	1983 10 04.84514	23 56 21.28	+08 14 17.0			556
1034	1983 10 04.95278	23 56 16.07	+08 13 46.0			556
1224	1983 10 04.85208	00 04 01.37	+17 34 07.8			556
1224	1983 10 04.85903	00 04 01.03	+17 34 04.2			556
1224	1983 10 04.95764	00 03 56.22	+17 33 16.6			556
1224	1983 10 04.96458	00 03 55.84	+17 33 11.4			556
1224	1983 10 04.97153	00 03 55.39	+17 33 08.5			556

OBSERVATIONS MADE AT BRESCIA BY U. QUADRI AND V. MARINELLO.

Object	Date	UT	R. A. (1950)	Decl.		N Obs.
51	1983 09 04.89301		23 36 47.12	-00 30 15.0		1 565
51	1983 09 04.94708		23 36 44.59	-00 30 44.0		1 565
51	1983 10 12.85457		23 08 47.73	-06 13 44.9		1 565
51	1983 10 12.90793		23 08 46.07	-06 14 08.4		1 565
51	1983 10 13.83628		23 08 20.76	-06 20 25.0		1 565
51	1983 10 13.88478		23 08 19.57	-06 20 45.5		1 565

Note 1: observatory code 565, Long. and Parallax 10.13, -301, -301 (see MPC 7759).

OBSERVATIONS MADE AT THE OSSERVATORIO CHAONIS BY J. M. BAUR AND C. R. BAUR. SCANNED BY G. CARNIEL, MEASURED AND REDUCED BY J. M. BAUR.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
32	1983 11 04.89166		02 18 12.61	+14 03 26.3		1 567
32	1983 11 04.92083		02 18 11.00	+14 03 17.9		1 567
96	1983 10 12.95521		01 11 34.55	+29 32 08.6		1 567
96	1983 10 12.98507		01 11 33.00	+29 32 04.5		1 567
677	1983 10 03.87986		00 31 40.98	+16 49 03.7	15.2	1 567
677	1983 10 03.90555		00 31 39.81	+16 48 57.4		1 567
995	1983 11 04.82291		02 14 44.67	+14 47 38.4	14.1	1 567
995	1983 11 04.85208		02 14 43.21	+14 47 20.0		1 567
1008	1983 10 13.89687		01 01 58.41	+05 51 36.2	15.4	1 567
1008	1983 10 13.92673		01 01 56.86	+05 51 33.6		1 567
1008	1983 11 01.75625		00 47 17.58	+05 20 10.6		1 567
1008	1983 11 01.78750		00 47 16.28	+05 20 12.2		1 567
1360	1983 11 01.90069		02 29 02.55	+48 21 19.9	16.7	1 567
1360	1983 11 01.93194		02 29 00.18	+48 21 16.2		1 567
1596	1983 10 13.95798		01 23 25.08	+25 03 31.4	14.7	1 567
1596	1983 10 13.98784		01 23 23.67	+25 03 16.9		1 567
1596	1983 11 01.83541		01 09 27.40	+22 08 45.6	15.8	1 567
1596	1983 11 01.86666		01 09 26.30	+22 08 25.1		1 567
1798	1983 12 02.95486		03 13 13.25	+21 40 20.5	15.6	1 567
1798	1983 12 02.97916		03 13 11.91	+21 40 20.6		1 567
1798	1983 12 03.85208		03 12 22.37	+21 40 35.1		1 567
1798	1983 12 03.87847		03 12 20.53	+21 40 35.2		1 567
1853	1983 10 26.75173		00 11 11.55	+26 22 56.6	16.2	1 567
1853	1983 10 26.78159		00 11 10.37	+26 22 43.3		1 567

2264		1983	10	12.89965	01	09	21.25	+07	32	54.6	15.7	1 567
2264		1983	10	12.92951	01	09	19.75	+07	32	47.7		1 567
2381		1983	11	02.00208	02	32	57.68	-08	17	06.3		1 567
2381		1983	11	02.03333	02	32	55.98	-08	17	17.2		1 567
2777		1983	12	05.95903	05	41	57.51	+29	23	46.2	16.6	1 567
2777		1983	12	05.97986	05	41	56.26	+29	23	47.5		1 567
1977	RE7	1983	12	05.91458	04	19	54.96	+18	25	44.8	16.5	1 567
1977	RE7	1983	12	05.93542	04	19	53.86	+18	25	44.3		1 567
1979	SD7	1983	12	08.90174	05	05	48.57	+29	31	14.7	16.4	1 567
1979	SD7	1983	12	08.92187	05	05	46.92	+29	31	15.7		1 567
1981	CY	1983	12	05.86805	04	16	16.45	+20	01	56.9	16.6	1 567
1981	CY	1983	12	05.88888	04	16	14.88	+20	01	56.8		1 567
1983	XB *	1983	12	08.90174	05	05	38.77	+29	57	58.3	16.1	1 567
1983	XB	1983	12	08.92187	05	05	38.26	+29	58	04.5		1 567

Note 1: observatory code 567, Long. and Parallax 12.71, -298, -305 (see MPC 7759).

OBSERVATIONS MADE WITH THE 0.46-M SCHMIDT TELESCOPE AT PALOMAR BY C. SHOEMAKER AND E. SHOEMAKER (ASSISTED BY P. SHOEMAKER AND P. KEMPCHINSKY).

Object		Date	UT	R. A. (1950)			Decl.			Mag.	Obs.
1219		1983	10 09.41076	01	39	01.22	+06	47	28.8	15	675
1219		1983	10 09.42847	01	39	00.16	+06	47	25.2		675
2324		1982	09 13.36805	22	05	55.25	-11	31	51.9	16.5	675
2324		1982	09 13.38888	22	05	54.42	-11	31	56.7		675
1981	JA3	1983	10 09.41076	01	47	21.93	+05	19	27.7	17	675
1981	JA3	1983	10 09.42847	01	47	21.11	+05	19	27.9		675
1982	OK	1982	09 13.36805	22	13	28.74	-13	40	28.0	16	675
1982	OK	1982	09 13.38888	22	13	28.09	-13	40	36.7		675
1982	QG1	1982	09 13.36805	22	09	37.49	-13	16	08.3	17	675
1982	QG1	1982	09 13.38888	22	09	36.62	-13	16	16.4		675
1982	QH1	1982	09 13.36805	22	09	24.01	-12	06	38.6	17	675
1982	QH1	1982	09 13.38888	22	09	23.14	-12	06	47.1		675
1982	QK1	1982	09 13.36805	22	13	20.15	-10	51	23.8	17.5	675
1982	QK1	1982	09 13.38888	22	13	19.19	-10	51	32.0		675
1983	RD	1983	10 09.46597	04	19	22.30	-14	53	48.7		675
1983	RD	1983	10 09.49166	04	19	27.15	-14	54	25.0		675
1983	TO	1983	10 09.41076	01	39	08.48	+07	00	28.2	16	675
1983	TO	1983	10 09.42847	01	39	07.71	+07	00	21.7		675
1983	VX	1983	10 09.45556	02	25	06.49	+06	32	39.0		675
1983	VX	1983	10 09.48125	02	25	05.96	+06	32	04.9		675
1983	VX *	1983	11 09.29375	02	06	20.77	-06	22	48.9	16	675
1983	VX	1983	11 09.32291	02	06	19.49	-06	23	29.3		675
1983	VQ1 *	1983	11 06.36250	03	20	31.03	+05	42	29.4	17	675
1983	VQ1	1983	11 06.38403	03	20	28.58	+05	43	04.5		675
1983	VQ1	1983	11 07.38681	03	18	38.79	+06	10	22.6		675
1983	VQ1	1983	11 08.41458	03	16	44.83	+06	38	37.9		675
1983	VQ1	1983	11 09.35278	03	15	00.19	+07	04	40.4		675
1983	VW1 *	1983	11 05.45208	03	48	29.08	+30	08	31.5	15	675
1983	VW1	1983	11 06.42291	03	47	42.81	+29	53	04.0		675
1983	VW1	1983	11 09.35833	03	45	16.70	+29	04	31.2		675
1983	VB2 *	1983	11 07.31597	02	38	10.98	+12	00	50.4	15	675
1983	VB2	1983	11 07.34722	02	38	08.08	+12	01	08.0		675
1983	VC2 *	1983	11 07.31597	02	40	11.59	+11	58	49.5	16.5	675
1983	VC2	1983	11 07.34722	02	40	10.01	+11	58	36.1		675
1983	VD2 *	1983	11 06.43680	04	23	23.15	+29	51	14.7	17	675
1983	VD2	1983	11 06.45902	04	23	21.97	+29	51	26.0		675
1983	VD2	1983	11 09.36667	04	20	31.96	+30	16	06.5		675
1983	VD2	1983	11 09.38611	04	20	30.65	+30	16	17.2		675

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

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1293		1983 11	28.27502	02 37 58.15	+15 57 51.7	15	1	675
1293		1983 11	29.38266	02 37 19.71	+15 50 00.7		1	675
1866		1955 01	26.4507	11 37 50.5	+74 19 45		2	675
1866		1955 01	26.4819	11 37 45.7	+74 20 15		2	675
1866		1955 01	26.4903	11 37 43.0	+74 20 24	16.5	2	675
1954 TV	*	1954 10	05.2872	00 05 19.3	+34 48 01	15.0	2	675
1954 TV		1954 10	05.2951	00 05 20.1	+34 48 05		2	675
1954 TV		1954 10	05.3299	00 05 24.2	+34 48 19		2	675
1955 WJ	*	1955 11	16.3757	05 14 52.6	-19 43 10		2	675
1955 WJ		1955 11	16.4104	05 14 51.6	-19 43 46		2	675
1955 WJ		1955 11	16.4243	05 14 51.6	-19 43 54	19.0	2	675
1955 XG1	*	1955 12	12.3715	06 20 21.9	-11 11 23		2	675
1955 XG1		1955 12	12.4028	06 20 20.5	-11 11 23		2	675
1955 XG1		1955 12	12.4083	06 20 20.4	-11 11 24	17.0	2	675
1983 PA		1983 11	30.10972	22 29 31.79	+25 13 29.7		3	675
1983 PA		1983 11	30.12014	22 29 33.29	+25 13 31.3		3	675
1983 QD		1983 10	27.23405	23 41 29.60	+16 22 09.7		1	675
1983 RD		1983 11	30.35694	04 43 17.81	-13 31 55.9		3	675
1983 RD		1983 11	30.39167	04 43 16.40	-13 31 21.3		3	675
1983 SA		1983 10	27.24793	22 38 23.12	+21 47 15.3		1	675
1983 SA		1983 10	29.16182	22 38 57.26	+22 05 21.1		1	675
1983 SB		1983 09	12.36840	23 40 12.72	+03 15 58.0		3	675
1983 SB		1983 09	13.31528	23 39 27.17	+03 09 35.2		3	675
1983 SC		1983 09	11.23402	23 43 02.18	+01 59 00.9		3	675
1983 SC		1983 09	12.36840	23 42 03.22	+01 55 46.1		3	675
1983 SC		1983 09	13.31528	23 41 13.00	+01 52 56.6		3	675
1983 TA		1983 10	29.20627	22 55 01.36	+04 18 01.1		6	675
1983 TB		1983 10	27.12710	21 02 23.01	+42 48 35.4		1	675
1983 TB		1983 10	27.22363	21 02 58.24	+42 42 11.1		1	675
1983 TB		1983 10	29.18786	21 14 17.65	+40 37 15.5		1	675
1983 TB		1983 11	29.11322	22 44 23.25	+22 50 57.3		1	675
1983 VQ1		1983 11	11.46669	03 11 00.91	+08 04 03.8		1	675
1983 VQ1		1983 11	28.27502	02 40 41.89	+16 00 18.1		1	675
1983 VQ1		1983 11	29.38266	02 38 58.27	+16 30 09.8		1	675
1983 VX1		1983 11	11.52016	03 43 28.56	+28 44 17.0		1	675
6627 P-L	*	1960 09	24.35002	23 58 34.21	-00 49 53.8	17.8	4	675
6627 P-L		1960 09	26.28543	23 57 10.19	-01 01 19.1		4	675
6627 P-L		1960 09	27.34237	23 56 24.51	-01 07 30.1		4	675
6627 P-L		1960 09	28.33822	23 55 41.65	-01 13 20.3		4	675
6627 P-L		1960 10	17.21390	23 43 54.12	-02 49 52.4		4	675
6627 P-L		1960 10	22.16324	23 41 41.28	-03 08 36.3		4	675
6627 P-L		1960 10	24.23753	23 40 54.24	-03 15 23.3		4	675
6627 P-L		1960 10	26.27157	23 40 13.30	-03 21 26.4		4	675
7607 P-L	*	1960 10	17.28198	00 09 19.67	-05 46 28.3	19.3	4	675
7607 P-L		1960 10	22.23406	00 05 47.89	-06 01 13.6		4	675
7607 P-L		1960 10	25.25350	00 03 57.17	-06 07 21.8		4	675
7607 P-L		1960 10	26.31531	00 03 21.80	-06 08 57.8		4	675
9103 P-L	*	1960 10	17.21390	23 31 44.85	-02 42 29.4	16.1	4	675
9103 P-L		1960 10	22.15559	23 31 01.65	-03 02 49.4		4	675
9103 P-L		1960 10	24.23753	23 30 58.47	-03 09 27.2		4	675
9103 P-L		1960 10	26.27157	23 31 04.25	-03 14 49.7		4	675

Note 1: observer J. Gibson. 2: found and measured on Sky Survey prints (trail ends on the red plates, mid-trail on the blue plates) by G. Auner, J. Dengel, M. Hartl and R. Weinberger. 3: observers E. Helin and R. S. Dunbar; measured by S. Swanson. 4: observer T. Gehrels, plates scanned and measured by C. J. van Houten and I. van Houten-Groeneveld. 5: plate exposed through thin cloud; declination uncertain. 6 = 1 + 5.

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION BY
H. L. GICLAS, E. BOWELL, B. SKIFF AND N. G. THOMAS. MEASURED BY BOWELL.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
2	1983 04	19.48012	19 15 18.91	+15 36 22.9			688
2	1983 04	19.48082	19 15 18.93	+15 36 23.7			688
2	1983 04	19.48151	19 15 18.94	+15 36 23.9			688
2	1983 04	19.48220	19 15 18.94	+15 36 24.6			688
5	1983 04	01.16736	10 27 20.75	+14 19 51.9			688
16	1983 05	06.30764	15 04 25.33	-12 49 47.2			688
16	1983 05	06.33958	15 04 23.68	-12 49 40.9			688
18	1983 04	01.16736	10 28 59.99	+14 06 59.3			688
18	1983 05	06.14583	10 26 27.80	+15 03 14.7			688
18	1983 05	06.17639	10 26 28.40	+15 03 12.3			688
20	1983 10	09.29722	01 37 54.22	+10 17 44.4			688
20	1983 10	09.32778	01 37 52.56	+10 17 34.7			688
20	1983 10	12.29236	01 35 13.02	+10 01 09.1			688
20	1983 10	12.32292	01 35 11.22	+10 00 59.4			688
20	1983 11	04.12569	01 14 31.12	+07 49 29.4			688
20	1983 11	04.19514	01 14 27.63	+07 49 07.3			688
24	1983 09	14.24306	22 27 28.99	-10 36 35.3			688
24	1983 09	14.25069	22 27 28.72	-10 36 37.1			688
26	1983 05	06.30764	15 30 01.05	-19 33 09.1			688
26	1983 05	06.33958	15 29 59.27	-19 33 06.5			688
31	1983 10	11.23958	02 07 14.51	+10 06 24.2			688
31	1983 10	11.27986	02 07 11.90	+10 06 33.5			688
31	1983 10	12.30764	02 06 07.07	+10 10 37.5			688
31	1983 10	12.33819	02 06 05.03	+10 10 45.6			688
59	1983 04	01.16736	10 11 10.63	+09 47 19.5			688
68	1983 10	11.23958	01 53 34.38	+06 31 35.7			688
68	1983 10	11.27986	01 53 32.18	+06 31 32.8			688
68	1983 10	12.30764	01 52 36.18	+06 30 20.3			688
68	1983 10	12.33819	01 52 34.39	+06 30 18.6			688
68	1983 11	04.14444	01 31 37.37	+06 13 25.5			688
68	1983 11	04.21389	01 31 33.82	+06 13 25.9			688
82	1983 09	10.35625	01 41 36.07	+09 43 41.8		2	688
82	1983 09	10.40833	01 41 34.83	+09 43 35.7			688
82	1983 10	09.29722	01 22 37.52	+08 14 25.1			688
82	1983 10	09.32778	01 22 35.73	+08 14 16.9			688
82	1983 10	12.29236	01 20 01.17	+08 01 33.6			688
82	1983 10	12.32292	01 19 59.52	+08 01 25.7			688
82	1983 11	04.12569	01 00 46.78	+06 25 51.0			688
82	1983 11	04.19514	01 00 43.53	+06 25 35.1			688
111	1983 09	14.24306	22 22 29.11	-05 23 59.2			688
111	1983 09	14.25069	22 22 28.70	-05 24 00.7			688
118	1983 05	06.32431	16 00 18.84	-22 30 34.5			688
118	1983 05	06.35556	16 00 16.95	-22 30 34.8			688
122	1983 11	07.35486	04 07 42.60	+18 54 34.3			688
122	1983 11	07.39931	04 07 40.71	+18 54 27.2			688
179	1983 06	07.25833	16 41 01.89	-21 59 11.6			688
179	1983 06	07.29028	16 41 00.24	-21 59 04.0			688
195	1983 08	13.32639	22 21 49.99	-17 24 38.5			688
195	1983 08	13.35764	22 21 48.40	-17 24 45.0			688
195	1983 10	11.12639	21 44 12.31	-18 15 55.5			688
195	1983 10	11.18819	21 44 11.76	-18 15 46.5			688
196	1983 05	06.14583	10 05 14.14	+20 30 33.5			688
196	1983 05	06.17639	10 05 14.80	+20 30 24.8			688
198	1983 06	07.24236	15 45 41.24	-25 46 50.9			688
198	1983 06	07.27431	15 45 39.36	-25 46 39.0			688
206	1983 09	14.24306	22 29 59.28	-11 07 47.8			688

206	1983	09	14.25069	22	29	58.99	-11	07	49.9	688
276	1983	07	10.39201	21	19	32.16	+13	46	53.5	688
276	1983	07	10.42014	21	19	31.32	+13	46	56.7	688
279	1983	07	04.22708	18	05	41.81	-24	30	20.8	688
279	1983	07	04.25764	18	05	40.60	-24	30	23.7	688
280	1983	07	11.34097	21	34	27.91	-24	04	58.7	688
280	1983	07	11.40833	21	34	25.45	-24	05	13.4	688
289	1983	03	17.19583	11	44	05.55	+00	38	59.8	688
289	1983	03	17.23403	11	44	03.77	+00	39	13.8	688
291	1983	06	07.25833	16	52	31.36	-19	13	48.9	688
291	1983	06	07.29028	16	52	29.20	-19	13	45.6	688
294	1983	05	06.14583	10	27	54.40	+13	46	25.4	688
294	1983	05	06.17639	10	27	54.49	+13	46	25.5	688
318	1983	09	14.24306	22	20	02.04	-09	36	01.5	688
318	1983	09	14.25069	22	20	01.71	-09	36	05.3	688
347	1983	06	07.25833	16	38	36.83	-17	40	15.1	688
347	1983	06	07.29028	16	38	34.84	-17	40	22.6	688
359	1983	04	01.16736	10	34	46.12	+12	23	50.4	688
372	1983	09	04.33750	00	20	14.22	+25	28	07.3	688
381	1983	09	06.38542	02	16	58.83	-02	40	38.0	688
390	1983	11	07.29514	02	57	04.83	+36	33	27.2	688
390	1983	11	07.33403	02	57	02.27	+36	33	18.2	688
399	1983	09	12.40139	01	14	11.97	+16	42	12.0	688
399	1983	09	12.43194	01	14	10.84	+16	42	13.8	688
399	1983	10	09.28194	00	53	22.43	+16	25	16.5	688
399	1983	10	09.31250	00	53	20.84	+16	25	12.7	688
399	1983	10	12.24653	00	50	47.94	+16	18	22.0	688
399	1983	10	12.27708	00	50	46.36	+16	18	17.2	688
404	1983	07	11.34097	21	43	06.75	-27	18	43.2	688
404	1983	07	11.40833	21	43	04.48	-27	19	24.7	688
421	1983	03	17.19583	11	42	04.85	-00	33	55.4	688
421	1983	03	17.23403	11	42	02.80	-00	33	37.7	688
450	1983	11	07.31528	03	24	48.65	+28	33	34.5	688
450	1983	11	07.37361	03	24	45.14	+28	33	35.6	688
458	1983	09	12.44375	02	04	53.57	-05	13	49.3	688
474	1983	09	14.24306	22	11	30.43	-10	58	38.0	688
474	1983	09	14.25069	22	11	30.15	-10	58	41.5	688
494	1983	06	07.24236	15	56	49.77	-25	54	28.2	688
494	1983	06	07.27431	15	56	48.10	-25	54	27.5	688
515	1983	03	17.19583	11	49	20.47	+03	43	09.0	688
515	1983	03	17.23403	11	49	18.74	+03	43	20.6	688
550	1983	11	07.31528	03	31	50.45	+29	30	48.5	688
550	1983	11	07.37361	03	31	46.77	+29	30	28.3	688
554	1983	06	07.25833	16	39	04.99	-25	18	20.0	688
554	1983	06	07.29028	16	39	02.95	-25	18	15.0	688
568	1983	07	13.26389	20	06	55.47	+01	07	03.7	688
568	1983	07	13.29514	20	06	53.87	+01	07	08.3	688
579	1983	09	06.38542	02	12	02.16	-01	27	49.4	688
591	1983	11	07.29514	03	07	27.36	+36	10	44.5	688
591	1983	11	07.33403	03	07	24.76	+36	10	41.2	688
595	1983	11	07.31528	03	18	06.11	+30	40	23.6	688
595	1983	11	07.37361	03	18	02.47	+30	40	30.1	688
616	1983	10	11.12639	21	54	08.42	-18	11	13.5	688
616	1983	10	11.18819	21	54	07.25	-18	10	54.4	688
637	1983	09	10.35625	01	30	26.52	+09	35	48.3	688
637	1983	09	10.40833	01	30	25.30	+09	35	42.2	688
637	1983	10	12.29236	01	10	43.01	+07	40	29.0	688
637	1983	10	12.32292	01	10	41.44	+07	40	21.7	688
637	1983	11	04.12569	00	55	04.48	+06	04	52.9	688

637	1983	11	04.19514	00	55	01.84	+06	04	37.7	688
663	1983	07	04.21042	17	51	32.20	-05	58	50.5	688
663	1983	07	04.24236	17	51	30.70	-05	58	46.2	688
688	1983	03	17.19583	11	48	42.97	+02	48	23.1	688
688	1983	03	17.23403	11	48	41.10	+02	48	41.8	688
703	1983	05	06.32431	15	55	54.96	-18	53	17.7	688
720	1983	05	06.30764	15	05	02.79	-18	10	31.6	688
720	1983	05	06.33958	15	05	01.05	-18	10	26.7	688
725	1983	05	06.14583	10	25	05.60	+14	37	18.7	688
725	1983	05	06.17639	10	25	06.28	+14	37	13.6	688
768	1983	05	07.25139	14	22	40.18	-14	31	31.3	688
768	1983	05	07.31736	14	22	36.91	-14	31	27.6	688
768	1983	05	15.19931	14	16	23.19	-14	22	44.2	688
768	1983	05	15.25903	14	16	20.40	-14	22	40.3	688
772	1983	05	06.32431	16	14	29.35	-15	55	09.4	688
772	1983	05	06.35556	16	14	27.38	-15	55	22.3	688
797	1983	11	28.21181	04	26	28.00	+20	36	04.5	688
797	1983	11	28.27292	04	26	24.27	+20	35	51.0	688
797	1983	12	01.30347	04	23	19.08	+20	23	50.0	688
797	1983	12	01.34028	04	23	16.86	+20	23	41.2	688
797	1983	12	05.20000	04	19	22.73	+20	08	17.2	688
797	1983	12	05.22431	04	19	21.11	+20	08	10.4	688
797	1983	12	06.18889	04	18	23.32	+20	04	20.7	688
797	1983	12	06.22569	04	18	21.17	+20	04	12.5	688
811	1983	05	06.30764	15	27	46.52	-13	55	47.4	688
811	1983	05	06.33958	15	27	44.87	-13	55	41.3	688
817	1983	05	06.14583	10	11	40.77	+21	00	51.4	688
817	1983	05	06.17639	10	11	41.67	+21	00	43.8	688
821	1983	11	28.27292	04	29	40.66	+17	05	46.2	688
821	1983	12	01.30347	04	26	57.01	+16	56	41.0	688
821	1983	12	01.34028	04	26	54.87	+16	56	35.1	688
821	1983	12	05.20000	04	23	27.33	+16	45	22.2	688
821	1983	12	06.18889	04	22	34.17	+16	42	34.1	688
821	1983	12	06.22569	04	22	32.44	+16	42	27.8	688
865	1983	09	10.35625	01	41	24.29	+05	12	01.9	688
865	1983	09	10.40833	01	41	23.53	+05	11	36.0	688
871	1983	04	01.16736	10	29	38.03	+11	24	17.8	688
886	1983	05	06.32431	16	17	32.44	-21	02	59.8	688
886	1983	05	06.35556	16	17	30.94	-21	03	03.0	688
889	1983	05	06.14583	10	02	43.17	+18	02	02.4	688
889	1983	05	06.17639	10	02	44.36	+18	01	55.6	688
892	1983	07	13.26389	19	55	16.48	+04	49	04.1	688
892	1983	07	13.29514	19	55	15.06	+04	49	00.1	688
893	1983	08	13.31111	21	47	20.49	-12	23	58.3	688
893	1983	08	13.34167	21	47	19.21	-12	24	16.5	688
911	1983	08	13.32639	22	12	06.57	-16	26	33.3	688
911	1983	08	13.35764	22	12	05.47	-16	26	34.6	688
911	1983	08	31.17465	22	01	38.17	-16	39	15.6	688
911	1983	08	31.20417	22	01	37.12	-16	39	16.9	688
911	1983	10	11.12639	21	44	00.64	-16	16	53.9	688
911	1983	10	11.18819	21	43	59.91	-16	16	46.6	688
912	1983	11	07.31528	03	42	08.64	+29	50	01.1	688
912	1983	11	07.37361	03	42	05.01	+29	50	16.9	688
920	1983	10	11.23958	02	05	58.92	+07	59	01.9	688
920	1983	10	11.27986	02	05	57.20	+07	58	38.0	688
920	1983	10	12.30764	02	05	13.37	+07	48	50.9	688
920	1983	10	12.33819	02	05	11.88	+07	48	34.5	688
933	1983	08	13.32639	22	29	16.57	-10	50	39.7	688
933	1983	08	13.35764	22	29	14.89	-10	50	52.7	688

933	1983	10	11.12639	21	49	22.62	-15	52	53.3		688
933	1983	10	11.18819	21	49	21.77	-15	53	00.1		688
955	1983	03	17.19583	11	45	56.23	-00	06	53.6		688
955	1983	03	17.23403	11	45	53.61	-00	06	49.4		688
962	1983	03	17.19583	11	41	18.33	+04	01	49.5		688
962	1983	03	17.23403	11	41	16.51	+04	02	02.5		688
965	1983	09	12.44375	02	01	12.64	-03	45	52.6		688
971	1983	04	01.18958	12	51	40.97	+17	44	58.1		688
981	1983	11	07.35486	04	21	15.24	+22	13	31.8		688
981	1983	11	07.39931	04	21	13.11	+22	13	29.2		688
984	1983	09	14.24306	22	09	38.82	-03	47	15.6		688
984	1983	09	14.25069	22	09	38.46	-03	47	16.0		688
1029	1983	05	06.30764	15	02	24.60	-18	22	52.7		688
1029	1983	05	06.33958	15	02	22.86	-18	22	47.6		688
1031	1983	07	13.26389	20	01	49.59	+05	03	59.1		688
1031	1983	07	13.29514	20	01	48.12	+05	03	58.6		688
1042	1983	05	06.30764	15	23	29.51	-17	38	38.7		688
1042	1983	05	06.33958	15	23	27.75	-17	38	41.5		688
1044	1983	09	10.35625	01	51	40.42	+06	27	42.4		688
1044	1983	09	10.40833	01	51	39.22	+06	27	35.4		688
1063	1983	05	06.14583	10	05	15.44	+19	30	57.1		688
1063	1983	05	06.17639	10	05	16.88	+19	30	45.2		688
1071	1983	11	07.35486	04	16	13.10	+22	06	07.2		688
1071	1983	11	07.39931	04	16	10.94	+22	06	08.5		688
1074	1983	06	07.25833	16	43	28.01	-22	56	36.9		688
1074	1983	06	07.29028	16	43	26.42	-22	56	34.5		688
1079	1983	08	13.32639	22	10	50.33	-11	20	15.2		688
1079	1983	08	13.35764	22	10	48.80	-11	20	23.1		688
1079	1983	08	31.17465	21	56	27.09	-12	31	27.2		688
1079	1983	08	31.20417	21	56	25.63	-12	31	34.1		688
1079	1983	10	11.12639	21	37	21.16	-13	55	54.1		688
1079	1983	10	11.18819	21	37	21.04	-13	55	54.8		688
1086	1983	08	13.31111	21	58	23.09	-09	33	05.1		688
1086	1983	08	13.34167	21	58	21.58	-09	33	07.5		688
1086	1983	08	31.17465	21	44	25.80	-10	11	07.9		688
1086	1983	08	31.20417	21	44	24.44	-10	11	12.1		688
1094	1983	05	06.14583	10	01	58.16	+18	46	00.3	17.0	688
1094	1983	05	06.17639	10	01	59.81	+18	45	55.6		688
1121	1983	03	17.19583	11	45	15.21	+01	58	17.7		688
1121	1983	03	17.23403	11	45	12.97	+01	58	26.5		688
1122	1983	11	28.21181	04	34	57.24	+22	47	20.5		688
1122	1983	11	28.27292	04	34	53.26	+22	47	26.4		688
1122	1983	12	01.30347	04	31	43.22	+22	52	05.7		688
1122	1983	12	01.34028	04	31	40.87	+22	52	08.0		688
1122	1983	12	05.20000	04	27	40.46	+22	57	23.7		688
1122	1983	12	05.22431	04	27	38.78	+22	57	25.8		688
1122	1983	12	06.18889	04	26	39.78	+22	58	38.4		688
1122	1983	12	06.22569	04	26	37.48	+22	58	41.8		688
1139	1983	07	10.26736	20	22	03.77	+05	16	20.8		688
1139	1983	07	10.31528	20	22	00.97	+05	16	31.9		688
1142	1983	09	14.24306	22	23	40.07	-11	07	54.5		688
1142	1983	09	14.25069	22	23	39.79	-11	07	55.7		688
1145	1983	08	13.32639	22	19	06.05	-14	34	17.4		688
1145	1983	08	13.35764	22	19	04.10	-14	34	22.2		688
1145	1983	08	31.17465	22	01	04.92	-15	12	50.4		688
1145	1983	08	31.20417	22	01	03.11	-15	12	53.3		688
1146	1983	09	14.26319	23	34	27.65	+15	28	23.3		688
1146	1983	09	14.29375	23	34	26.37	+15	28	06.0		688
1155	1983	07	11.34097	21	38	33.73	-25	50	17.3		688

1155		1983	07	11.40833	21	38	31.20	-25	50	40.5	688
1176		1983	11	07.31528	03	42	52.26	+27	07	31.6	688
1176		1983	11	07.37361	03	42	49.14	+27	07	16.0	688
1203		1983	05	07.25139	14	13	29.29	-14	21	12.4	17.0 688
1203		1983	05	07.31736	14	13	26.45	-14	20	53.0	688
1207		1983	09	10.35625	01	31	59.41	+07	11	17.6	688
1207		1983	09	10.40833	01	31	58.00	+07	11	18.7	688
1219		1983	10	09.29722	01	39	08.40	+06	47	45.5	688
1219		1983	10	09.32778	01	39	06.24	+06	47	39.3	688
1219		1983	10	12.29236	01	36	08.46	+06	39	13.7	688
1219		1983	10	12.32292	01	36	06.45	+06	39	08.1	688
1219		1983	11	04.12569	01	13	12.93	+05	45	27.9	688
1219		1983	11	04.19514	01	13	09.17	+05	45	22.3	688
1223		1983	05	06.30764	15	12	20.59	-18	26	09.6	688
1223		1983	05	06.33958	15	12	18.91	-18	26	04.9	688
1224		1983	09	04.33750	00	25	05.00	+19	17	43.1	688
1224		1983	09	04.36806	00	25	04.15	+19	17	47.4	688
1247		1983	11	28.21181	04	17	31.42	+18	52	18.6	688
1247		1983	11	28.27292	04	17	28.15	+18	52	10.2	688
1247		1983	12	01.30347	04	14	54.57	+18	45	44.7	688
1247		1983	12	01.34028	04	14	52.71	+18	45	40.1	688
1247		1983	12	05.20000	04	11	39.94	+18	37	38.5	688
1247		1983	12	05.22431	04	11	38.63	+18	37	34.8	688
1247		1983	12	06.18889	04	10	51.23	+18	35	38.0	688
1247		1983	12	06.22569	04	10	49.45	+18	35	33.1	688
1257		1983	09	14.24306	22	20	06.13	-04	57	57.8	688
1257		1983	09	14.25069	22	20	05.75	-04	58	00.6	688
1258		1983	08	13.31111	21	55	45.38	-07	14	36.8	688
1258		1983	08	13.34167	21	55	43.89	-07	14	39.3	688
1261		1983	04	01.16736	10	12	59.56	+14	49	44.5	688
1261		1983	05	06.14583	10	17	13.10	+13	42	37.8	688
1261		1983	05	06.17639	10	17	14.14	+13	42	29.9	688
1322		1983	06	07.25833	16	45	39.63	-21	03	39.8	688
1322		1983	06	07.29028	16	45	37.60	-21	02	56.1	688
1332		1983	03	17.19583	11	48	26.89	+02	24	11.7	688
1332		1983	03	17.23403	11	48	25.07	+02	24	21.2	688
1337		1983	07	13.26389	19	50	24.57	-00	50	57.8	688
1337		1983	07	13.29514	19	50	23.14	-00	51	07.4	688
1347		1983	05	06.30764	15	12	48.29	-18	06	34.0	688
1347		1983	05	06.33958	15	12	46.57	-18	06	19.1	688
1353		1983	05	06.30764	15	27	34.53	-14	16	06.0	688
1353		1983	05	06.33958	15	27	33.05	-14	15	54.3	688
1366		1983	05	06.14583	10	04	52.62	+19	05	19.8	688
1366		1983	05	06.17639	10	04	53.11	+19	05	10.9	688
1382		1983	11	07.35486	04	12	21.55	+23	26	36.7	688
1382		1983	11	07.39931	04	12	18.88	+23	26	32.0	688
1383		1983	11	04.14444	01	42	53.43	+10	37	50.2	688
1383		1983	11	04.21389	01	42	50.35	+10	37	33.5	688
1389		1983	08	31.17465	22	00	55.37	-10	51	17.8	688
1389		1983	08	31.20417	22	00	54.11	-10	51	27.0	688
1389		1983	10	11.12639	21	42	07.81	-13	03	15.8	688
1389		1983	10	11.18819	21	42	07.57	-13	03	20.6	688
1423		1983	05	06.30764	15	28	12.56	-18	19	05.7	688
1423		1983	05	06.33958	15	28	10.67	-18	19	02.8	688
1424		1983	05	06.14583	10	25	58.64	+19	08	39.5	688
1424		1983	05	06.17639	10	25	58.90	+19	08	30.5	688
1437		1983	08	13.31111	21	52	54.25	-07	25	27.6	688
1437		1983	08	13.34167	21	52	53.07	-07	25	28.2	688
1533		1983	10	11.12639	21	50	22.35	-13	50	34.7	688

1533	1983	10	11.18819	21	50	22.02	-13	50	44.9		688
1541	1983	11	07.31528	03	27	57.53	+24	43	57.4		688
1541	1983	11	07.37361	03	27	53.82	+24	43	51.5		688
1542	1983	05	07.25139	14	37	15.53	-14	36	23.1		688
1542	1983	05	07.31736	14	37	12.50	-14	36	07.0		688
1542	1983	05	15.19931	14	31	20.43	-14	03	27.3		688
1542	1983	05	15.25903	14	31	17.90	-14	03	13.1		688
1553	1983	11	28.21181	04	13	10.64	+17	30	10.2		688
1553	1983	11	28.27292	04	13	07.13	+17	30	03.5		688
1553	1983	12	01.30347	04	10	18.86	+17	25	16.8		688
1553	1983	12	01.34028	04	10	16.71	+17	25	13.2		688
1553	1983	12	05.20000	04	06	45.17	+17	19	29.3		688
1553	1983	12	05.22431	04	06	43.77	+17	19	27.1		688
1553	1983	12	06.18889	04	05	52.21	+17	18	07.6	1	688
1553	1983	12	06.22569	04	05	49.83	+17	18	02.8		688
1555	1983	04	01.16736	10	09	36.45	+07	48	26.9		688
1586	1983	11	28.21181	04	21	13.08	+15	27	14.5		688
1586	1983	11	28.27292	04	21	09.01	+15	27	09.1		688
1586	1983	12	01.30347	04	17	56.40	+15	22	05.2		688
1586	1983	12	01.34028	04	17	54.02	+15	22	01.9		688
1586	1983	12	06.18889	04	12	48.66	+15	15	02.8		688
1586	1983	12	06.22569	04	12	46.26	+15	15	00.1		688
1592	1983	04	19.36111	14	33	48.33	+09	12	12.6		688
1592	1983	04	19.39167	14	33	46.79	+09	12	21.9		688
1603	1983	05	06.14583	10	25	44.24	+17	01	43.1		688
1603	1983	05	06.17639	10	25	44.79	+17	01	38.1		688
1618	1983	10	11.23958	01	44	03.68	+05	36	21.8		688
1618	1983	10	11.27986	01	44	01.93	+05	36	08.1		688
1618	1983	10	12.30764	01	43	12.90	+05	31	24.4		688
1618	1983	10	12.33819	01	43	11.36	+05	31	15.4		688
1618	1983	11	04.14444	01	25	09.42	+03	57	07.7		688
1618	1983	11	04.21389	01	25	06.44	+03	56	54.6		688
1626	1983	07	04.22708	18	10	37.26	-26	02	14.3	16.2	688
1626	1983	07	04.25764	18	10	34.77	-26	02	02.1		688
1652	1983	05	06.32431	15	55	38.88	-22	28	24.2		688
1652	1983	05	06.35556	15	55	37.35	-22	28	16.7		688
1680	1983	05	06.30764	15	20	11.94	-13	48	40.0		688
1680	1983	05	06.33958	15	20	10.22	-13	48	37.0		688
1681	1983	09	12.37014	00	42	24.62	-07	50	21.6		688
1684	1983	07	04.22708	18	10	31.05	-22	27	04.7		688
1684	1983	07	04.25764	18	10	29.40	-22	27	08.4		688
1692	1983	11	04.14444	01	42	50.80	+09	45	15.7		688
1692	1983	11	04.21389	01	42	47.52	+09	44	55.1		688
1753	1983	11	07.35486	04	12	44.14	+21	14	16.4		688
1768	1983	05	07.25139	14	22	54.99	-16	47	41.3	17.0	688
1768	1983	05	07.31736	14	22	51.34	-16	47	24.3		688
1768	1983	05	15.19931	14	15	34.55	-16	16	33.7	17.0	688
1768	1983	05	15.25903	14	15	31.20	-16	16	17.3		688
1874	1983	03	17.19583	11	30	22.76	+04	45	55.4	1	688
1874	1983	03	17.23403	11	30	21.42	+04	46	07.4		688
1905	1983	11	28.21181	04	24	17.11	+18	33	47.6	17.5	688
1905	1983	11	28.27292	04	24	12.90	+18	33	36.5		688
1905	1983	12	01.30347	04	20	46.29	+18	23	23.4		688
1905	1983	12	01.34028	04	20	43.61	+18	23	17.2		688
1905	1983	12	05.20000	04	16	23.42	+18	10	32.2		688
1905	1983	12	05.22431	04	16	21.60	+18	10	26.8		688
1905	1983	12	06.18889	04	15	17.46	+18	07	21.0		688
1905	1983	12	06.22569	04	15	14.89	+18	07	16.3		688
1940	1983	08	13.31111	21	40	48.79	-05	05	46.6		688

1940	1983	08	13.34167	21	40	47.33	-05	05	50.7		688
1956	1983	04	01.16736	10	33	47.36	+09	33	45.1		688
1964	1983	08	13.31111	21	49	58.83	-08	37	51.2		688
1964	1983	08	13.34167	21	49	56.98	-08	37	59.0		688
2015	1983	10	12.24653	01	05	02.95	+19	56	07.5		688
2015	1983	10	12.27708	01	05	00.65	+19	56	03.6		688
2020	1983	05	06.14583	10	04	40.40	+16	14	16.7		688
2020	1983	05	06.17639	10	04	41.34	+16	14	13.9		688
2024	1983	05	06.30764	15	22	04.01	-14	11	49.0		688
2024	1983	05	06.33958	15	22	02.00	-14	11	46.3		688
2042	1983	09	10.35625	01	46	46.10	+10	22	56.8		688
2042	1983	09	10.40833	01	46	45.10	+10	22	57.5		688
2042	1983	10	12.29236	01	26	10.99	+09	45	09.7		688
2042	1983	10	12.32292	01	26	09.26	+09	45	05.4		688
2042	1983	11	04.12569	01	06	14.72	+08	45	11.1		688
2042	1983	11	04.19514	01	06	11.45	+08	45	00.8		688
2046	1983	05	06.30764	15	09	26.34	-15	53	48.2		688
2046	1983	05	06.33958	15	09	24.84	-15	53	43.2		688
2067	1983	04	01.16736	10	16	38.53	+11	33	41.8		688
2087	1983	04	01.16736	10	24	11.45	+13	04	09.4		688
2111	1983	04	01.16736	10	18	47.40	+09	38	19.9		688
2123	1983	09	10.35625	01	42	36.60	+12	01	37.2		688
2123	1983	09	10.40833	01	42	35.66	+12	01	32.1		688
2123	1983	10	12.29236	01	22	51.20	+10	21	01.3		688
2123	1983	10	12.32292	01	22	49.66	+10	20	52.4		688
2123	1983	11	04.12569	01	05	17.75	+08	35	09.8		688
2123	1983	11	04.19514	01	05	14.84	+08	34	52.1		688
2142	1983	03	17.19583	11	29	51.12	+03	35	37.8		688
2142	1983	03	17.23403	11	29	49.33	+03	35	49.9		688
2144	1983	11	28.21181	04	35	55.80	+17	49	05.8		688
2144	1983	11	28.27292	04	35	52.36	+17	48	59.5		688
2144	1983	12	01.30347	04	33	04.02	+17	43	58.4		688
2144	1983	12	01.34028	04	33	01.88	+17	43	55.5		688
2144	1983	12	05.20000	04	29	27.26	+17	37	52.3		688
2144	1983	12	05.22431	04	29	25.67	+17	37	49.8		688
2144	1983	12	06.18889	04	28	32.49	+17	36	24.2		688
2144	1983	12	06.22569	04	28	30.46	+17	36	21.1		688
2166	1983	10	11.23958	02	00	49.59	+05	51	51.6		688
2166	1983	10	11.27986	02	00	47.23	+05	51	32.4		688
2166	1983	10	12.30764	01	59	50.68	+05	43	28.2		688
2166	1983	10	12.33819	01	59	48.81	+05	43	13.3		688
2166	1983	11	04.14444	01	38	43.89	+03	07	56.3		688
2166	1983	11	04.21389	01	38	40.45	+03	07	34.7		688
2173	1983	03	17.19583	11	53	53.14	+01	41	02.0		688
2173	1983	03	17.23403	11	53	51.53	+01	41	19.6		688
2181	1983	09	10.35625	01	47	59.96	+10	11	57.2		688
2181	1983	09	10.40833	01	47	58.62	+10	12	04.1		688
2181	1983	10	12.29236	01	22	28.74	+10	18	51.4		688
2181	1983	10	12.32292	01	22	26.63	+10	18	48.9		688
2181	1983	11	04.12569	00	59	38.41	+09	52	13.6		688
2181	1983	11	04.19514	00	59	34.91	+09	52	08.9	1	688
2201	1983	07	02.24653	14	11	59.37	-15	42	05.1		688
2201	1983	07	02.26736	14	12	12.04	-15	43	15.8	3	688
2201	1983	07	04.17361	14	29	26.85	-17	17	01.6		688
2201	1983	07	04.19306	14	29	36.71	-17	17	53.8		688
2201	1983	07	10.18125	15	12	08.46	-20	37	21.0		688
2201	1983	07	10.20833	15	12	17.91	-20	37	59.3		688
2201	1983	07	14.23333	15	33	40.95	-22	00	05.3		688
2201	1983	07	15.25278	15	38	26.54	-22	16	38.7		688

2204		1983	10	11.12639	21	40	18.94	-15	08	52.7	688
2206		1983	09	12.37014	00	44	43.20	-10	35	47.2	688
2207		1983	03	17.19583	11	34	01.30	+05	04	08.7	688
2207		1983	03	17.23403	11	34	00.17	+05	04	17.4	688
2224		1983	05	07.25139	14	28	32.59	-13	57	09.1	688
2224		1983	05	07.31736	14	28	29.14	-13	56	57.2	688
2224		1983	05	15.19931	14	22	04.31	-13	33	04.4	688
2224		1983	05	15.25903	14	22	01.57	-13	32	53.0	688
2230		1983	11	28.21181	04	21	00.08	+17	23	29.0	688
2230		1983	11	28.27292	04	20	56.62	+17	23	21.9	688
2230		1983	12	01.30347	04	18	08.47	+17	16	44.8	688
2230		1983	12	01.34028	04	18	06.36	+17	16	40.3	688
2230		1983	12	05.20000	04	14	34.95	+17	08	43.2	688
2230		1983	12	05.22431	04	14	33.49	+17	08	38.5	688
2230		1983	12	06.18889	04	13	41.56	+17	06	46.0	688
2230		1983	12	06.22569	04	13	39.60	+17	06	41.8	688
2264		1983	09	10.35625	01	30	21.59	+09	38	47.5	688
2264		1983	09	10.40833	01	30	20.33	+09	38	40.0	688
2264		1983	11	04.12569	00	54	07.51	+05	57	27.2	688
2264		1983	11	04.19514	00	54	05.05	+05	57	11.5	688
2271		1983	04	01.16736	10	13	54.48	+13	17	10.3	688
2273		1983	05	15.19931	14	26	08.02	-14	13	45.0	688
2273		1983	05	15.25903	14	26	04.98	-14	13	31.1	688
2275		1983	10	11.23958	01	45	05.75	+09	33	14.8	16.2 688
2275		1983	10	11.27986	01	45	03.91	+09	32	51.1	688
2275		1983	10	12.30764	01	44	14.93	+09	22	24.3	16.5 688
2275		1983	10	12.33819	01	44	13.31	+09	22	05.5	688
2275		1983	11	04.14444	01	26	34.48	+05	43	07.6	16.2 688
2275		1983	11	04.21389	01	26	31.73	+05	42	34.3	688
2284		1983	05	06.14583	10	07	24.67	+15	02	09.7	688
2293		1983	05	06.30764	15	06	04.91	-17	50	51.4	688
2293		1983	05	06.33958	15	06	03.33	-17	50	46.5	688
2312		1983	05	06.14583	10	27	15.94	+15	44	20.0	688
2312		1983	05	06.17639	10	27	16.19	+15	44	16.1	688
2328		1983	07	04.21042	17	43	28.83	-06	30	29.2	688
2328		1983	07	04.24236	17	43	27.25	-06	30	34.9	688
2331		1983	08	13.31111	21	37	20.63	-08	38	27.6	17.0 688
2331		1983	08	13.34167	21	37	18.92	-08	38	34.9	688
2353		1983	05	07.25139	14	19	03.00	-16	02	38.0	688
2353		1983	05	07.31736	14	18	59.39	-16	02	26.2	688
2353		1983	05	15.19931	14	12	16.97	-15	39	52.6	688
2353		1983	05	15.25903	14	12	13.92	-15	39	41.8	688
2359		1983	05	07.25139	14	26	39.04	-12	15	43.0	688
2359		1983	05	07.31736	14	26	35.28	-12	15	17.4	688
2359		1983	05	15.19931	14	19	55.08	-11	24	08.0	688
2359		1983	05	15.25903	14	19	52.10	-11	23	46.9	688
2366		1983	11	07.35486	04	02	37.94	+22	48	22.8	688
2380		1983	04	01.16736	10	19	47.95	+08	56	59.6	688
2400		1983	08	13.31111	21	54	29.58	-04	55	14.7	17.0 688
2400		1983	08	13.34167	21	54	28.16	-04	55	27.2	688
2419		1983	03	17.19583	11	33	04.41	+04	10	12.3	688
2419		1983	03	17.23403	11	33	02.17	+04	10	34.1	688
2421		1983	06	07.25833	16	57	51.29	-22	10	26.6	688
2421		1983	06	07.29028	16	57	49.53	-22	10	28.4	688
2426		1983	11	07.35486	04	09	39.54	+20	46	45.8	688
2450		1983	08	13.32639	22	08	02.54	-13	25	17.5	688
2450		1983	08	13.35764	22	08	01.22	-13	25	26.4	688
2450		1983	08	31.17465	21	54	45.03	-14	46	14.9	688
2450		1983	08	31.20417	21	54	43.72	-14	46	22.8	688

2450		1983	10	11.12639	21	37	16.98	-16	17	56.0		688
2450		1983	10	11.18819	21	37	16.66	-16	17	57.2		688
2474		1983	06	07.25833	16	41	05.91	-18	13	43.8		688
2474		1983	06	07.29028	16	41	04.25	-18	13	31.4		688
2535		1983	05	06.30764	15	19	05.25	-13	04	46.0		688
2535		1983	05	06.33958	15	19	03.16	-13	04	37.3		688
2563		1983	05	06.30764	15	13	08.64	-15	03	41.2		688
2563		1983	05	06.33958	15	13	07.11	-15	03	36.5		688
2566		1983	05	06.30764	15	12	12.51	-17	23	09.4		688
2566		1983	05	06.33958	15	12	10.70	-17	23	06.5		688
2589		1983	05	06.32431	16	03	49.94	-16	48	01.1	17.2	688
2589		1983	05	06.35556	16	03	48.48	-16	47	53.6		688
2603		1983	05	06.32431	16	03	14.82	-22	17	59.4		688
2603		1983	05	06.35556	16	03	13.22	-22	17	54.0		688
2631		1983	05	07.25139	14	28	12.41	-19	06	56.1		688
2631		1983	05	07.31736	14	28	09.06	-19	06	45.2		688
2631		1983	05	15.19931	14	21	13.37	-18	48	55.0		688
2631		1983	05	15.25903	14	21	10.35	-18	48	46.2		688
2668		1983	08	13.31111	21	55	06.13	-09	55	30.2		688
2668		1983	08	13.34167	21	55	04.30	-09	55	33.8		688
2672		1983	04	19.36111	14	42	19.63	+09	05	59.0	16.5	688
2672		1983	04	19.39167	14	42	18.19	+09	06	12.8		688
2674		1983	03	17.19583	11	30	55.14	+02	51	40.6		688
2674		1983	03	17.23403	11	30	53.91	+02	51	48.7		688
2687		1983	09	12.37014	00	28	00.88	-12	26	51.5		688
2711		1983	08	13.31111	21	44	33.48	-09	18	05.6		688
2711		1983	08	13.34167	21	44	32.06	-09	18	18.2		688
2719		1983	03	17.19583	11	33	21.29	+03	49	53.7		688
2719		1983	03	17.23403	11	33	18.87	+03	50	08.4		688
2724		1983	09	10.35625	01	42	55.98	+06	47	32.5		688
2724		1983	09	10.40833	01	42	54.89	+06	47	19.9		688
2739		1983	11	28.21181	04	16	37.75	+22	02	13.3		688
2739		1983	11	28.27292	04	16	33.49	+22	02	04.8		688
2739		1983	12	01.30347	04	13	18.31	+21	52	35.6		688
2739		1983	12	01.34028	04	13	16.17	+21	52	29.5		688
2739		1983	12	05.20000	04	09	12.65	+21	40	11.2		688
2739		1983	12	05.22431	04	09	11.17	+21	40	10.5		688
2739		1983	12	06.18889	04	08	11.87	+21	37	03.6	1	688
2739		1983	12	06.22569	04	08	09.25	+21	36	55.3		688
2770		1983	08	13.32639	22	25	49.80	-14	59	18.8		688
2770		1983	08	13.35764	22	25	48.03	-14	59	29.0		688
2793		1983	09	12.40139	01	13	29.18	+17	51	04.6		688
2793		1983	09	12.43194	01	13	27.88	+17	51	10.5		688
2793		1983	10	12.24653	00	47	30.70	+18	24	43.4		688
2793		1983	10	12.27708	00	47	29.02	+18	24	42.8		688
2807		1983	09	10.35625	01	46	30.46	+08	03	15.9		688
2807		1983	09	10.40833	01	46	29.21	+08	03	16.0		688
2807		1983	10	12.29236	01	24	25.62	+07	05	43.0		688
2807		1983	10	12.32292	01	24	23.98	+07	05	38.8		688
2807		1983	11	04.12569	01	04	08.85	+06	10	15.8		688
2807		1983	11	04.19514	01	04	05.39	+06	10	07.3		688
2808		1983	08	13.31111	21	54	02.30	-10	13	48.1	16.5	688
2808		1983	08	13.34167	21	54	00.82	-10	13	50.3		688
2808		1983	08	31.17465	21	39	05.31	-10	45	10.9		688
2808		1983	08	31.20417	21	39	03.89	-10	45	14.4		688
2847		1983	11	28.21181	04	28	19.93	+21	43	46.8		688
2847		1983	11	28.27292	04	28	15.72	+21	43	34.8		688
2847		1983	12	01.30347	04	24	40.06	+21	32	15.5		688
2847		1983	12	01.34028	04	24	37.42	+21	32	06.8		688

2847		1983	12	05.20000	04	20	04.95	+21	17	21.6			688
2847		1983	12	05.22431	04	20	03.01	+21	17	15.1			688
2847		1983	12	06.18889	04	18	55.81	+21	13	32.4			688
2847		1983	12	06.22569	04	18	53.43	+21	13	24.0			688
2857		1983	05	06.14583	10	14	11.48	+14	24	18.0			688
2857		1983	05	06.17639	10	14	12.72	+14	24	10.5			688
2869		1983	03	17.19583	11	42	18.13	+02	40	43.0			688
2869		1983	03	17.23403	11	42	15.74	+02	40	47.8			688
2897		1983	05	06.30764	15	18	29.82	-18	26	12.3	17.0		688
2897		1983	05	06.33958	15	18	27.44	-18	26	12.5			688
2920		1983	07	04.29236	19	19	12.57	+00	20	51.1	16.8		688
2920		1983	07	04.33194	19	19	11.26	+00	20	52.1			688
2935		1983	09	12.37014	00	34	44.66	-11	46	05.8			688
2943		1983	09	04.33750	00	07	31.37	+18	14	47.0	16.2		688
2943		1983	09	04.36806	00	07	29.77	+18	14	59.7			688
2945		1983	09	10.35625	01	52	32.58	+07	12	05.2	16.8		688
2945		1983	09	10.40833	01	52	31.80	+07	11	57.7			688
2945		1983	11	04.12569	01	14	34.96	+03	33	09.8	16.5		688
2945		1983	11	04.19514	01	14	31.99	+03	32	57.8			688
2949		1983	09	14.24306	22	17	20.10	-10	24	45.6			688
2949		1983	09	14.25069	22	17	19.69	-10	24	45.5			688
2950		1983	09	12.37014	00	42	57.96	-12	34	55.3			688
1938	WA	1983	11	28.21181	04	15	15.27	+20	02	54.0	16.5		688
1938	WA	1983	11	28.27292	04	15	11.95	+20	02	44.6			688
1938	WA	1983	12	01.30347	04	12	32.37	+19	55	48.3	16.5		688
1938	WA	1983	12	01.34028	04	12	30.42	+19	55	43.9			688
1938	WA	1983	12	05.20000	04	09	09.75	+19	46	53.7	16.8		688
1938	WA	1983	12	05.22431	04	09	08.28	+19	46	50.9			688
1938	WA	1983	12	06.18889	04	08	18.96	+19	44	39.8	16.8		688
1938	WA	1983	12	06.22569	04	08	17.07	+19	44	34.1			688
1951	AJ	1983	05	07.25139	14	36	47.97	-17	40	11.8	17.0		688
1951	AJ	1983	05	07.31736	14	36	44.01	-17	39	55.6			688
1951	AJ	1983	05	15.25903	14	29	21.81	-17	05	36.5	17.2		688
1970	AF1	1981	08	30.22431	18	55	23.70	-13	17	29.6	17.0	1	688
1970	PA	1983	11	07.29514	03	10	51.73	+41	02	32.3	16.2		688
1970	PA	1983	11	07.33403	03	10	49.16	+41	02	28.3			688
1974	SO2	1983	05	07.25139	14	15	49.72	-18	23	49.1	16.5		688
1974	SO2	1983	05	07.31736	14	15	46.05	-18	23	17.4			688
1974	SO2	1983	05	15.19931	14	09	02.53	-17	20	22.4	16.2		688
1974	SO2	1983	05	15.25903	14	08	59.42	-17	19	55.0			688
1976	QN1	1983	09	10.35625	01	47	02.76	+09	52	22.5	16.8		688
1976	QN1	1983	09	10.40833	01	47	02.02	+09	52	14.4			688
1976	QN1	1983	10	12.29236	01	26	17.74	+07	16	22.9	16.5		688
1976	QN1	1983	10	12.32292	01	26	15.95	+07	16	11.8			688
1976	QN1	1983	11	04.12569	01	06	33.13	+05	04	58.4	17.0		688
1976	QN1	1983	11	04.19514	01	06	30.23	+05	04	40.5			688
1977	RE7	1983	11	28.21181	04	26	45.38	+18	40	00.6	16.5		688
1977	RE7	1983	11	28.27292	04	26	42.01	+18	39	54.2			688
1977	RE7	1983	12	01.30347	04	23	59.35	+18	34	09.3	16.2		688
1977	RE7	1983	12	01.34028	04	23	57.38	+18	34	04.5			688
1977	RE7	1983	12	05.20000	04	20	32.60	+18	26	59.5	16.2		688
1977	RE7	1983	12	05.22431	04	20	31.22	+18	26	56.0			688
1977	RE7	1983	12	06.18889	04	19	40.71	+18	25	13.8	16.5		688
1977	RE7	1983	12	06.22569	04	19	38.96	+18	25	11.4			688
1977	SS1	1983	11	07.31528	03	23	13.07	+28	13	41.0	15.8		688
1977	SS1	1983	11	07.37361	03	23	09.44	+28	13	51.0			688
1978	PA	1983	07	04.21042	17	53	25.02	-08	07	33.2	15.8		688
1978	PA	1983	07	04.24236	17	53	22.27	-08	08	17.1			688
1978	RU1	1983	11	04.12569	01	10	53.39	+06	14	58.7	17.5	2	688

1978	RU1	1983	11	04.19514	01	10	50.44	+06	14	38.3		3	688
1978	WH14	1983	09	10.35625	01	50	10.45	+09	00	54.0	17.2		688
1978	WH14	1983	09	10.40833	01	50	09.68	+09	00	46.6			688
1978	WH14	1983	10	12.29236	01	32	57.83	+07	01	28.6	16.8		688
1978	WH14	1983	10	12.32292	01	32	56.29	+07	01	19.7			688
1978	WH14	1983	11	04.12569	01	15	41.33	+05	18	23.4	16.8		688
1978	WH14	1983	11	04.19514	01	15	38.54	+05	18	08.1			688
1979	MC	1983	09	12.37014	00	37	29.43	-09	05	32.3			688
1979	RZ	1983	05	06.30764	15	03	46.12	-15	06	59.3	17.0		688
1979	RZ	1983	05	06.33958	15	03	44.61	-15	06	46.2			688
1980	OE	1983	07	04.22708	18	08	48.34	-24	17	34.8	16.5	3	688
1980	OE	1983	07	04.25764	18	08	46.23	-24	17	33.0			688
1980	VR1	1983	05	06.32431	15	56	24.58	-21	49	51.7	16.8		688
1980	VR1	1983	05	06.35556	15	56	22.90	-21	49	56.9			688
1981	CY	1983	11	28.21181	04	25	19.06	+19	48	28.9	16.2		688
1981	CY	1983	11	28.27292	04	25	14.49	+19	48	37.6			688
1981	CY	1983	12	01.30347	04	21	39.53	+19	53	55.2	16.0		688
1981	CY	1983	12	01.34028	04	21	36.95	+19	53	58.9			688
1981	CY	1983	12	05.20000	04	17	03.54	+20	00	45.2	16.0		688
1981	CY	1983	12	05.22431	04	17	01.67	+20	00	47.8			688
1981	CY	1983	12	06.18889	04	15	54.09	+20	02	29.4	16.2		688
1981	CY	1983	12	06.22569	04	15	51.56	+20	02	33.1			688
1981	EH14	1983	10	11.23958	01	58	40.63	+10	55	07.5	17.0		688
1981	EH14	1983	10	12.30764	01	58	00.54	+10	40	44.0	16.8		688
1981	EH14	1983	10	12.33819	01	57	59.06	+10	40	21.1			688
1981	EH14	1983	11	04.14444	01	42	35.39	+05	30	54.6	16.8		688
1981	EH14	1983	11	04.21389	01	42	32.79	+05	30	04.0			688
1981	EE20	1983	09	10.35625	01	41	46.75	+10	23	26.9	17.5		688
1981	EE20	1983	10	12.29236	01	21	56.39	+08	19	51.3	17.2		688
1981	EE20	1983	10	12.32292	01	21	54.88	+08	19	42.9			688
1981	EE20	1983	11	04.12569	01	05	46.42	+06	37	33.2	17.5		688
1981	EE20	1983	11	04.19514	01	05	43.74	+06	37	14.5			688
1981	JA3	1983	10	11.23958	01	45	50.50	+05	16	00.9	17.0		688
1981	JA3	1983	10	11.27986	01	45	48.52	+05	15	56.9			688
1981	JA3	1983	10	12.30764	01	44	56.13	+05	14	00.8	16.8		688
1981	JA3	1983	10	12.33819	01	44	54.54	+05	13	57.5			688
1981	JA3	1983	11	04.14444	01	25	18.52	+04	41	34.1	16.8		688
1981	JA3	1983	11	04.21389	01	25	15.16	+04	41	30.1			688
1981	YD	1983	05	06.32431	16	12	09.96	-19	02	44.4	17.0		688
1981	YD	1983	05	06.35556	16	12	08.21	-19	02	41.7			688
1982	HQ1	1983	11	28.21181	04	14	10.13	+22	26	36.5	17.2		688
1982	HQ1	1983	11	28.27292	04	14	05.69	+22	26	36.5			688
1982	HQ1	1983	12	01.30347	04	10	21.93	+22	26	08.9	17.5	1	688
1982	HQ1	1983	12	05.20000	04	05	41.05	+22	24	56.7	17.2		688
1982	HQ1	1983	12	05.22431	04	05	39.14	+22	24	58.4			688
1982	HQ1	1983	12	06.18889	04	04	31.33	+22	24	35.5	17.2		688
1982	HQ1	1983	12	06.22569	04	04	28.75	+22	24	35.0			688
1982	KM	1983	11	28.21181	04	28	44.07	+19	15	46.4	17.0		688
1982	KM	1983	11	28.27292	04	28	40.29	+19	15	32.7			688
1982	KM	1983	12	01.30347	04	25	21.26	+19	02	58.4	17.0		688
1982	KM	1983	12	01.34028	04	25	18.55	+19	02	49.8			688
1982	KM	1983	12	05.20000	04	21	08.30	+18	47	04.0	16.8		688
1982	KM	1983	12	05.22431	04	21	06.56	+18	46	55.8			688
1982	KM	1983	12	06.18889	04	20	05.05	+18	43	06.6	17.0	3	688
1982	KM	1983	12	06.22569	04	20	02.92	+18	42	55.6			688
1983	AY	1983	01	09.26944	08	05	47.30	+19	11	27.9			688
1983	CS2	1983	04	01.16736	10	15	38.62	+10	45	14.4			688
1983	DG	1983	04	01.16736	10	32	52.59	+09	51	48.8			688
1983	EU	1983	03	17.19583	11	30	32.10	+01	47	18.0	16.2		688

1983	EU		1983	03	17.23403	11	30	29.88	+01	47	37.6		688
1983	EV		1983	03	17.19583	11	41	30.01	+03	54	59.8	16.8	688
1983	EV		1983	03	17.23403	11	41	27.90	+03	55	08.4		688
1983	EW		1983	03	17.19583	11	53	14.80	+01	52	53.5	16.2	688
1983	EW		1983	03	17.23403	11	53	12.50	+01	53	12.9		688
1983	GQ		1983	05	07.25139	14	21	14.71	-13	41	53.8	16.5	688
1983	GQ		1983	05	07.31736	14	21	10.72	-13	41	35.9		688
1983	GQ		1983	05	15.25903	14	13	36.48	-13	05	23.0	16.8	688
1983	HZ1	*	1983	04	19.36111	14	43	16.09	+12	43	14.7	16.5 7	688
1983	HZ1		1983	04	19.39167	14	43	14.55	+12	43	22.9		688
1983	JL	*	1983	05	06.30764	15	06	42.10	-15	49	54.4	7	688
1983	JL		1983	05	06.33958	15	06	39.89	-15	49	50.1		688
1983	JM	*	1983	05	06.30764	15	12	40.17	-15	46	51.0	7	688
1983	JM		1983	05	06.33958	15	12	38.50	-15	46	36.3		688
1983	JN	*	1983	05	06.32431	15	54	24.82	-23	14	21.2	16.5 7	688
1983	JN		1983	05	06.35556	15	54	23.45	-23	14	05.7		688
1983	JO	*	1983	05	06.32431	15	58	53.81	-22	46	48.2	17.0 7	688
1983	JO		1983	05	06.35556	15	58	51.80	-22	46	44.8		688
1983	JP	*	1983	05	06.32431	16	01	35.60	-19	42	36.7	17.0 7	688
1983	JP		1983	05	06.35556	16	01	34.86	-19	42	48.3	3	688
1983	JQ	*	1983	05	06.32431	16	08	04.65	-17	08	03.6	17.2 7	688
1983	JQ		1983	05	06.35556	16	08	03.39	-17	07	59.1		688
1983	JR	*	1983	05	07.25139	14	23	13.95	-14	54	33.1	16.2 7	688
1983	JR		1983	05	07.31736	14	23	10.63	-14	53	48.2		688
1983	JR		1983	05	15.19931	14	17	11.85	-13	24	23.1	16.5	688
1983	JR		1983	05	15.25903	14	17	09.27	-13	23	43.7		688
1983	JS	*	1983	05	07.25139	14	27	11.34	-15	59	26.0	16.8 7	688
1983	JS		1983	05	07.31736	14	27	06.95	-15	59	24.0		688
1983	JS		1983	05	15.19931	14	19	10.79	-15	52	12.8	16.8	688
1983	JS		1983	05	15.25903	14	19	07.30	-15	52	10.4		688
1983	JT	*	1983	05	07.25139	14	32	48.01	-17	49	04.9	16.8 7	688
1983	JT		1983	05	07.31736	14	32	43.47	-17	48	56.6		688
1983	JT		1983	05	15.19931	14	24	01.22	-17	25	41.5	16.8	688
1983	JT		1983	05	15.25903	14	23	57.37	-17	25	30.3		688
1983	OJ	*	1983	07	17.35556	22	11	28.73	-07	00	49.0	16.5 4	688
1983	OJ		1983	07	17.40972	22	11	27.38	-07	00	38.9		688
1983	OJ		1983	08	13.31111	21	51	58.49	-06	17	16.6	16.0	688
1983	OJ		1983	08	13.34167	21	51	56.62	-06	17	16.0		688
1983	PU	*	1983	08	13.32639	22	08	31.52	-10	47	22.6	16.8 4	688
1983	PU		1983	08	13.35764	22	08	28.30	-10	47	01.7		688
1983	QD		1983	09	04.33750	00	26	25.93	+17	58	40.4	17.0	688
1983	QD		1983	09	04.36806	00	26	24.51	+17	58	47.7		688
1983	RJ		1983	09	12.37014	00	26	35.18	-11	27	15.7		688
1983	RO		1983	10	11.12639	21	49	07.50	-12	03	29.0	17.2	688
1983	RO		1983	10	11.18819	21	49	09.13	-12	03	22.4		688
1983	RF2		1983	09	12.37014	00	30	52.02	-12	39	27.5		688
1983	RG2		1983	09	12.37014	00	31	56.77	-10	55	31.6		688
1983	TL		1983	09	10.35625	01	41	19.47	+10	31	22.9	17.8	688
1983	TL		1983	09	10.40833	01	41	18.46	+10	31	25.5		688
1983	TL		1983	10	12.29236	01	21	44.19	+09	53	26.0	16.5	688
1983	TL		1983	10	12.32292	01	21	42.60	+09	53	22.3		688
1983	TL		1983	11	04.12569	01	03	45.89	+08	55	10.2	16.8	688
1983	TL		1983	11	04.19514	01	03	43.19	+08	55	01.1		688
1983	TR		1983	10	09.29722	01	18	59.54	+10	25	36.1		688
1983	TR		1983	10	09.32778	01	18	58.43	+10	25	22.7		688
1983	TR		1983	10	12.29236	01	17	00.11	+10	03	39.3	15.8	688
1983	TR		1983	10	12.32292	01	16	58.71	+10	03	24.5		688
1983	TR		1983	11	04.12569	01	02	59.01	+07	18	20.3	15.8	688
1983	TR		1983	11	04.19514	01	02	56.63	+07	17	51.6		688

1983	TU		1983	10	11.23958	01	55	17.02	+07	25	34.2	16.5	688
1983	TU		1983	10	11.27986	01	55	14.48	+07	25	32.3		688
1983	TU		1983	10	12.30764	01	54	11.06	+07	24	38.0	16.5	688
1983	TU		1983	10	12.33819	01	54	08.93	+07	24	37.4		688
1983	TU		1983	11	04.14444	01	30	39.38	+07	13	56.3	16.5	688
1983	TU		1983	11	04.21389	01	30	35.55	+07	13	58.6		688
1983	TJ1		1983	09	10.35625	01	39	11.07	+11	23	25.9	17.0	688
1983	TJ1		1983	09	10.40833	01	39	10.44	+11	23	08.2		688
1983	TJ1		1983	10	12.29236	01	23	26.98	+07	02	09.1	16.8	688
1983	TJ1		1983	10	12.32292	01	23	25.55	+07	01	52.5		688
1983	TJ1		1983	11	04.12569	01	08	28.70	+03	36	08.5	17.0	688
1983	TJ1		1983	11	04.19514	01	08	26.44	+03	35	35.0		688
1983	TM1		1983	09	10.35625	01	37	31.67	+07	56	27.4	17.0	688
1983	TM1		1983	09	10.40833	01	37	30.20	+07	56	15.6		688
1983	TM1	*	1983	10	12.29236	01	12	23.84	+06	20	21.7	16.8	4 688
1983	TM1		1983	10	12.32292	01	12	22.25	+06	20	16.6		688
1983	TN1	*	1983	10	12.29236	01	16	08.77	+12	01	54.6	16.8	4 688
1983	TN1		1983	10	12.32292	01	16	06.92	+12	01	42.1		688
1983	TN1		1983	11	04.12569	00	56	39.49	+09	12	48.0	16.5	688
1983	TN1		1983	11	04.19514	00	56	36.50	+09	12	18.6		688
1983	TO1	*	1983	10	12.29236	01	17	27.83	+07	15	59.8	16.8	4 688
1983	TO1		1983	10	12.32292	01	17	25.75	+07	15	48.9		3 688
1983	TO1		1983	11	04.12569	00	59	16.02	+04	01	00.9	17.2	688
1983	TO1		1983	11	04.19514	00	59	13.23	+04	00	39.5		688
1983	TP1	*	1983	10	12.29236	01	22	31.39	+12	25	15.1	16.8	4 688
1983	TP1		1983	10	12.32292	01	22	29.48	+12	25	06.8		688
1983	TQ1		1983	09	10.35625	01	49	44.48	+08	22	11.6	17.5	688
1983	TQ1		1983	09	10.40833	01	49	43.76	+08	22	06.2		688
1983	TQ1	*	1983	10	12.29236	01	32	31.01	+06	38	05.0	16.8	4 688
1983	TQ1		1983	10	12.32292	01	32	29.37	+06	37	55.2		688
1983	TQ1		1983	11	04.12569	01	15	17.52	+05	10	21.9	17.0	688
1983	TQ1		1983	11	04.19514	01	15	14.56	+05	10	11.0		688
1983	TR1	*	1983	10	12.30764	01	41	52.94	+10	50	35.0	17.2	4 688
1983	TR1		1983	10	12.33819	01	41	49.93	+10	50	59.6		688
1983	TS1		1983	10	11.23958	01	43	06.58	+06	38	08.4	16.8	688
1983	TS1		1983	10	11.27986	01	43	04.76	+06	37	54.8		688
1983	TS1	*	1983	10	12.30764	01	42	18.67	+06	33	31.7	16.2	4 688
1983	TS1		1983	10	12.33819	01	42	17.23	+06	33	24.1		688
1983	TS1		1983	11	04.14444	01	25	15.14	+05	06	05.4	17.0	688
1983	TS1		1983	11	04.21389	01	25	12.24	+05	05	54.0		688
1983	TT1		1983	10	11.23958	01	48	54.83	+08	05	03.8	16.5	688
1983	TT1		1983	10	11.27986	01	48	52.11	+08	05	11.8		688
1983	TT1	*	1983	10	12.30764	01	47	44.52	+08	08	38.5	16.2	6 688
1983	TT1		1983	10	12.33819	01	47	42.29	+08	08	42.6		688
1983	TT1		1983	11	04.14444	01	21	48.70	+09	26	51.7	16.2	688
1983	TT1		1983	11	04.21389	01	21	44.32	+09	27	06.5		688
1983	TU1		1983	10	11.23958	01	49	58.45	+03	56	58.4	17.0	688
1983	TU1		1983	10	11.27986	01	49	56.08	+03	56	57.8		688
1983	TU1	*	1983	10	12.30764	01	48	53.69	+03	55	42.1	16.8	4 688
1983	TU1		1983	10	12.33819	01	48	51.85	+03	55	40.7		688
1983	TU1		1983	11	04.14444	01	25	45.53	+03	49	25.6	17.0	688
1983	TU1		1983	11	04.21389	01	25	41.66	+03	49	30.5		688
1983	TV1		1983	10	11.23958	01	49	54.08	+10	36	31.7	17.2	688
1983	TV1		1983	10	11.27986	01	49	52.23	+10	36	24.1		1 688
1983	TV1	*	1983	10	12.30764	01	49	01.55	+10	32	38.3	17.0	4 688
1983	TV1		1983	10	12.33819	01	48	59.90	+10	32	29.6		2 688
1983	TV1		1983	11	04.14444	01	30	04.71	+09	06	16.6	17.0	688
1983	TV1		1983	11	04.21389	01	30	01.49	+09	06	02.2		688
1983	TW1		1983	10	11.23958	01	54	53.82	+04	48	09.1	17.2	688

1983	TW1		1983	10	11.27986	01	54	51.74	+04	47	58.0		688
1983	TW1	*	1983	10	12.30764	01	53	57.20	+04	42	08.5	17.2 4	688
1983	TW1		1983	10	12.33819	01	53	55.40	+04	41	57.6		688
1983	TW1		1983	11	04.14444	01	33	52.66	+02	55	01.6	17.0	688
1983	TW1		1983	11	04.21389	01	33	49.44	+02	54	47.0		688
1983	TX1	*	1983	10	12.24653	00	47	32.39	+19	44	35.9	16.8 4	688
1983	TX1		1983	10	12.27708	00	47	30.33	+19	44	34.2		688
1983	TY1	*	1983	10	12.24653	00	55	14.56	+18	54	41.4	16.8 4	688
1983	TY1		1983	10	12.27708	00	55	12.31	+18	54	46.9		688
1983	TZ1	*	1983	10	12.24653	00	56	20.90	+15	08	25.8	16.5 4	688
1983	TZ1		1983	10	12.27708	00	56	19.04	+15	08	22.0		688
1983	TA2	*	1983	10	12.24653	00	57	23.32	+20	46	25.3	16.8 4	688
1983	TA2		1983	10	12.27708	00	57	22.04	+20	46	09.5		688
1983	UE		1983	10	11.23958	01	59	36.42	+10	40	56.4	16.2	688
1983	UE		1983	10	11.27986	01	59	34.36	+10	40	37.7		688
1983	UE		1983	10	12.30764	01	58	45.13	+10	32	48.3	16.2	688
1983	UE		1983	10	12.33819	01	58	43.47	+10	32	34.4		688
1983	UE		1983	11	04.14444	01	39	27.75	+07	40	18.4	16.0	688
1983	UE		1983	11	04.21389	01	39	24.61	+07	39	51.0		688
1983	VU	*	1983	11	04.12569	00	57	15.88	+03	29	48.9	16.8 4	688
1983	VU		1983	11	04.19514	00	57	12.41	+03	29	57.1		688
1983	VV		1983	10	12.29236	01	18	46.06	+12	14	16.8	16.5	688
1983	VV		1983	10	12.32292	01	18	44.38	+12	14	08.0		688
1983	VV	*	1983	11	04.12569	01	00	32.99	+10	31	21.0	17.2 4	688
1983	VV		1983	11	04.19514	01	00	30.38	+10	31	01.3		688
1983	VW	*	1983	11	04.12569	01	01	38.56	+05	50	38.7	17.2 4	688
1983	VW		1983	11	04.19514	01	01	36.13	+05	50	16.1		688
1983	VW1		1983	12	09.08542	03	21	13.53	+19	39	27.0	15.5	688
1983	VW1		1983	12	09.15208	03	21	11.14	+19	38	14.7		688
1983	WA		1983	11	28.21181	04	16	24.56	+20	27	55.0	16.8 3	688
1983	WA		1983	11	28.27292	04	16	20.59	+20	27	28.2		688
1983	WA		1983	12	01.30347	04	13	26.05	+20	07	00.5	17.0	688
1983	WA		1983	12	01.34028	04	13	23.74	+20	06	45.8		688
1983	WA		1983	12	05.20000	04	09	43.79	+19	40	32.1	17.0	688
1983	WA		1983	12	05.22431	04	09	42.33	+19	40	20.8		688
1983	WA		1983	12	06.22569	04	08	46.35	+19	33	35.9	17.0 1	688
1983	WB		1983	11	28.21181	04	17	49.07	+19	29	47.7	15.5	688
1983	WB		1983	11	28.27292	04	17	45.48	+19	29	50.1		688
1983	WB		1983	12	01.30347	04	14	52.46	+19	31	53.0	15.5	688
1983	WB		1983	12	01.34028	04	14	50.30	+19	31	54.6		688
1983	WB		1983	12	05.20000	04	11	11.73	+19	34	31.5	15.8	688
1983	WB		1983	12	05.22431	04	11	10.28	+19	34	32.4		688
1983	WB		1983	12	06.18889	04	10	16.23	+19	35	12.7	15.8	688
1983	WB		1983	12	06.22569	04	10	14.30	+19	35	14.6		688
1983	WC	*	1983	11	28.21181	04	18	30.56	+18	24	48.4	16.8 4	688
1983	WC		1983	11	28.27292	04	18	27.43	+18	24	44.6		688
1983	WC		1983	12	01.30347	04	15	50.85	+18	20	01.7	17.0	688
1983	WC		1983	12	01.34028	04	15	48.71	+18	19	58.2		688
1983	WC		1983	12	05.20000	04	12	32.30	+18	14	20.4	17.2	688
1983	WC		1983	12	05.22431	04	12	30.95	+18	14	18.9		688
1983	WC		1983	12	06.18889	04	11	42.99	+18	12	59.5	16.8	688
1983	WC		1983	12	06.22569	04	11	41.09	+18	12	58.7		688
1983	WD	*	1983	11	28.21181	04	18	54.73	+18	20	52.5	16.5 4	688
1983	WD		1983	11	28.27292	04	18	50.55	+18	20	56.8		688
1983	WD		1983	12	01.30347	04	15	26.31	+18	25	29.8	16.5 3	688
1983	WD		1983	12	05.20000	04	11	06.32	+18	31	37.0	16.8	688
1983	WD		1983	12	05.22431	04	11	04.60	+18	31	38.8		688
1983	WD		1983	12	06.18889	04	10	01.41	+18	33	13.2	16.8	688
1983	WD		1983	12	06.22569	04	09	58.96	+18	33	16.3		688

1983	WE	*	1983	11	28.21181	04	19	13.47	+21	38	14.4	16.8	4 688
1983	WE		1983	11	28.27292	04	19	09.74	+21	38	08.1		688
1983	WE		1983	12	01.30347	04	16	17.77	+21	34	03.9	17.2	688
1983	WE		1983	12	01.34028	04	16	15.16	+21	34	02.7		688
1983	WE		1983	12	06.18889	04	11	43.15	+21	27	08.0	17.0	688
1983	WE		1983	12	06.22569	04	11	41.30	+21	27	05.9		688
1983	WF	*	1983	11	28.21181	04	20	40.63	+15	47	43.1	17.0	4 688
1983	WF		1983	11	28.27292	04	20	36.93	+15	47	21.9		688
1983	WF		1983	12	01.30347	04	17	30.68	+15	30	11.0	17.0	1 688
1983	WF		1983	12	01.34028	04	17	28.60	+15	29	59.0		1 688
1983	WF		1983	12	06.18889	04	12	35.53	+15	04	04.5	17.2	688
1983	WF		1983	12	06.22569	04	12	33.52	+15	03	52.1		688
1983	WG	*	1983	11	28.21181	04	21	22.49	+17	42	56.4	16.2	4 688
1983	WG		1983	11	28.27292	04	21	18.48	+17	43	10.7		688
1983	WG		1983	12	01.30347	04	18	06.97	+17	54	23.0	16.2	688
1983	WG		1983	12	01.34028	04	18	04.71	+17	54	30.6		688
1983	WG		1983	12	05.20000	04	14	00.90	+18	09	13.8	16.2	688
1983	WG		1983	12	05.22431	04	13	59.15	+18	09	20.6		688
1983	WG		1983	12	06.18889	04	12	58.85	+18	13	06.3	16.5	688
1983	WG		1983	12	06.22569	04	12	56.47	+18	13	14.9		688
1983	WH	*	1983	11	28.21181	04	21	55.11	+21	22	02.0	16.5	4 688
1983	WH		1983	11	28.27292	04	21	50.90	+21	21	40.9		688
1983	WH		1983	12	01.30347	04	18	33.58	+21	04	02.8	16.5	1 688
1983	WH		1983	12	01.34028	04	18	31.00	+21	03	48.5		688
1983	WH		1983	12	05.20000	04	14	22.76	+20	41	05.0	17.0	688
1983	WH		1983	12	05.22431	04	14	20.94	+20	40	54.6		1 688
1983	WH		1983	12	06.22569	04	13	17.81	+20	35	04.1	16.8	688
1983	WJ	*	1983	11	28.21181	04	25	03.16	+18	58	27.5	17.0	4 688
1983	WJ		1983	11	28.27292	04	24	59.72	+18	58	21.9		688
1983	WJ		1983	12	06.18889	04	17	35.05	+18	50	26.3	16.8	688
1983	WJ		1983	12	06.22569	04	17	32.88	+18	50	25.7		1 688
1983	WK	*	1983	11	28.21181	04	26	01.34	+17	30	42.7	16.2	4 688
1983	WK		1983	11	28.27292	04	25	57.16	+17	31	15.2		688
1983	WK		1983	12	01.30347	04	22	35.07	+17	58	11.6	16.5	688
1983	WK		1983	12	01.34028	04	22	32.61	+17	58	30.6		688
1983	WK		1983	12	05.20000	04	18	18.42	+18	32	53.8	16.5	688
1983	WK		1983	12	05.22431	04	18	16.65	+18	33	07.1		688
1983	WK		1983	12	06.18889	04	17	14.36	+18	41	41.3	16.2	688
1983	WK		1983	12	06.22569	04	17	12.09	+18	41	59.7		688
1983	WL	*	1983	11	28.21181	04	26	16.15	+21	24	31.1	16.2	4 688
1983	WL		1983	11	28.27292	04	26	11.47	+21	24	46.4		688
1983	WL		1983	12	01.30347	04	22	30.24	+21	37	01.7	16.2	688
1983	WL		1983	12	01.34028	04	22	27.61	+21	37	09.8		688
1983	WL		1983	12	05.20000	04	17	46.12	+21	52	18.3	16.5	688
1983	WL		1983	12	05.22431	04	17	44.05	+21	52	25.4		688
1983	WL		1983	12	06.18889	04	16	34.53	+21	56	07.6	16.2	688
1983	WL		1983	12	06.22569	04	16	31.73	+21	56	17.0		688
1983	WM	*	1983	11	28.21181	04	31	19.61	+22	54	21.7	16.8	4 688
1983	WM		1983	11	28.27292	04	31	15.28	+22	54	03.5		688
1983	WM		1983	12	01.30347	04	27	58.27	+22	36	01.6	16.8	688
1983	WM		1983	12	01.34028	04	27	55.84	+22	35	47.3		688
1983	WM		1983	12	05.20000	04	23	45.67	+22	12	15.1	17.0	688
1983	WM		1983	12	05.22431	04	23	43.68	+22	12	04.6		688
1983	WM		1983	12	06.18889	04	22	42.22	+22	06	09.9	16.8	688
1983	WM		1983	12	06.22569	04	22	39.74	+22	05	57.6		688
1983	WN	*	1983	11	28.21181	04	32	41.61	+23	11	43.0	16.5	4 688
1983	WN		1983	11	28.27292	04	32	37.31	+23	11	08.8		688
1983	WN		1983	12	01.30347	04	29	14.09	+22	42	06.9	16.8	1 688
1983	WN		1983	12	01.34028	04	29	11.22	+22	41	43.0		688

1983	WN		1983	12	06.18889	04	23	56.41	+21	55	24.5	16.8	688
1983	WN		1983	12	06.22569	04	23	53.91	+21	55	03.6		688
1983	WO	*	1983	11	28.21181	04	33	06.37	+20	09	14.1	17.0	4 688
1983	WO		1983	11	28.27292	04	33	02.25	+20	09	22.2		1 688
1983	WO		1983	12	01.30347	04	29	37.22	+20	14	32.3	17.0	688
1983	WO		1983	12	01.34028	04	29	34.64	+20	14	37.9		688
1983	WO		1983	12	05.20000	04	25	15.13	+20	21	09.9	17.0	688
1983	WO		1983	12	05.22431	04	25	13.62	+20	21	13.7		688
1983	WO		1983	12	06.18889	04	24	09.69	+20	22	48.9	17.0	688
1983	WO		1983	12	06.22569	04	24	06.90	+20	22	53.0		688
1983	WP	*	1983	11	28.21181	04	36	29.98	+16	47	16.8	16.8	4 688
1983	WP		1983	11	28.27292	04	36	25.85	+16	47	30.6		688
1983	WP		1983	12	01.30347	04	33	06.43	+16	58	21.7	16.8	688
1983	WP		1983	12	01.34028	04	33	03.76	+16	58	29.2		688
1983	WP		1983	12	05.20000	04	28	46.93	+17	12	49.9	17.0	688
1983	WP		1983	12	05.22431	04	28	45.08	+17	12	56.0		688
1983	WP		1983	12	06.18889	04	27	41.04	+17	16	37.0	16.8	688
1983	WP		1983	12	06.22569	04	27	38.62	+17	16	42.9		688
1983	XA		1983	11	28.21181	04	15	27.52	+19	37	05.4	16.0	688
1983	XA		1983	11	28.27292	04	15	23.17	+19	37	11.0		688
1983	XA		1983	12	01.30347	04	11	57.09	+19	41	23.7	16.2	688
1983	XA		1983	12	01.34028	04	11	54.56	+19	41	26.9		688
1983	XA		1983	12	05.20000	04	07	38.15	+19	46	45.4	16.5	688
1983	XA		1983	12	05.22431	04	07	36.48	+19	46	46.6		688
1983	XA		1983	12	06.18889	04	06	34.11	+19	48	07.5	16.5	688
1983	XA		1983	12	06.22569	04	06	31.78	+19	48	10.5		688
1983	XC		1983	11	28.21181	04	16	39.12	+16	11	50.6	17.0	688
1983	XC		1983	11	28.27292	04	16	34.78	+16	12	03.3		688
1983	XC	*	1983	12	01.30347	04	13	08.40	+16	22	33.8	16.8	5 688
1983	XC		1983	12	01.34028	04	13	05.78	+16	22	41.4		688
1983	XC		1983	12	05.20000	04	08	49.33	+16	36	46.2	16.8	688
1983	XC		1983	12	05.22431	04	08	47.77	+16	36	52.4		688
1983	XC		1983	12	06.18889	04	07	45.34	+16	40	29.3	16.8	688
1983	XC		1983	12	06.22569	04	07	43.08	+16	40	36.8		688
1983	XD		1983	11	28.21181	04	21	11.76	+22	33	31.9	16.5	688
1983	XD		1983	11	28.27292	04	21	08.37	+22	33	18.0		688
1983	XD	*	1983	12	01.30347	04	18	26.16	+22	21	29.5	16.8	4 688
1983	XD		1983	12	01.34028	04	18	24.31	+22	21	21.5		688
1983	XD		1983	12	05.20000	04	15	00.99	+22	06	04.8	16.8	688
1983	XD		1983	12	05.22431	04	14	59.69	+22	05	58.9		688
1983	XD		1983	12	06.18889	04	14	09.67	+22	02	09.6	16.5	688
1983	XD		1983	12	06.22569	04	14	07.89	+22	02	01.8		688
1983	XE	*	1983	12	01.30347	04	23	03.30	+19	21	34.9	17.0	4 688
1983	XE		1983	12	01.34028	04	23	00.97	+19	21	21.0		688
1983	XE		1983	12	06.18889	04	18	28.32	+18	49	26.1	17.0	688
1983	XE		1983	12	06.22569	04	18	26.38	+18	49	11.5		688
1983	XF		1983	11	28.21181	04	28	40.78	+20	41	33.3	16.5	688
1983	XF		1983	11	28.27292	04	28	37.41	+20	41	43.6		688
1983	XF	*	1983	12	01.30347	04	25	48.61	+20	49	03.9	16.5	4 688
1983	XF		1983	12	01.34028	04	25	46.49	+20	49	09.8		688
1983	XF		1983	12	05.20000	04	22	01.50	+20	58	54.0	16.5	688
1983	XF		1983	12	05.22431	04	21	59.74	+20	59	00.0		688
1983	XF		1983	12	06.18889	04	21	02.74	+21	01	29.3	16.5	688
1983	XF		1983	12	06.22569	04	21	00.43	+21	01	35.0		688
1983	XG		1983	11	28.21181	04	36	21.98	+17	19	12.0	17.2	688
1983	XG		1983	11	28.27292	04	36	18.53	+17	18	59.8		688
1983	XG	*	1983	12	01.30347	04	33	43.08	+17	09	45.0	16.8	1 688
1983	XG		1983	12	01.34028	04	33	40.96	+17	09	38.2		688
1983	XG		1983	12	06.18889	04	29	33.86	+16	55	27.4	16.8	688

1983 XG	1983	12	06.22569	04	29	31.99	+16	55	21.6	688
2525 P-L	1983	10	11.23958	01	57	37.85	+10	12	03.9	16.8 688
2525 P-L	1983	10	11.27986	01	57	36.08	+10	11	56.1	688
2525 P-L	1983	10	12.30764	01	56	50.11	+10	08	28.9	16.8 688
2525 P-L	1983	10	12.33819	01	56	48.68	+10	08	24.3	688
2525 P-L	1983	11	04.14444	01	39	09.39	+08	50	32.5	16.8 688
2525 P-L	1983	11	04.21389	01	39	06.31	+08	50	21.0	688
4583 P-L	1983	05	06.32431	15	58	28.86	-19	03	26.8	16.8 688
4583 P-L	1983	05	06.35556	15	58	27.31	-19	03	20.8	688

Note 1: right ascension uncertain. 2: declination uncertain. 3 = 1 + 2. 4: discoverer Bowell. 5 = 1 + 4. 6 = 2 + 4. 7: discoverer Thomas.

OBSERVATIONS MADE AT THE GOETHE LINK OBSERVATORY. MEASURED AND REDUCED AT INDIANA UNIVERSITY.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1219	1962 05	04.22954	13 46 57.50	-09 56 39.0	760
1219	1962 05	04.28231	13 46 54.27	-09 56 29.7	760
1219	1963 08	21.33611	22 57 33.09	-14 50 20.4	760
1219	1963 09	19.09028	22 28 59.19	-16 56 17.3	760
1219	1963 09	19.13542	22 28 56.67	-16 56 23.0	760
1219	1963 09	23.16736	22 25 34.17	-17 02 52.9	760
1219	1963 09	23.21111	22 25 32.13	-17 02 57.3	760
1219	1965 02	28.27567	11 59 08.45	+06 49 56.6	760
1219	1965 02	28.32150	11 59 05.33	+06 50 11.1	760
2746	1954 04	02.11457	12 15 08.65	-00 10 32.7	760
2746	1954 04	02.21294	12 15 03.48	-00 09 45.2	760
1954 GB	1954 04	02.11457	12 10 53.13	-00 30 23.8	760
1954 GB	1954 04	02.21294	12 10 48.53	-00 29 50.7	760
1955 DJ	1955 02	24.35804	12 01 58.14	+08 00 46.1	760
1955 DJ	1955 02	24.40109	12 01 56.27	+08 01 07.9	760
1955 DM	1955 02	25.09467	08 19 29.08	+24 17 37.7	760
1955 DM	1955 02	25.13842	08 19 27.86	+24 17 31.5	760
1955 FN	1955 03	20.18751	10 38 23.51	+22 13 13.3	760
1955 FN	1955 03	20.22988	10 38 21.26	+22 13 16.2	760
1955 HB	1955 04	16.13643	11 22 45.71	+08 06 43.8	760
1955 HB	1955 04	16.17532	11 22 44.43	+08 06 39.0	760
1955 MD	1955 06	19.13129	16 25 59.89	-09 53 12.7	760
1955 MD	1955 06	19.17363	16 25 57.55	-09 53 20.3	760
1955 MM	1955 06	28.27428	19 39 35.01	-20 39 15.5	760
1955 MM	1955 06	28.31596	19 39 32.57	-20 39 10.3	760
1955 MN	1955 06	28.27428	19 36 35.61	-19 22 05.7	760
1955 MN	1955 06	28.31596	19 36 33.47	-19 22 03.9	760
1955 NA	1955 07	13.11737	16 55 06.73	-29 39 23.1	760
1955 NA	1955 07	13.15070	16 55 07.59	-29 39 53.1	760
1955 QB	1955 08	19.11181	20 52 48.04	-14 59 17.9	760
1955 QU	1955 08	23.31870	23 13 16.06	-11 20 46.6	760
1955 QU	1955 08	23.35689	23 13 14.24	-11 20 55.0	760
1962 AB	1962 01	10.16808	05 46 27.98	+29 23 01.2	760
1962 AB	1962 01	10.22398	05 46 25.45	+29 23 18.2	760
1963 TR	1963 10	14.10628	23 43 41.23	-02 45 36.3	760
1963 TR	1963 10	14.15004	23 43 39.65	-02 45 49.3	760

OBSERVATIONS MADE AT THE OAK RIDGE OBSERVATORY BY R. E. MC CROSKY, C.-Y. SHAO AND G. SCHWARTZ (WITH ASSISTANCE FROM C. M. BARDWELL, D. W. E. GREEN AND B. G. MARSDEN).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
680	1983 11	08.09637	02 10 19.46	+11 58 35.2		801
1808	1983 11	08.14423	02 42 46.12	+17 45 04.8	15	801
2340	1983 11	08.29447	03 12 16.95	+06 14 39.1		801

2627		1981	03	28.25880	12	18	59.42	+01	42	54.6			801
2940		1983	11	07.98273	21	37	51.85	-06	03	21.6			801
1943	EM	1983	11	10.26101	03	18	28.78	-00	14	36.8			801
1951	AJ	1983	04	18.30420	14	54	31.01	-18	52	09.6			801
1955	QK	1983	11	07.95592	20	35	06.43	-12	40	24.6			801
1964	VM1	1983	11	01.07572	00	35	51.90	+01	44	49.3			801
1970	PA	1983	11	03.32574	03	15	06.18	+41	09	52.4			801
1974	OA1	1983	11	03.20306	01	19	01.75	+33	19	31.5			801
1975	PA	1983	11	08.23521	03	54	15.10	+23	54	53.8			801
1975	PA	1983	11	08.40809	03	54	03.49	+23	54	31.6			801
1975	PA	1983	11	09.20518	03	53	11.73	+23	52	49.0			801
1976	UF1	1983	11	03.39414	05	12	09.03	+21	41	24.6			801
1976	YJ3	1983	11	08.14423	02	44	20.56	+17	35	07.3			801
1977	RE7	1983	11	03.34320	04	46	23.93	+19	25	19.4			801
1977	SS1	1983	11	10.22383	03	20	09.62	+28	22	27.5			801
1978	QK	1983	11	08.37461	06	23	34.54	+01	55	27.2			801
1978	RU1	1983	11	05.15885	01	10	13.12	+06	10	33.3			801
1978	SR	1983	10	10.03239	20	05	24.54	-21	01	42.3			801
1978	SR	1983	10	04.02414	20	01	32.93	-21	16	35.0		1	801
1978	TZ6	1983	11	05.13868	00	45	49.93	-12	11	32.9			801
1979	QK2	1983	11	09.15432	00	40	21.90	+02	39	12.5			801
1980	YL	1983	09	03.30738	01	06	42.04	-05	51	44.7			801
1981	CY	1983	11	07.39376	04	45	50.21	+19	10	30.4			801
1981	CY	1983	11	08.43015	04	45	05.25	+19	12	25.2			801
1981	EJ10	1983	11	05.07045	23	52	47.60	+04	48	42.8			801
1981	EU17	1983	11	07.12389	23	14	53.86	-08	01	00.7			801
1981	EG19	1983	11	03.42244	07	47	53.30	+17	48	53.5	19		801
1981	EE20	1983	11	09.18435	01	02	56.98	+06	19	28.0			801
1981	EN27	1983	11	09.30888	02	56	49.02	+12	45	56.7			801
1981	FA1 *	1981	03	28.25880	12	18	12.89	+01	32	40.6	18		801
1981	FB1 *	1981	03	28.25880	12	19	20.31	+01	21	29.2	16.5		801
1981	JA3	1983	11	03.22151	01	26	02.09	+04	42	13.8			801
1982	HV	1983	11	08.31622	04	11	25.57	+15	41	50.1			801
1983	PA	1983	09	12.05614	20	43	57.31	+24	06	41.0			801
1983	PA	1983	11	05.00716	21	26	03.83	+25	20	55.2			801
1983	RB	1983	11	01.04981	23	19	26.15	-20	47	34.5			801
1983	RV2 *	1983	09	03.30738	01	06	13.46	-05	45	51.4	17		801
1983	SA	1983	11	01.02248	22	40	04.42	+22	30	08.2			801
1983	SA	1983	11	09.07273	22	44	48.39	+23	29	28.1			801
1983	TB	1983	11	01.00490	21	28	08.92	+37	53	16.0			801
1983	TB	1983	11	09.05566	21	57	47.34	+31	36	52.5			801
1983	TH	1983	09	03.30738	01	06	20.81	-05	56	54.1	16.2		801
1983	TK1 *	1983	10	08.30766	01	38	11.72	+11	07	52.4	18.5	2	801
1983	TL1 *	1983	10	08.30766	01	38	29.58	+11	02	26.8	17		801
1983	VF *	1983	11	01.10949	01	23	26.67	+09	31	10.9	17.5		801
1983	VG *	1983	11	01.10949	01	24	49.55	+09	39	44.5	16		801
1983	VH *	1983	11	05.10943	00	39	52.95	+03	31	03.6	18		801
1983	VJ *	1983	11	08.14423	02	43	46.59	+17	46	08.1	17.5		801
1983	VK *	1983	11	08.14423	02	44	57.36	+17	31	30.4	18		801
1983	VL *	1983	11	08.19076	00	41	33.75	+04	03	56.4	18.5		801
1983	VM *	1983	11	08.23521	03	53	16.80	+23	58	34.3	18		801
1983	VM	1983	11	08.40809	03	53	05.83	+23	58	06.7		3	801
1983	VM	1983	11	09.20518	03	52	16.83	+23	55	58.8			801
1983	VN *	1983	11	08.23521	03	53	47.78	+23	55	22.6	16.5		801
1983	VN	1983	11	08.40809	03	53	34.96	+23	56	06.0			801
1983	VO *	1983	11	08.23521	03	54	14.72	+23	59	31.0	18.5		801
1983	VO	1983	11	08.40809	03	54	04.01	+23	58	58.6		4	801
1983	VP *	1983	11	09.10168	00	44	28.14	+01	40	29.0	18.5		801
1983	VQ *	1983	11	09.10168	00	45	02.88	+01	41	25.6	18.5		801

1983 VR	*	1983	11	09.10168	00	45	09.74	+01	53	07.0	18.5 801
1983 VS	*	1983	11	09.10168	00	45	50.06	+02	08	56.0	18.5 801
1983 VT	*	1983	11	09.10168	00	46	17.72	+01	35	15.3	18 801
6562 P-L		1983	11	08.21350	03	44	24.04	+19	06	39.6	801

Note 1: very weak image, poor measurement. 2: measured in one direction only. 3: position uncertain. 4: involved with star; very uncertain.

OBSERVATIONS MADE WITH THE 0.4-M ASTROGRAPH AT THE EUROPEAN SOUTHERN OBSERVATORY BY H. DEBEHOGNE. MEASURED BY C.-I. LAGERKVIST AND G. HAHN.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
319	1982 03	31.37656	13 47 19.09	-07 02 48.0		809
319	1982 03	31.38210	13 47 18.87	-07 02 45.6		809
319	1982 03	31.38764	13 47 18.53	-07 02 44.1		809
371	1982 03	18.14717	11 18 56.51	-07 34 27.6	1	809
371	1982 03	18.15376	11 18 56.18	-07 34 25.0		809
371	1982 03	18.16020	11 18 55.82	-07 34 23.6		809
371	1982 03	21.16148	11 16 22.60	-07 19 50.0		809
371	1982 03	21.16737	11 16 22.24	-07 19 47.8		809
371	1982 03	21.17326	11 16 21.95	-07 19 46.3		809
371	1982 03	22.10271	11 15 35.40	-07 15 07.2		809
371	1982 03	22.10840	11 15 35.09	-07 15 04.6		809
371	1982 03	22.11429	11 15 34.82	-07 15 02.7		809
371	1982 03	23.06875	11 14 47.43	-07 10 12.3		809
371	1982 03	23.07431	11 14 47.15	-07 10 10.5		809
371	1982 03	23.07987	11 14 46.86	-07 10 09.0		809
371	1982 03	26.16789	11 12 17.12	-06 54 07.7		809
371	1982 03	26.17345	11 12 16.82	-06 54 05.4		809
371	1982 03	26.17899	11 12 16.55	-06 54 03.8		809
371	1982 03	27.24898	11 11 26.21	-06 48 24.9		809
371	1982 03	27.25453	11 11 25.96	-06 48 22.7		809
371	1982 03	27.26007	11 11 25.70	-06 48 21.1		809
371	1982 03	28.06551	11 10 49.02	-06 44 04.5		809
371	1982 03	28.07105	11 10 48.61	-06 44 02.6		809
371	1982 03	28.07659	11 10 48.34	-06 44 00.5		809
371	1982 03	31.07253	11 08 35.31	-06 27 59.0		809
371	1982 03	31.07807	11 08 35.03	-06 27 56.7		809
371	1982 03	31.08362	11 08 34.79	-06 27 55.2		809
371	1982 04	01.10722	11 07 51.29	-06 22 25.7		809
371	1982 04	01.11276	11 07 51.07	-06 22 23.6		809
371	1982 04	01.11830	11 07 50.81	-06 22 21.7		809
682	1982 03	22.35681	13 50 33.64	-08 47 35.6		809
682	1982 03	22.36236	13 50 33.54	-08 47 33.3		809
682	1982 03	22.36790	13 50 33.33	-08 47 30.7		809
682	1982 03	23.26337	13 50 07.36	-08 40 27.3		809
682	1982 03	23.26891	13 50 07.29	-08 40 23.1		809
682	1982 03	23.27445	13 50 07.07	-08 40 20.9		809
682	1982 03	24.31881	13 49 35.26	-08 31 56.7		809
682	1982 03	24.32435	13 49 35.26	-08 31 52.7		809
682	1982 03	24.32989	13 49 35.02	-08 31 50.2		809
682	1982 03	26.38122	13 48 28.36	-08 14 54.6		809
682	1982 03	26.38676	13 48 28.26	-08 14 53.7		809
682	1982 03	26.39230	13 48 28.01	-08 14 47.4		809
682	1982 03	27.39582	13 47 53.65	-08 06 18.8	2	809
682	1982 03	27.40170	13 47 53.60	-08 06 15.1		809
682	1982 03	27.40724	13 47 53.27	-08 06 13.4		809
682	1982 03	28.34736	13 47 20.24	-07 58 06.8		809
682	1982 03	28.35290	13 47 20.02	-07 58 02.8		809
682	1982 03	28.35844	13 47 19.94	-07 58 04.6		809
682	1982 03	29.38272	13 46 42.59	-07 49 04.6		809

682	1982	03	29.38826	13	46	42.31	-07	49	02.1		809
682	1982	03	29.39380	13	46	42.12	-07	48	58.7		809
682	1982	03	30.39800	13	46	04.49	-07	40	05.0		809
682	1982	03	30.40354	13	46	04.34	-07	40	03.2		809
682	1982	03	30.40908	13	46	04.13	-07	39	59.4		809
682	1982	03	31.37656	13	45	26.93	-07	31	18.8		809
682	1982	03	31.38210	13	45	26.70	-07	31	15.6		809
682	1982	03	31.38764	13	45	26.48	-07	31	12.4		809
682	1982	04	01.40223	13	44	46.53	-07	22	00.9		809
682	1982	04	01.40777	13	44	46.28	-07	21	58.3		809
682	1982	04	01.41331	13	44	46.02	-07	21	54.2		809
721	1982	03	28.37022	14	08	25.30	-10	33	57.7	3	809
721	1982	03	28.37576	14	08	25.00	-10	33	54.9		809
721	1982	03	28.38130	14	08	24.84	-10	33	55.5		809
767	1982	03	20.16252	10	11	46.28	+14	30	25.3		809
767	1982	03	20.16906	10	11	46.20	+14	30	26.4		809
767	1982	03	20.17460	10	11	45.86	+14	30	27.4		809
972	1982	03	18.14717	11	17	21.79	-07	09	24.4	1	809
972	1982	03	18.15376	11	17	21.53	-07	09	21.6		809
972	1982	03	18.16020	11	17	21.24	-07	09	20.0		809
972	1982	03	21.16148	11	15	10.46	-06	55	43.2		809
972	1982	03	21.16737	11	15	10.20	-06	55	41.1		809
972	1982	03	21.17326	11	15	09.94	-06	55	39.5		809
972	1982	03	22.10271	11	14	30.07	-06	51	23.2	4	809
972	1982	03	22.10840	11	14	29.86	-06	51	21.4	4	809
972	1982	03	22.11429	11	14	29.57	-06	51	17.8		809
972	1982	03	23.06875	11	13	49.07	-06	46	51.2		809
972	1982	03	23.07431	11	13	48.82	-06	46	49.4		809
972	1982	03	23.07987	11	13	48.58	-06	46	48.1		809
972	1982	03	26.16789	11	11	40.07	-06	32	13.4		809
972	1982	03	26.17345	11	11	39.76	-06	32	11.5		809
972	1982	03	26.17899	11	11	39.53	-06	32	09.4		809
972	1982	03	27.24898	11	10	56.20	-06	27	03.6		809
972	1982	03	27.25453	11	10	55.96	-06	27	01.9		809
972	1982	03	27.26007	11	10	55.73	-06	27	00.7		809
972	1982	03	28.06551	11	10	23.89	-06	23	09.5		809
972	1982	03	28.07105	11	10	23.51	-06	23	07.7		809
972	1982	03	28.07659	11	10	23.32	-06	23	05.8		809
972	1982	03	31.07253	11	08	27.26	-06	08	45.5		809
972	1982	03	31.07807	11	08	26.96	-06	08	43.1		809
972	1982	03	31.08362	11	08	26.79	-06	08	41.7		809
972	1982	04	01.10722	11	07	48.51	-06	03	47.9		809
972	1982	04	01.11276	11	07	48.34	-06	03	45.6		809
972	1982	04	01.11830	11	07	48.10	-06	03	44.1		809
979	1982	03	18.14717	11	17	43.88	-08	08	11.4	1	809
979	1982	03	18.15376	11	17	43.66	-08	08	08.7		809
979	1982	03	18.16020	11	17	43.37	-08	08	07.0		809
979	1982	03	21.16148	11	15	39.88	-07	50	35.2		809
979	1982	03	21.16737	11	15	39.65	-07	50	33.0		809
979	1982	03	21.17326	11	15	39.39	-07	50	31.2		809
979	1982	03	22.10271	11	15	01.80	-07	44	59.4		809
979	1982	03	22.10840	11	15	01.54	-07	44	56.4		809
979	1982	03	22.11429	11	15	01.28	-07	44	54.4		809
979	1982	03	23.06875	11	14	23.04	-07	39	10.8		809
979	1982	03	23.07431	11	14	22.82	-07	39	08.6		809
979	1982	03	23.07987	11	14	22.58	-07	39	06.8		809
979	1982	03	26.16789	11	12	21.15	-07	20	21.1		809
979	1982	03	26.17345	11	12	20.95	-07	20	19.2		809
979	1982	03	26.17899	11	12	20.66	-07	20	18.0		809

979	1982	03	27.24898	11	11	39.72	-07	13	43.1		809
979	1982	03	27.25453	11	11	39.49	-07	13	40.5		809
979	1982	03	27.26007	11	11	39.27	-07	13	38.5		809
979	1982	03	28.06551	11	11	09.25	-07	08	41.0		809
979	1982	03	28.07105	11	11	08.94	-07	08	38.9		809
979	1982	03	28.07659	11	11	08.71	-07	08	36.9		809
979	1982	03	31.07253	11	09	19.29	-06	50	05.6		809
979	1982	03	31.07807	11	09	19.08	-06	50	02.5		809
979	1982	03	31.08362	11	09	18.90	-06	50	01.3		809
979	1982	04	01.10722	11	08	42.85	-06	43	40.7		809
979	1982	04	01.11276	11	08	42.66	-06	43	38.4		809
979	1982	04	01.11830	11	08	42.44	-06	43	36.4		809
1156	1982	03	28.37022	14	13	07.63	-11	04	12.0	3	809
1156	1982	03	28.37576	14	13	07.41	-11	04	10.5		809
1156	1982	03	28.38130	14	13	07.16	-11	04	09.3		809
1423	1982	03	20.16252	10	11	42.34	+15	32	27.1		809
1423	1982	03	20.16906	10	11	42.19	+15	32	27.6		809
1423	1982	03	20.17460	10	11	41.95	+15	32	28.7		809
1705	1982	03	22.36236	13	56	32.55	-09	24	00.9	5	809
1705	1982	03	22.36790	13	56	32.58	-09	24	00.9	5	809
1705	1982	03	24.31881	13	55	20.67	-09	11	14.0	4	809
1705	1982	03	24.32435	13	55	20.61	-09	11	07.9	5	809
1705	1982	03	24.32989	13	55	20.17	-09	11	07.8	5	809
1705	1982	03	26.38122	13	53	58.85	-08	57	08.0	5	809
1705	1982	03	26.38676	13	53	58.81	-08	57	00.0	5	809
1705	1982	03	26.39230	13	53	58.38	-08	57	00.7	5	809
1705	1982	03	28.34736	13	52	36.00	-08	43	10.0	5	809
1705	1982	03	28.35290	13	52	35.64	-08	43	07.8	5	809
1705	1982	03	28.35844	13	52	35.47	-08	43	05.6	5	809
1705	1982	03	29.38272	13	51	50.48	-08	35	37.7		809
1705	1982	03	29.38826	13	51	50.22	-08	35	35.1		809
1705	1982	03	29.39380	13	51	49.96	-08	35	32.4		809
1705	1982	03	30.39800	13	51	04.61	-08	28	05.9	5	809
1705	1982	03	30.40354	13	51	04.35	-08	28	01.4	5	809
1705	1982	03	30.40908	13	51	04.11	-08	28	01.5	5	809
1705	1982	03	31.37656	13	50	19.60	-08	20	49.2	5	809
1705	1982	03	31.38210	13	50	19.30	-08	20	46.2	5	809
1705	1982	03	31.38764	13	50	19.22	-08	20	43.2	5	809
2297	1982	03	22.35681	13	51	18.86	-09	14	24.1		809
2297	1982	03	22.36236	13	51	18.66	-09	14	22.1		809
2297	1982	03	22.36790	13	51	18.47	-09	14	21.2		809
2297	1982	03	23.26337	13	50	52.75	-09	11	16.5		809
2297	1982	03	23.26891	13	50	52.56	-09	11	13.5		809
2297	1982	03	23.27445	13	50	52.44	-09	11	12.4		809
2297	1982	03	24.31881	13	50	20.93	-09	07	28.7		809
2297	1982	03	24.32435	13	50	20.90	-09	07	26.6		809
2297	1982	03	24.32989	13	50	20.64	-09	07	25.4		809
2297	1982	03	26.38122	13	49	15.15	-08	59	48.7		809
2297	1982	03	26.38676	13	49	14.95	-08	59	46.8		809
2297	1982	03	26.39230	13	49	14.79	-08	59	45.9		809
2297	1982	03	27.39582	13	48	41.20	-08	55	53.0		809
2297	1982	03	27.40170	13	48	41.06	-08	55	52.8		809
2297	1982	03	27.40724	13	48	40.80	-08	55	49.9		809
2297	1982	03	28.34736	13	48	08.46	-08	52	08.4		809
2297	1982	03	28.35290	13	48	08.27	-08	52	06.2		809
2297	1982	03	28.35844	13	48	08.06	-08	52	05.5		809
2297	1982	03	29.38272	13	47	31.69	-08	47	59.1		809
2297	1982	03	29.38826	13	47	31.51	-08	47	56.9		809
2297	1982	03	29.39380	13	47	31.32	-08	47	56.0		809

2297		1982	03	30.39800	13	46	54.74	-08	43	47.9	809
2297		1982	03	30.40354	13	46	54.53	-08	43	47.0	809
2297		1982	03	30.40908	13	46	54.32	-08	43	45.6	809
2297		1982	03	31.37656	13	46	18.27	-08	39	44.3	809
2297		1982	03	31.38210	13	46	18.05	-08	39	41.5	809
2297		1982	03	31.38764	13	46	17.90	-08	39	40.0	809
2297		1982	04	01.40223	13	45	39.18	-08	35	21.6	809
2297		1982	04	01.40777	13	45	38.70	-08	35	18.8	809
2297		1982	04	01.41331	13	45	38.72	-08	35	19.0	809
1979	SX9	1982	03	22.35681	13	53	15.05	-09	25	14.4	5 809
1979	SX9	1982	03	22.36236	13	53	14.77	-09	25	14.6	5 809
1979	SX9	1982	03	22.36790	13	53	14.64	-09	25	11.5	5 809
1979	SX9	1982	03	23.26337	13	52	44.29	-09	22	43.2	809
1979	SX9	1982	03	23.26891	13	52	44.08	-09	22	40.8	809
1979	SX9	1982	03	23.27445	13	52	43.89	-09	22	39.7	809
1979	SX9	1982	03	24.31881	13	52	07.08	-09	19	39.6	809
1979	SX9	1982	03	24.32435	13	52	06.78	-09	19	37.1	809
1979	SX9	1982	03	24.32989	13	52	06.66	-09	19	38.3	809
1979	SX9	1982	03	26.38122	13	50	50.86	-09	13	25.1	5 809
1979	SX9	1982	03	26.38676	13	50	50.51	-09	13	24.7	5 809
1979	SX9	1982	03	26.39230	13	50	50.15	-09	13	21.8	5 809
1979	SX9	1982	03	27.40170	13	50	11.41	-09	10	10.8	5 809
1979	SX9	1982	03	27.40724	13	50	11.23	-09	10	11.6	5 809
1979	SX9	1982	03	28.34736	13	49	34.00	-09	07	07.8	809
1979	SX9	1982	03	28.35290	13	49	33.83	-09	07	07.9	809
1979	SX9	1982	03	28.35844	13	49	33.54	-09	07	06.8	809
1979	SX9	1982	03	29.38272	13	48	51.85	-09	03	41.7	809
1979	SX9	1982	03	29.38826	13	48	51.69	-09	03	39.1	4 809
1979	SX9	1982	03	29.39380	13	48	51.49	-09	03	37.5	809
1979	SX9	1982	03	30.39800	13	48	09.85	-09	00	14.5	5 809
1979	SX9	1982	03	30.40354	13	48	09.31	-09	00	14.3	5 809
1979	SX9	1982	03	30.40908	13	48	08.75	-09	00	13.2	5 809
1982	FW2	1982	03	18.14717	11	19	08.54	-08	07	36.2	1 809
1982	FW2	1982	03	18.15376	11	19	08.25	-08	07	33.8	809
1982	FW2	1982	03	18.16020	11	19	07.82	-08	07	32.6	809
1982	FW2	1982	03	21.16148	11	16	03.38	-07	54	25.6	809
1982	FW2	1982	03	21.16737	11	16	03.04	-07	54	23.7	809
1982	FW2	1982	03	21.17326	11	16	02.77	-07	54	22.2	809
1982	FW2	1982	03	22.10271	11	15	06.69	-07	50	08.2	809
1982	FW2	1982	03	22.10840	11	15	06.21	-07	50	05.7	809
1982	FW2	1982	03	23.06875	11	14	08.78	-07	45	38.3	809
1982	FW2	1982	03	23.07431	11	14	08.45	-07	45	36.2	809
1982	FW2	1982	03	23.07987	11	14	08.02	-07	45	35.3	809
1982	FW2	1982	03	26.16789	11	11	06.93	-07	30	49.6	809
1982	FW2	1982	03	26.17345	11	11	06.51	-07	30	47.2	809
1982	FW2	1982	03	26.17899	11	11	06.27	-07	30	45.9	809
1982	FW2	1982	03	27.24898	11	10	05.13	-07	25	31.4	809
1982	FW2	1982	03	27.25453	11	10	04.84	-07	25	29.1	809
1982	FW2	1982	03	27.26007	11	10	04.50	-07	25	27.6	809
1982	FW2	1982	03	28.06551	11	09	19.80	-07	21	28.8	809
1982	FW2	1982	03	28.07105	11	09	19.42	-07	21	27.6	809
1982	FW2	1982	03	28.07659	11	09	19.03	-07	21	25.2	809
1982	FW2	1982	03	31.07253	11	06	36.84	-07	06	27.9	5 809
1982	FW2	1982	03	31.07807	11	06	36.49	-07	06	25.3	5 809
1982	FW2	1982	03	31.08362	11	06	36.14	-07	06	23.8	5 809
1982	FW2	1982	04	01.10722	11	05	42.95	-07	01	13.8	809
1982	FW2	1982	04	01.11276	11	05	42.64	-07	01	11.5	809
1982	FW2	1982	04	01.11830	11	05	42.33	-07	01	10.1	809
1982	GG	1982	03	22.35681	13	56	03.78	-09	50	12.8	809

1982 GG	1982 03 22.36236	13 56 03.58	-09 50 12.3				809
1982 GG	1982 03 22.36790	13 56 03.49	-09 50 11.0				809
1982 GG	1982 03 23.26337	13 55 28.72	-09 48 57.5				809
1982 GG	1982 03 23.26891	13 55 28.48	-09 48 56.2				809
1982 GG	1982 03 23.27445	13 55 28.17	-09 48 55.2				809
1982 GG	1982 03 24.31881	13 54 45.60	-09 47 21.4				809
1982 GG	1982 03 24.32435	13 54 45.42	-09 47 20.0				809
1982 GG	1982 03 24.32989	13 54 45.20	-09 47 19.9				809
1982 GG	1982 03 26.38122	13 53 15.99	-09 43 51.2				809
1982 GG	1982 03 26.38676	13 53 15.60	-09 43 52.4				809
1982 GG	1982 03 26.39230	13 53 15.26	-09 43 50.7				809
1982 GG	1982 03 29.38272	13 50 53.39	-09 37 58.9			5	809
1982 GG	1982 03 29.38826	13 50 53.07	-09 37 57.3			5	809
1982 GG	1982 03 29.39380	13 50 52.92	-09 37 58.2			5	809

Note 1: image of minor planet elongated. 2: faint image. 3: poor plate.
4: image of minor planet blended with star. 5: very faint image.

OBSERVATION MADE WITH THE 1.0-M SCHMIDT TELESCOPE AT THE EUROPEAN SOUTHERN OBSERVATORY. MEASURED BY R. M. WEST.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 VA	1983 10 27.04763		22 32 05.51	-57 31 13.4		809

OBSERVATIONS MADE AT KARASUYAMA BY Y. BANNO AND T. URATA.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 WA *	1983 11 28.50508		04 16 07.46	+20 25 55.7	17	889
1983 WA	1983 11 28.54675		04 16 04.60	+20 25 37.3		889

* * * * *

ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers are B = C. M. Bardwell, E = E. Bowell, h = K. Hurukawa, I = H. Oishi, l = W. Landgraf, M = B. G. Marsden. See also MPC 7828.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1981 ES29	14.5	810317	357.17	337.93	208.97	8.29	0.2132	2.8538	39	9	1	l
1982 FW2	13.5	820401	222.50	19.80	306.53	9.52	0.1549	2.3122	15	0		M
1982 OK	15.5	820819	8.07	171.38	145.66	4.24	0.2107	2.2377	51	0		M
1982 VZ	13.5	821127	357.98	288.46	128.70	1.84	0.1722	3.1561	29	6		I
1982 VB1	15.3	821127	36.30	147.07	222.03	5.71	0.1350	2.3412	30	8		I
1982 VS2	15.0	821127	79.97	220.75	106.36	1.98	0.0657	2.6176	30	6		h
1982 VU2	13.9	821127	140.61	210.24	54.56	14.23	0.1394	2.6340	30	6		h
1982 VY2	14.4	821127	309.67	345.86	122.91	3.02	0.0453	2.9239	30	6		h
1982 VC3	15.6	821127	49.84	260.35	75.38	5.90	0.2775	2.6024	30	6		h
1982 VD3	15.7	821127	348.21	1.19	69.70	6.05	0.1092	2.2835	30	6		h
1982 VN3	16.5	821127	0.85	327.33	88.02	3.70	0.2298	2.5828	30	6		h
1982 VO3	14.0	821127	38.51	266.47	92.32	2.62	0.2046	3.2002	30	6		h
1982 VP3	13.5	821127	141.78	207.30	61.39	13.57	0.0574	2.9437	30	6		h
1982 VY3	14.8	821127	142.90	197.38	66.92	6.53	0.1355	2.2905	30	6		h
1982 VB4	15.3	821127	293.34	78.10	57.33	4.02	0.1132	2.5136	30	6		h
1982 VC4	13.8	821127	235.47	48.52	138.69	1.71	0.0863	3.2266	30	6		h
1982 VE4	14.7	821127	112.81	186.70	99.43	3.70	0.1731	2.2130	30	6		h
1982 VF4	16.0	821127	35.05	157.51	206.32	3.42	0.2263	2.1827	30	9		h
1982 VG4	15.9	821127	188.30	17.73	211.09	4.05	0.0589	2.2336	30	6		h
1982 VK4	14.9	821127	49.61	287.75	60.71	13.06	0.1813	2.6042	30	6		h
1982 VL4	14.9	821127	23.02	322.32	62.41	13.85	0.1503	2.9624	30	6		h
1982 VU4	15.1	821127	311.09	316.47	161.50	2.99	0.1311	2.6004	30	8		h
1982 VZ4	14.2	821127	128.45	57.61	219.80	4.65	0.1347	2.4491	30	9		h
1982 VD5	15.7	821127	350.75	203.57	227.48	3.27	0.1440	2.2817	30	5		h

1982	VF5	15.0	821127	44.66	150.31	205.87	5.35	0.1758	2.7076	30	5	h
1982	VL5	14.1	821127	80.36	92.67	207.83	1.88	0.3203	2.9836	30	5	h
1982	VM5	15.2	821127	117.93	53.12	228.99	4.80	0.1967	2.2375	30	7	h
1983	AY	14.1	830106	250.90	307.65	288.85	6.19	0.1287	2.3771	12	5	E
1983	GQ	15.0	830416	307.31	212.63	71.80	0.36	0.1714	2.2210	39	0	B
1983	QD	12.5	830923	308.71	121.60	312.54	11.76	0.1668	2.6576	57	7	M
1983	RF2	15.0	830923	350.18	298.58	78.21	7.35	0.2667	2.6337	30	6	B
1983	RG2	15.5	830923	355.76	296.37	69.73	6.34	0.2012	2.2939	30	6	B
1983	SB	16.0	830923	4.76	126.30	223.77	2.94	0.1609	2.2196	59	0	M
1983	SC	15.0	830923	132.05	246.95	335.00	7.01	0.0252	2.6931	48	0	M
1983	SM		830923	87.06	52.55	192.00	11.25	0.2334	2.3795	2	0	M
1983	TC	14.0	831102	15.01	125.17	228.67	11.91	0.1945	2.6925	29	0	M
1983	TH	15.0	830923	350.39	329.53	47.91	7.55	0.1735	2.2104	34	7	M
1983	TL	14.0	831013	347.50	26.80	12.25	4.86	0.1775	3.0440	55	0	B
1983	TO	13.0	831013	59.14	126.53	188.12	8.48	0.0875	3.0900	3	8	M
1983	TU	15.0	831102	34.70	298.55	42.58	5.84	0.1938	2.2597	31	0	M
1983	TE1	15.5	831013	15.83	144.85	211.42	4.14	0.2066	2.2995	9	8	M
1983	TJ1	14.0	831013	5.45	178.25	194.68	9.55	0.1578	2.7770	55	8	B
1983	TS1	13.7	831013	357.47	286.60	100.20	2.33	0.1919	3.0719	24	6	E
1983	TT1	13.6	831023	337.22	30.17	28.84	16.76	0.1742	2.6952	24	6	B
1983	TU1	14.8	831013	17.59	311.57	48.88	8.22	0.1140	2.3930	24	6	E
1983	TW1	14.4	831013	53.67	184.62	123.45	3.84	0.2096	2.5775	24	6	E
1983	UC	15.5	831102	2.07	353.44	35.27	5.88	0.1453	2.2823	23	8	M
1983	UG	15.5	831102	12.19	301.98	77.21	5.78	0.2212	2.2503	24	6	M
1983	VE	12.0	831102	14.12	152.34	225.90	7.24	0.2330	3.1903	5	8	2 M
1983	VZ	15.0	831102	21.45	131.55	221.83	7.62	0.3038	2.8375	5	6	M
1983	VC1	13.0	831102	1.50	67.08	326.42	3.66	0.1373	3.1583	4	6	2 M
1983	VG1	14.5	831102	5.74	306.22	83.17	8.90	0.1640	2.6418	3	6	M
1983	VH1	13.5	831102	346.58	334.80	80.45	10.55	0.1421	3.0922	3	7	M
1983	VJ1	14.5	831102	358.04	43.33	3.79	3.64	0.2815	3.1157	3	8	2 M
1983	VK1	15.5	831102	344.17	27.95	34.78	4.83	0.1141	2.2095	3	8	M
1983	VM1	14.5	831102	10.91	136.72	253.93	5.70	0.1193	2.8311	3	8	2 M
1983	VO1	15.0	831102	309.86	137.77	329.22	2.16	0.0762	2.2009	6	6	M
1983	VP1	13.0	831102	39.52	119.31	243.20	10.19	0.1202	2.9378	6	8	2 M
1983	VQ1	16.5	831122	5.34	346.94	55.39	26.79	0.2904	2.3346	23	8	B
1983	VR1	15.5	831102	354.91	111.89	299.21	1.53	0.2810	2.2514	2	6	2 M
1983	VU1	14.0	831102	179.75	338.43	251.48	9.43	0.0908	2.2758	2	5	2 M
1983	VV1	13.5	831102	358.55	72.71	340.04	2.85	0.1301	3.1400	2	5	2 M
1983	VW1	13.5	831122	2.23	168.09	245.82	20.26	0.2125	2.5119	34	0	B
1983	VX1	14.5	831102	18.47	83.33	303.56	5.37	0.1489	2.6309	4	7	M
1983	VA2	15.0	831102	343.70	73.28	350.09	4.94	0.2178	2.6535	3	3	M
1983	WA	15.5	831212	337.51	228.82	240.74	5.14	0.2629	2.5032	8	9	M
1983	WB	12.5	831212	312.34	49.02	73.07	9.32	0.0676	3.0091	8	0	M
1983	WC	14.5	831212	1.25	301.56	126.06	1.95	0.2514	3.1211	8	8	M
1983	WE	14.0	831212	344.50	27.83	62.59	2.10	0.1439	2.9212	8	6	2 M
1983	WF	15.4	831122	334.11	246.79	210.69	5.02	0.1397	2.2995	8	6	E
1983	WG	14.0	831212	338.37	27.92	77.10	10.55	0.2326	2.7754	8	8	M
1983	WH	15.0	831212	338.43	212.56	245.04	4.53	0.1054	2.2611	8	7	2 M
1983	WK	15.0	831212	16.59	326.12	75.17	12.65	0.2843	2.6184	8	8	M
1983	WL	14.5	831212	346.83	20.67	67.56	9.32	0.1151	2.2854	8	8	M
1983	WM	15.5	831212	351.61	189.75	253.61	4.54	0.1250	2.2323	8	8	M
1983	WN	15.5	831212	42.41	115.65	251.52	8.21	0.2406	2.2506	8	6	2 M
1983	WO	15.5	831212	26.39	318.36	77.20	5.11	0.1692	2.3075	8	8	M
1983	WP	14.0	831212	316.06	44.20	81.37	13.09	0.1169	2.6038	8	8	M
1983	XC	15.5	831212	27.19	308.00	83.86	7.67	0.1735	2.2950	8	8	M
1983	XD	12.5	831212	83.84	74.53	252.89	6.35	0.1546	3.0794	8	8	M
1983	XF	17.0	831212	339.40	46.82	74.38	2.71	0.3806	2.1685	8	8	2 M
1983	XG	13.1	831122	54.29	138.84	211.27	5.21	0.2132	3.2594	8	6	E

Note 1: double designation 1981 ES29 = 1981 GY (h, l). 2: e assumed.

ORBITAL ELEMENTS BY W. LANDGRAF, MAX-PLANCK-INSTITUT FUR AERONOMIE, LINDAU.

The identifications are by W. Landgraf unless otherwise stated.

Comet IRAS-Araki-Alcock (1983d)
Epoch 1983 May 26.0 ET = JDE 2445480.5
T 1983 May 21.25486 ET

		(1950.0)	P	Q
q 0.9913405				
z +0.0102662	Peri.	192.84553	-0.59931057	+0.35777773
+/-0.0000318	Node	48.40554	-0.62327426	+0.35282343
e 0.9898227	Incl.	73.24586	-0.50235052	-0.86458702

From 213 right ascensions and 217 declinations of 254 observations 1983 Apr. 27-Oct. 4, mean residual 1".2.

(1862) Apollo
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 105.46164				
n 0.55230079	Peri.	285.43730	+0.77210161	+0.63225880
a 1.47124703	Node	35.41568	-0.53234999	+0.69856405
e 0.55996826	Incl.	6.34988	-0.34707720	+0.33504787
P 1.78	B(1,0)	17.1		

From 139 observations at 6 apparitions 1932-1982, mean error 1".0.

(2959)* 1983 RE2 = 1968 UB3 = 1977 UK = 1978 EY1

Discovered 1983 Sept. 4 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory. The identifications and the double designation were found independently by K. Hurukawa.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 8.41865				
n 0.12613489	Peri.	285.74319	+0.68190749	-0.72724472
a 3.9377296	Node	120.99376	+0.70113551	+0.61944920
e 0.2765009	Incl.	5.23495	+0.20835347	+0.29563121
P 7.81	B(1,0)	12.5		

Residuals in seconds of arc

681023 095	0.3-	0.8+	830813 688	1.5+	0.7+	830906 688	1.6+	0.5+
771016 809	0.6+	0.7-	830902 688	1.1-	1.7-	830910 688	0.4+	0.5+
771017 809	1.6-	1.2-	830902 688	0.5-	0.1+	830910 688	2.5-	1.9-
771020 809	0.4+	0.1+	830904 688	0.2+	0.6+	830912 688	0.3-	0.1-
780305 095	0.2+	0.2+	830904 688	0.8-	0.8-	830912 688	0.6-	0.4+
830813 688	1.2+	0.7+	830906 688	1.3+	0.3-			

1981 EP = 1981 EG30 = 1953 FA1 = 1979 YY6

The double designation and identification 1981 EP = 1981 EG30 = 1953 FA1 were found independently by K. Hurukawa.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 300.95839				
n 0.17627016	Peri.	275.98300	+0.02556468	-0.99807341
a 3.1502875	Node	171.87906	+0.99967312	+0.02553987
e 0.1798647	Incl.	23.59019	-0.00028462	+0.05654360
P 5.59	B(1,0)	12.5		

Residuals in seconds of arc

530316 024	1.6-	(6.1-)	810302 413	1.1-	0.2+	810311 413	0.3-	0.1+
530320 024	1.6+	1.1+	810302 413	0.2+	1.0-	810311 413	0.0	0.1-
791224 095	0.0	0.0	810303 413	0.9-	0.3+	810316 413	0.3-	0.5-
810301 809	0.1+	0.3+	810303 413	0.9+	0.6-	810316 413	0.4+	0.4-
810301 809	0.5+	0.4+	810307 413	0.4-	1.0+			
810301 809	0.3+	0.3+	810307 413	0.7+	0.4-			

1981 EY31 = 1974 MF
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 287.45335		(1950.0)	P	Q
n 0.26437733	Peri.	346.34904	-0.25147759	+0.96745923
a 2.4042885	Node	269.08053	-0.88530707	-0.24160507
e 0.1800230	Incl.	1.60230	-0.39113988	-0.07516401
P 3.73	B(1,0)	16.5		

Residuals in seconds of arc

740620 808	0.7+	0.6-	740622 808	0.1+	0.3+	810307 413	(3.4+	2.3-)
740620 808	0.6-	0.1+	810303 413	0.4+	0.2+	810311 413	1.1-	0.6+
740622 808	0.3-	0.2+	810307 413	0.4-	0.2+	810311 413	1.2+	1.0-

1983 RL2 = 1974 QR1 = 1981 AB3

The identifications were found independently by K. Hurukawa.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 126.17820		(1950.0)	P	Q
n 0.21684393	Peri.	281.92530	+0.33851295	+0.94089329
a 2.7439185	Node	7.88901	-0.82788758	+0.30354504
e 0.1356767	Incl.	4.74294	-0.44722604	+0.15026716
P 4.55	B(1,0)	14.0		

Residuals in seconds of arc

740824 095	0.2-	(3.4-)	830813 688	0.1+	0.5+	830906 688	(2.2+)	0.2+
740911 095	0.4+	0.4-	830902 688	1.1+	0.7-	830910 688	0.6-	(1.7+)
810108 381	0.2-	1.0+	830902 688	0.2+	0.4-	830910 688	0.8-	0.6+
810108 381	0.4-	1.2-	830904 688	1.2-	0.0	830912 688	0.5-	0.1-
810108 381	0.6+	0.3+	830904 688	0.2+	0.7+	830912 688	0.8-	(1.9+)
830813 688	1.1+	0.6-	830906 688	1.0+	0.2+			

1983 RO2 = 1973 SK3

The identification was found independently by K. Hurukawa.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 135.73283		(1950.0)	P	Q
n 0.29465911	Peri.	178.32712	+0.78072315	+0.62334905
a 2.2366059	Node	142.99547	-0.57412486	+0.74314974
e 0.1486008	Incl.	4.16111	-0.24668200	+0.24323738
P 3.34	B(1,0)	15.0		

Residuals in seconds of arc

730923 095	1.1+	1.5-	830902 688	1.1-	0.2+	830906 688	0.1-	0.1-
730925 095	0.7-	(6.7+)	830902 688	0.8-	0.7+	830910 688	0.0	0.3-
730928 095	0.1-	0.5+	830904 688	0.2-	0.0	830910 688	0.1-	0.1+
830813 688	0.0	1.0-	830904 688	0.8-	0.2-	830912 688	1.1+	1.3+
830813 688	0.9+	0.0	830906 688	0.5+	0.2-	830912 688	0.6+	0.5+

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ORBITAL ELEMENTS BY K. HURUKAWA, TOKYO ASTRONOMICAL OBSERVATORY.

The identifications are by K. Hurukawa unless otherwise stated.

(2960)* 1977 DK3 = 1947 BH = 1979 WK4

Discovered 1977 Feb. 18 by H. Kosai and K. Hurukawa at the Tokyo Observatory's Kiso Station. The identifications 1977 DK3 = 1947 BH and 1977 DK3 = 1979 WK4 are by L. D. Schmadel and by C. M. Bardwell, respectively (MPC 7606).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (V-P)

M 153.78535	(1950.0)	P	Q	
n 0.29768524	Peri. 333.01241	-0.23254840	-0.97074112	
a 2.2214227	Node 130.37179	+0.90587152	-0.23858758	
e 0.1130500	Incl. 4.50625	+0.35400288	-0.02715966	
P 3.31	B(1,0) 15.1			

Residuals in seconds of arc

470119 754	0.5-	2.4+	770218 381	0.7+	1.0+	770315 381	0.0	1.0-
470119 754	2.2-	1.9+	770219 381	0.1+	1.1+	770315 381	0.5+	0.7-
470125 754	0.5+	2.8-	770219 381	0.1-	0.7+	791117 095	0.0	0.2+
470125 754	2.2+	3.1-	770312 381	0.0	0.1-	821114 381	0.3+	0.3+
770218 381	0.5-	0.6+	770312 381	0.2-	0.3-	821114 381	0.5-	0.1+

(2961)* 1982 XA = 1941 WZ = 1951 UD = 1968 QH

Discovered 1982 Dec. 7 by T. Seki at Geisei.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (V-P)

M 204.37022	(1950.0)	P	Q	
n 0.28848899	Peri. 195.40467	+0.55781009	-0.82835381	
a 2.2683840	Node 220.72853	+0.76958092	+0.53956575	
e 0.1379538	Incl. 4.54892	+0.31079433	+0.15066110	
P 3.42	B(1,0) 14.2			

Residuals in seconds of arc

411116 062	1.1-	1.6+	821209 372	1.4-	2.6-	821218 372	0.8+	0.5+
411117 062	1.1-	2.1+	821209 372	1.2+	2.5-	821222 372	1.2+	1.0-
511025 760	3.8-	1.4-	821211 372	1.8+	1.8-	821230 372	0.3+	1.1-
511025 760	7.2+	2.8+	821211 372	2.7+	0.1+	821230 372	0.8+	0.3-
680825 095	1.4-	2.2-	821213 381	0.7-	0.9-	830110 372	1.4+	0.4-
821114 381	0.3-	1.9+	821214 381	0.2-	0.0	830110 372	3.6+	0.4-
821114 381	1.1-	0.3+	821214 381	0.1-	0.2+	830211 801	1.8+	2.0+
821207 372	2.8-	1.3+	821217 372	0.3-	1.2-			
821207 372	4.5-	2.9+	821218 372	0.6-	0.6-			

1973 SZ1 = 1982 VX2

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 317.60509	(1950.0)	P	Q	
n 0.12398161	Peri. 117.73050	-0.97476196	+0.21832840	
a 3.9831996	Node 74.91111	-0.21802812	-0.88613086	
e 0.1222544	Incl. 2.76657	-0.04798805	-0.40878454	
P 7.95	B(1,0) 12.7			

Residuals in seconds of arc

730919 675	0.2+	0.3+	730930 675	0.4-	1.6-	821114 381	1.5-	0.6-
730920 675	0.8+	0.6+	731004 675	0.5-	0.6+	821213 381	0.8+	0.4+
730925 675	0.8-	0.8-	731004 675	0.2-	0.0	821213 381	1.5+	1.6+
730929 675	0.2-	1.1+	731005 675	0.7+	0.1-	821214 381	0.1-	0.9-
730929 675	0.8-	0.1-	731005 675	1.2+	0.4+	821214 381	2.2-	0.3-
730930 675	0.0	0.3-	821114 381	1.5+	0.2-			

1978 VQ3 = 1982 XC3

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 126.38458	(1950.0)	P	Q	
n 0.24155218	Peri. 233.53541	-0.37808992	-0.91556226	
a 2.5534632	Node 239.22895	+0.89219110	-0.32083901	
e 0.1264113	Incl. 9.18092	+0.24706891	-0.24250378	
P 4.08	B(1,0) 15.4			

Residuals in seconds of arc

781105 675	0.1+	1.0+	781129 675	2.2-	1.3-	821214 381	0.7+	0.7+
781106 675	0.5-	0.0	781130 675	0.6+	0.4-	821214 381	0.8+	0.7+
781107 675	0.4-	0.4+	781130 675	3.0+	1.6+			
781108 675	0.8-	1.8-	821213 381	1.5-	0.7-			

1978 VW6 = 1982 XQ
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 164.23701		(1950.0)	P	Q
n 0.23978948	Peri.	177.11668	+0.50029973	-0.84199102
a 2.5659617	Node	242.78618	+0.78975263	+0.53932976
e 0.1523409	Incl.	13.12032	+0.35495206	-0.01321085
P 4.11	B(1,0)	15.8		

Residuals in seconds of arc

781105	675	0.3+	0.5-	781129	675	0.2+	0.0	821214	381	0.3+	0.7-
781106	675	0.3-	0.5-	781130	675	0.1-	0.0	821214	381	0.1+	0.4-
781107	675	0.3+	1.0+	821213	381	0.6-	0.5+				
781108	675	0.3-	0.1+	821213	381	0.2+	0.6+				

1980 KO = 1982 VV2
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 334.35392		(1950.0)	P	Q
n 0.19476047	Peri.	141.49804	-0.80116100	+0.59626041
a 2.9476078	Node	75.18011	-0.56130870	-0.71906108
e 0.0125694	Incl.	3.03192	-0.20754177	-0.35696594
P 5.06	B(1,0)	13.9		

Residuals in seconds of arc

800522	809	1.2+	0.1+	800525	809	0.1-	0.6+	800605	809	0.9-	0.6+
800522	809	0.5+	0.4+	800525	809	0.4+	0.6+	800606	809	0.9+	0.5+
800522	809	0.4-	0.2+	800525	809	0.6-	0.5+	800606	809	0.7+	0.5+
800523	809	0.0	0.7-	800602	809	2.4-	0.1+	800606	809	0.4+	0.5+
800523	809	0.7+	1.2-	800602	809	1.8-	0.3+	821114	381	0.5+	0.2+
800523	809	1.5+	1.8-	800602	809	1.2-	0.7+	821114	381	0.8-	1.0-
800524	809	1.5+	0.1-	800604	809	1.0+	0.5-	821213	381	0.2-	0.2+
800524	809	1.1+	0.0	800604	809	0.6+	0.9-	821213	381	0.3+	0.5-
800524	809	0.8-	0.5-	800604	809	0.5+	0.5-	821214	381	0.1-	0.1-
800524	809	1.4-	0.6-	800605	809	0.3-	0.1-	821214	381	0.6+	0.2+
800524	809	1.3-	0.2-	800605	809	0.3-	0.5+				

1981 QZ2 = 1982 VK3
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 232.62094		(1950.0)	P	Q
n 0.17176193	Peri.	155.84612	+0.30162693	+0.95305528
a 3.2051792	Node	131.69758	-0.88040318	+0.28911967
e 0.1455825	Incl.	2.04053	-0.36593912	+0.08997470
P 5.74	B(1,0)	13.4		

Residuals in seconds of arc

810824	809	1.4+	0.1-	810827	809	0.0	0.6+	810903	809	0.3-	0.6+
810824	809	1.5+	0.8-	810828	809	0.0	0.1+	810903	809	0.0	0.3+
810824	809	1.8+	0.1-	810828	809	1.4+	0.3-	810905	809	0.8-	0.4+
810825	809	1.0-	0.8-	810828	809	1.2+	0.4+	810905	809	0.5-	0.2+
810825	809	0.8-	1.1-	810828	809	0.1-	0.8+	810905	809	0.7-	0.4-
810825	809	0.8-	1.2-	810828	809	0.5-	0.0	810906	809	0.7-	0.0
810825	809	1.1-	0.2+	810828	809	1.0-	0.6-	810906	809	0.3-	0.3-
810825	809	0.7-	0.1+	810828	809	1.0-	0.1+	810906	809	0.4-	0.7-
810825	809	0.1+	0.2+	810828	809	0.4-	0.0	810907	809	0.3-	0.1-
810826	809	0.5-	1.0-	810828	809	0.4+	0.3-	810907	809	0.0	0.0
810826	809	0.4+	0.5-	810831	809	0.1-	2.9+	810907	809	0.4-	0.3-
810826	809	0.9+	0.3-	810831	809	0.5+	1.1+	821114	381	1.5-	0.0
810827	809	0.8+	0.5+	810831	809	0.5+	0.4-	821114	381	0.2+	0.3+
810827	809	0.4+	0.2+	810903	809	0.2+	0.3-	821213	381	0.1-	0.6-
810827	809	0.4+	0.1-	810903	809	0.2+	0.1-	821213	381	0.4+	0.1-
810827	809	0.3+	1.1+	810903	809	0.5+	0.7-	821214	381	0.8+	0.2+
810827	809	0.1-	0.2+	810903	809	0.7-	0.5+	821214	381	0.3+	0.2+

1982 VX3 = 1974 HE2
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	205.57535		(1950.0)	P	Q
n	0.17596590	Peri.	170.86002	+0.78735734	+0.61626591
a	3.1539241	Node	151.07487	-0.56777921	+0.73553039
e	0.0917604	Incl.	1.99937	-0.24019823	+0.28144516
P	5.60	B(1,0)	13.4		

Residuals in seconds of arc

740424	805	0.2-	3.5-	821114	381	0.2-	0.7-	821214 381	0.4+	0.2+
740425	805	0.2+	3.4+	821213	381	0.3-	0.0	821214 381	0.1-	0.1-
821114	381	0.2+	0.6+	821213	381	0.1-	0.1+			

1982 VR4 = 1976 SA1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	168.59400		(1950.0)	P	Q
n	0.18019125	Peri.	199.06303	+0.99828967	+0.05652957
a	3.1044246	Node	157.68046	-0.04722948	+0.93009651
e	0.1850069	Incl.	2.24923	-0.03445456	+0.36293923
P	5.47	B(1,0)	13.9		

Residuals in seconds of arc

760924	095	1.5-	0.6-	821114	381	0.0	0.3+	821214 381	0.1-	0.5-
760925	095	1.5+	0.5+	821213	381	0.7+	0.1-			
821114	381	0.4-	0.6+	821214	381	0.1-	0.3-			

1983 QA = 1947 UG = 1976 UJ1
The identifications were found independently by W. Landgraf.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (V-P)

M	104.48491		(1950.0)	P	Q
n	0.27262293	Peri.	31.17585	+0.98858458	+0.11814561
a	2.3555617	Node	321.68884	-0.14928516	+0.85194358
e	0.2565086	Incl.	8.67458	+0.02035870	+0.51013112
P	3.62	B(1,0)	14.6		

Residuals in seconds of arc

471021	062	0.1+	2.1-	830816	046	0.2+	0.4-	830901 046	0.1-	1.8-
471021	062	1.4+	0.6-	830816	046	1.0+	0.1+	830904 046	2.2-	4.8+
761022	026	1.2-	1.2+	830820	046	0.2-	0.8+	830904 046	0.4+	2.3+
761024	026	0.0	2.1+	830830	046	0.9+	1.6-	830905 046	0.1+	1.4-
830717	688	1.9-	0.5+	830830	046	1.0+	0.3-	830905 046	1.2+	1.4-
830717	688	2.2-	0.1+	830901	046	0.5+	1.3-			

6627 P-L = 1982 VF3
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	142.02398		(1950.0)	P	Q
n	0.18378254	Peri.	225.73899	+0.78494548	-0.61952069
a	3.0638494	Node	172.53142	+0.58339620	+0.73505019
e	0.1021428	Incl.	3.26229	+0.20858923	+0.27549109
P	5.36	B(1,0)	14.3		

Residuals in seconds of arc

600924	675	0.3-	0.3+	601022	675	0.6-	0.8-	821213 381	0.4+	0.2-
600926	675	0.7-	0.3+	601024	675	0.6+	0.4+	821213 381	1.4-	0.4-
600927	675	0.8+	1.2+	601026	675	0.2-	0.3-	821214 381	0.4+	0.1+
600928	675	0.0	0.6-	821114	381	1.3+	1.3+	821214 381	0.2+	0.6-
601017	675	0.5+	0.9-	821114	381	0.9-	0.1-			

7607 P-L = 1982 VH5

The identification is by H. Oishi.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	177.27847	(1950.0)		P	Q
n	0.27152543	Peri.	339.56051	+0.19955495	-0.97812372
a	2.3619094	Node	98.89285	+0.90704506	+0.16170334
e	0.2068890	Incl.	3.40921	+0.37073857	+0.13086638
P	3.63	B(1,0)	16.5		

Residuals in seconds of arc

601017	675	0.8-	1.6+	601026	675	0.7+	1.0-	821213	381	0.8+	0.3+
601022	675	0.2-	0.6+	821114	381	0.6+	0.3-	821214	381	0.4-	0.2-
601025	675	0.3+	1.4-	821114	381	0.6-	0.3+	821214	381	0.4-	0.0

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

The identifications are by B. G. Marsden unless otherwise stated.

Comet Russell (1981 V)

Epoch 1981 Mar. 17.0 ET = JDE 2444680.5

T 1981 Mar. 6.16406 ET

q	2.1124412	(1950.0)		P	Q
z	-0.0008155	Peri.	297.19978	+0.15806004	-0.77197088
	+/-0.0001372	Node	232.09482	-0.36825049	-0.62463161
e	1.0017227	Incl.	128.71031	-0.91619244	+0.11788260

From 16 observations 1980 Sept. 6-1981 Apr. 5, mean residual 1".9.

Periodic Comet Russell 3 (1983i)

Epoch 1982 Nov. 7.0 ET = JDE 2445280.5

T 1982 Nov. 23.24269 ET

q	2.5102088	(1950.0)		P	Q
n	0.13149124	Peri.	353.45303	-0.47467531	+0.85069259
a	3.8300534	Node	248.00128	-0.79604008	-0.52440595
e	0.3446021	Incl.	14.09783	-0.37550437	+0.03633882
P	7.50				

From 36 observations 1983 June 14-Oct. 31, mean residual 1".2.

Comet IRAS (1983k)

T 1983 May 2.67486 ET

q	2.4177544	(1950.0)		P	Q
		Peri.	265.56431	-0.03979299	-0.99400084
		Node	171.09486	-0.43029208	+0.10906617
e	1.0	Incl.	138.84320	-0.90181219	-0.00817913

From 6 observations 1983 July 14-Aug. 10.

Periodic Comet IRAS (1983j)

Epoch 1983 Aug. 14.0 ET = JDE 2445560.5

T 1983 Aug. 23.80205 ET

q	1.6968299	(1950.0)		P	Q
n	0.07489838	Peri.	356.89159	+0.99544241	+0.08841170
a	5.5738392	Node	357.16024	-0.06422199	+0.34439531
e	0.6955725	Incl.	46.17994	-0.07049787	+0.93465247
P	13.16				

From 70 observations 1983 June 30-Nov. 9, mean residual 1".4.

Comet Shoemaker (1983p)
Epoch 1983 Dec. 12.0 ET = JDE 2445680.5
T 1983 Nov. 23.73874 ET

		(1950.0)	P	Q
q 3.3450171				
z -0.0001168	Peri.	176.02398	+0.97299593	-0.13663743
+/-0.0001370	Node	163.98298	-0.22597702	-0.39961247
e 1.0003908	Incl.	137.60566	-0.04704587	-0.90644364

From 67 observations 1983 Sept. 7-Dec. 9, mean residual 1".1.

Periodic Comet Hartley-IRAS (1983v)
T 1984 Jan. 8.52245 ET

		(1950.0)	P	Q
q 1.2843359				
n 0.04457196	Peri.	46.92724	+0.68385569	-0.72949356
a 7.8782228	Node	0.77381	-0.34805567	-0.34235593
e 0.8369764	Incl.	95.76753	+0.64124772	+0.59214151
P 22.11				

From 13 observations 1983 Nov. 4-Dec. 8.

(2962)* 1940 YF = 1931 TV2 = 1942 JB = 1950 GC

Discovered 1940 Dec. 28 by Y. Vaisala at Turku. The identifications are by K. Hurukawa and L. D. Schmadel (MPC 7449), who found them independently.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 167.65552				
n 0.23957203	Peri.	120.66095	-0.96975048	-0.10868859
a 2.5675090	Node	53.98304	-0.02411100	-0.84836875
e 0.0379147	Incl.	15.67734	+0.24290463	-0.51812859
P 4.11	B(1,0)	12.5		

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

311007	690	(5.7+	1.3-)	410130	062	0.9+	0.9-	830418	688	0.4-	1.0+
311009	690	1.7-	2.1+	420512	078	(6.2-	61.5+)X	830418	688	0.5+	1.3+
311011	690	0.1-	0.5+	420513	078	(0.00+	0.03+)X	830419	688	0.3-	0.8-
401130	062	0.5-	2.5-	420520	078	(78.0-	44.5+)X	830419	688	0.4-	0.9-
401228	062	0.4-	1.9-	420605	078	(17.0+	24.7-)X	830507	688	0.2+	0.0
410101	062	0.6+	2.2-	500411	024	0.1-	0.1+	830607	688	0.8+	1.8-
410119	062	1.7-	1.2+	830220	801	0.4+	0.9-	830607	688	0.0	1.2-
410121	062	0.8+	2.1-	830412	801	4.0+	2.6+	830611	801	0.0	2.0+

(2963)* 1964 VM1 = 1978 RL

Discovered 1964 Nov. 9 at the Purple Mountain Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 55.61630				
n 0.20257558	Peri.	352.02046	+0.77200887	-0.63465739
a 2.8712962	Node	47.43460	+0.58571378	+0.68905962
e 0.0738750	Incl.	2.70965	+0.24686366	+0.34986688
P 4.87	B(1,0)	13.5		

Residuals in seconds of arc

641109	330	1.1-	1.8-	780905	095	0.7-	0.1-	791223	095	0.1+	0.7+
641127	330	1.8+	0.4-	780907	095	0.6+	0.1+	830905	801	1.0-	0.7+
641225	330	0.9+	0.9+	780912	095	1.8+	1.0+	831007	801	1.3+	0.1+
650101	330	1.6-	0.5+	781004	095	1.6-	0.8+	831101	801	0.3-	0.8-
780901	095	0.2+	0.9-	781009	095	0.7-	0.2-				

(2964)* 1974 OA1 = 1981 EE5

Discovered 1974 July 16 at the El Leoncito Station of the Felix Aguilar Observatory, University of Cuyo.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	89.07937		(1950.0)	P	Q
n	0.23596805	Peri.	58.71490	+0.86072385	-0.49579724
a	2.5935856	Node	330.53735	+0.34937874	+0.74032617
e	0.2003159	Incl.	13.58094	+0.37025526	+0.45398485
P	4.18	B(1,0)	13.5		

Residuals in seconds of arc

740716	808	0.3-	0.1-	810302	413	1.6-	0.7-	810407	413	0.5+	0.7-
740716	808	0.2+	0.4-	810302	413	3.3+	1.2-	810408	413	1.5-	0.1+
740717	808	0.5+	0.2-	810307	413	0.7-	0.1+	810408	413	0.5+	0.5-
740717	808	1.2+	1.3+	810307	413	0.9+	0.1+	810409	413	1.1-	0.3-
740720	808	0.5-	0.3-	810310	413	0.5-	0.8+	810409	413	0.1+	0.3-
740720	808	0.3-	0.4-	810310	413	1.6+	0.6+	830904	801	1.7-	1.2-
740726	808	0.8-	0.8-	810312	413	1.9-	0.7+	831103	801	1.8+	0.2+
740726	808	0.1-	0.0	810312	413	1.7+	0.2+				
740818	808	(8.0+	8.3-)	810407	413	2.0-	0.1+				

(2965)* 1975 BX = 1980 UK

Discovered 1975 Jan. 18 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	186.98162		(1950.0)	P	Q
n	0.26668360	Peri.	71.42421	-0.88327465	+0.33359571
a	2.3904070	Node	126.69758	-0.39442988	-0.90858532
e	0.2202545	Incl.	24.26090	+0.25347774	-0.25136947
P	3.70	B(1,0)	14.5		

Residuals in seconds of arc

750116	330	0.1+	2.5-	750307	330	1.5-	2.0+	811231	801	0.5-	2.3-
750118	095	(5.6-	19.6-)	801030	809	0.5-	1.2+	820121	801	0.9+	0.7+
750118	330	0.6+	4.1+	801101	809	0.3+	0.3+	830713	801	0.4+	1.3+
750122	330	0.3-	1.1+	801102	809	0.2-	0.7+				
750211	330	0.5-	0.0	811124	801	0.0	0.8+				

(2966)* 1977 EB2 = 1981 JL

Discovered 1977 Mar. 13 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	310.35459		(1950.0)	P	Q
n	0.25732699	Peri.	198.24752	-0.43152685	+0.90153096
a	2.4480061	Node	46.20213	-0.82199152	-0.37832661
e	0.1391648	Incl.	2.54412	-0.37163760	-0.21002596
P	3.83	B(1,0)	15.0		

Residuals in seconds of arc

770313	095	2.4-	1.1-	810505	675	0.1+	0.0	810506	704	2.5+	0.5-
770322	095	0.8+	0.7+	810505	675	1.6-	3.0+	810507	704	1.8-	1.1+
770325	095	1.7+	0.8+	810506	704	0.9-	0.2-	810507	704	2.4-	1.3+
810503	688	2.1+	0.9-	810506	704	1.7+	1.6-	810602	688	0.4-	0.9-
810503	688	2.5+	0.9-	810506	675	0.1+	0.6+	810602	688	1.3-	0.3-
810505	704	1.6+	0.2+	810506	675	0.4-	1.0+	820917	801	0.1-	1.2+
810505	704	1.7-	3.3-	810506	675	2.1-	3.0+	821012	801	1.0-	0.6+
810505	675	0.9+	1.7+	810506	704	1.1+	3.1-	821117	801	1.1+	1.5-

(2967)* 1977 SS1 = 1977 TF8 = 1977 YB = 1948 TJ

Discovered 1977 Sept. 19 by N. S. Chernykh at the Crimean Astrophysical Observatory. The triple designation 1977 SS1 = 1977 TF8 = 1977 YB is by T. Urata (MPC 7459).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	73.38484	(1950.0)	P	Q	
n	0.17160396	Peri.	4.00981	+0.80803159	-0.56554003
a	3.2071394	Node	32.26369	+0.53153011	+0.57897132
e	0.1240740	Incl.	18.01305	+0.25408797	+0.58733012
P	5.74	B(1,0)	12.5		

Residuals in seconds of arc

481009 062	1.6+	0.9-	771013 095	1.9-	1.7+	821016 474	0.3-	1.1+
481009 062	0.5-	0.5+	771216 801	0.9-	0.3-	821016 474	0.1-	1.0+
481009 062	0.9+	1.1-	771217 801	0.5-	0.5-	831107 688	0.1-	0.4-
481009 062	1.0-	0.8-	771217 801	0.4+	1.0-	831107 688	1.3+	1.5-
770919 095	0.1+	1.2+	820920 474	0.2-	1.2-	831110 801	0.9-	1.4+
770922 095	2.0+	0.9+	820921 474	0.7+	0.2+			
771007 095	0.9-	1.0-	820921 474	0.2+	0.3+			

(2968)* 1978 QJ = 1981 EZ3

Discovered 1978 Aug. 31 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	260.89093	(1950.0)	P	Q	
n	0.27075175	Peri.	33.45394	+0.60142396	+0.78293782
a	2.3664021	Node	274.02423	-0.76349101	+0.50460552
e	0.3098375	Incl.	9.17470	-0.23530977	+0.36384288
P	3.64	B(1,0)	15.5		

Residuals in seconds of arc

780831 095	0.3+	1.8+	810307 413	0.2+	0.2+	820918 801	0.1-	0.9+
780903 095	0.4-	0.0	810310 413	1.1-	0.1+	820928 675	1.7+	1.8-
780907 095	0.1-	1.4-	810310 413	2.2+	0.3-	820929 675	1.4+	1.8-
810302 413	0.1-	2.1+	810409 413	1.5-	0.0	821016 801	2.3-	3.0+
810302 413	0.5+	0.4-	810409 413	0.1+	1.1-	821109 801	0.4-	0.5-

(2969)* 1978 RU1 = 1976 GB = 1981 FC

Discovered 1978 Sept. 5 by N. S. Chernykh at the Crimean Astrophysical Observatory. The key identification 1978 RU1 = 1981 FC is by E. Bowell (MPC 5977).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	179.82220	(1950.0)	P	Q	
n	0.20529552	Peri.	95.55749	+0.11881671	+0.99291594
a	2.8458788	Node	181.26701	-0.92341988	+0.11023231
e	0.0272771	Incl.	1.87732	-0.36493603	+0.04434831
P	4.80	B(1,0)	14.0		

Residuals in seconds of arc

760401 095	0.6+	1.6+	781004 095	0.4+	0.4-	831013 046	0.6+	0.4+
780901 095	0.1-	0.7-	781009 095	0.1+	0.8-	831013 046	1.9-	1.0+
780905 095	1.3+	0.1+	810330 688	0.7+	1.1-	831104 688	2.6+	0.2-
780907 095	0.4-	1.7-	810330 688	0.7+	1.9-	831104 688	0.4+	2.7-
780912 095	1.4-	0.2-	810401 688	1.2-	1.5-	831105 801	1.2-	0.0
780928 095	1.6+	0.4-	810401 688	2.7-	2.1-			

(2970)* 1978 UC = 1950 ER = 1954 CC

Discovered 1978 Oct. 27 by P. Wild at Zimmerwald.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	117.88967	(1950.0)	P	Q	
n	0.23008199	Peri.	76.07107	+0.51565358	-0.85445895
a	2.6376326	Node	342.45126	+0.68251861	+0.45427537
e	0.1529130	Incl.	12.11016	+0.51794762	+0.25205911
P	4.28	B(1,0)	13.5		

Residuals in seconds of arc

500315	760	1.0-	2.6-		781109	026	0.0	0.8+		820921	688	0.5-	2.1+
500315	760	0.6-	0.8-		781124	026	1.0+	0.8-		820921	688	0.1+	1.6+
540209	760	0.5-	1.0+		781124	026	0.1-	0.4-		821011	801	2.0+	3.2-
781027	026	0.9+	0.5+		781202	026	1.4-	0.9+		821111	801	2.0-	0.7-
781028	026	0.2+	0.8-		820915	688	0.7+	1.6-					
781107	026	0.0	0.1-		820915	688	0.2-	1.9-					

(2971)* 1980 YL = 1963 VJ = 1973 SM5 = 1976 SM10

Discovered 1980 Dec. 30 by A. Mrkos at Klet. The identifications are by K. Hurukawa (MPC 7449). The identification 1980 YL = 1976 SM10 was found independently by L. D. Schmadel (MPC 7449).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	64.84915		(1950.0)	P	Q
n	0.29278422	Peri.	352.37921	+0.37130261	-0.92096941
a	2.2461441	Node	75.76570	+0.85815159	+0.29180581
e	0.1178370	Incl.	6.99888	+0.35455636	+0.25819513
P	3.37	B(1,0)	14.5		

Residuals in seconds of arc

631111	760	1.9-	0.6+		801230	046	2.1+	0.7+		831004	801	0.4+	2.7+
631111	760	1.4-	1.4+		810106	046	3.7-	0.3-		831005	046	1.5-	1.1+
730927	095	4.9+	0.7+		810108	046	1.3-	1.0-		831005	046	0.9+	2.1-
760918	808	1.0+	0.1+		810108	046	0.3-	1.4+		831006	046	3.6-	3.2-
760918	808	0.3-	0.2-		830903	801	(0.8+	0.9+)		831006	046	0.2+	2.4-
801213	330	1.7+	2.8-		831001	046	2.4-	0.7+					
801230	046	1.8+	0.4+		831001	046	3.2+	1.6+					

1932 CN = 1949 UP = 1974 HG3 = 1983 WD

The key identification 1932 CN = 1983 WD is by E. Bowell.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	68.99143		(1950.0)	P	Q
n	0.26279047	Peri.	8.78520	+0.05437904	-0.98975714
a	2.4139624	Node	78.17593	+0.90768927	-0.00608971
e	0.0696199	Incl.	7.75056	+0.41610468	+0.14263143
P	3.75	B(1,0)	14.0		

Residuals in seconds of arc

320205	024	7.4+	2.2-		740425	805	0.2+	1.0+		831205	688	1.1-	0.5-
320211	024	6.0-	4.5+		831128	688	0.7-	0.8+		831206	688	0.4+	0.5+
320301	024	0.3+	0.7-		831128	688	0.3+	0.6-		831206	688	0.9+	0.2-
320310	024	1.4-	2.5-		831201	688	0.3+	1.5-					
491028	760	(83.2-	13.9-)X		831205	688	0.2-	0.2+					

1953 VN2 = 1953 XG = 1953 XJ1 = 1934 SC = 1978 JU1 = 1983 XA

The triple designation 1953 VN2 = 1953 XG = 1953 XJ1 is by C. M. Bardwell (MPC 4772). The key identification 1953 VN2 = 1983 XA is by E. Bowell.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	130.83695		(1950.0)	P	Q
n	0.26333355	Peri.	297.04946	+0.97960741	-0.16456866
a	2.4106423	Node	72.60734	+0.19848763	+0.88166824
e	0.1414789	Incl.	6.93768	-0.03117649	+0.44224230
P	3.74	B(1,0)	14.0		

Residuals in seconds of arc

340929	078	4.8-	1.6+		780506	095	1.4-	3.4-		831202	372	1.1-	1.6-
341012	078	5.5+	2.4-		831128	688	0.4+	0.5-		831205	688	0.3-	0.8+
531109	024	1.6-	1.5-		831128	688	0.0	0.3-		831205	688	0.7-	0.1-
531205	760	1.8+	0.9-		831201	688	0.1-	0.1+		831206	688	0.2+	1.1+
531205	760	0.1-	1.5+		831201	688	0.6+	0.3+		831206	688	2.0+	0.8+
531208	024	0.7+	1.8-		831202	372	1.1-	0.1-					

1976 US2 = 1976 YG = 1972 TT4 = 1983 JR

The key identification 1976 US2 = 1983 JR and the identification 1976 US2 = 1972 TT4 are by E. Bowell and by L. D. Schmadel, respectively. The double designation 1976 US2 = 1976 YG is by T. Urata (JAM 743).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	81.48753	(1950.0)	P	Q
n	0.23949923	Peri. 56.31019	+0.14063389	+0.97503368
a	2.5680344	Node 222.83874	-0.97126466	+0.10220796
e	0.1100534	Incl. 14.63969	-0.19200794	+0.19713665
P	4.12	B(1,0) 14.0		

Residuals in seconds of arc

721005 095	0.1+	3.5+	761118 381	0.4-	0.2-	830507 688	0.4+	0.0
761024 381	0.5+	2.1-	761118 381	0.2-	0.6-	830515 688	0.9-	0.6+
761024 381	0.5-	2.6-	761216 801	1.9-	0.0	830515 688	0.2+	0.4+
761026 095	2.2+	3.9+	830507 688	0.5+	0.6+			

1977 RG

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	271.87529	(1950.0)	P	Q
n	0.21145647	Peri. 82.73427	-0.34431948	+0.93814981
a	2.7903289	Node 166.94743	-0.91228384	-0.32518743
e	0.1073890	Incl. 9.25398	-0.22177081	-0.11886152
P	4.66	B(1,0) 14.5		

From 8 observations 1977 Sept. 8-Dec. 11, mean residual 1".1.

1978 TR2 = 1983 VL1

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	107.08999	(1950.0)	P	Q
n	0.20456860	Peri. 75.59639	+0.99705058	-0.07491639
a	2.8526223	Node 288.69793	+0.06187403	+0.91310884
e	0.0920860	Incl. 1.00800	+0.04540643	+0.40077397
P	4.82	B(1,0) 14.0		

Residuals in seconds of arc

780927 095	0.3-	0.1-	831106 046	0.6-	0.8-	831108 046	0.0	0.4+
781003 095	0.8-	0.8-	831107 046	3.0+	0.6-	831109 046	2.0-	1.9-
781007 095	0.2+	0.4-	831107 046	0.4+	1.6-	831109 046	0.6-	0.0
831106 046	2.3-	0.6+	831108 046	1.1+	0.1+			

1980 PF

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	85.22588	(1950.0)	P	Q
n	0.28959377	Peri. 17.27950	+0.85719612	+0.50365469
a	2.2626111	Node 311.98271	-0.48791015	+0.72747565
e	0.1614689	Incl. 8.31162	-0.16479834	+0.46595185
P	3.40	B(1,0) 15.0		

From 6 observations 1980 July 17-Oct. 2, mean residual 0".7.

1980 RG1

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	346.11803	(1950.0)	P	Q
n	0.22824373	Peri. 109.72613	+0.97592866	+0.20786687
a	2.6517758	Node 238.32714	-0.21758668	+0.90748918
e	0.4669171	Incl. 4.44707	-0.01480841	+0.36504074
P	4.32	B(1,0) 17.0		

From 11 observations 1980 Sept. 13-Dec. 1, mean residual 1".1.

1980 VM1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	226.89698	(1950.0)	P	Q
n	0.17674649	Peri. 30.52552	-0.09736745	-0.99228341
a	3.1446249	Node 65.15720	+0.89513031	-0.12102834
e	0.2303034	Incl. 4.85276	+0.43504171	+0.02694003
P	5.58	B(1,0) 13.5		

From 5 observations 1980 Oct. 18-Dec. 27, mean residual 1".1.

1981 EO7
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	66.08978	(1950.0)	P	Q
n	0.23545625	Peri. 210.36196	+0.65049440	-0.75563699
a	2.5973477	Node 199.39980	+0.73493318	+0.65168760
e	0.1061061	Incl. 13.33574	+0.19165140	+0.06569629
P	4.19	B(1,0) 15.0		

Residuals in seconds of arc

810301	413	0.4-	0.6+	810315	413	0.6+	0.3-	810410	413	0.3-	0.7+
810301	413	2.0+	2.5-	810405	413	0.9-	1.9+	810410	413	0.9+	1.8-
810307	413	0.3-	1.6+	810405	413	0.7+	2.3-	810412	413	1.1-	1.5+
810307	413	0.4+	0.3+	810406	413	1.2-	1.7+	831013	046	0.9-	2.5-
810311	413	2.0-	1.2+	810406	413	0.1+	1.6-	831013	046	1.1-	1.3+
810311	413	0.3-	1.1-	810407	413	0.1+	2.1+	831015	046	2.1-	0.8-
810315	413	0.9-	0.8+	810407	413	2.5+	2.8-	831015	046	4.0+	1.9+

1981 EH14
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	86.13528	(1950.0)	P	Q
n	0.22650649	Peri. 182.86377	+0.90382966	-0.41597827
a	2.6653228	Node 202.55918	+0.39757713	+0.90304482
e	0.1769277	Incl. 15.15114	+0.15819095	+0.10710802
P	4.35	B(1,0) 15.0		

Residuals in seconds of arc

810228	413	0.2-	1.1+	810312	413	1.6+	0.4-	831012	688	5.7+	0.4+
810228	413	0.8+	1.6+	810406	413	0.2-	0.8+	831012	688	2.2+	2.3+
810301	413	1.1+	0.4+	810406	413	3.0+	1.5-	831016	046	3.1-	2.0-
810306	413	1.1-	1.2+	810408	413	1.1-	1.1+	831016	046	6.3-	3.5-
810306	413	1.9+	0.9-	810408	413	0.7+	0.7-	831104	688	0.2+	0.9-
810308	413	0.5+	0.5+	810409	413	0.1+	0.5+	831104	688	1.5+	0.0
810308	413	1.0+	0.2+	810409	413	1.3+	0.7-				
810312	413	1.3-	1.6+	831011	688	1.7+	2.0-				

1981 PA = 1946 DA
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	258.23898	(1950.0)	P	Q
n	0.27007662	Peri. 108.19350	+0.29513421	-0.92788698
a	2.3703488	Node 322.12487	+0.67440976	+0.37124404
e	0.3576999	Incl. 21.78638	+0.67680666	+0.03469319
P	3.65	B(1,0) 14.5		

Residuals in seconds of arc

460219	062	0.4+	0.1+	810801	801	0.2+	0.3-	810829	801	1.0+	0.2-
460219	062	1.2-	0.7+	810802	801	1.2+	0.8+	810925	801	2.9-	0.8-
460223	062	1.6+	0.5-	810808	801	0.1+	1.0+	811029	801	1.7+	0.4+
810731	801	0.2+	0.7+	810822	801	1.3-	0.9-				

1981 WO1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	34.09803	(1950.0)	P	Q
n	0.40999313	Peri. 248.82946	-0.51197927	-0.81572449
a	1.7945339	Node 234.84628	+0.85817822	-0.47203689
e	0.0844805	Incl. 19.22369	+0.03751491	-0.33432727
P	2.40	B(1,0) 15.5		

From 9 observations 1981 Nov. 21-1982 Feb. 27, mean residual 0".4.

1981 XA
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	355.51060	(1950.0)	P	Q
n	0.34610834	Peri. 3.26132	+0.18257519	-0.91926743
a	2.0090682	Node 76.43333	+0.89370194	+0.00731703
e	0.2038299	Incl. 21.02291	+0.40983305	+0.39356556
P	2.85	B(1,0) 15.5		

From 9 observations 1981 Oct. 5-Dec. 23, mean residual 1".2.

1982 BJ
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	264.13794	(1950.0)	P	Q
n	0.27960559	Peri. 37.65237	-0.85481381	-0.37051568
a	2.3161791	Node 116.77234	+0.31899201	-0.92742419
e	0.1961013	Incl. 24.01391	+0.40931337	-0.05101474
P	3.52	B(1,0) 15.0		

From 12 observations 1982 Jan. 26-Apr. 13, mean residual 0".8.

1982 HQ1 = 1949 UL = 1978 EZ3
The identification 1982 HQ1 = 1978 EZ3 is by L. D. Schmadel.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	210.86702	(1950.0)	P	Q
n	0.29239619	Peri. 233.70797	+0.39294260	+0.91275208
a	2.2481353	Node 59.79437	-0.79675423	+0.39859609
e	0.1979907	Incl. 7.42704	-0.45910652	+0.08946955
P	3.37	B(1,0) 14.8		

Residuals in seconds of arc

491028	760(23.1+	34.6+)X	820428	688	0.4+	0.2-	831201	688	2.4-	0.2+
780306	095	0.1+	0.3+	820520	688	1.4-	0.0	831205	688	1.4+	1.3-
820418	688	0.1-	0.3+	820520	688	0.5-	0.4-	831205	688	0.5-	0.9+
820418	688	1.4+	0.7-	831128	688	2.7-	0.8-	831206	688	1.6+	0.3+
820428	688	0.2-	0.4+	831128	688	0.2+	0.7-	831206	688	2.6+	0.5+

1982 SV
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	164.25638	(1950.0)	P	Q
n	0.26244543	Peri. 243.32517	+0.31079369	-0.94860955
a	2.4160729	Node 189.18743	+0.94924639	+0.31296931
e	0.3690366	Incl. 21.90214	+0.04835876	-0.04679891
P	3.76	B(1,0) 15.5		

From 13 observations 1982 Sept. 24-Dec. 6, mean residual 1".4.

1982 SH1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	266.15058	(1950.0)	P	Q
n	0.37490868	Peri. 198.96760	+0.90839922	-0.41635739
a	1.9048132	Node 186.06346	+0.41487227	+0.90894317
e	0.0870232	Incl. 21.18683	+0.05188309	+0.02165256
P	2.63	B(1,0) 17.5		

From 7 observations 1982 Sept. 20-Dec. 6, mean residual 1".7.

1983 PA
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 95.37366		(1950.0)	P	Q
n 0.26371704	Peri.	84.75055	+0.91666158	-0.22866966
a 2.4083000	Node	288.15434	+0.05074672	+0.88010177
e 0.3931008	Incl.	20.17903	+0.39642946	+0.41609020
P 3.74	B(1,0)	14.0		

From 22 observations 1983 Aug. 8-Nov. 30, mean residual 1".3.

1983 RB
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 141.71192		(1950.0)	P	Q
n 0.29730017	Peri.	114.80819	+0.24667673	+0.96697406
a 2.2233403	Node	168.88445	-0.96496463	+0.25119097
e 0.5070001	Incl.	19.42719	-0.08940832	-0.04317725
P 3.32	B(1,0)	17.0		

From 18 observations 1983 Sept. 7-Nov. 1, mean residual 1".3.

1983 RD
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 129.20670		(1950.0)	P	Q
n 0.32649324	Peri.	192.94983	+0.99350717	-0.11217337
a 2.0887506	Node	173.40200	+0.11342697	+0.96367717
e 0.4863508	Incl.	9.51308	+0.00882150	+0.24237047
P 3.02	B(1,0)	18.0		

From 50 observations 1983 Sept. 7-Nov. 30, mean residual 1".5.

1983 SA
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 52.00041		(1950.0)	P	Q
n 0.11332255	Peri.	316.54312	+0.61298472	+0.78514218
a 4.2292025	Node	350.05974	-0.50895197	+0.30688073
e 0.7147092	Incl.	30.77547	-0.60433238	+0.53793676
P 8.70	B(1,0)	14.5		

From 41 observations 1983 Sept. 10-Nov. 9, mean residual 1".1.

1983 TA
Epoch 1983 Oct. 13.0 ET = JDE 2445620.5

M 340.03131		(1950.0)	P	Q
n 0.22514376	Peri.	57.43565	+0.45949800	-0.88674974
a 2.6760616	Node	5.92118	+0.55842824	+0.24434280
e 0.4695382	Incl.	29.22278	+0.69066597	+0.39239201
P 4.38	B(1,0)	17.5		

From 7 observations 1983 Oct. 1-29.

1983 TB
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 290.30039		(1950.0)	P	Q
n 0.68739597	Peri.	321.68737	-0.64049850	+0.67086635
a 1.2715440	Node	265.02877	-0.57891936	-0.74157790
e 0.8902509	Incl.	22.03519	-0.50459294	-0.00074334
P 1.43	B(1,0)	16.0		

From 16 observations 1983 Oct. 12-Nov. 29, mean residual 1".0.

1983 VA
Epoch 1983 Nov. 2.0 ET = JDE 2445640.5

M 349.25596		(1950.0)	P	Q
n 0.23754737	Peri.	11.73513	+0.03093396	-0.96185015
a 2.5820772	Node	76.94326	+0.89293776	-0.09560294
e 0.6888028	Incl.	16.20270	+0.44911606	+0.25632864
P 4.15	B(1,0)	17.5		

From 5 observations 1983 Oct. 27-Nov. 11.

6032 P-L = 1979 OV15 = 1983 SG

The identifications are by K. Hurukawa and W. Landgraf, who found them independently.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 113.02174		(1950.0)	P	Q
n 0.25691845	Peri.	28.29966	+0.96104132	+0.27491857
a 2.4506054	Node	315.71238	-0.26068900	+0.86710268
e 0.1581641	Incl.	2.34945	-0.09187401	+0.41539464
P 3.84	B(1,0)	15.0		

Residuals in seconds of arc

600924 675	0.0	0.3-	790730 095	0.0	0.2+	830929 046	3.8-	0.3-
600925 675	0.4-	0.4-	830928 071	1.7+	4.4+	830930 071	0.0	2.7+
600926 675	0.6-	0.1-	830928 071	2.5+	0.2+	830930 071	1.3+	0.3+
600928 675	0.5-	0.4+	830928 071	4.3+	1.1+	831001 046	3.2-	1.5-
601017 675	0.2-	0.1-	830928 071	2.5+	2.0+	831001 046	1.5-	1.7-
601022 675	0.1+	0.3+	830928 071	0.5-	1.1-	831005 046	2.1-	4.9-
601024 675	0.5+	1.5+	830928 071	2.8+	1.0+	831005 046	1.8-	4.4-
601026 675	0.2-	0.9+	830929 046	2.1-	0.3-			

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

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

(2972)* 1939 TB = 1955 XL = 1964 PK = 1976 GO2 = 1977 UL1 = 1980 TY2 = 1983 RO

Discovered 1939 Oct. 7 by Y. Vaisala at Turku. The key identification 1939 TB = 1983 RO is by O. Kippes and W. Landgraf, who found it independently. The identifications 1939 TB = 1942 PJ = 1948 HC (MPC 2327) and 1939 TB = 1957 BK (MPC 2806) are invalid.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 125.21729		(1950.0)	P	Q
n 0.31235727	Peri.	138.83487	+0.95486027	+0.29695477
a 2.1513033	Node	203.89368	-0.27728323	+0.88166917
e 0.1692870	Incl.	1.09336	-0.10656396	+0.36671152
P 3.16	B(1,0)	14.5		

Residuals in seconds of arc

391007 062	0.9-	0.1-	771018 095	0.4-	1.1-	830907 046	1.4-	0.3-
391017 062	1.1-	1.5+	801010 095	0.2+	0.8+	830907 046	1.0-	0.4-
391018 062	1.0+	1.0+	801014 511	0.1-	0.3-	830908 046	0.2+	0.1+
391020 062	3.6+	1.1+	801014 511	0.8-	0.8-	830908 046	0.7+	0.2+
391111 062	3.5-	1.9-	801014 511	1.8-	1.6-	831011 688	3.7+	0.2+
551212 760(73.7-	46.3+)X		801015 095	3.1+	1.5+	831011 688	3.1+	2.1+
640812 760(65.6-	21.7+)X		830905 046	2.6-	0.4-			
760401 095	0.2+	0.7-	830905 046	0.9-	1.7-			

(2973)* 1951 AJ = 1951 AQ = 1973 UQ4 = 1981 YB1

Discovered 1951 Jan. 10 by S. Arend at Uccle. The double designation 1951 AJ = 1951 AQ is by O. Kippes (MPC 650).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	287.62333	(1950.0)	P	Q
n	0.25395197	Peri. 88.91624	+0.41451054	-0.90998070
a	2.4696476	Node 336.58606	+0.82374930	+0.38021140
e	0.1505523	Incl. 1.55403	+0.38680498	+0.16545213
P	3.88	B(1,0) 13.5		

Residuals in seconds of arc

510109	760	0.5-	1.6+	731029	095	0.2+	1.1-	830417	474	1.3-	1.5-
510109	760	4.9+	0.5+	811225	704	0.9-	1.2+	830417	474	2.7-	1.9-
510110	012	1.7-	0.1-	811227	704	(1.5-	9.2-)	830418	801	0.1-	4.6+
510113	711	(9.8+	3.5+)Y	811229	704	1.9-	3.2-	830507	688	1.8+	0.2+
510205	012	1.4+	0.6+	811231	704	2.4+	0.1-	830507	688	1.0+	0.5-
510206	012	4.2-	2.6-	820101	704	0.4+	2.3+	830515	688	0.8+	2.0-

(2974)* 1955 QK = 1980 TJ13

Discovered 1955 Aug. 23 at the Goethe Link Observatory, Indiana University.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	93.92792	(1950.0)	P	Q
n	0.28026011	Peri. 130.01400	+0.96139102	+0.26776991
a	2.3125716	Node 214.59037	-0.27400015	+0.91006743
e	0.1402371	Incl. 6.41766	-0.02551920	+0.31634875
P	3.52	B(1,0) 15.0		

Residuals in seconds of arc

550823	760	1.3+	0.4+	550919	760	2.3+	0.2+	801017	095	1.3-	0.3-
550823	760	0.1+	0.7+	550919	760	1.8-	0.0	830907	801	0.1-	0.2-
550913	760	0.7-	1.5-	801011	095	0.9+	3.0+	831007	801	0.3-	0.5+
550913	760	1.5-	1.7-	801015	095	0.5+	2.5-	831107	801	0.2-	2.0+

(2975)* 1970 AF1 = 1970 AK1 = 1970 CB = 1957 HU = 1967 GH = 1978 PF4

Discovered 1970 Jan. 8 by H. Potter and A. Lokalov at Cerro El Roble. The identifications are by T. Urata (NOC 1213).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	78.06820	(1950.0)	P	Q
n	0.29223016	Peri. 316.93531	-0.96969975	+0.22298681
a	2.2489822	Node 236.20758	-0.17850378	-0.92561450
e	0.0948019	Incl. 6.89691	-0.16678967	-0.30580169
P	3.37	B(1,0) 13.5		

Residuals in seconds of arc

570430	076	1.6-	2.4+	700207	805	0.5-	1.0-	821213	381	0.4+	0.4-
570430	076	2.3+	4.1-	700207	805	0.4+	0.2-	821214	381	0.2+	0.5-
670406	095	0.3-	0.9+	700207	805	0.1+	0.6+	821214	381	1.6+	0.5-
700108	805	0.9-	0.7+	780809	095	2.0-	0.3-				
700109	805	0.1-	0.2+	810830	688	1.0+	0.5-				

(2976)* 1974 HR = A903 UG = 1953 XA = 1957 NB = 1965 XA = 1972 YP1 = 1977 VV = 1983 TR

Discovered 1974 Apr. 22 by C. Torres at Cerro El Roble. The key identification 1974 HR = 1983 TR is by E. Bowell and T. Urata, who found it independently. The identifications 1974 HR = 1953 XA = 1957 NB = 1965 XA = 1972 YP1 = 1977 VV were also found independently by Urata.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	59.99310	(1950.0)	P	Q
n	0.16033263	Peri. 174.36528	+0.92924065	-0.36140400
a	3.3557384	Node 207.21886	+0.33207242	+0.90806539
e	0.1299052	Incl. 9.66686	+0.16198679	+0.21167047
P	6.15	B(1,0) 12.0		

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

031027	024	0.6+	1.1+		740425	805	0.1+	1.7-		831009	046	0.4+	2.4-
531202	012	1.3-	1.2+		771103	330	4.6-	0.6-		831012	688	1.4+	1.4+
570702	839	0.2+	0.3-		771111	805	1.1-	1.3+		831012	688	0.4-	0.2+
651201	760	(0.04-	0.02+)X		771112	805	0.7-	1.6+		831014	046	0.7-	1.3+
721230	095	1.4+	1.7-		831007	046	0.5+	1.6-		831014	046	0.8+	0.8+
740419	808	0.5-	1.8-		831007	046	1.7+	1.8-		831015	046	0.3-	1.7-
740419	808	1.0-	1.5-		831009	688	1.1+	1.1-		831015	046	0.5+	2.3-
740422	805	0.6-	1.5-		831009	688	3.3+	1.2-		831104	688	0.5+	0.1+
740424	805	0.1-	2.2-		831009	046	1.3+	1.2-		831104	688	2.8-	1.5-

(2977)* 1974 SP = 1977 EG2

Discovered 1974 Sept. 19 by L. I. Chernykh at the Crimean Astrophysical Observatory. The identification is by S. Nakano and K. Hurukawa (MPC 7227).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	63.10278		(1950.0)	P	Q
n	0.21194990	Peri.	184.58765	+0.99581431	+0.08697696
a	2.7859966	Node	170.28764	-0.07766017	+0.96721939
e	0.1685807	Incl.	9.58365	-0.04819497	+0.23858260
P	4.65	B(1,0)	13.5		

Residuals in seconds of arc

740919	095	2.7-	0.4+		770315	381	1.0+	1.1-		830813	688	1.4+	0.7+
740921	808	0.4+	0.1-		770315	381	0.5+	0.1-		830813	688	0.0	0.4+
740921	808	0.0	0.7-		770410	381	1.3-	0.6+		830814	801	1.0-	0.1-
740921	095	0.8+	4.4-		770410	381	0.6-	0.8-		830902	801	0.8+	1.9+
740923	095	1.6-	1.2-		830710	688	1.0+	1.1-		830908	801	1.4-	0.4+
741010	808	2.9+	2.2+		830710	688	0.7+	1.3-					
741010	808	1.1+	1.7+		830711	801	1.6-	0.5+					

(2978)* 1978 SR = 1929 TC1 = 1934 PN = 1940 SE = 1967 RC1

Discovered 1978 Sept. 26 at the Agassiz Station of the Harvard College Observatory. The identifications are by L. D. Schmadel (MPC 7608).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	48.05712		(1950.0)	P	Q
n	0.18001734	Peri.	1.96074	+0.98659788	+0.16311463
a	3.1064175	Node	348.64884	-0.14999243	+0.89630475
e	0.1741339	Incl.	1.24306	-0.06424084	+0.41234864
P	5.48	B(1,0)	13.0		

Residuals in seconds of arc

291001	690	1.9+	0.2+		780905	095	0.8+	0.2+		781003	801	0.4-	1.1+
291005	690	1.4-	3.1+		780907	095	0.6-	1.5+		781004	095	1.5+	0.8+
291011	690	1.3-	0.2+		780912	095	1.0-	1.6+		781008	095	0.9+	0.5+
291012	690	0.4+	1.5+		780926	801	1.7-	1.6-		781009	095	0.4-	0.8+
340807	078	(3.7+	7.7-)X		780927	801	3.2+	2.5-		781024	095	0.1-	1.4-
400928	119	(52.2+	89.4+)X		780928	801	3.6-	2.8-		800122	095	1.6+	1.7-
400928	119	(77.8+	36.8+)X		780928	095	2.5+	2.0+		831004	801	1.3+	1.3+
670912	095	2.8-	7.3-		781003	801	0.4+	1.5+		831010	801	1.6+	0.4-
780901	095	0.2+	0.3-		781003	801	0.4-	0.4-					

(2979)* 1978 TB7 = 1976 HM = 1982 KM1

Discovered 1978 Oct. 2 by L. V. Zhuravleva at the Crimean Astrophysical Observatory. The key identification 1978 TB7 = 1982 KM1 is by S. Nakano and K. Hurukawa (MPC 7228).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	67.89554		(1950.0)	P	Q
n	0.17776340	Peri.	191.99816	+0.94074270	+0.32319098
a	3.1326207	Node	148.54019	-0.29257099	+0.92664442
e	0.1434738	Incl.	11.35067	-0.17148000	+0.19203566
P	5.54	B(1,0)	12.5		

Residuals in seconds of arc

760423 095	1.4-	0.7-	820524 381	1.2+	1.6+	830815 046	1.6-	2.1-
781002 095	0.1-	2.5+	830710 801	0.9-	1.0+	830815 046	1.4-	1.4-
781008 095	1.9-	1.8+	830711 801	2.0-	0.0	830816 801	0.1-	0.7+
781101 095	0.9+	2.5+	830717 688	0.8+	1.3-	830905 801	2.2-	1.6-
820522 381	1.3+	1.1+	830717 688	1.6+	1.5+	831004 688	2.3+	0.6+
820522 381	0.7+	1.4+	830814 046	2.5+	0.6-	831004 688	0.3+	1.3-
820523 381	0.2-	1.9+	830814 046	0.3+	1.1+			

(2980)* 1981 EU17 = 1977 EL3 = 1979 SQ7

Discovered 1981 Mar. 2 by S. J. Bus at Siding Spring in the course of the U.K.-Caltech Asteroid Survey.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 43.73949		(1950.0)	P	Q
n 0.23933250	Peri.	253.34231	+0.41549837	-0.90942378
a 2.5692218	Node	172.03926	+0.87541284	+0.39455760
e 0.1790423	Incl.	7.29776	+0.24700901	+0.13142560
P 4.12	B(1,0)	14.0		

Residuals in seconds of arc

770315 381	0.6-	0.2+	810307 413	0.6-	0.6+	810407 413	1.3+	0.6-
770315 381	0.5+	0.8-	810307 413	1.7+	1.5-	810408 413	1.6-	1.5+
790923 095	0.1+	0.0	810311 413	0.8-	1.4+	810408 413	0.8+	0.9-
810302 413	0.8-	0.4+	810311 413	1.4+	0.6-	810411 413	0.7-	0.6+
810302 413	1.6+	1.3-	810316 413	1.6-	1.9+	830905 801	1.0+	0.8+
810303 413	1.0-	0.6+	810329 413	0.9-	1.8+	831008 801	2.1-	0.1+
810303 413	1.8+	1.9-	810329 413	0.1-	0.5+	831107 801	0.7+	0.6+

(2981)* 1981 EE20 = 1954 LF = 1977 RN3

Discovered 1981 Mar. 2 by S. J. Bus at Siding Spring in the course of the U.K.-Caltech Asteroid Survey.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 153.06635		(1950.0)	P	Q
n 0.17653690	Peri.	87.70186	+0.09341428	+0.99562539
a 3.1471134	Node	187.65903	-0.91918240	+0.08548388
e 0.1716202	Incl.	0.84412	-0.38259309	+0.03771723
P 5.58	B(1,0)	13.0		

Residuals in seconds of arc

540607 760	0.6-	3.2-	810311 413	1.0-	0.3+	830904 071	0.7+	0.0
540607 760	0.3+	0.4+	810316 413	0.8-	0.5-	830910 688	3.0-	0.8-
770912 095	1.9-	0.7+	810316 413	1.7+	1.0-	831008 801	1.2+	0.2-
770918 095	1.6+	0.4+	810329 413	0.4+	0.0	831012 688	0.6-	1.2-
810302 413	0.0	0.5-	810407 413	0.8-	1.1-	831012 688	1.6-	0.9-
810302 413	1.1-	0.5-	810407 413	1.1+	1.4-	831104 688	3.0+	0.1-
810303 413	1.3-	0.2+	810408 413	0.9-	0.2+	831104 688	1.2+	3.0-
810303 413	0.7+	0.1+	810411 413	0.5+	0.2+	831109 801	0.5+	0.1+
810307 413	0.6-	0.4+	810411 413	0.4+	0.1+			
810307 413	0.1+	0.3-	830904 071	1.0+	0.3-			

(2982)* 1981 JA3 = 1973 YP = 1978 SY5

Discovered 1981 May 6 by C. Shoemaker at Palomar.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 20.36936		(1950.0)	P	Q
n 0.18976478	Peri.	38.43396	+0.15899180	-0.97984331
a 2.9991094	Node	42.80886	+0.85604173	+0.07578745
e 0.0664740	Incl.	10.25229	+0.49184769	+0.18483329
P 5.19	B(1,0)	13.0		

Residuals in seconds of arc

731220 095	0.6+	1.7-	810506 675	0.1+	0.1+	831011 688	1.4+	0.3-
780928 095	0.6+	0.2-	810511 675	1.4-	1.0-	831012 688	1.5+	1.0-
810411 675	1.3+	0.6+	831004 801	(7.8-	1.0-)	831012 688	1.9+	0.9-
810411 675	0.5-	0.7-	831009 675	1.5-	0.2-	831103 801	1.2-	1.8+
810505 675	0.5-	1.6-	831009 675	0.2-	2.0+	831104 688	0.7-	0.0
810506 675	0.3-	1.4-	831011 688	0.4-	0.8-	831104 688	0.5-	1.3-

(2983)* 1981 RW2 = 1933 SM = 1955 FM = 1962 SF = 1971 OD = 1972 VE = 1972 XK1 = 1977 UO1 = 1977 VR2

Discovered 1981 Sept. 2 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	234.21728		(1950.0)		P		Q	
n	0.20530791	Peri.	88.96596		+0.91653142		+0.39399973	
a	2.8457643	Node	247.82756		-0.39011364		+0.84269158	
e	0.0605591	Incl.	4.26107		-0.08821289		+0.36692657	
P	4.80	B(1,0)	13.0					

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

330925 012	0.3-	1.5-	721108 095	(2.0-	16.5-)	810902 095	0.7+	1.8+
550320 760	(0.03-	0.01-)X	721203 095	1.0-	1.9-	810905 095	1.8-	0.2-
620922 760	0.8+	0.1+	771018 095	1.0-	0.3+	810923 095	0.2-	0.2+
620923 760	1.4+	0.9+	771109 026	0.4-	0.9-	810925 095	1.1-	1.6+
710717 095	0.9+	3.0-	771111 026	1.9+	0.3-			

(2984)* 1981 YD = 1963 FB = 1965 UK1 = 1971 FZ = 1971 JA

Discovered 1981 Dec. 30 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	229.88241		(1950.0)		P		Q	
n	0.25393401	Peri.	47.65055		-0.62816444		-0.77629609	
a	2.4697641	Node	81.34072		+0.69725985		-0.59166458	
e	0.1334442	Incl.	3.05384		+0.34530876		-0.21747966	
P	3.88	B(1,0)	13.5					

Residuals in seconds of arc

630322 760	1.1-	1.6+	811124 688	4.6-	4.1-	811230 688	2.0+	0.1-
630322 760	0.1+	0.6+	811202 688	0.6-	1.6-	820116 688	1.0+	0.5-
651018 330	1.1+	1.4-	811202 688	0.2+	1.0-	820116 688	0.4-	1.1+
710319 095	0.6+	0.7+	811220 688	1.4+	0.4+	830506 688	1.2-	3.4-
710514 095	2.0+	3.0-	811220 688	1.7+	0.5+	830506 688	1.8-	3.4-
811124 688	2.2-	1.6-	811230 688	1.7+	0.7-	830609 801	0.7-	1.0-

(2985)* 1983 TV1 = 1962 JJ = 1976 GV = 1978 RY4 = 1978 TM3 = 1980 BT3

Discovered 1983 Oct. 12 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	151.88272		(1950.0)		P		Q	
n	0.20499297	Peri.	272.37127		+0.59545157		+0.80296645	
a	2.8486783	Node	34.21683		-0.71736343		+0.54604711	
e	0.0421701	Incl.	2.66244		-0.36170033		+0.23890883	
P	4.81	B(1,0)	13.0					

Residuals in seconds of arc

620505 760	(21.9-	59.4-)X	831011 688	0.7-	0.2-	831104 688	0.0	0.8+
760401 095	2.7+	0.7-	831011 688	1.9+	0.9+	831106 046	0.6+	0.5-
760402 095	3.7-	0.4-	831012 688	0.9-	1.0+	831106 046	0.6+	0.3-
760404 095	0.2+	0.8-	831012 688	2.2-	1.0-	831107 046	1.8+	0.7-
780906 095	0.2+	1.9+	831102 046	0.5-	2.3-	831107 046	0.1+	1.2-
781004 095	1.5-	0.9+	831102 046	2.0+	2.5-			
800122 095	0.2+	2.7+	831104 688	0.4-	1.0+			

(2986)* 2525 P-L = 1977 QG1

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

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	91.89653	(1950.0)		P	Q
n	0.17316460	Peri.	300.09016	+0.98929948	+0.14165599
a	3.1878409	Node	51.78870	-0.11381344	+0.89908718
e	0.1403528	Incl.	2.54794	-0.09128544	+0.41421711
P	5.69	B(1,0)	13.0		

Residuals in seconds of arc

600924	675	0.0	1.4+	770820	095	3.2+	0.8+	831011	688	0.2-	0.4+
600926	675	0.2-	0.2+	770822	095	2.4+	0.5-	831012	688	1.0+	0.2-
600928	675	1.3+	1.3+	770824	095	1.4+	0.9-	831012	688	0.9+	1.4+
600929	675	1.3+	1.3+	770908	095	0.5-	0.7+	831016	046	0.9+	2.7-
601017	675	0.4+	0.2+	770910	095	0.6-	0.4-	831016	046	3.1-	2.3-
601022	675	1.0-	0.3+	770918	095	2.0-	0.7-	831104	688	1.4+	0.5+
601025	675	1.3-	1.1-	770922	095	2.7-	0.6+	831104	688	1.5+	1.5+
601026	675	1.7-	1.4-	771007	095	2.7-	2.1-				
770819	095	2.3+	1.3+	831011	688	1.4-	0.2+				

(2987)* 4583 P-L = 1978 JY1 = 1980 UB1 = 1982 CB

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

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	193.22648	(1950.0)		P	Q
n	0.20103658	Peri.	336.38336	-0.80355123	-0.59522245
a	2.8859313	Node	167.08586	+0.54887411	-0.74351992
e	0.0652035	Incl.	1.01433	+0.23030985	-0.30477591
P	4.90	B(1,0)	13.5		

Residuals in seconds of arc

600924	675	0.4+	1.7-	601026	675	0.8+	0.6-	820216	046	0.5-	0.7-
600926	675	0.6+	1.1-	780506	095	1.2-	1.4-	820216	046	0.7+	0.6-
600927	675	0.1+	0.9-	801017	095	0.0	1.1-	830506	688	0.1+	2.3-
600928	675	0.2-	1.3-	820213	046	1.1-	1.0-	830506	688	0.5-	1.1-
601017	675	1.0+	0.3-	820213	046	0.3-	1.3-	830609	801	0.2+	1.6-
601022	675	0.0	0.3-	820214	046	0.7-	0.6-				
601025	675	0.4+	0.4-	820214	046	0.3+	1.3-				

1978 VR9 = 1983 TQ1

The identification is by E. Bowell.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	43.57593	(1950.0)		P	Q
n	0.18249008	Peri.	336.15609	+0.54079319	-0.84041368
a	3.0782986	Node	81.08887	+0.77734377	+0.48328373
e	0.1606172	Incl.	2.04890	+0.32137108	+0.24523799
P	5.40	B(1,0)	13.5		

Residuals in seconds of arc

781105	675	0.1+	0.5-	781129	675	0.4+	0.6-	831012	688	1.3+	1.7+
781106	675	0.1-	0.3+	781130	675	0.1+	0.9-	831012	688	1.2-	0.3-
781107	675	0.5-	1.3+	830910	688	0.4-	0.0	831104	688	1.3+	1.6-
781108	675	0.0	0.9+	830910	688	0.1-	0.1-	831104	688	0.7-	0.2-

1981 EY25 = 1963 TR = 1978 RM5

The identification 1981 EY25 = 1978 RM5 was found independently by W. Landgraf.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 125.80514		(1950.0)	P	Q
n 0.19861214	Peri.	152.58305	+0.76946889	+0.63863153
a 2.9093751	Node	167.71662	-0.59279536	+0.71890834
e 0.0598206	Incl.	2.21145	-0.23772102	+0.27444591
P 4.96	B(1,0)	13.0		

Residuals in seconds of arc

631014 760	0.3+	1.6+	810311 413	0.6-	0.2+	810406 413	0.7-	1.4+
631014 760	0.2-	0.2-	810311 413	0.3+	0.2+	810406 413	0.1-	0.6+
780906 095	0.5-	0.4+	810315 413	1.4-	0.9+	810407 413	0.5-	0.4+
810302 413	0.8-	0.5+	810315 413	0.7+	0.0	810407 413	1.9+	0.9-
810302 413	0.5+	0.5-	810405 413	1.1-	0.7+	810410 413	0.7+	0.2+
810306 413	1.4-	0.3-	810405 413	3.2+	1.4-	810410 413	0.1-	0.4-

1982 GG = 1982 FL3 = 1972 HT = 1975 EK3

The double designation 1982 GG = 1982 FL3 is by F. Bowman (MPC 7360).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 189.62116		(1950.0)	P	Q
n 0.29188714	Peri.	274.88680	+0.56942981	+0.82061333
a 2.2507483	Node	29.98703	-0.71055763	+0.52096284
e 0.1697736	Incl.	5.55817	-0.41334917	+0.23492867
P 3.38	B(1,0)	14.5		

Residuals in seconds of arc

720418 095	0.4+	1.0+	820323 809	0.7-	0.0	820415 046	1.7+	0.2-
750314 095	0.3+	0.6+	820324 809	0.8+	0.4-	820415 046	0.1+	0.6+
820321 809	0.7-	1.4-	820324 809	1.7+	0.5+	820419 046	0.6-	2.3-
820321 809	0.9-	0.1+	820324 809	2.1+	0.0	820419 046	1.0-	0.4+
820321 809	0.2-	2.5+	820326 809	1.0+	1.3+	820423 046	0.6-	0.5-
820322 809	1.1-	1.3-	820326 809	0.9-	0.5-	820423 046	(3.6+	1.2-)
820322 809	0.8-	1.2-	820326 809	2.1-	0.6+	820425 046	(4.3-	3.4+)
820322 809	1.2+	0.4-	820329 809	0.6-	0.7+	820425 046	0.1-	0.5+
820323 809	0.5+	1.3-	820329 809	1.2-	1.5+			
820323 809	0.5+	0.5-	820329 809	0.8+	0.1-			

9103 P-L = A924 RE = 1973 SF2 = 1983 TS = 1983 UE

The key identification 9103 P-L = 1983 UE is by E. Bowell.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 133.10849		(1950.0)	P	Q
n 0.30147621	Peri.	166.44961	+0.99930061	+0.03573567
a 2.2027652	Node	191.51938	-0.03733415	+0.93685940
e 0.1735780	Incl.	3.16087	-0.00210947	+0.34787558
P 3.27	B(1,0)	14.5		

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

240906 094(46.1+	31.6+)X	730922 095	1.3+	1.8-	831012 688	3.2+	0.8-	
240910 094(0.03+	0.01+)X	831007 046	4.4-	2.8-	831016 046	2.3-	1.8-	
601017 675	0.7-	1.4+	831007 046	2.3-	0.6+	831016 046	3.1-	1.4-
601022 675	0.9-	2.1+	831011 688	2.1+	0.5-	831104 688	0.8-	0.6+
601024 675	0.9+	2.8+	831011 688	1.7+	1.1-	831104 688	1.0+	0.2-
601026 675	1.0+	1.8+	831012 688	4.2+	0.9-			

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ORBITAL ELEMENTS BY T. URATA, SHIMIZU, JAPAN.

The following orbital elements are from NOC 1454 and 1455. The identifications are by T. Urata unless otherwise stated.

1979 OB15 = 1950 NE = 1950 NO = 1972 RT = 1983 VC

The double designation 1950 NE = 1950 NO was found by O. Kippes (MPC 1331).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

		(1950.0)	P	Q
M	145.41728			
n	0.27295126	Peri. 50.61484	+0.90901213	+0.41450642
a	2.3536769	Node 284.85801	-0.39483363	+0.82317184
e	0.1921943	Incl. 2.57203	-0.13342920	+0.38803680
P	3.61	B(1,0) 14.5		

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

500706	078	0.6+	3.5-	790730 095	0.2-	1.2+	831106 372	3.3+	0.3+
500710	760(0.07- | 0.00-)X		790819 095	1.9+	0.7-	831106 372	1.3+	2.7+
720907	095	0.2+	0.9-	831101 372	1.1-	2.6-			
790721	095	2.9-	3.1+	831101 372	3.4-	0.7-			

1979 TA = 1979 QK9 = 1983 VD

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

		(1950.0)	P	Q
M	124.75009			
n	0.25931616	Peri. 51.22367	+0.99280081	+0.11459116
a	2.4354761	Node 302.17034	-0.11864143	+0.90082323
e	0.2180755	Incl. 2.36047	-0.01645506	+0.41879156
P	3.80	B(1,0) 15.0		

Residuals in seconds of arc

790828	095	0.6+	1.2-	791012 046	0.8-	1.0-	791019 046	0.9+	0.6-
790923	095	0.6+	0.7+	791015 046	1.0+	3.4+	831106 372	2.3-	0.9+
791011	046	0.7-	2.9-	791015 046	1.0-	0.9+	831106 372	0.4+	1.5+
791011	046	1.1+	2.4-	791016 095	0.3-	3.6+	831107 372	0.3+	1.9-
791012	046	0.6-	0.6+	791019 046	1.1-	0.3-	831107 372	1.9+	1.3-

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NEW NAMES OF MINOR PLANETS.

(1787) Chiny = 1950 SK

Discovered 1950 Sept. 19 by S. Arend at Uccle.

Named for the principal town in the ancient county of the same name, situated on the beautiful river Semoise.

(1878) Hughes = 1933 QC

Discovered 1933 Aug. 18 by E. Delporte at Uccle.

Named in honor of the son of Mireille (nee Delporte) Demiddelaer, granddaughter of the discoverer.

(1925) Franklin-Adams = 1934 RY

Discovered 1934 Sept. 9 by H. van Gent at Johannesburg.

Named in memory of John Franklin-Adams (1843-1912), the British amateur astronomer who acquired and originally owned the 0.25-m photographic refractor he later donated to the Union Observatory in Johannesburg. Initially utilized for the pioneering photographic survey of the Milky Way, the Franklin-Adams Star Camera was employed for observations of minor planets in Johannesburg and Hartbeespoort for almost 70 years. Among the many discoveries with this celebrated instrument was Proxima Centauri.

(1926) Demiddelaer = 1935 JA

Discovered 1935 May 2 by E. Delporte at Uccle.

Named in honor of the family of Mireille Demiddelaer, granddaughter of the discoverer.

(2069) Hubble = 1955 FT
Discovered 1955 Mar. 29 at the Goethe Link Observatory, Indiana University.
Named in memory of Edwin P. Hubble (1889-1953), who provided the first comprehensive exploration of the universe beyond our own galaxy. He established a self-consistent distance scale as far as the 2.5-m Mount Wilson reflector could reach, and his classification scheme for galaxies is still the standard. He discovered the unique minor planet (1373) Cincinnati. His greatest achievement, however, known as Hubble's law of redshifts, can be interpreted as observational basis for the expanding universe. Name proposed by F. K. Edmondson. Citation written by N. U. Mayall.

(2070) Humason = 1964 TQ
Discovered 1964 Oct. 14 at the Goethe Link Observatory, Indiana University.
Named in memory of Milton L. Humason (1891-1972), who provided all the larger redshifts in the Hubble-Humason epoch-making program. Unrivaled in obtaining spectrograms of very faint galaxies, he correctly identified the few available features. Originally a mule skinner who brought up material for the construction of the Mount Wilson Observatory, he rose through the ranks as a janitor, night assistant and telescope user for colleagues. Appointed a regular staff member with only grammar-school education, he was eventually awarded an honorary degree by the University of Lund. Name proposed by F. K. Edmondson. Citation written by N. U. Mayall.

(2265) Verbaandert = 1950 DB
Discovered 1950 Feb. 17 by S. Arend at Uccle.
Named in memory of Jean Verbaandert (1901-1974), a Belgian astronomer who was a colleague of the discoverer for many years.

(2276) Warck = 1933 QA
Discovered 1933 Aug. 18 by E. Delporte at Uccle.
Named in honor of the family of Evelyne (nee Delporte) Warck, granddaughter of the discoverer.

(2277) Moreau = 1950 DS
Discovered 1950 Feb. 18 by S. Arend at Uccle.
Named in memory of Fernand Moreau (1888-1979), a long-time colleague of the discoverer at the Uccle Observatory.

(2300) Stebbins = 1953 TG2
Discovered 1953 Oct. 10 at the Goethe Link Observatory, Indiana University.
Named in memory of Joel Stebbins (1878-1966), who pioneered the development of photoelectric methods for measuring astronomical radiation, first at the University of Illinois, then at the University of Wisconsin. He applied the method in work on eclipsing binaries, interstellar reddening and the integrated magnitudes of galaxies. Others have used the technique to study the shapes, rotation periods and surface properties of asteroids. Name proposed by F. K. Edmondson. Citation written by A. E. Whitford.

(2301) Whitford = 1965 WJ
Discovered 1965 Nov. 20 at the Goethe Link Observatory, Indiana University.
Named in honor of Albert E. Whitford, director of the Washburn Observatory (1945-1958), director of the Lick Observatory (1958-1968), and a past president of the American Astronomical Society. As a pioneer in photoelectric photometry he developed, in collaboration with Stebbins, the first precise multicolor photometric system. He made major contributions in both

galactic and extragalactic research. His studies of the wavelength dependence of interstellar extinction are fundamental to the understanding of interstellar particles, and the standard galactic extinction curve is referred to as the Whitford curve. Name proposed by F. K. Edmondson. Citation written by A. D. Code.

(2455) Somville = 1950 TO4
Discovered 1950 Oct. 5 by S. Arend at Uccle.
Named in memory of Oscar Somville (1880-1980), some time head of the seismological section of the Uccle Observatory.

(2493) Elmer = 1978 XC
Discovered 1978 Dec. 1 at the Harvard College Observatory's Agassiz Station.
Named in memory of Charles Wesley Elmer (1872-1954), whose meeting with Richard S. Perkin at the Harvard Tercentenary celebration in 1936 led to the establishment of the Perkin-Elmer Corporation two years later. Director of the astronomy department at the Brooklyn Academy of Arts and Sciences, he founded the Amateur Astronomers Association in New York City and the Custer Institute in Southold, Long Island. His summer abode in Southold long served as a lending repository of telescopes for amateur astronomers.

(2513) Baetsle = 1950 SH
Discovered 1950 Sept. 19 by S. Arend at Uccle.
Named in memory of Paul-Louis Baetsle (1909-1983), professor of astronomy and geodesy at the Brussels Royal Military School and a friend of the discoverer.

(2538) Vanderlinden = 1954 UD
Discovered 1954 Oct. 30 by S. Arend at Uccle.
Named in memory of Henri Vanderlinden (1892-1983), a Belgian astronomer and professor at the Ghent State University.

(2686) Linda Susan = 1981 JW1
Discovered 1981 May 5 by C. S. Shoemaker on films taken at Palomar by E. F. Helin and S. J. Bus.
Named in honor of Linda Susan Salazar, youngest daughter of the discoverer.

(2748) Patrick Gene = 1981 JF2
Discovered 1981 May 5 by C. S. Shoemaker on films taken at Palomar by E. F. Helin and S. J. Bus.
Named in honor of Patrick Gene Shoemaker, son of the discoverer.

(2759) Idomeneus = 1980 GC
Discovered 1980 Apr. 14 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.
Named for a king of Crete, renowned for his valor in the Trojan War, during which he slew many Trojans.

(2799) Justus = 3071 P-L
Discovered 1960 Sept. 25 by C. J. van Houten at Leiden on Palomar Schmidt plates taken by T. Gehrels.
Named in honor of Justus Cramer, a descendant of H. G. van de Sande Bakhuyzen, a former director of the Leiden Observatory.

(2812) Scaltriti = 1981 FN
Discovered 1981 Mar. 30 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Franco Scaltriti, astronomer at the Pino Torinese Observatory. With his colleague Zappala, Scaltriti has undertaken an extensive program of minor-planet rotational studies. He has also worked on lightcurves of variable stars.

(2813) Zappala = 1981 WZ

Discovered 1981 Nov. 24 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Vincenzo Zappala, astronomer at the Pino Torinese Observatory. Zappala's work on minor-planet brightness variation has provided a wealth of data on rotation and shape for the brighter main-belt objects. He has also studied collisional evolution and has been active in a program of minor-planet astrometry.

(2834) Christy Carol = 1980 TB4

Discovered 1980 Oct. 9 by C. S. Shoemaker on films taken at Palomar by S. J. Bus.

Named in honor of Christine Carol Woodard, eldest daughter of the discoverer.

(2878) Panacea = 1980 RX

Discovered 1980 Sept. 7 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for the Roman goddess of health, daughter of Aesculapius and sister of Machaon, Podalirius and Hygiea. Name proposed by the discoverer, following a suggestion by J. Meeus.

(2884) Reddish = 1981 ES22

Discovered 1981 Mar. 2 by S. J. Bus at Siding Spring in the course of the U.K.-Caltech Asteroid Survey.

Named in honor of Vincent C. Reddish, former Astronomer Royal for Scotland and director of the Royal Observatory, Edinburgh. Project scientist for the U.K. Schmidt Telescope, he played a leading role in organizing the survey of the southern sky being undertaken at Siding Spring. Name proposed by J. A. Dawe, current director of the U.K. Schmidt.

(2895) Memnon = 1981 AE1

Discovered 1981 Jan. 10 by N. G. Thomas at the Anderson Mesa Station of the Lowell Observatory.

Named for a king of Ethiopia, who took 10 000 men to Troy to assist his uncle Priam in the Trojan War. Slayer of Antilochus, Nestor's son, Memnon was killed in combat by Achilles. Name proposed by the discoverer, following a suggestion by E. Bowell.

(2925) Beatty = 1978 VC5

Discovered 1978 Nov. 7 by E. F. Helin and S. J. Bus at Palomar.

Named in honor of J. Kelly Beatty, associate editor of "Sky and Telescope", on the occasion of his marriage, 1983 Oct. 1. A long-time friend of the first discoverer, and a geologist and planetary scientist in his own right, he has given encouragement to the Palomar planet-crossing asteroid survey for many years.

(2927) Alamosa = 1981 TM

Discovered 1981 Oct. 5 by N. G. Thomas at the Anderson Mesa Station of the Lowell Observatory.

Named for the discoverer's birthplace, the central town of the San Luis Valley of southern Colorado, located on the upper Rio Grande River.

(2929) Harris = 1982 BK1

Discovered 1982 Jan. 24 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of Alan W. Harris, planetary scientist at the Jet Propulsion Laboratory, whose research has included studies of the origin of the solar system and the dynamics of planetary satellites and ring systems. In recent years he has become the most prolific observer of minor-planet rotational lightcurves.

(2933) Amber = 1983 HN

Discovered 1983 Apr. 18 by N. G. Thomas at the Anderson Mesa Station of the Lowell Observatory.

Named in honor of the discoverer's granddaughter, Amber Marie Baltutis.

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EPHEMERIDES.

Periodic Comet Hartley-IRAS (1983v) Elements MPC 8387

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1983	12 12	20 52.63	+02 30.3	1.537	1.340	59.5	39.3	10.7
1983	12 22	20 48.96	+07 01.9					
1984	01 01	20 47.15	+11 15.9	1.754	1.289	46.3	33.5	10.8
1984	01 11	20 46.54	+15 23.8					
1984	01 21	20 46.64	+19 35.1	1.867	1.296	41.0	29.8	11.0
1984	01 31	20 47.12	+23 58.7					
1984	02 10	20 47.61	+28 43.7	1.871	1.360	44.7	30.7	11.2
1984	02 20	20 47.65	+33 59.3					
1984	03 01	20 46.59	+39 54.7	1.792	1.471	55.2	33.6	11.4
1984	03 11	20 43.24	+46 37.7					
1984	03 21	20 35.31	+54 11.4	1.689	1.616	68.5	35.0	11.7
1984	03 31	20 17.58	+62 28.3					
1984	04 10	19 35.63	+70 54.8	1.641	1.781	80.8	33.7	12.1
1984	04 20	17 46.88	+77 37.5					
1984	04 30	14 38.08	+77 52.1	1.724	1.959	87.5	30.9	12.6
1984	05 10	12 48.29	+71 48.9					
1984	05 20	12 06.74	+64 20.8	1.963	2.143	85.9	28.1	13.3
1984	05 30	11 50.24	+57 12.3					
1984	06 09	11 44.22	+50 47.6	2.319	2.330	78.0	25.2	14.0
1984	06 19	11 43.39	+45 09.8					
1984	06 29	11 45.47	+40 14.5	2.735	2.517	67.0	21.8	14.7
1984	07 09	11 49.34	+35 55.9					
1984	07 19	11 54.34	+32 08.2	3.162	2.703	54.6	17.8	15.3
1984	07 29	12 00.09	+28 46.3					
1984	08 08	12 06.36	+25 46.0	3.561	2.888	41.9	13.6	15.9

1981 ET3 a,e,i = 1.77, 0.42, 22 Elements MPC 7234

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	01 01	14 44.09	-31 29.8	2.790	2.327	52.5	19.6	20.0
1984	01 11	15 01.40	-33 41.2					
1984	01 21	15 18.90	-35 53.2	2.517	2.268	64.1	23.0	19.8
1984	01 31	15 36.58	-38 06.5					
1984	02 10	15 54.34	-40 21.6	2.223	2.200	75.8	25.8	19.5
1984	02 20	16 12.08	-42 39.3					
1984	03 01	16 29.70	-45 01.0	1.923	2.124	87.5	27.8	19.2
1984	03 11	16 46.97	-47 28.0					
1984	03 21	17 03.63	-50 01.8	1.630	2.040	99.1	28.8	18.8
1984	03 31	17 19.33	-52 44.3					
1984	04 10	17 33.45	-55 37.0	1.358	1.948	110.3	28.8	18.3

1984 04 20	17 45.18	-58 40.6						
1984 04 30	17 53.17	-61 54.6	1.120	1.848	120.5	28.0	17.7	
1984 05 10	17 55.24	-65 14.5						
1984 05 20	17 48.23	-68 30.2	0.926	1.740	127.8	27.4	17.2	
1984 05 30	17 27.72	-71 21.7						
1984 06 09	16 50.93	-73 15.0	0.779	1.627	129.6	28.8	16.7	
1984 06 19	16 03.85	-73 33.2						
1984 06 29	15 22.41	-72 03.1	0.677	1.508	124.7	33.7	16.3	
1984 07 09	14 58.74	-69 06.7						
1984 07 19	14 53.18	-65 16.8	0.606	1.388	115.3	41.5	16.1	
1984 07 29	15 01.36	-60 52.8						
1984 08 08	15 19.21	-56 01.7	0.551	1.270	104.7	50.5	15.9	
1984 08 18	15 43.50	-50 39.4						
1984 08 28	16 11.93	-44 35.4	0.503	1.164	94.6	59.9	15.7	
1984 09 07	16 42.77	-37 39.7						
1984 09 17	17 14.50	-29 45.0	0.465	1.080	86.3	68.3	15.6	
1984 09 27	17 46.17	-20 54.0						
1984 10 07	18 17.30	-11 22.1	0.448	1.030	81.1	73.4	15.5	
1984 10 17	18 47.74	-01 35.1						
1984 10 27	19 18.02	+07 57.1	0.463	1.025	80.6	73.0	15.6	
1984 11 06	19 49.06	+16 50.9						
1984 11 16	20 22.00	+24 51.5	0.505	1.067	84.6	67.3	15.7	
1984 11 26	20 58.31	+31 51.1						
1984 12 06	21 39.26	+37 45.7	0.569	1.146	90.9	59.3	15.9	
1984 12 16	22 25.51	+42 28.8						
1984 12 26	23 16.73	+45 52.8	0.661	1.249	96.8	51.5	16.3	
1985 01 05	00 11.09	+47 54.5						
1985 01 15	01 05.60	+48 37.7	0.795	1.364	99.6	45.3	16.7	
1985 01 25	01 57.47	+48 16.0						
1985 02 04	02 44.95	+47 08.3	0.980	1.484	98.1	41.1	17.3	
1985 02 14	03 27.51	+45 32.2						
1985 02 24	04 05.51	+43 41.0	1.213	1.604	92.9	38.1	17.8	
1985 03 06	04 39.63	+41 43.7						
1985 03 16	05 10.54	+39 44.9	1.483	1.719	85.4	35.2	18.3	
1985 03 26	05 38.90	+37 46.9						
1985 04 05	06 05.18	+35 50.5	1.776	1.827	76.7	32.2	18.8	
1985 04 15	06 29.74	+33 55.5						
1985 04 25	06 52.92	+32 01.7	2.078	1.929	67.4	28.8	19.2	
1985 05 05	07 14.90	+30 08.3						
1985 05 15	07 35.86	+28 14.9	2.373	2.023	57.7	25.0	19.5	

1983 VA a,e,i = 2.24, 0.64, 15 Elements MPC 8395

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 01 01	15 46.36	+08 38.2	0.304	0.837	53.1	110.0	17.1
1984 01 11	15 39.44	+12 41.6					
1984 01 21	15 38.70	+14 47.4	0.450	0.968	74.7	78.6	17.5
1984 01 31	15 38.81	+16 17.0					
1984 02 10	15 36.56	+17 42.8	0.547	1.152	92.8	58.8	17.9
1984 02 20	15 30.07	+19 13.0					
1984 03 01	15 18.23	+20 43.6	0.609	1.353	113.4	42.3	18.1
1984 03 11	15 00.81	+22 00.5					
1984 03 21	14 39.02	+22 44.4	0.681	1.555	135.2	26.8	18.2
1984 03 31	14 15.32	+22 40.9					
1984 04 10	13 52.75	+21 46.2	0.815	1.751	148.9	17.2	18.7
1984 04 20	13 33.81	+20 09.6					
1984 04 30	13 19.64	+18 06.2	1.036	1.939	143.2	18.1	19.4
1984 05 10	13 10.34	+15 49.3					
1984 05 20	13 05.37	+13 28.6	1.335	2.118	128.3	22.0	20.3

Comet Cernis (1983l) Elements MPC 8272

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984 03 21	00 04.23	-31 36.2	4.830	4.016	31.7	7.5	16.5
1984 03 31	00 09.90	-32 09.2					
1984 04 10	00 15.51	-32 53.7	4.797	4.120	42.9	9.5	16.6
1984 04 20	00 20.89	-33 51.4					
1984 04 30	00 25.92	-35 03.7	4.683	4.228	57.5	11.6	16.6
1984 05 10	00 30.40	-36 32.4					
1984 05 20	00 34.13	-38 18.6	4.517	4.340	73.5	12.9	16.6
1984 05 30	00 36.88	-40 23.3					
1984 06 09	00 38.34	-42 46.7	4.335	4.455	90.1	13.2	16.7
1984 06 19	00 38.15	-45 28.0					
1984 06 29	00 35.84	-48 24.9	4.182	4.573	106.3	12.3	16.7
1984 07 09	00 30.84	-51 33.1					
1984 07 19	00 22.49	-54 46.0	4.104	4.693	119.8	10.8	16.8
1984 07 29	00 10.08	-57 54.7					
1984 08 08	23 53.03	-60 48.5	4.139	4.816	126.9	9.7	16.9
1984 08 18	23 31.21	-63 16.2					
1984 08 28	23 05.28	-65 08.0	4.300	4.941	124.3	9.7	17.1
1984 09 07	22 37.08	-66 18.2					
1984 09 17	22 09.20	-66 47.0	4.576	5.067	113.9	10.5	17.4
1984 09 27	21 44.16	-66 40.1					
1984 10 07	21 23.61	-66 06.5	4.934	5.195	99.6	10.9	17.6
1984 10 17	21 08.05	-65 16.0					
1984 10 27	20 57.22	-64 16.4	5.330	5.324	84.3	10.7	17.9
1984 11 06	20 50.50	-63 13.7					
1984 11 16	20 47.13	-62 12.0	5.723	5.454	69.4	9.8	18.2
1984 11 26	20 46.44	-61 13.7					
1984 12 06	20 47.86	-60 20.7	6.078	5.585	55.8	8.4	18.4
1984 12 16	20 50.88	-59 33.9					
1984 12 26	20 55.12	-58 53.9	6.368	5.716	45.1	7.0	18.6

Comet Shoemaker (1983p) Elements MPC 8387

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984 04 10	22 53.66	-22 54.1	4.211	3.586	45.9	11.6	16.7
1984 04 20	22 57.58	-24 17.9					
1984 04 30	23 00.60	-25 58.1	3.972	3.657	64.7	14.4	16.6
1984 05 10	23 02.47	-27 57.5					
1984 05 20	23 02.86	-30 18.7	3.693	3.734	84.5	15.6	16.6
1984 05 30	23 01.38	-33 03.2					
1984 06 09	22 57.52	-36 11.4	3.426	3.819	105.1	14.9	16.5
1984 06 19	22 50.69	-39 40.6					
1984 06 29	22 40.22	-43 24.7	3.232	3.910	125.4	12.2	16.5
1984 07 09	22 25.41	-47 12.8					
1984 07 19	22 05.83	-50 49.6	3.171	4.006	140.3	9.3	16.5
1984 07 29	21 41.60	-53 58.2					
1984 08 08	21 13.82	-56 23.8	3.279	4.107	139.9	9.2	16.7
1984 08 18	20 44.69	-57 58.8					
1984 08 28	20 16.89	-58 45.0	3.545	4.213	125.5	11.3	17.0
1984 09 07	19 52.71	-58 51.8					
1984 09 17	19 33.34	-58 31.6	3.923	4.322	106.8	12.9	17.3
1984 09 27	19 18.99	-57 56.2					
1984 10 07	19 09.23	-57 14.3	4.352	4.435	88.2	13.0	17.7
1984 10 17	19 03.36	-56 31.9					
1984 10 27	19 00.68	-55 52.7	4.782	4.551	70.7	11.9	18.0
1984 11 06	19 00.55	-55 18.7					
1984 11 16	19 02.41	-54 50.8	5.169	4.670	54.8	10.0	18.3
1984 11 26	19 05.82	-54 29.7					
1984 12 06	19 10.41	-54 15.6	5.485	4.791	41.4	7.8	18.5

Comet Bowell (1980b) Elements MPC 8051

Date ET	R. A. (1950) Decl.	Delta	r	Elong.	Phase	m2
1984 04 10	23 14.01 -06 10.0	8.276	7.454	32.8	4.2	20.8
1984 04 20	23 19.00 -05 39.8					
1984 04 30	23 23.53 -05 12.6	8.203	7.592	49.8	5.8	20.9
1984 05 10	23 27.55 -04 48.7					
1984 05 20	23 30.98 -04 28.6	8.066	7.729	67.1	6.9	20.9
1984 05 30	23 33.79 -04 12.6					
1984 06 09	23 35.92 -04 01.1	7.890	7.867	85.0	7.4	20.9
1984 06 19	23 37.32 -03 54.3					
1984 06 29	23 37.98 -03 52.3	7.705	8.004	103.5	7.1	21.0
1984 07 09	23 37.89 -03 55.2					
1984 07 19	23 37.06 -04 02.8	7.544	8.141	122.9	6.0	21.0
1984 07 29	23 35.53 -04 14.7					
1984 08 08	23 33.38 -04 30.3	7.445	8.278	143.0	4.2	21.0
1984 08 18	23 30.71 -04 48.9					
1984 08 28	23 27.67 -05 09.6	7.439	8.414	163.8	1.9	21.1
1984 09 07	23 24.40 -05 31.2					
1984 09 17	23 21.10 -05 52.5	7.549	8.550	174.7	0.6	21.2
1984 09 27	23 17.92 -06 12.6					
1984 10 07	23 15.04 -06 30.3	7.779	8.686	153.7	2.9	21.3
1984 10 17	23 12.61 -06 44.9					
1984 10 27	23 10.73 -06 55.6	8.117	8.821	132.7	4.8	21.5

Periodic Comet Wolf (1983m) Elements MPC 7659

Date ET	R. A. (1950) Decl.	Delta	r	Elong.	Phase	m2
1984 04 30	00 23.46 +12 36.9	3.242	2.426	30.3	12.1	20.2
1984 05 10	00 42.36 +13 42.8					
1984 05 20	01 01.09 +14 42.7	3.109	2.417	39.6	15.5	20.1
1984 05 30	01 19.61 +15 35.4					
1984 06 09	01 37.82 +16 19.3	2.948	2.416	49.5	18.6	20.0
1984 06 19	01 55.65 +16 53.1					
1984 06 29	02 12.99 +17 15.5	2.763	2.423	60.2	21.3	19.9
1984 07 09	02 29.66 +17 25.1					
1984 07 19	02 45.52 +17 20.7	2.557	2.439	71.8	23.3	19.7
1984 07 29	03 00.36 +17 01.0					
1984 08 08	03 13.93 +16 24.7	2.340	2.462	84.7	24.2	19.6
1984 08 18	03 25.99 +15 31.0					
1984 08 28	03 36.25 +14 18.9	2.124	2.493	99.2	23.6	19.4
1984 09 07	03 44.40 +12 47.8					
1984 09 17	03 50.19 +10 58.1	1.928	2.531	115.7	21.0	19.3
1984 09 27	03 53.37 +08 50.9					
1984 10 07	03 53.84 +06 29.5	1.777	2.575	134.1	16.2	19.2
1984 10 17	03 51.70 +03 59.5					
1984 10 27	03 47.26 +01 28.7	1.704	2.625	152.2	10.2	19.1
1984 11 06	03 41.16 -00 53.0					
1984 11 16	03 34.27 -02 55.9	1.735	2.679	158.3	7.8	19.3
1984 11 26	03 27.51 -04 32.6					
1984 12 06	03 21.80 -05 39.2	1.874	2.739	144.8	12.0	19.5
1984 12 16	03 17.76 -06 16.1					
1984 12 26	03 15.78 -06 26.2	2.101	2.802	126.6	16.4	19.9
1985 01 05	03 15.99 -06 14.2					
1985 01 15	03 18.35 -05 45.2	2.387	2.868	109.4	18.9	20.3

Periodic Comet Arend-Rigaux Elements MPC 7659

Date ET	R. A. (1950) Decl.	Delta	r	Elong.	Phase	m2
1984 04 30	00 29.52 -08 12.9	3.289	2.560	37.2	13.8	20.5
1984 05 10	00 46.95 -06 56.4					
1984 05 20	01 04.84 -05 42.2	2.998	2.425	47.1	17.8	20.3

1984 05 30	01 23.23	-04 31.1						
1984 06 09	01 42.17	-03 24.1	2.688	2.290	56.5	21.7	20.1	
1984 06 19	02 01.71	-02 22.2						
1984 06 29	02 21.89	-01 26.7	2.374	2.155	65.2	25.4	19.8	
1984 07 09	02 42.74	-00 38.7						
1984 07 19	03 04.30	+00 00.6	2.066	2.022	73.2	28.8	19.5	
1984 07 29	03 26.59	+00 30.1						
1984 08 08	03 49.59	+00 48.7	1.776	1.893	80.4	31.9	19.1	
1984 08 18	04 13.27	+00 55.8						
1984 08 28	04 37.57	+00 51.0	1.513	1.771	86.8	34.7	18.7	
1984 09 07	05 02.36	+00 34.8						
1984 09 17	05 27.52	+00 08.5	1.281	1.661	92.4	37.2	18.3	
1984 09 27	05 52.86	-00 25.7						
1984 10 07	06 18.11	-01 04.1	1.082	1.568	97.7	39.2	17.8	
1984 10 17	06 43.05	-01 41.3						
1984 10 27	07 07.33	-02 11.2	0.914	1.498	103.4	40.2	17.4	
1984 11 06	07 30.57	-02 25.1						
1984 11 16	07 52.37	-02 13.7	0.774	1.456	110.8	39.4	16.9	
1984 11 26	08 12.21	-01 25.8						
1984 12 06	08 29.51	+00 10.7	0.660	1.447	121.9	35.3	16.5	
1984 12 16	08 43.73	+02 46.5						
1984 12 26	08 54.25	+06 28.1	0.582	1.471	138.6	26.2	15.9	
1985 01 05	09 00.80	+11 11.0						
1985 01 15	09 03.58	+16 32.7	0.563	1.527	160.8	12.2	15.5	
1985 01 25	09 03.42	+21 55.7						
1985 02 04	09 01.91	+26 39.3	0.629	1.608	169.7	6.3	15.7	
1985 02 14	09 00.80	+30 17.4						
1985 02 24	09 01.49	+32 43.4	0.780	1.710	149.8	17.0	16.6	
1985 03 06	09 04.81	+34 04.4						
1985 03 16	09 10.83	+34 33.4	1.001	1.826	132.3	23.8	17.5	
1985 03 26	09 19.28	+34 22.6						
1985 04 05	09 29.72	+33 42.2	1.274	1.951	117.7	27.0	18.3	
1985 04 15	09 41.61	+32 40.2						
1985 04 25	09 54.56	+31 22.2	1.583	2.082	104.9	27.8	18.9	
1985 05 05	10 08.22	+29 52.7						
1985 05 15	10 22.32	+28 14.8	1.917	2.216	93.2	27.1	19.5	
1985 05 25	10 36.69	+26 30.9						
1985 06 04	10 51.19	+24 43.0	2.267	2.352	82.0	25.3	19.9	
1985 06 14	11 05.71	+22 52.8						
1985 06 24	11 20.22	+21 01.2	2.620	2.487	71.2	22.8	20.3	
1985 07 04	11 34.67	+19 09.5						
1985 07 14	11 49.03	+17 18.4	2.966	2.621	60.6	19.7	20.5	

1973 SZ1 a,e,i = 3.98, 0.12, 2 Elements MPC 8383

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983 12 12	06 53.21	+24 13.0	3.052	3.975	156.8	5.6	18.2	
1983 12 22	06 46.57	+24 26.5						
1984 01 01	06 39.21	+24 38.9	2.971	3.954	178.4	0.4	17.7	
1984 01 11	06 31.79	+24 49.1						
1984 01 21	06 25.00	+24 56.5	3.014	3.933	156.0	5.9	18.2	
1984 01 31	06 19.41	+25 01.3						
1984 02 10	06 15.47	+25 03.9	3.166	3.912	133.5	10.5	18.4	
1984 02 20	06 13.44	+25 04.8						
1984 03 01	06 13.39	+25 04.6	3.396	3.891	112.9	13.6	18.6	
1984 03 11	06 15.30	+25 03.4						
1984 03 21	06 19.05	+25 01.2	3.666	3.869	94.2	14.9	18.8	
1984 03 31	06 24.44	+24 57.7						
1984 04 10	06 31.32	+24 52.5	3.943	3.848	77.3	14.7	18.9	

1981 QZ2 a,e,i = 3.21, 0.15, 2 Elements MPC 8384

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983	12 12	07 46.23	+20 01.7	2.829	3.671	144.1	9.1	18.7
1983	12 22	07 40.28	+20 17.9					
1984	01 01	07 32.95	+20 37.1	2.705	3.672	167.6	3.3	18.4
1984	01 11	07 24.82	+20 57.6					
1984	01 21	07 16.66	+21 17.3	2.702	3.671	168.1	3.2	18.4
1984	01 31	07 09.18	+21 34.8					
1984	02 10	07 03.03	+21 49.5	2.819	3.668	144.6	9.0	18.7
1984	02 20	06 58.68	+22 00.8					
1984	03 01	06 56.36	+22 09.0	3.031	3.665	122.9	13.1	18.9
1984	03 11	06 56.16	+22 14.0					
1984	03 21	06 57.98	+22 16.0	3.300	3.660	103.3	15.4	19.2
1984	03 31	07 01.69	+22 14.9					
1984	04 10	07 07.07	+22 10.5	3.590	3.654	85.7	15.9	19.4
1984	04 20	07 13.92	+22 02.5					
1984	04 30	07 22.02	+21 50.8	3.873	3.646	69.6	15.0	19.5
1984	05 10	07 31.18	+21 34.9					
1984	05 20	07 41.22	+21 14.8	4.126	3.638	54.8	13.1	19.6

1982 VX3 a,e,i = 3.15, 0.09, 2 Elements MPC 8385

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983	12 12	08 43.65	+16 38.6	2.691	3.409	130.0	12.8	18.5
1983	12 22	08 40.26	+16 51.6					
1984	01 01	08 34.92	+17 12.4	2.514	3.416	152.5	7.6	18.2
1984	01 11	08 27.98	+17 39.3					
1984	01 21	08 20.05	+18 09.6	2.440	3.423	176.3	1.0	17.8
1984	01 31	08 11.87	+18 40.3					
1984	02 10	08 04.25	+19 08.7	2.488	3.428	159.2	5.9	18.2
1984	02 20	07 57.91	+19 32.8					
1984	03 01	07 53.34	+19 51.5	2.647	3.433	136.4	11.5	18.5
1984	03 11	07 50.87	+20 04.2					
1984	03 21	07 50.57	+20 10.9	2.885	3.437	115.7	15.1	18.7
1984	03 31	07 52.36	+20 11.8					
1984	04 10	07 56.11	+20 06.8	3.166	3.440	97.3	16.8	19.0
1984	04 20	08 01.57	+19 56.1					
1984	04 30	08 08.52	+19 39.9	3.458	3.442	80.7	16.8	19.2
1984	05 10	08 16.74	+19 18.1					
1984	05 20	08 26.01	+18 50.8	3.736	3.443	65.6	15.5	19.3

1982 VR4 a,e,i = 3.10, 0.19, 2 Elements MPC 8385

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983	12 12	09 29.61	+13 18.3	2.811	3.392	118.4	14.8	19.1
1983	12 22	09 28.31	+13 24.5					
1984	01 01	09 24.94	+13 41.2	2.608	3.420	140.0	10.7	18.9
1984	01 11	09 19.65	+14 07.4					
1984	01 21	09 12.83	+14 41.1	2.493	3.447	163.4	4.7	18.6
1984	01 31	09 05.05	+15 19.1					
1984	02 10	08 57.02	+15 57.9	2.493	3.473	172.1	2.2	18.5
1984	02 20	08 49.53	+16 34.0					
1984	03 01	08 43.24	+17 04.8	2.613	3.497	148.5	8.5	18.9
1984	03 11	08 38.64	+17 28.6					
1984	03 21	08 36.02	+17 44.7	2.832	3.519	126.7	13.1	19.2
1984	03 31	08 35.45	+17 52.8					
1984	04 10	08 36.87	+17 53.2	3.113	3.541	107.2	15.7	19.5
1984	04 20	08 40.12	+17 46.3					
1984	04 30	08 44.99	+17 32.5	3.422	3.561	89.6	16.4	19.7
1984	05 10	08 51.27	+17 12.2					
1984	05 20	08 58.73	+16 45.7	3.730	3.579	73.6	15.7	19.9

1980 KO a,e,i = 2.95, 0.01, 3 Elements MPC 8384

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983	12 12	09 53.34	+15 56.4	2.408	2.947	113.9	17.8	18.6
1983	12 22	09 54.75	+16 04.2					
1984	01 01	09 53.77	+16 24.6	2.173	2.944	134.2	13.9	18.2
1984	01 11	09 50.35	+16 56.9					
1984	01 21	09 44.71	+17 38.4	2.011	2.942	156.8	7.6	17.9
1984	01 31	09 37.30	+18 25.0					
1984	02 10	09 28.87	+19 11.6	1.955	2.939	175.6	1.5	17.5
1984	02 20	09 20.39	+19 52.8					
1984	03 01	09 12.82	+20 24.5	2.014	2.937	154.0	8.5	17.9
1984	03 11	09 06.95	+20 44.6					
1984	03 21	09 03.33	+20 52.2	2.173	2.934	132.0	14.6	18.3
1984	03 31	09 02.15	+20 48.1					
1984	04 10	09 03.42	+20 33.1	2.400	2.932	112.4	18.4	18.6
1984	04 20	09 06.95	+20 08.4					
1984	04 30	09 12.49	+19 35.0	2.660	2.930	95.3	20.0	18.8
1984	05 10	09 19.76	+18 53.6					
1984	05 20	09 28.49	+18 04.9	2.928	2.928	80.0	19.9	19.0

6627 P-L a,e,i = 3.06, 0.10, 3 Elements MPC 8385

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983	12 12	10 09.09	+08 49.3	2.611	3.059	107.8	17.8	19.2
1983	12 22	10 10.95	+08 37.2					
1984	01 01	10 10.62	+08 38.1	2.377	3.079	127.7	14.6	19.0
1984	01 11	10 08.06	+08 52.5					
1984	01 21	10 03.43	+09 20.0	2.207	3.099	150.0	9.1	18.7
1984	01 31	09 57.05	+09 58.5					
1984	02 10	09 49.53	+10 44.6	2.136	3.118	173.6	2.0	18.3
1984	02 20	09 41.67	+11 33.7					
1984	03 01	09 34.27	+12 20.9	2.181	3.137	161.6	5.7	18.6
1984	03 11	09 28.12	+13 02.3					
1984	03 21	09 23.76	+13 34.9	2.337	3.156	138.9	12.0	18.9
1984	03 31	09 21.49	+13 57.4					
1984	04 10	09 21.40	+14 09.1	2.573	3.175	118.5	16.1	19.2
1984	04 20	09 23.41	+14 10.3					
1984	04 30	09 27.32	+14 01.5	2.854	3.193	100.4	18.1	19.5
1984	05 10	09 32.92	+13 43.3					
1984	05 20	09 39.96	+13 16.6	3.150	3.210	84.2	18.3	19.7

(2983) 1981 RW2 a,e,i = 2.85, 0.06, 4 Elements MPC 8399

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1983	12 12	11 00.16	+01 30.2	2.794	3.015	93.3	19.0	18.1
1983	12 22	11 04.90	+00 42.9					
1984	01 01	11 07.77	+00 06.3	2.518	3.017	111.2	17.7	17.8
1984	01 11	11 08.56	-00 17.7					
1984	01 21	11 07.15	-00 27.5	2.276	3.018	131.4	14.2	17.5
1984	01 31	11 03.55	-00 21.9					
1984	02 10	10 57.97	-00 01.0	2.102	3.018	153.6	8.4	17.2
1984	02 20	10 50.86	+00 33.8					
1984	03 01	10 42.90	+01 19.1	2.031	3.018	173.5	2.1	16.8
1984	03 11	10 34.93	+02 10.2					
1984	03 21	10 27.80	+03 01.4	2.075	3.016	156.7	7.5	17.1
1984	03 31	10 22.20	+03 47.9					
1984	04 10	10 18.59	+04 25.8	2.223	3.014	134.8	13.7	17.4
1984	04 20	10 17.19	+04 52.5					
1984	04 30	10 17.99	+05 07.2	2.443	3.011	115.0	17.6	17.7
1984	05 10	10 20.87	+05 09.5					
1984	05 20	10 25.61	+05 00.0	2.702	3.008	97.6	19.5	18.0

1978 VW6 a,e,i = 2.57, 0.15, 13 Elements MPC 8384

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	01 01	12 22.87	-16 59.2	2.497	2.640	87.3	21.8	20.4
1984	01 11	12 29.53	-18 19.6					
1984	01 21	12 34.18	-19 29.0	2.263	2.670	103.6	21.0	20.2
1984	01 31	12 36.55	-20 24.6					
1984	02 10	12 36.43	-21 03.3	2.047	2.700	121.8	18.1	19.9
1984	02 20	12 33.75	-21 21.6					
1984	03 01	12 28.64	-21 16.4	1.881	2.729	141.6	13.0	19.7
1984	03 11	12 21.56	-20 45.6					
1984	03 21	12 13.27	-19 50.1	1.799	2.756	160.0	7.1	19.4
1984	03 31	12 04.73	-18 33.8					
1984	04 10	11 56.95	-17 03.8	1.823	2.782	159.2	7.3	19.5
1984	04 20	11 50.77	-15 29.2					
1984	04 30	11 46.72	-13 58.6	1.951	2.806	141.0	13.1	19.8
1984	05 10	11 45.05	-12 38.5					
1984	05 20	11 45.76	-11 33.3	2.161	2.829	121.9	17.7	20.1
1984	05 30	11 48.67	-10 44.6					
1984	06 09	11 53.55	-10 12.8	2.421	2.850	104.5	20.2	20.5

1980 EB a,e,i = 2.44, 0.09, 2 Elements MPC 5440

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	01 21	13 03.14	-06 14.5	1.842	2.271	-1.26	+8.8	18.7
1984	01 31	13 10.23	-07 05.0					
1984	02 10	13 14.91	-07 41.6	1.601	2.259	-1.49	+10.2	18.3
1984	02 20	13 16.86	-08 02.8					
1984	03 01	13 15.81	-08 07.3	1.401	2.249	-1.76	+11.9	17.9
1984	03 11	13 11.72	-07 54.8					
1984	03 21	13 05.00	-07 26.8	1.272	2.241	-1.97	+13.5	17.4
1984	03 31	12 56.42	-06 47.0					
1984	04 10	12 47.19	-06 01.8	1.236	2.235	-2.00	+14.0	17.2
1984	04 20	12 38.67	-05 18.9					
1984	04 30	12 31.98	-04 45.4	1.301	2.230	-1.83	+13.1	17.6
1984	05 10	12 27.92	-04 26.5					
1984	05 20	12 26.81	-04 24.6	1.446	2.228	-1.57	+11.4	18.0
1984	05 30	12 28.62	-04 39.8					
1984	06 09	12 33.14	-05 11.3	1.642	2.228	-1.35	+9.8	18.4
1984	06 19	12 40.04	-05 56.8					
1984	06 29	12 49.00	-06 54.4	1.865	2.230	-1.18	+8.4	18.7

1974 RV1 a,e,i = 2.34, 0.17, 3 Elements MPC 5440

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	01 21	13 08.02	-10 39.3	1.916	2.299	99.9	24.9	17.3
1984	01 31	13 15.70	-11 48.3					
1984	02 10	13 21.21	-12 46.0	1.642	2.261	116.4	23.0	16.9
1984	02 20	13 24.18	-13 30.4					
1984	03 01	13 24.24	-13 59.0	1.406	2.222	135.3	18.3	16.4
1984	03 11	13 21.18	-14 09.3					
1984	03 21	13 15.17	-13 59.6	1.233	2.184	156.8	10.3	15.9
1984	03 31	13 06.77	-13 30.1					
1984	04 10	12 57.08	-12 43.9	1.149	2.147	173.6	3.0	15.4
1984	04 20	12 47.56	-11 48.4					
1984	04 30	12 39.59	-10 52.3	1.163	2.112	153.4	12.4	15.7
1984	05 10	12 34.26	-10 04.7					
1984	05 20	12 32.16	-09 32.2	1.259	2.079	132.2	21.1	16.1
1984	05 30	12 33.38	-09 18.0					
1984	06 09	12 37.78	-09 22.8	1.408	2.048	114.4	26.8	16.4
1984	06 19	12 45.02	-09 45.6					
1984	06 29	12 54.76	-10 24.3	1.583	2.020	99.6	29.8	16.7

1978 RJ2 a,e,i = 2.38, 0.21, 1 Elements MPC 6206

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	01 21	13 42.19	-11 41.2	2.604	2.811	91.7	20.5	20.8
1984	01 31	13 47.67	-12 18.3					
1984	02 10	13 51.11	-12 44.2	2.343	2.832	109.6	19.2	20.5
1984	02 20	13 52.24	-12 57.8					
1984	03 01	13 50.88	-12 57.9	2.111	2.849	129.8	15.5	20.3
1984	03 11	13 46.99	-12 43.8					
1984	03 21	13 40.76	-12 15.7	1.944	2.863	152.3	9.3	19.9
1984	03 31	13 32.66	-11 35.2					
1984	04 10	13 23.45	-10 45.5	1.874	2.874	176.1	1.4	19.5
1984	04 20	13 14.09	-09 51.9					
1984	04 30	13 05.50	-09 00.0	1.919	2.883	159.1	7.2	19.9
1984	05 10	12 58.50	-08 15.3					
1984	05 20	12 53.59	-07 41.8	2.068	2.888	136.6	13.9	20.2
1984	05 30	12 50.99	-07 21.8					
1984	06 09	12 50.74	-07 16.0	2.289	2.890	116.6	18.3	20.5
1984	06 19	12 52.68	-07 23.8					
1984	06 29	12 56.60	-07 44.0	2.549	2.889	99.1	20.3	20.8

1978 VQ3 a,e,i = 2.55, 0.13, 9 Elements MPC 8383

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	01 21	13 37.35	-18 54.4	2.206	2.419	90.2	24.0	19.6
1984	01 31	13 45.98	-19 55.0					
1984	02 10	13 52.48	-20 42.7	1.977	2.445	106.3	22.8	19.3
1984	02 20	13 56.54	-21 15.7					
1984	03 01	13 57.88	-21 31.5	1.770	2.472	124.7	19.2	19.0
1984	03 11	13 56.33	-21 27.7					
1984	03 21	13 52.02	-21 02.5	1.613	2.500	145.6	13.0	18.7
1984	03 31	13 45.38	-20 15.3					
1984	04 10	13 37.22	-19 08.1	1.540	2.527	167.2	5.0	18.4
1984	04 20	13 28.62	-17 46.7					
1984	04 30	13 20.71	-16 18.8	1.572	2.554	163.7	6.3	18.5
1984	05 10	13 14.42	-14 53.6					
1984	05 20	13 10.40	-13 38.7	1.705	2.581	142.4	13.9	18.9
1984	05 30	13 08.87	-12 39.1					
1984	06 09	13 09.85	-11 57.1	1.916	2.608	122.7	19.1	19.3
1984	06 19	13 13.16	-11 32.8					
1984	06 29	13 18.55	-11 24.8	2.174	2.634	105.4	21.8	19.7

1980 VN a,e,i = 3.40, 0.16, 17 Elements MPC 5836

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	01 21	14 06.34	-05 35.9	3.737	3.836	88.3	14.9	18.4
1984	01 31	14 10.38	-06 02.3					
1984	02 10	14 12.90	-06 21.5	3.418	3.819	106.7	14.3	18.2
1984	02 20	14 13.75	-06 33.4					
1984	03 01	14 12.80	-06 38.2	3.127	3.802	126.6	12.1	18.0
1984	03 11	14 09.99	-06 36.4					
1984	03 21	14 05.43	-06 29.1	2.900	3.783	148.1	8.0	17.7
1984	03 31	13 59.34	-06 17.6					
1984	04 10	13 52.11	-06 04.1	2.772	3.763	170.2	2.6	17.3
1984	04 20	13 44.31	-05 51.0					
1984	04 30	13 36.55	-05 40.8	2.761	3.742	164.5	4.1	17.4
1984	05 10	13 29.42	-05 35.9					
1984	05 20	13 23.45	-05 38.3	2.865	3.720	142.6	9.5	17.7
1984	05 30	13 18.98	-05 49.0					
1984	06 09	13 16.24	-06 08.5	3.058	3.697	122.0	13.5	17.9
1984	06 19	13 15.27	-06 36.8					
1984	06 29	13 16.03	-07 13.3	3.304	3.674	103.3	15.6	18.1

(2961) 1982 XA a,e,i = 2.27, 0.14, 5 Elements MPC 8383

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	02 10	14 25.31	-16 44.0	2.113	2.489	100.5	22.9	18.3
1984	02 20	14 30.73	-17 05.4					
1984	03 01	14 33.63	-17 13.2	1.879	2.509	118.6	20.3	18.0
1984	03 11	14 33.71	-17 05.9					
1984	03 21	14 30.88	-16 42.6	1.685	2.526	139.3	14.9	17.7
1984	03 31	14 25.27	-16 03.2					
1984	04 10	14 17.35	-15 09.0	1.567	2.541	162.7	6.7	17.3
1984	04 20	14 08.02	-14 04.0					
1984	04 30	13 58.35	-12 53.9	1.551	2.554	172.6	2.9	17.1
1984	05 10	13 49.51	-11 46.2					
1984	05 20	13 42.45	-10 47.9	1.643	2.564	149.0	11.7	17.6
1984	05 30	13 37.75	-10 03.6					
1984	06 09	13 35.67	-09 36.0	1.821	2.572	127.8	18.2	18.0
1984	06 19	13 36.19	-09 25.2					
1984	06 29	13 39.14	-09 30.1	2.054	2.577	109.5	21.8	18.3
1984	07 09	13 44.27	-09 48.9					
1984	07 19	13 51.31	-10 19.3	2.311	2.581	93.5	23.1	18.6

(2975) 1970 AF1 a,e,i = 2.25, 0.09, 7 Elements MPC 8396

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	02 10	14 42.72	-21 25.5	1.695	2.036	95.1	28.9	16.9
1984	02 20	14 55.00	-22 15.5					
1984	03 01	15 05.07	-22 51.0	1.477	2.038	109.8	27.2	16.5
1984	03 11	15 12.41	-23 10.6					
1984	03 21	15 16.59	-23 12.8	1.282	2.043	127.0	22.9	16.1
1984	03 31	15 17.25	-22 55.6					
1984	04 10	15 14.30	-22 17.5	1.134	2.051	147.5	15.2	15.7
1984	04 20	15 08.16	-21 18.6					
1984	04 30	14 59.74	-20 01.4	1.060	2.061	170.7	4.5	15.3
1984	05 10	14 50.45	-18 32.9					
1984	05 20	14 41.88	-17 03.1	1.080	2.073	164.6	7.5	15.4
1984	05 30	14 35.32	-15 42.1					
1984	06 09	14 31.62	-14 37.9	1.189	2.087	142.4	17.3	15.9
1984	06 19	14 31.11	-13 54.5					
1984	06 29	14 33.70	-13 31.9	1.365	2.103	123.4	23.8	16.3
1984	07 09	14 39.15	-13 28.4					
1984	07 19	14 47.10	-13 40.8	1.582	2.121	107.5	27.2	16.8

1957 UK1 a,e,i = 2.85, 0.06, 2 Elements MPC 7239

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 01	15 46.94	-18 41.5	2.656	3.013	101.4	18.8	17.4
1984	03 11	15 51.21	-18 47.8					
1984	03 21	15 53.28	-18 46.5	2.393	3.016	119.9	16.6	17.2
1984	03 31	15 52.98	-18 37.8					
1984	04 10	15 50.26	-18 21.7	2.177	3.018	140.4	12.2	16.9
1984	04 20	15 45.29	-17 58.6					
1984	04 30	15 38.45	-17 29.6	2.042	3.019	162.8	5.7	16.6
1984	05 10	15 30.37	-16 56.5					
1984	05 20	15 21.90	-16 22.2	2.012	3.020	173.3	2.2	16.3
1984	05 30	15 13.90	-15 50.1					
1984	06 09	15 07.15	-15 23.5	2.093	3.019	150.7	9.5	16.7
1984	06 19	15 02.22	-15 05.0					
1984	06 29	14 59.42	-14 56.3	2.265	3.018	129.8	15.0	17.0
1984	07 09	14 58.88	-14 57.7					
1984	07 19	15 00.55	-15 08.8	2.498	3.016	111.0	18.3	17.3
1984	07 29	15 04.27	-15 28.5					
1984	08 08	15 09.88	-15 55.5	2.763	3.013	94.3	19.6	17.6

4579 P-L a,e,i = 2.30, 0.21, 1 Elements MPC 6207

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 01	16 03.17	-19 07.3	1.889	2.246	97.6	25.9	19.7
1984	03 11	16 14.01	-19 30.6					
1984	03 21	16 22.87	-19 46.2	1.609	2.197	112.9	24.7	19.3
1984	03 31	16 29.31	-19 54.6					
1984	04 10	16 32.87	-19 56.0	1.360	2.148	130.2	20.9	18.8
1984	04 20	16 33.19	-19 51.0					
1984	04 30	16 30.06	-19 39.9	1.164	2.100	150.4	13.7	18.3
1984	05 10	16 23.63	-19 23.1					
1984	05 20	16 14.64	-19 01.8	1.044	2.053	173.2	3.4	17.6
1984	05 30	16 04.31	-18 38.4					
1984	06 09	15 54.27	-18 16.9	1.017	2.008	162.3	8.8	17.7
1984	06 19	15 46.13	-18 02.1					
1984	06 29	15 41.01	-17 57.6	1.074	1.966	140.2	19.3	18.1
1984	07 09	15 39.57	-18 05.9					
1984	07 19	15 41.93	-18 26.6	1.191	1.927	121.4	26.7	18.4
1984	07 29	15 47.91	-18 58.1					
1984	08 08	15 57.22	-19 37.8	1.342	1.893	106.1	31.0	18.7

1983 AD a,e,i = 2.56, 0.12, 10 Elements MPC 7766

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	03 01	16 36.95	-17 17.4	2.329	2.530	-0.92	+5.1	18.3
1984	03 11	16 45.56	-17 44.0					
1984	03 21	16 52.01	-18 07.1	2.093	2.557	-1.04	+5.3	18.0
1984	03 31	16 55.98	-18 28.0					
1984	04 10	16 57.16	-18 47.4	1.878	2.582	-1.20	+5.8	17.8
1984	04 20	16 55.41	-19 06.2					
1984	04 30	16 50.71	-19 24.6	1.714	2.608	-1.36	+6.5	17.4
1984	05 10	16 43.35	-19 42.3					
1984	05 20	16 34.02	-19 58.8	1.633	2.633	-1.46	+7.2	17.1
1984	05 30	16 23.68	-20 13.7					
1984	06 09	16 13.50	-20 27.7	1.658	2.657	-1.43	+7.7	17.2
1984	06 19	16 04.59	-20 41.9					
1984	06 29	15 57.78	-20 58.0	1.786	2.681	-1.29	+7.4	17.6
1984	07 09	15 53.58	-21 17.3					
1984	07 19	15 52.14	-21 40.9	1.995	2.703	-1.12	+6.7	18.0
1984	07 29	15 53.41	-22 08.7					
1984	08 08	15 57.21	-22 40.5	2.254	2.725	-0.98	+5.8	18.3

1983 AG2 a,e,i = 2.32, 0.34, 22 Elements MPC 8061

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 14.44	-47 33.7	2.709	3.009	97.7	19.1	19.0
1984	03 31	17 18.53	-48 53.1					
1984	04 10	17 19.36	-50 11.2	2.486	3.034	114.0	17.6	18.8
1984	04 20	17 16.51	-51 24.6					
1984	04 30	17 09.75	-52 28.1	2.303	3.055	130.4	14.5	18.6
1984	05 10	16 59.20	-53 14.8					
1984	05 20	16 45.60	-53 37.6	2.192	3.071	144.3	11.1	18.4
1984	05 30	16 30.27	-53 31.1					
1984	06 09	16 14.98	-52 53.9	2.173	3.083	148.4	9.9	18.4
1984	06 19	16 01.47	-51 50.0					
1984	06 29	15 50.93	-50 27.1	2.252	3.091	138.9	12.5	18.5
1984	07 09	15 44.00	-48 54.2					
1984	07 19	15 40.73	-47 19.8	2.416	3.095	123.5	15.9	18.7
1984	07 29	15 40.87	-45 49.8					
1984	08 08	15 44.04	-44 28.2	2.639	3.095	107.2	18.2	19.0
1984	08 18	15 49.80	-43 16.6					
1984	08 28	15 57.77	-42 14.9	2.892	3.091	91.7	19.1	19.2

1966 AA a,e,i = 2.61, 0.13, 13 Elements MPC 7233

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	16 58.42	-33 07.4	2.447	2.841	102.9	20.0	18.2
1984	03 31	17 02.51	-33 22.8					
1984	04 10	17 03.83	-33 32.4	2.209	2.858	121.1	17.5	17.9
1984	04 20	17 02.23	-33 34.7					
1984	04 30	16 57.69	-33 27.3	2.018	2.874	141.3	12.7	17.6
1984	05 10	16 50.51	-33 07.8					
1984	05 20	16 41.35	-32 34.2	1.908	2.888	162.2	6.1	17.3
1984	05 30	16 31.15	-31 46.5					
1984	06 09	16 21.03	-30 46.9	1.902	2.901	167.0	4.5	17.3
1984	06 19	16 12.08	-29 40.1					
1984	06 29	16 05.11	-28 31.7	2.005	2.912	147.0	10.9	17.6
1984	07 09	16 00.62	-27 27.0					
1984	07 19	15 58.78	-26 30.0	2.197	2.921	126.7	16.2	17.9
1984	07 29	15 59.52	-25 42.5					
1984	08 08	16 02.68	-25 05.0	2.446	2.929	108.4	19.2	18.2
1984	08 18	16 08.00	-24 36.9					
1984	08 28	16 15.21	-24 16.7	2.723	2.935	91.8	20.1	18.5

1983 AU2 a,e,i = 2.22, 0.10, 3 Elements MPC 8212

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	16 57.54	-26 10.9	2.010	2.451	104.1	23.2	19.0
1984	03 31	17 03.14	-26 29.7					
1984	04 10	17 05.85	-26 44.2	1.774	2.455	121.9	20.3	18.7
1984	04 20	17 05.39	-26 54.1					
1984	04 30	17 01.60	-26 58.1	1.581	2.456	142.2	14.6	18.3
1984	05 10	16 54.63	-26 54.3					
1984	05 20	16 45.10	-26 41.0	1.465	2.456	164.8	6.2	17.9
1984	05 30	16 34.01	-26 17.5					
1984	06 09	16 22.73	-25 45.4	1.448	2.453	169.5	4.3	17.8
1984	06 19	16 12.65	-25 08.5					
1984	06 29	16 04.85	-24 31.9	1.534	2.449	146.8	13.1	18.2
1984	07 09	16 00.00	-24 00.3					
1984	07 19	15 58.33	-23 36.7	1.700	2.442	126.2	19.6	18.5
1984	07 29	15 59.76	-23 22.1					
1984	08 08	16 04.08	-23 16.5	1.916	2.434	108.4	23.3	18.9
1984	08 18	16 10.95	-23 18.3					
1984	08 28	16 20.07	-23 25.9	2.154	2.424	92.8	24.6	19.2

(2864) Soderblom a,e,i = 2.75, 0.15, 3 Elements MPC 7778

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	16 56.87	-18 56.0	2.246	2.683	105.0	21.0	18.4
1984	03 31	17 01.15	-18 51.0					
1984	04 10	17 02.82	-18 42.1	2.031	2.713	123.3	18.0	18.1
1984	04 20	17 01.76	-18 30.2					
1984	04 30	16 57.99	-18 15.9	1.865	2.744	143.9	12.5	17.8
1984	05 10	16 51.79	-18 00.0					
1984	05 20	16 43.75	-17 43.6	1.781	2.774	166.1	5.0	17.5
1984	05 30	16 34.70	-17 27.8					
1984	06 09	16 25.65	-17 14.6	1.801	2.804	168.7	4.1	17.5
1984	06 19	16 17.57	-17 05.8					
1984	06 29	16 11.23	-17 02.9	1.927	2.833	146.9	11.3	17.9
1984	07 09	16 07.12	-17 07.1					
1984	07 19	16 05.45	-17 18.5	2.137	2.861	126.6	16.6	18.3
1984	07 29	16 06.21	-17 36.3					
1984	08 08	16 09.27	-17 59.8	2.402	2.889	108.6	19.4	18.7
1984	08 18	16 14.43	-18 27.4					
1984	08 28	16 21.46	-18 57.7	2.694	2.916	92.4	20.3	18.9

1981 WW a,e,i = 2.43, 0.22, 4 Elements MPC 6646

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	16 55.97	-20 26.2	2.161	2.604	105.1	21.7	18.7
1984	03 31	17 01.47	-20 35.6					
1984	04 10	17 04.47	-20 42.0	1.874	2.560	122.8	19.2	18.3
1984	04 20	17 04.70	-20 46.0					
1984	04 30	17 01.94	-20 47.8	1.635	2.513	142.9	14.0	17.9
1984	05 10	16 56.20	-20 47.4					
1984	05 20	16 47.86	-20 44.7	1.473	2.466	165.4	5.9	17.4
1984	05 30	16 37.69	-20 39.5					
1984	06 09	16 26.85	-20 32.8	1.410	2.417	170.3	4.0	17.2
1984	06 19	16 16.71	-20 26.7					
1984	06 29	16 08.42	-20 23.7	1.448	2.367	147.0	13.5	17.5
1984	07 09	16 02.88	-20 26.5					
1984	07 19	16 00.54	-20 36.7	1.566	2.316	126.2	20.7	17.8
1984	07 29	16 01.47	-20 54.6					
1984	08 08	16 05.58	-21 19.7	1.732	2.266	108.4	25.1	18.0
1984	08 18	16 12.60	-21 50.3					
1984	08 28	16 22.26	-22 24.6	1.918	2.216	93.1	27.1	18.3

1983 BN a,e,i = 2.74, 0.02, 6 Elements MPC 7829

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	03 21	16 56.72	-16 25.6	2.254	2.693	-1.03	+3.5	17.6
1984	03 31	17 01.51	-16 22.7					
1984	04 10	17 03.82	-16 16.8	2.010	2.692	-1.18	+3.8	17.3
1984	04 20	17 03.49	-16 09.3					
1984	04 30	17 00.45	-16 01.3	1.815	2.691	-1.33	+4.3	16.9
1984	05 10	16 54.89	-15 54.0					
1984	05 20	16 47.29	-15 48.5	1.700	2.690	-1.44	+4.9	16.6
1984	05 30	16 38.43	-15 46.1					
1984	06 09	16 29.30	-15 48.0	1.687	2.690	-1.44	+5.3	16.5
1984	06 19	16 20.97	-15 55.4					
1984	06 29	16 14.27	-16 09.3	1.777	2.689	-1.33	+5.3	16.9
1984	07 09	16 09.84	-16 30.0					
1984	07 19	16 07.98	-16 57.3	1.951	2.690	-1.18	+4.9	17.2
1984	07 29	16 08.72	-17 30.4					
1984	08 08	16 11.99	-18 08.1	2.180	2.690	-1.04	+4.3	17.5
1984	08 18	16 17.57	-18 49.0					
1984	08 28	16 25.24	-19 31.6	2.436	2.691	-0.94	+3.6	17.8

5550 P-L a,e,i = 2.60, 0.11, 12 Elements MPC 7841

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 00.48	-30 55.6	2.004	2.427	102.8	23.6	18.0
1984	03 31	17 07.03	-32 10.2					
1984	04 10	17 10.66	-33 25.0	1.792	2.449	119.7	20.8	17.7
1984	04 20	17 11.01	-34 38.8					
1984	04 30	17 07.83	-35 49.0	1.625	2.471	138.5	15.7	17.4
1984	05 10	17 01.19	-36 50.6					
1984	05 20	16 51.65	-37 38.0	1.531	2.495	157.2	9.0	17.1
1984	05 30	16 40.24	-38 06.3					
1984	06 09	16 28.46	-38 13.2	1.532	2.519	162.6	6.9	17.1
1984	06 19	16 17.85	-38 01.1					
1984	06 29	16 09.64	-37 35.2	1.631	2.543	146.7	12.7	17.4
1984	07 09	16 04.60	-37 02.2					
1984	07 19	16 02.97	-36 28.3	1.811	2.567	128.2	18.1	17.8
1984	07 29	16 04.62	-35 57.3					
1984	08 08	16 09.29	-35 31.5	2.046	2.591	111.2	21.4	18.1
1984	08 18	16 16.61	-35 11.3					
1984	08 28	16 26.21	-34 56.0	2.311	2.616	95.9	22.6	18.4

(2875) 1983 CL a,e,i = 2.80, 0.10, 9 Elements MPC 7833

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 07.91	-33 08.3	2.396	2.764	101.0	20.7	17.6
1984	03 31	17 13.53	-33 54.0					
1984	04 10	17 16.47	-34 37.6	2.165	2.784	118.3	18.5	17.3
1984	04 20	17 16.47	-35 17.8					
1984	04 30	17 13.41	-35 52.5	1.979	2.805	137.4	14.1	17.0
1984	05 10	17 07.42	-36 18.1					
1984	05 20	16 58.99	-36 31.2	1.866	2.825	156.9	8.1	16.8
1984	05 30	16 48.97	-36 28.7					
1984	06 09	16 38.53	-36 10.1	1.851	2.845	165.3	5.2	16.7
1984	06 19	16 28.90	-35 37.5					
1984	06 29	16 21.06	-34 55.4	1.941	2.864	149.6	10.3	17.0
1984	07 09	16 15.74	-34 09.2					
1984	07 19	16 13.22	-33 23.9	2.120	2.883	130.3	15.6	17.3
1984	07 29	16 13.52	-32 42.9					
1984	08 08	16 16.47	-32 08.0	2.361	2.902	112.3	18.9	17.6
1984	08 18	16 21.81	-31 39.8					
1984	08 28	16 29.25	-31 17.7	2.636	2.920	96.0	20.1	17.9

1979 DF a,e,i = 2.66, 0.17, 15 Elements MPC 4771

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	03 21	17 11.77	-29 09.3	2.103	2.487	-1.15	+5.1	17.6
1984	03 31	17 18.05	-30 24.2					
1984	04 10	17 21.49	-31 40.9	1.895	2.522	-1.34	+5.0	17.4
1984	04 20	17 21.76	-32 58.8					
1984	04 30	17 18.63	-34 15.6	1.728	2.558	-1.56	+5.3	17.1
1984	05 10	17 12.11	-35 26.9					
1984	05 20	17 02.68	-36 27.2	1.635	2.594	-1.74	+6.4	16.8
1984	05 30	16 51.27	-37 11.2					
1984	06 09	16 39.21	-37 35.7	1.638	2.629	-1.75	+7.7	16.8
1984	06 19	16 28.02	-37 41.5					
1984	06 29	16 18.91	-37 32.4	1.744	2.665	-1.59	+8.3	17.1
1984	07 09	16 12.73	-37 14.3					
1984	07 19	16 09.82	-36 52.9	1.936	2.699	-1.37	+7.8	17.5
1984	07 29	16 10.13	-36 32.2					
1984	08 08	16 13.45	-36 14.9	2.186	2.734	-1.18	+6.7	17.8
1984	08 18	16 19.43	-36 01.8					
1984	08 28	16 27.73	-35 52.6	2.467	2.767	-1.04	+5.4	18.2

1978 VV6 a,e,i = 2.25, 0.21, 3 Elements MPC 5318

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	16 54.23	-22 40.9	1.692	2.178	105.2	26.2	20.4
1984	03 31	17 03.52	-23 07.6					
1984	04 10	17 10.31	-23 31.5	1.430	2.130	121.2	23.7	20.0
1984	04 20	17 14.13	-23 53.6					
1984	04 30	17 14.56	-24 14.4	1.209	2.082	139.7	18.2	19.4
1984	05 10	17 11.31	-24 33.3					
1984	05 20	17 04.54	-24 48.9	1.051	2.035	161.2	9.2	18.9
1984	05 30	16 54.91	-24 59.0					
1984	06 09	16 43.78	-25 02.3	0.977	1.990	174.2	2.9	18.4
1984	06 19	16 32.95	-24 59.5					
1984	06 29	16 24.16	-24 53.8	0.993	1.947	151.2	14.6	18.8
1984	07 09	16 18.75	-24 49.4					
1984	07 19	16 17.40	-24 50.0	1.082	1.908	130.7	23.8	19.1
1984	07 29	16 20.18	-24 57.0					
1984	08 08	16 26.93	-25 10.3	1.217	1.872	113.8	29.7	19.5
1984	08 18	16 37.21	-25 27.9					
1984	08 28	16 50.60	-25 47.1	1.375	1.842	100.0	32.7	19.8

(2890) 1978 SY7 a,e,i = 2.26, 0.16, 7 Elements MPC 8017

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 16.84	-29 52.1	2.258	2.613	99.4	22.1	18.4
1984	03 31	17 23.21	-30 31.4					
1984	04 10	17 26.96	-31 10.2	1.995	2.604	116.7	20.1	18.0
1984	04 20	17 27.74	-31 48.1					
1984	04 30	17 25.26	-32 23.6	1.771	2.592	136.0	15.7	17.7
1984	05 10	17 19.45	-32 53.7					
1984	05 20	17 10.62	-33 14.6	1.616	2.578	156.9	8.9	17.3
1984	05 30	16 59.51	-33 22.1					
1984	06 09	16 47.33	-33 14.0	1.557	2.561	168.8	4.4	17.1
1984	06 19	16 35.57	-32 51.2					
1984	06 29	16 25.55	-32 17.5	1.603	2.541	151.1	11.2	17.3
1984	07 09	16 18.29	-31 38.8					
1984	07 19	16 14.30	-31 00.6	1.738	2.519	130.5	17.9	17.6
1984	07 29	16 13.65	-30 27.1					
1984	08 08	16 16.22	-30 00.2	1.930	2.495	112.1	22.1	17.9
1984	08 18	16 21.69	-29 40.5					
1984	08 28	16 29.74	-29 27.0	2.151	2.468	95.9	24.0	18.2

1978 PC a,e,i = 2.29, 0.24, 24 Elements MPC 7599

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 30.96	-21 39.8	2.276	2.591	96.8	22.4	18.9
1984	03 31	17 35.68	-22 40.6					
1984	04 10	17 37.71	-23 46.1	2.044	2.629	114.9	20.2	18.6
1984	04 20	17 36.74	-24 57.0					
1984	04 30	17 32.52	-26 12.7	1.850	2.663	135.5	15.4	18.3
1984	05 10	17 25.01	-27 30.5					
1984	05 20	17 14.56	-28 46.2	1.730	2.695	158.0	8.1	18.0
1984	05 30	17 01.92	-29 54.6					
1984	06 09	16 48.29	-30 51.2	1.716	2.723	171.0	3.3	17.8
1984	06 19	16 35.10	-31 33.9					
1984	06 29	16 23.63	-32 03.9	1.816	2.748	150.7	10.4	18.2
1984	07 09	16 14.85	-32 24.7					
1984	07 19	16 09.24	-32 40.4	2.011	2.770	129.5	16.4	18.6
1984	07 29	16 06.88	-32 54.7					
1984	08 08	16 07.63	-33 09.9	2.265	2.788	110.6	19.9	19.0
1984	08 18	16 11.21	-33 27.4					
1984	08 28	16 17.28	-33 47.2	2.547	2.803	93.9	21.1	19.3

2011 P-L a,e,i = 2.93, 0.09, 7 Elements MPC 7938

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 12.66	-17 18.2	2.357	2.734	101.4	20.9	17.5
1984	03 31	17 19.00	-16 49.3					
1984	04 10	17 23.07	-16 14.9	2.096	2.721	118.5	18.9	17.2
1984	04 20	17 24.66	-15 36.2					
1984	04 30	17 23.67	-14 54.6	1.880	2.710	137.6	14.5	16.9
1984	05 10	17 20.13	-14 12.1					
1984	05 20	17 14.37	-13 30.9	1.735	2.699	157.9	8.1	16.5
1984	05 30	17 06.95	-12 53.6					
1984	06 09	16 58.74	-12 23.0	1.686	2.690	169.3	4.0	16.3
1984	06 19	16 50.70	-12 01.6					
1984	06 29	16 43.76	-11 50.9	1.740	2.682	152.2	10.2	16.6
1984	07 09	16 38.66	-11 51.6					
1984	07 19	16 35.88	-12 03.1	1.884	2.676	132.3	16.3	16.9
1984	07 29	16 35.58	-12 23.9					
1984	08 08	16 37.80	-12 52.1	2.089	2.671	114.2	20.3	17.2
1984	08 18	16 42.38	-13 25.4					
1984	08 28	16 49.11	-14 01.6	2.329	2.667	98.2	22.0	17.5

1981 GX a,e,i = 1.94, 0.10, 20 Elements MPC 7460

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 18.54	-34 21.3	1.459	1.886	98.6	31.5	18.4
1984	03 31	17 30.18	-33 41.1					
1984	04 10	17 38.12	-32 44.6	1.268	1.910	114.2	28.6	18.1
1984	04 20	17 41.88	-31 30.5					
1984	04 30	17 41.08	-29 56.8	1.101	1.935	133.1	22.3	17.7
1984	05 10	17 35.67	-28 01.2					
1984	05 20	17 26.20	-25 43.2	0.990	1.959	156.2	12.0	17.2
1984	05 30	17 13.88	-23 06.2					
1984	06 09	17 00.55	-20 20.3	0.968	1.983	177.0	1.5	16.7
1984	06 19	16 48.26	-17 39.7					
1984	06 29	16 38.53	-15 17.9	1.047	2.005	152.5	13.5	17.4
1984	07 09	16 32.33	-13 23.7					
1984	07 19	16 29.89	-11 59.1	1.210	2.026	130.9	22.3	18.0
1984	07 29	16 31.02	-11 01.6					
1984	08 08	16 35.36	-10 26.4	1.423	2.046	113.1	27.1	18.4
1984	08 18	16 42.46	-10 08.0					
1984	08 28	16 51.89	-10 01.3	1.661	2.064	98.2	29.0	18.8

1981 XC a,e,i = 2.39, 0.18, 5 Elements MPC 6630

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	03 21	17 11.62	-27 07.7	1.934	2.337	-1.46	+2.4	17.4
1984	03 31	17 21.09	-27 45.3					
1984	04 10	17 28.20	-28 21.8	1.664	2.296	-1.77	+2.1	17.0
1984	04 20	17 32.51	-28 57.9					
1984	04 30	17 33.60	-29 33.4	1.430	2.256	-2.14	+2.2	16.6
1984	05 10	17 31.17	-30 06.8					
1984	05 20	17 25.27	-30 35.2	1.256	2.216	-2.51	+3.4	16.1
1984	05 30	17 16.34	-30 54.4					
1984	06 09	17 05.48	-31 00.8	1.168	2.177	-2.66	+5.5	15.6
1984	06 19	16 54.30	-30 53.2					
1984	06 29	16 44.46	-30 33.5	1.174	2.140	-2.50	+6.9	15.9
1984	07 09	16 37.41	-30 07.0					
1984	07 19	16 33.97	-29 39.3	1.263	2.105	-2.17	+6.8	16.2
1984	07 29	16 34.42	-29 14.6					
1984	08 08	16 38.67	-28 55.1	1.408	2.073	-1.87	+5.5	16.5
1984	08 18	16 46.38	-28 40.9					
1984	08 28	16 57.13	-28 30.5	1.584	2.044	-1.66	+3.8	16.8

1981 QN a,e,i = 2.25, 0.20, 4 Elements MPC 7011

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	03 21	17 21.72	-25 06.9	2.070	2.430	-1.26	-0.1	19.1
1984	03 31	17 30.36	-25 08.3					
1984	04 10	17 36.63	-25 05.2	1.786	2.390	-1.50	-0.6	18.7
1984	04 20	17 40.17	-24 58.1					
1984	04 30	17 40.61	-24 47.0	1.535	2.347	-1.79	-0.8	18.2
1984	05 10	17 37.69	-24 31.3					
1984	05 20	17 31.50	-24 10.2	1.345	2.303	-2.08	-0.3	17.7
1984	05 30	17 22.45	-23 42.7					
1984	06 09	17 11.54	-23 08.5	1.242	2.257	-2.20	+0.8	16.9
1984	06 19	17 00.18	-22 29.7					
1984	06 29	16 49.88	-21 49.7	1.239	2.210	-2.08	+1.5	17.4
1984	07 09	16 41.98	-21 13.2					
1984	07 19	16 37.32	-20 44.2	1.324	2.162	-1.82	+1.5	17.7
1984	07 29	16 36.21	-20 24.7					
1984	08 08	16 38.69	-20 15.0	1.466	2.115	-1.57	+1.0	18.0
1984	08 18	16 44.48	-20 13.8					
1984	08 28	16 53.27	-20 18.7	1.638	2.068	-1.39	+0.2	18.3

1978 LB a,e,i = 3.18, 0.13, 18 Elements MPC 6638

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 28.00	-15 04.3	2.455	2.772	97.8	20.9	17.1
1984	03 31	17 34.26	-15 27.3					
1984	04 10	17 38.33	-15 52.1	2.199	2.774	114.9	19.1	16.9
1984	04 20	17 39.98	-16 20.6					
1984	04 30	17 39.04	-16 54.2	1.981	2.778	134.1	15.1	16.6
1984	05 10	17 35.48	-17 33.5					
1984	05 20	17 29.50	-18 18.7	1.831	2.784	155.5	8.7	16.2
1984	05 30	17 21.58	-19 08.4					
1984	06 09	17 12.50	-20 01.1	1.777	2.791	176.9	1.1	15.8
1984	06 19	17 03.24	-20 54.6					
1984	06 29	16 54.81	-21 47.3	1.832	2.801	157.9	7.8	16.2
1984	07 09	16 48.09	-22 38.5					
1984	07 19	16 43.68	-23 28.0	1.986	2.812	136.5	14.4	16.6
1984	07 29	16 41.85	-24 16.0					
1984	08 08	16 42.69	-25 02.7	2.212	2.825	117.3	18.6	16.9
1984	08 18	16 46.07	-25 48.1					
1984	08 28	16 51.80	-26 31.9	2.478	2.839	100.3	20.5	17.2

1979 OM15 a,e,i = 3.13, 0.19, 1 Elements MPC 6517

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 26.85	-22 45.5	2.849	3.142	97.7	18.3	18.7
1984	03 31	17 32.54	-22 47.5					
1984	04 10	17 36.23	-22 47.5	2.541	3.105	115.3	17.0	18.4
1984	04 20	17 37.71	-22 45.9					
1984	04 30	17 36.84	-22 43.0	2.274	3.067	134.7	13.5	18.0
1984	05 10	17 33.57	-22 38.6					
1984	05 20	17 28.10	-22 32.7	2.076	3.029	156.0	7.8	17.7
1984	05 30	17 20.84	-22 24.7					
1984	06 09	17 12.46	-22 14.7	1.976	2.991	178.6	0.5	17.0
1984	06 19	17 03.85	-22 03.5					
1984	06 29	16 55.89	-21 52.1	1.985	2.954	158.2	7.4	17.5
1984	07 09	16 49.43	-21 42.3					
1984	07 19	16 45.05	-21 35.9	2.093	2.916	136.6	13.9	17.7
1984	07 29	16 43.07	-21 33.8					
1984	08 08	16 43.61	-21 36.5	2.272	2.879	117.1	18.3	18.0
1984	08 18	16 46.62	-21 43.6					
1984	08 28	16 51.94	-21 54.4	2.490	2.843	99.9	20.5	18.2

1982 YC1 a,e,i = 2.48, 0.18, 16 Elements MPC 7942

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 43.71	-39 05.6	2.241	2.504	93.3	23.4	17.3
1984	03 31	17 52.79	-39 41.0					
1984	04 10	17 58.96	-40 14.7	2.031	2.543	109.2	21.9	17.1
1984	04 20	18 01.83	-40 46.2					
1984	04 30	18 01.07	-41 13.4	1.846	2.581	127.0	18.2	16.8
1984	05 10	17 56.56	-41 32.6					
1984	05 20	17 48.54	-41 38.7	1.716	2.618	146.1	12.4	16.5
1984	05 30	17 37.72	-41 26.4					
1984	06 09	17 25.32	-40 52.0	1.670	2.653	161.6	6.9	16.4
1984	06 19	17 12.91	-39 55.9					
1984	06 29	17 01.92	-38 42.5	1.728	2.687	155.7	9.0	16.5
1984	07 09	16 53.47	-37 18.8					
1984	07 19	16 48.14	-35 52.8	1.883	2.719	137.3	14.7	16.9
1984	07 29	16 46.03	-34 30.6					
1984	08 08	16 47.00	-33 15.9	2.113	2.749	118.8	18.9	17.3
1984	08 18	16 50.71	-32 10.3					
1984	08 28	16 56.80	-31 13.7	2.387	2.777	101.9	20.9	17.6

1978 VT9 a,e,i = 2.23, 0.20, 4 Elements MPC 5318

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 23.76	-23 16.2	1.911	2.280	98.4	25.6	21.3
1984	03 31	17 34.05	-23 38.7					
1984	04 10	17 42.17	-24 00.1	1.632	2.234	113.9	24.2	20.9
1984	04 20	17 47.69	-24 22.0					
1984	04 30	17 50.17	-24 45.5	1.385	2.187	131.6	20.2	20.4
1984	05 10	17 49.19	-25 11.0					
1984	05 20	17 44.63	-25 37.7	1.193	2.140	152.1	12.8	19.8
1984	05 30	17 36.66	-26 03.2					
1984	06 09	17 26.08	-26 24.4	1.080	2.093	174.5	2.7	19.2
1984	06 19	17 14.33	-26 38.7					
1984	06 29	17 03.16	-26 45.5	1.061	2.046	160.0	9.8	19.4
1984	07 09	16 54.27	-26 47.0					
1984	07 19	16 48.87	-26 46.8	1.127	2.000	137.9	19.9	19.7
1984	07 29	16 47.50	-26 48.0					
1984	08 08	16 50.28	-26 52.5	1.251	1.957	119.2	26.9	20.1
1984	08 18	16 56.94	-27 00.2					
1984	08 28	17 07.07	-27 09.5	1.406	1.917	103.8	30.8	20.4

1983 CN a,e,i = 2.53, 0.03, 15 Elements MPC 8062

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 37.85	-39 34.6	2.266	2.544	94.4	23.0	18.3
1984	03 31	17 47.91	-40 41.3					
1984	04 10	17 55.39	-41 48.9	2.032	2.550	109.6	21.7	18.1
1984	04 20	17 59.85	-42 57.1					
1984	04 30	18 00.84	-44 04.0	1.827	2.555	126.3	18.5	17.8
1984	05 10	17 58.01	-45 05.8					
1984	05 20	17 51.36	-45 56.6	1.676	2.560	143.4	13.6	17.5
1984	05 30	17 41.36	-46 29.1					
1984	06 09	17 29.10	-46 36.7	1.605	2.566	155.9	9.3	17.3
1984	06 19	17 16.24	-46 16.2					
1984	06 29	17 04.50	-45 29.5	1.629	2.570	151.8	10.8	17.4
1984	07 09	16 55.36	-44 22.9					
1984	07 19	16 49.67	-43 05.1	1.744	2.575	136.2	15.9	17.6
1984	07 29	16 47.66	-41 43.8					
1984	08 08	16 49.23	-40 25.0	1.929	2.579	119.2	20.1	17.9
1984	08 18	16 53.99	-39 11.8					
1984	08 28	17 01.51	-38 05.2	2.158	2.583	103.2	22.4	18.2

1971 UG1 a,e,i = 2.85, 0.08, 2 Elements MPC 5519

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 41.46	-21 22.9	2.794	3.038	94.4	19.1	18.6
1984	03 31	17 47.65	-21 17.4					
1984	04 10	17 51.80	-21 10.0	2.513	3.030	111.7	17.9	18.3
1984	04 20	17 53.70	-21 01.7					
1984	04 30	17 53.19	-20 52.9	2.265	3.022	130.9	14.6	18.0
1984	05 10	17 50.22	-20 44.1					
1984	05 20	17 44.96	-20 35.3	2.081	3.013	152.1	9.0	17.7
1984	05 30	17 37.77	-20 26.4					
1984	06 09	17 29.29	-20 17.5	1.991	3.003	174.3	1.9	17.3
1984	06 19	17 20.39	-20 09.2					
1984	06 29	17 11.96	-20 02.1	2.010	2.992	161.5	6.2	17.5
1984	07 09	17 04.84	-19 57.4					
1984	07 19	16 59.66	-19 56.2	2.132	2.980	139.7	12.7	17.8
1984	07 29	16 56.77	-19 59.1					
1984	08 08	16 56.33	-20 06.3	2.330	2.968	119.9	17.2	18.1
1984	08 18	16 58.30	-20 17.2					
1984	08 28	17 02.52	-20 31.1	2.573	2.956	102.1	19.5	18.4

1981 QD2 a,e,i = 2.28, 0.17, 4 Elements MPC 6514

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	03 21	17 39.60	-24 15.6	2.229	2.516	-1.12	+1.6	19.2
1984	03 31	17 48.48	-24 32.4					
1984	04 10	17 55.18	-24 48.9	1.945	2.486	-1.31	+1.3	18.8
1984	04 20	17 59.35	-25 06.1					
1984	04 30	18 00.62	-25 24.8	1.690	2.454	-1.56	+1.3	18.4
1984	05 10	17 58.70	-25 44.9					
1984	05 20	17 53.52	-26 05.4	1.490	2.420	-1.82	+1.9	18.0
1984	05 30	17 45.32	-26 23.9					
1984	06 09	17 34.81	-26 37.8	1.374	2.385	-1.98	+3.1	17.4
1984	06 19	17 23.23	-26 44.9					
1984	06 29	17 12.00	-26 45.0	1.360	2.348	-1.92	+4.3	17.6
1984	07 09	17 02.56	-26 39.8					
1984	07 19	16 55.98	-26 32.7	1.441	2.310	-1.71	+4.7	17.9
1984	07 29	16 52.78	-26 26.6					
1984	08 08	16 53.16	-26 23.6	1.589	2.271	-1.48	+4.2	18.2
1984	08 18	16 56.94	-26 24.3					
1984	08 28	17 03.83	-26 28.0	1.775	2.231	-1.30	+3.3	18.5

1981 XK2 a,e,i = 2.93, 0.19, 17 Elements MPC 7840

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 35.43	-13 58.3	2.122	2.437	96.1	24.0	16.1
1984	03 31	17 44.62	-14 20.8					
1984	04 10	17 51.72	-14 45.8	1.862	2.418	111.6	22.7	15.8
1984	04 20	17 56.41	-15 15.9					
1984	04 30	17 58.37	-15 53.9	1.633	2.402	129.3	18.9	15.4
1984	05 10	17 57.38	-16 41.8					
1984	05 20	17 53.42	-17 40.7	1.460	2.390	149.8	12.3	15.0
1984	05 30	17 46.73	-18 49.9					
1984	06 09	17 37.98	-20 06.9	1.371	2.381	172.3	3.3	14.6
1984	06 19	17 28.26	-21 27.8					
1984	06 29	17 18.82	-22 48.1	1.384	2.376	163.6	7.0	14.7
1984	07 09	17 10.94	-24 04.8					
1984	07 19	17 05.57	-25 16.1	1.494	2.375	141.6	15.4	15.1
1984	07 29	17 03.26	-26 21.7					
1984	08 08	17 04.21	-27 21.8	1.677	2.379	122.3	21.1	15.5
1984	08 18	17 08.32	-28 16.6					
1984	08 28	17 15.34	-29 06.1	1.905	2.386	105.7	24.1	15.8

1981 QC a,e,i = 2.34, 0.22, 26 Elements MPC 8144

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 57.68	-24 45.0	2.541	2.740	90.6	21.3	19.2
1984	03 31	18 05.19	-25 47.6					
1984	04 10	18 10.67	-26 57.5	2.239	2.713	107.4	20.6	18.9
1984	04 20	18 13.76	-28 16.6					
1984	04 30	18 14.04	-29 45.7	1.963	2.683	126.0	17.7	18.5
1984	05 10	18 11.12	-31 24.5					
1984	05 20	18 04.77	-33 10.1	1.747	2.650	146.4	12.2	18.1
1984	05 30	17 55.03	-34 56.9					
1984	06 09	17 42.41	-36 36.9	1.623	2.615	164.3	6.0	17.8
1984	06 19	17 28.03	-38 02.1					
1984	06 29	17 13.41	-39 06.9	1.609	2.577	157.2	8.8	17.8
1984	07 09	17 00.26	-39 50.5					
1984	07 19	16 49.98	-40 16.4	1.697	2.536	136.9	15.9	18.0
1984	07 29	16 43.36	-40 30.3					
1984	08 08	16 40.76	-40 37.9	1.857	2.494	117.5	21.1	18.3
1984	08 18	16 42.06	-40 43.4					
1984	08 28	16 46.98	-40 49.1	2.053	2.449	100.6	23.9	18.6

(2917) 1980 RR a,e,i = 2.80, 0.11, 13 Elements MPC 8141

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 51.88	-36 58.0	2.807	3.006	91.7	19.3	18.1
1984	03 31	18 00.04	-37 45.2					
1984	04 10	18 06.05	-38 34.2	2.525	2.990	107.9	18.6	17.8
1984	04 20	18 09.56	-39 25.0					
1984	04 30	18 10.27	-40 16.4	2.273	2.973	125.5	16.0	17.5
1984	05 10	18 07.92	-41 05.9					
1984	05 20	18 02.51	-41 49.7	2.077	2.955	143.8	11.7	17.2
1984	05 30	17 54.30	-42 22.8					
1984	06 09	17 43.97	-42 39.9	1.966	2.935	158.8	7.2	17.0
1984	06 19	17 32.65	-42 37.8					
1984	06 29	17 21.60	-42 15.8	1.956	2.915	156.2	8.1	17.0
1984	07 09	17 12.11	-41 36.6					
1984	07 19	17 05.11	-40 45.7	2.045	2.895	139.6	13.2	17.2
1984	07 29	17 01.10	-39 48.8					
1984	08 08	17 00.24	-38 50.8	2.212	2.873	121.4	17.5	17.4
1984	08 18	17 02.41	-37 55.2					
1984	08 28	17 07.34	-37 03.8	2.428	2.852	104.4	20.1	17.7

(2904) 1981 YB a,e,i = 2.60, 0.14, 15 Elements MPC 8059

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 55.62	-20 27.0	2.750	2.943	91.1	19.8	18.0
1984	03 31	18 02.32	-20 49.8					
1984	04 10	18 07.03	-21 14.9	2.461	2.933	108.2	18.9	17.7
1984	04 20	18 09.50	-21 43.7					
1984	04 30	18 09.48	-22 17.1	2.199	2.920	127.2	16.0	17.4
1984	05 10	18 06.80	-22 55.3					
1984	05 20	18 01.48	-23 37.6	1.996	2.906	148.3	10.5	17.1
1984	05 30	17 53.75	-24 22.4					
1984	06 09	17 44.18	-25 07.0	1.883	2.891	171.3	3.1	16.6
1984	06 19	17 33.64	-25 48.7					
1984	06 29	17 23.19	-26 25.6	1.881	2.873	164.5	5.4	16.8
1984	07 09	17 13.90	-26 57.0					
1984	07 19	17 06.64	-27 23.9	1.985	2.854	141.9	12.7	17.1
1984	07 29	17 01.95	-27 47.7					
1984	08 08	17 00.09	-28 09.9	2.170	2.834	121.5	17.8	17.4
1984	08 18	17 01.06	-28 31.5					
1984	08 28	17 04.71	-28 53.1	2.401	2.812	103.4	20.5	17.6

(2871) 1981 QC2 a,e,i = 2.26, 0.14, 6 Elements MPC 7832

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 21	17 42.13	-27 00.3	2.099	2.387	94.1	24.6	18.1
1984	03 31	17 52.61	-27 33.0					
1984	04 10	18 00.94	-28 06.6	1.826	2.358	109.6	23.6	17.7
1984	04 20	18 06.75	-28 42.5					
1984	04 30	18 09.58	-29 21.3	1.579	2.329	127.0	20.2	17.3
1984	05 10	18 09.05	-30 02.9					
1984	05 20	18 04.96	-30 45.3	1.383	2.298	146.9	13.9	16.8
1984	05 30	17 57.40	-31 24.6					
1984	06 09	17 47.00	-31 55.8	1.265	2.266	167.4	5.6	16.4
1984	06 19	17 35.03	-32 14.2					
1984	06 29	17 23.09	-32 17.7	1.243	2.234	162.6	7.8	16.4
1984	07 09	17 12.89	-32 08.0					
1984	07 19	17 05.73	-31 49.6	1.314	2.202	141.4	16.7	16.7
1984	07 29	17 02.28	-31 27.6					
1984	08 08	17 02.75	-31 06.0	1.454	2.170	122.1	23.3	17.0
1984	08 18	17 06.95	-30 46.8					
1984	08 28	17 14.52	-30 30.2	1.632	2.138	105.6	27.1	17.3

1981 PB a,e,i = 2.13, 0.28, 5 Elements MPC 6950

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	04 10	17 28.14	-29 46.1	1.089	1.779	-3.27	+3.7	18.6
1984	04 20	17 40.90	-30 51.1					
1984	04 30	17 51.00	-31 57.8	0.882	1.718	-4.33	+2.6	18.0
1984	05 10	17 57.75	-33 06.3					
1984	05 20	18 00.57	-34 15.2	0.721	1.663	-5.65	+3.2	17.3
1984	05 30	17 59.09	-35 19.3					
1984	06 09	17 53.60	-36 10.2	0.617	1.616	-6.71	+7.8	16.7
1984	06 19	17 45.44	-36 38.3					
1984	06 29	17 36.80	-36 37.1	0.579	1.578	-6.73	+13.3	16.6
1984	07 09	17 30.32	-36 07.5					
1984	07 19	17 28.03	-35 16.8	0.605	1.553	-5.83	+13.6	16.9
1984	07 29	17 30.85	-34 13.9					
1984	08 08	17 38.86	-33 05.8	0.680	1.540	-4.82	+8.9	17.3
1984	08 18	17 51.45	-31 55.5					
1984	08 28	18 07.78	-30 43.0	0.792	1.541	-4.01	+2.7	17.8
1984	09 07	18 27.05	-29 26.6					
1984	09 17	18 48.44	-28 04.4	0.931	1.556	-3.37	-2.9	18.2

1964 XA a,e,i = 2.35, 0.30, 22 Elements MPC 7233

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 34.11	-43 13.2	2.331	2.728	102.4	21.0	19.0
1984	04 20	18 38.60	-44 52.1					
1984	04 30	18 39.75	-46 36.2	2.142	2.775	119.0	18.5	18.8
1984	05 10	18 37.06	-48 21.8					
1984	05 20	18 30.28	-50 02.8	2.004	2.818	135.7	14.5	18.6
1984	05 30	18 19.47	-51 30.8					
1984	06 09	18 05.32	-52 36.6	1.944	2.858	148.3	10.8	18.5
1984	06 19	17 49.29	-53 12.7					
1984	06 29	17 33.28	-53 16.6	1.980	2.893	148.1	10.7	18.5
1984	07 09	17 19.23	-52 51.3					
1984	07 19	17 08.53	-52 04.1	2.111	2.926	135.7	14.0	18.8
1984	07 29	17 01.79	-51 03.8					
1984	08 08	16 59.11	-49 58.1	2.316	2.954	119.8	17.3	19.1
1984	08 18	17 00.16	-48 52.7					
1984	08 28	17 04.45	-47 50.5	2.570	2.979	103.9	19.2	19.4
1984	09 07	17 11.54	-46 53.0					
1984	09 17	17 20.93	-46 00.3	2.845	3.000	88.9	19.6	19.6

1971 MG a,e,i = 2.68, 0.21, 13 Elements MPC 8148

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 09.61	-31 03.4	2.064	2.552	107.6	22.0	16.6
1984	04 20	18 15.57	-30 53.1					
1984	04 30	18 18.75	-30 38.8	1.790	2.508	125.0	19.2	16.2
1984	05 10	18 18.83	-30 19.6					
1984	05 20	18 15.71	-29 53.8	1.567	2.464	144.7	13.7	15.7
1984	05 30	18 09.50	-29 19.2					
1984	06 09	18 00.75	-28 33.8	1.421	2.421	166.7	5.5	15.3
1984	06 19	17 50.49	-27 36.8					
1984	06 29	17 40.02	-26 30.2	1.375	2.379	168.1	5.0	15.1
1984	07 09	17 30.76	-25 18.2					
1984	07 19	17 23.85	-24 06.4	1.428	2.338	145.7	14.2	15.4
1984	07 29	17 19.96	-22 59.8					
1984	08 08	17 19.39	-22 01.6	1.559	2.300	125.4	21.0	15.8
1984	08 18	17 22.06	-21 12.7					
1984	08 28	17 27.73	-20 32.2	1.738	2.264	108.0	25.1	16.1
1984	09 07	17 36.10	-19 58.3					
1984	09 17	17 46.80	-19 28.4	1.939	2.232	93.1	26.7	16.3

1978 UJ2 a,e,i = 2.18, 0.22, 3 Elements MPC 6524

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	17 56.32	-21 17.0	1.500	2.077	110.7	26.8	18.6
1984	04 20	18 04.99	-21 20.4					
1984	04 30	18 10.92	-21 24.8	1.253	2.024	126.8	23.5	18.1
1984	05 10	18 13.62	-21 32.3					
1984	05 20	18 12.76	-21 44.4	1.052	1.973	145.7	16.8	17.5
1984	05 30	18 08.19	-22 01.6					
1984	06 09	18 00.23	-22 22.9	0.918	1.922	167.8	6.4	16.9
1984	06 19	17 49.96	-22 46.2					
1984	06 29	17 38.97	-23 09.2	0.868	1.874	168.2	6.4	16.7
1984	07 09	17 29.23	-23 30.8					
1984	07 19	17 22.47	-23 51.6	0.901	1.830	145.4	18.4	17.0
1984	07 29	17 19.71	-24 12.6					
1984	08 08	17 21.41	-24 34.3	0.996	1.791	126.1	27.2	17.4
1984	08 18	17 27.47	-24 56.2					
1984	08 28	17 37.49	-25 16.4	1.127	1.758	110.5	32.6	17.7
1984	09 07	17 51.03	-25 32.5					
1984	09 17	18 07.54	-25 41.5	1.278	1.731	97.9	35.1	18.0

1981 YO a,e,i = 2.47, 0.20, 4 Elements MPC 7241

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 08.30	-20 03.1	1.995	2.492	107.9	22.5	18.0
1984	04 20	18 13.99	-19 59.5					
1984	04 30	18 17.12	-19 57.4	1.724	2.448	125.3	19.6	17.6
1984	05 10	18 17.37	-19 58.2					
1984	05 20	18 14.60	-20 03.0	1.503	2.404	145.1	13.9	17.1
1984	05 30	18 08.84	-20 12.0					
1984	06 09	18 00.52	-20 24.7	1.358	2.359	167.4	5.4	16.6
1984	06 19	17 50.54	-20 40.0					
1984	06 29	17 40.10	-20 56.9	1.310	2.315	168.1	5.2	16.5
1984	07 09	17 30.62	-21 14.9					
1984	07 19	17 23.31	-21 34.2	1.359	2.271	145.4	14.7	16.8
1984	07 29	17 18.99	-21 55.1					
1984	08 08	17 18.08	-22 18.0	1.484	2.227	125.2	21.9	17.1
1984	08 18	17 20.62	-22 42.5					
1984	08 28	17 26.42	-23 07.5	1.653	2.186	107.9	26.1	17.4
1984	09 07	17 35.21	-23 31.5					
1984	09 17	17 46.63	-23 52.6	1.842	2.146	93.1	27.9	17.6

1978 RA6 a,e,i = 2.26, 0.12, 6 Elements MPC 7839

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 20.53	-28 32.1	2.075	2.531	105.3	22.5	19.6
1984	04 20	18 25.78	-29 01.0					
1984	04 30	18 28.18	-29 33.2	1.833	2.527	123.0	19.5	19.3
1984	05 10	18 27.41	-30 08.4					
1984	05 20	18 23.31	-30 45.0	1.638	2.521	143.0	14.0	18.9
1984	05 30	18 15.97	-31 19.5					
1984	06 09	18 05.94	-31 47.5	1.521	2.513	164.2	6.3	18.5
1984	06 19	17 54.24	-32 04.8					
1984	06 29	17 42.25	-32 08.9	1.504	2.503	166.2	5.6	18.5
1984	07 09	17 31.44	-32 00.6					
1984	07 19	17 23.03	-31 43.1	1.588	2.490	145.1	13.5	18.8
1984	07 29	17 17.74	-31 20.7					
1984	08 08	17 15.88	-30 57.4	1.752	2.476	124.9	19.6	19.1
1984	08 18	17 17.37	-30 35.7					
1984	08 28	17 21.95	-30 16.4	1.964	2.460	107.2	23.1	19.5
1984	09 07	17 29.30	-29 59.4					
1984	09 17	17 39.02	-29 43.6	2.197	2.441	91.6	24.3	19.7

1983 CA3 a,e,i = 2.79, 0.07, 5 Elements MPC 7935

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	04 10	18 21.83	-23 39.3	2.445	2.870	-0.94	-1.7	18.2
1984	04 20	18 25.77	-23 24.4					
1984	04 30	18 27.24	-23 09.4	2.205	2.882	-1.06	-2.0	17.9
1984	05 10	18 26.08	-22 54.7					
1984	05 20	18 22.34	-22 40.1	2.015	2.892	-1.18	-2.0	17.6
1984	05 30	18 16.23	-22 25.4					
1984	06 09	18 08.26	-22 10.0	1.907	2.903	-1.27	-1.7	17.3
1984	06 19	17 59.23	-21 53.7					
1984	06 29	17 50.06	-21 36.8	1.904	2.912	-1.27	-1.1	17.2
1984	07 09	17 41.72	-21 20.3					
1984	07 19	17 35.03	-21 05.6	2.009	2.921	-1.18	-0.7	17.6
1984	07 29	17 30.52	-20 53.7					
1984	08 08	17 28.48	-20 45.4	2.200	2.929	-1.05	-0.6	17.9
1984	08 18	17 28.93	-20 40.7					
1984	08 28	17 31.77	-20 39.0	2.448	2.937	-0.93	-0.6	18.2
1984	09 07	17 36.80	-20 39.4					
1984	09 17	17 43.79	-20 40.7	2.725	2.943	-0.83	-0.8	18.5

(2846) 1942 CJ a,e,i = 3.23, 0.06, 11 Elements MPC 7767

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 19.48	-11 06.4	2.645	3.055	104.6	18.5	16.8
1984	04 20	18 23.05	-10 37.0					
1984	04 30	18 24.47	-10 09.6	2.402	3.060	122.2	16.2	16.5
1984	05 10	18 23.66	-09 46.2					
1984	05 20	18 20.66	-09 29.1	2.211	3.066	141.2	11.9	16.2
1984	05 30	18 15.68	-09 20.1					
1984	06 09	18 09.12	-09 20.7	2.099	3.072	159.9	6.5	16.0
1984	06 19	18 01.62	-09 31.7					
1984	06 29	17 53.90	-09 53.1	2.089	3.079	164.0	5.2	15.9
1984	07 09	17 46.75	-10 23.8					
1984	07 19	17 40.89	-11 02.2	2.184	3.087	147.0	10.3	16.2
1984	07 29	17 36.79	-11 46.3					
1984	08 08	17 34.80	-12 34.0	2.368	3.095	127.8	15.0	16.5
1984	08 18	17 35.00	-13 23.2					
1984	08 28	17 37.37	-14 12.2	2.612	3.104	109.8	17.8	16.8
1984	09 07	17 41.80	-14 59.6					
1984	09 17	17 48.09	-15 43.9	2.889	3.113	93.3	18.8	17.0

1969 TE2 a,e,i = 2.53, 0.12, 3 Elements MPC 7227

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 27.16	-19 36.3	2.420	2.826	103.4	20.2	19.0
1984	04 20	18 31.22	-19 17.4					
1984	04 30	18 32.87	-18 59.4	2.170	2.829	121.5	17.7	18.7
1984	05 10	18 31.91	-18 43.5					
1984	05 20	18 28.33	-18 30.2	1.967	2.831	141.7	12.8	18.4
1984	05 30	18 22.30	-18 20.1					
1984	06 09	18 14.24	-18 13.2	1.843	2.832	163.7	5.8	18.1
1984	06 19	18 04.92	-18 09.3					
1984	06 29	17 55.25	-18 08.4	1.823	2.830	170.3	3.5	18.0
1984	07 09	17 46.25	-18 10.5					
1984	07 19	17 38.83	-18 15.8	1.909	2.827	148.6	10.8	18.3
1984	07 29	17 33.59	-18 24.5					
1984	08 08	17 30.88	-18 36.3	2.084	2.822	127.8	16.5	18.6
1984	08 18	17 30.80	-18 50.8					
1984	08 28	17 33.25	-19 07.1	2.316	2.815	109.2	19.8	18.9
1984	09 07	17 38.05	-19 24.2					
1984	09 17	17 44.95	-19 40.6	2.574	2.806	92.6	21.0	19.2

(2843) 1975 XQ a,e,i = 2.30, 0.13, 5 Elements MPC 7664

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 26.85	-23 50.3	1.863	2.315	103.7	24.9	17.7
1984	04 20	18 33.03	-23 27.2					
1984	04 30	18 36.20	-23 03.6	1.659	2.344	121.0	21.6	17.4
1984	05 10	18 36.09	-22 40.2					
1984	05 20	18 32.64	-22 17.4	1.497	2.372	141.1	15.5	17.1
1984	05 30	18 26.05	-21 54.9					
1984	06 09	18 16.91	-21 32.3	1.407	2.398	163.8	6.8	16.8
1984	06 19	18 06.26	-21 09.3					
1984	06 29	17 55.38	-20 46.4	1.414	2.424	171.5	3.5	16.7
1984	07 09	17 45.62	-20 25.2					
1984	07 19	17 38.04	-20 07.3	1.523	2.448	148.7	12.5	17.1
1984	07 29	17 33.26	-19 54.2					
1984	08 08	17 31.56	-19 46.3	1.713	2.471	128.1	18.8	17.6
1984	08 18	17 32.84	-19 43.2					
1984	08 28	17 36.88	-19 43.6	1.957	2.492	110.1	22.4	18.0
1984	09 07	17 43.37	-19 46.0					
1984	09 17	17 51.98	-19 48.7	2.227	2.511	94.3	23.5	18.3

1979 EE a,e,i = 2.57, 0.24, 12 Elements MPC 7662

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 38.36	-36 25.5	2.585	2.954	101.6	19.4	20.4
1984	04 20	18 42.31	-36 55.3					
1984	04 30	18 43.48	-37 27.0	2.361	2.987	119.4	17.1	20.1
1984	05 10	18 41.64	-37 59.0					
1984	05 20	18 36.75	-38 28.4	2.182	3.018	138.8	12.8	19.9
1984	05 30	18 29.01	-38 51.1					
1984	06 09	18 18.97	-39 02.5	2.082	3.046	157.8	7.2	19.7
1984	06 19	18 07.56	-38 59.0					
1984	06 29	17 55.92	-38 39.1	2.086	3.072	163.0	5.6	19.6
1984	07 09	17 45.27	-38 04.4					
1984	07 19	17 36.58	-37 18.6	2.197	3.095	146.4	10.5	19.9
1984	07 29	17 30.44	-36 26.6					
1984	08 08	17 27.14	-35 32.9	2.398	3.115	127.0	15.1	20.2
1984	08 18	17 26.64	-34 40.9					
1984	08 28	17 28.75	-33 52.4	2.660	3.133	108.7	17.8	20.5
1984	09 07	17 33.21	-33 08.1					
1984	09 17	17 39.71	-32 27.8	2.951	3.148	91.8	18.6	20.8

(2853) 1963 RG a,e,i = 2.34, 0.14, 4 Elements MPC 7772

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 26.84	-19 28.6	2.206	2.627	103.5	21.8	18.5
1984	04 20	18 31.98	-19 03.2					
1984	04 30	18 34.61	-18 37.9	1.944	2.610	121.0	19.3	18.2
1984	05 10	18 34.48	-18 13.9					
1984	05 20	18 31.49	-17 52.3	1.726	2.590	140.9	14.3	17.8
1984	05 30	18 25.70	-17 33.9					
1984	06 09	18 17.51	-17 19.3	1.582	2.569	162.6	6.8	17.4
1984	06 19	18 07.68	-17 08.8					
1984	06 29	17 57.26	-17 02.6	1.538	2.546	170.1	4.0	17.2
1984	07 09	17 47.45	-17 01.2					
1984	07 19	17 39.34	-17 04.8	1.598	2.521	148.4	12.2	17.5
1984	07 29	17 33.70	-17 13.5					
1984	08 08	17 30.97	-17 27.0	1.742	2.494	127.7	18.8	17.8
1984	08 18	17 31.25	-17 44.2					
1984	08 28	17 34.42	-18 03.9	1.939	2.466	109.4	22.7	18.1
1984	09 07	17 40.28	-18 24.4					
1984	09 17	17 48.52	-18 43.9	2.159	2.436	93.5	24.3	18.4

(2903) 1981 UV9 a,e,i = 2.56, 0.06, 14 Elements MPC 8059

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 29.28	-16 31.2	2.272	2.677	102.7	21.4	17.4
1984	04 20	18 33.93	-15 26.1					
1984	04 30	18 36.08	-14 18.0	2.033	2.684	120.1	19.0	17.1
1984	05 10	18 35.57	-13 08.5					
1984	05 20	18 32.39	-12 00.0	1.840	2.690	139.3	14.2	16.8
1984	05 30	18 26.70	-10 54.9					
1984	06 09	18 18.95	-09 56.4	1.724	2.695	158.5	7.9	16.5
1984	06 19	18 09.91	-09 07.3					
1984	06 29	18 00.49	-08 30.4	1.709	2.699	163.6	6.1	16.4
1984	07 09	17 51.73	-08 07.2					
1984	07 19	17 44.52	-07 57.8	1.796	2.703	146.6	11.9	16.7
1984	07 29	17 39.46	-08 00.7					
1984	08 08	17 36.90	-08 14.0	1.967	2.705	127.4	17.3	17.0
1984	08 18	17 36.94	-08 34.7					
1984	08 28	17 39.46	-09 00.1	2.194	2.707	109.7	20.6	17.3
1984	09 07	17 44.30	-09 27.6					
1984	09 17	17 51.21	-09 54.9	2.448	2.708	93.9	21.7	17.6

1978 VK9 a,e,i = 2.25, 0.16, 5 Elements MPC 8149

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 26.32	-22 33.5	1.971	2.415	103.8	23.8	18.4
1984	04 20	18 33.17	-22 10.0					
1984	04 30	18 37.42	-21 45.4	1.706	2.383	120.7	21.3	18.0
1984	05 10	18 38.72	-21 20.6					
1984	05 20	18 36.84	-20 56.4	1.481	2.349	140.0	16.1	17.6
1984	05 30	18 31.75	-20 33.2					
1984	06 09	18 23.72	-20 10.8	1.327	2.314	162.0	7.8	17.1
1984	06 19	18 13.56	-19 49.3					
1984	06 29	18 02.44	-19 28.8	1.265	2.277	172.5	3.3	16.8
1984	07 09	17 51.82	-19 10.6					
1984	07 19	17 43.08	-18 56.1	1.303	2.240	149.7	13.2	17.1
1984	07 29	17 37.18	-18 46.8					
1984	08 08	17 34.67	-18 43.2	1.421	2.202	128.7	21.1	17.5
1984	08 18	17 35.65	-18 45.0					
1984	08 28	17 39.94	-18 50.6	1.588	2.164	110.8	25.9	17.8
1984	09 07	17 47.29	-18 58.2					
1984	09 17	17 57.31	-19 05.4	1.779	2.126	95.5	28.1	18.0

1983 AV a,e,i = 2.66, 0.20, 13 Elements MPC 7938

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 35.89	-18 15.2	2.225	2.613	101.2	22.1	18.3
1984	04 20	18 40.77	-18 29.8					
1984	04 30	18 43.06	-18 50.1	2.016	2.656	119.1	19.4	18.1
1984	05 10	18 42.58	-19 17.2					
1984	05 20	18 39.27	-19 51.8	1.849	2.699	139.3	14.1	17.8
1984	05 30	18 33.27	-20 33.0					
1984	06 09	18 25.03	-21 18.8	1.757	2.741	161.9	6.6	17.5
1984	06 19	18 15.32	-22 06.5					
1984	06 29	18 05.15	-22 53.0	1.768	2.781	174.2	2.1	17.3
1984	07 09	17 55.62	-23 36.0					
1984	07 19	17 47.70	-24 14.4	1.888	2.821	151.2	10.0	17.9
1984	07 29	17 42.05	-24 48.4					
1984	08 08	17 39.03	-25 18.5	2.099	2.859	130.1	15.7	18.3
1984	08 18	17 38.73	-25 45.5					
1984	08 28	17 41.01	-26 09.7	2.371	2.895	111.3	19.0	18.6
1984	09 07	17 45.67	-26 31.2					
1984	09 17	17 52.43	-26 49.9	2.675	2.930	94.5	20.0	18.9

1981 QK a,e,i = 2.24, 0.19, 6 Elements MPC 6463

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	04 10	18 20.98	-30 20.4	1.784	2.263	-1.65	-0.7	19.1
1984	04 20	18 29.97	-30 52.7					
1984	04 30	18 36.29	-31 28.3	1.525	2.220	-2.01	-1.7	18.7
1984	05 10	18 39.44	-32 07.9					
1984	05 20	18 39.03	-32 50.5	1.306	2.177	-2.46	-2.0	18.2
1984	05 30	18 34.76	-33 33.2					
1984	06 09	18 26.79	-34 10.5	1.153	2.133	-2.87	-0.8	17.7
1984	06 19	18 15.91	-34 35.7					
1984	06 29	18 03.55	-34 42.9	1.086	2.090	-2.99	+1.8	17.4
1984	07 09	17 51.67	-34 30.1					
1984	07 19	17 42.14	-34 00.2	1.111	2.047	-2.72	+3.6	17.6
1984	07 29	17 36.24	-33 19.4					
1984	08 08	17 34.62	-32 34.0	1.209	2.006	-2.32	+3.4	18.0
1984	08 18	17 37.29	-31 48.3					
1984	08 28	17 43.89	-31 04.2	1.353	1.968	-1.97	+2.0	18.3
1984	09 07	17 53.98	-30 21.5					
1984	09 17	18 07.03	-29 38.7	1.521	1.932	-1.73	+0.2	18.6

1974 SD5 a,e,i = 3.05, 0.20, 15 Elements MPC 7598

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 31.79	-40 16.4	2.557	2.947	102.9	19.4	17.8
1984	04 20	18 38.44	-41 16.5					
1984	04 30	18 42.58	-42 20.7	2.279	2.907	119.1	17.6	17.5
1984	05 10	18 43.82	-43 27.6					
1984	05 20	18 41.90	-44 34.2	2.050	2.866	136.1	14.2	17.2
1984	05 30	18 36.70	-45 35.9					
1984	06 09	18 28.45	-46 26.0	1.893	2.826	151.3	9.9	16.9
1984	06 19	18 17.90	-46 58.1					
1984	06 29	18 06.25	-47 07.0	1.829	2.787	155.7	8.6	16.7
1984	07 09	17 55.00	-46 51.2					
1984	07 19	17 45.60	-46 13.3	1.861	2.748	143.9	12.6	16.8
1984	07 29	17 39.08	-45 18.9					
1984	08 08	17 36.01	-44 14.4	1.975	2.711	127.1	17.4	17.0
1984	08 18	17 36.47	-43 05.4					
1984	08 28	17 40.26	-41 55.8	2.147	2.674	110.6	20.7	17.3
1984	09 07	17 47.07	-40 47.6					
1984	09 17	17 56.46	-39 41.3	2.350	2.639	95.3	22.3	17.5

1983 HO a,e,i = 3.98, 0.13, 10 Elements MPC 8213

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 31.12	-16 52.4	3.195	3.546	102.3	16.0	17.6
1984	04 20	18 34.66	-16 46.8					
1984	04 30	18 36.36	-16 43.7	2.913	3.531	120.4	14.2	17.4
1984	05 10	18 36.13	-16 44.2					
1984	05 20	18 33.97	-16 49.1	2.681	3.517	140.1	10.6	17.1
1984	05 30	18 30.01	-16 58.8					
1984	06 09	18 24.53	-17 13.2	2.529	3.504	161.0	5.4	16.8
1984	06 19	18 17.99	-17 31.9					
1984	06 29	18 10.97	-17 54.1	2.481	3.492	173.0	2.0	16.6
1984	07 09	18 04.16	-18 19.0					
1984	07 19	17 58.20	-18 45.7	2.544	3.482	153.2	7.6	16.9
1984	07 29	17 53.62	-19 13.3					
1984	08 08	17 50.80	-19 41.3	2.705	3.472	132.6	12.4	17.1
1984	08 18	17 49.95	-20 09.2					
1984	08 28	17 51.13	-20 36.4	2.935	3.464	113.5	15.5	17.4
1984	09 07	17 54.29	-21 02.3					
1984	09 17	17 59.31	-21 26.2	3.203	3.457	96.0	16.8	17.6

1978 VB5 a,e,i = 2.38, 0.10, 7 Elements MPC 7140

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 27.83	-23 04.0	1.718	2.181	103.4	26.5	18.5
1984	04 20	18 36.30	-23 29.5					
1984	04 30	18 41.91	-24 00.4	1.515	2.197	119.8	23.4	18.2
1984	05 10	18 44.28	-24 38.4					
1984	05 20	18 43.16	-25 23.7	1.351	2.215	138.9	17.5	17.8
1984	05 30	18 38.52	-26 14.7					
1984	06 09	18 30.71	-27 07.8	1.252	2.235	160.7	8.7	17.4
1984	06 19	18 20.64	-27 57.8					
1984	06 29	18 09.65	-28 39.6	1.243	2.256	172.9	3.2	17.2
1984	07 09	17 59.34	-29 10.6					
1984	07 19	17 51.13	-29 30.8	1.333	2.278	151.4	12.3	17.7
1984	07 29	17 45.92	-29 42.4					
1984	08 08	17 44.18	-29 48.0	1.503	2.300	131.1	19.4	18.1
1984	08 18	17 45.90	-29 49.9					
1984	08 28	17 50.80	-29 49.2	1.728	2.323	113.4	23.5	18.6
1984	09 07	17 58.54	-29 45.9					
1984	09 17	18 08.69	-29 39.6	1.984	2.346	98.1	25.1	18.9

(2861) 1981 VL2 a,e,i = 2.47, 0.07, 4 Elements MPC 7776

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 34.84	-18 47.4	2.242	2.632	101.5	21.9	17.9
1984	04 20	18 40.61	-18 21.7					
1984	04 30	18 43.96	-17 56.8	1.987	2.625	118.7	19.7	17.5
1984	05 10	18 44.64	-17 34.1					
1984	05 20	18 42.55	-17 15.0	1.774	2.617	138.2	15.0	17.2
1984	05 30	18 37.71	-17 00.4					
1984	06 09	18 30.44	-16 50.9	1.632	2.607	159.6	7.8	16.8
1984	06 19	18 21.44	-16 46.8					
1984	06 29	18 11.64	-16 47.8	1.586	2.597	172.2	3.0	16.5
1984	07 09	18 02.18	-16 53.6					
1984	07 19	17 54.12	-17 04.0	1.644	2.585	151.9	10.7	16.9
1984	07 29	17 48.27	-17 18.4					
1984	08 08	17 45.14	-17 36.2	1.791	2.573	131.0	17.3	17.2
1984	08 18	17 44.86	-17 56.4					
1984	08 28	17 47.39	-18 17.9	1.997	2.560	112.5	21.4	17.5
1984	09 07	17 52.53	-18 39.2					
1984	09 17	18 00.01	-18 58.8	2.234	2.546	96.2	23.1	17.8

(2830) 1980 GA a,e,i = 2.38, 0.21, 25 Elements MPC 7604

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 41.84	-35 35.3	1.639	2.077	100.9	28.3	16.8
1984	04 20	18 52.50	-38 06.2					
1984	04 30	19 00.16	-40 51.3	1.475	2.120	116.0	25.3	16.6
1984	05 10	19 04.11	-43 49.2					
1984	05 20	19 03.61	-46 54.7	1.355	2.165	131.8	20.4	16.3
1984	05 30	18 58.02	-49 57.8					
1984	06 09	18 47.15	-52 43.5	1.304	2.211	144.6	15.4	16.2
1984	06 19	18 31.87	-54 55.8					
1984	06 29	18 14.17	-56 22.5	1.338	2.259	146.8	14.3	16.2
1984	07 09	17 57.05	-57 00.3					
1984	07 19	17 43.33	-56 55.9	1.456	2.306	137.0	17.5	16.5
1984	07 29	17 34.65	-56 20.9					
1984	08 08	17 31.54	-55 27.5	1.641	2.353	123.0	21.2	16.9
1984	08 18	17 33.59	-54 25.0					
1984	08 28	17 40.03	-53 18.8	1.871	2.399	109.1	23.4	17.3
1984	09 07	17 50.10	-52 11.5					
1984	09 17	18 03.01	-51 04.0	2.126	2.444	96.0	24.1	17.6

1981 SO a,e,i = 2.30, 0.12, 6 Elements MPC 6514

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	04 10	18 31.17	-30 39.1	1.852	2.295	-1.56	-1.5	18.2
1984	04 20	18 40.44	-31 05.1					
1984	04 30	18 47.06	-31 34.1	1.603	2.268	-1.87	-2.7	17.8
1984	05 10	18 50.57	-32 06.6					
1984	05 20	18 50.59	-32 42.0	1.392	2.241	-2.25	-3.2	17.4
1984	05 30	18 46.90	-33 17.6					
1984	06 09	18 39.61	-33 48.7	1.243	2.214	-2.61	-2.5	16.9
1984	06 19	18 29.44	-34 09.1					
1984	06 29	18 17.70	-34 13.5	1.181	2.187	-2.73	-0.4	16.6
1984	07 09	18 06.13	-33 59.6					
1984	07 19	17 56.50	-33 29.8	1.214	2.162	-2.52	+1.3	16.9
1984	07 29	17 50.04	-32 49.0					
1984	08 08	17 47.44	-32 03.1	1.326	2.138	-2.16	+1.5	17.2
1984	08 18	17 48.79	-31 16.6					
1984	08 28	17 53.82	-30 31.3	1.491	2.115	-1.83	+0.6	17.6
1984	09 07	18 02.13	-29 47.7					
1984	09 17	18 13.23	-29 04.7	1.686	2.094	-1.58	-0.7	17.9

1981 KE a,e,i = 1.91, 0.15, 27 Elements MPC 7460

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 55.12	-30 59.9	1.727	2.112	97.9	28.0	18.5
1984	04 20	19 04.83	-33 05.7					
1984	04 30	19 11.80	-35 29.8	1.519	2.134	113.8	25.6	18.1
1984	05 10	19 15.35	-38 13.7					
1984	05 20	19 14.76	-41 15.4	1.349	2.154	131.1	20.7	17.8
1984	05 30	19 09.24	-44 27.7					
1984	06 09	18 58.31	-47 36.8	1.248	2.170	146.8	14.8	17.5
1984	06 19	18 42.31	-50 24.1					
1984	06 29	18 22.75	-52 31.6	1.239	2.183	150.7	13.2	17.5
1984	07 09	18 02.51	-53 48.6					
1984	07 19	17 44.87	-54 17.5	1.322	2.192	138.9	17.7	17.7
1984	07 29	17 32.18	-54 09.1					
1984	08 08	17 25.53	-53 37.3	1.476	2.198	122.8	22.8	18.1
1984	08 18	17 24.81	-52 53.7					
1984	08 28	17 29.33	-52 05.2	1.671	2.200	107.7	26.0	18.4
1984	09 07	17 38.30	-51 15.3					
1984	09 17	17 50.88	-50 24.7	1.884	2.198	94.1	27.1	18.7

1981 XD a,e,i = 2.35, 0.17, 5 Elements MPC 6630

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	04 10	18 29.07	-28 35.9	1.786	2.241	-1.66	-0.7	16.9
1984	04 20	18 39.11	-28 59.7					
1984	04 30	18 46.66	-29 26.7	1.532	2.204	-2.00	-1.8	16.5
1984	05 10	18 51.24	-29 57.9					
1984	05 20	18 52.47	-30 33.6	1.316	2.168	-2.43	-2.4	16.0
1984	05 30	18 50.04	-31 12.1					
1984	06 09	18 43.98	-31 49.4	1.162	2.133	-2.85	-1.8	15.5
1984	06 19	18 34.89	-32 20.0					
1984	06 29	18 23.93	-32 37.8	1.091	2.100	-3.03	+0.3	15.2
1984	07 09	18 12.84	-32 39.4					
1984	07 19	18 03.45	-32 25.3	1.111	2.070	-2.83	+2.2	15.4
1984	07 29	17 57.12	-31 59.3					
1984	08 08	17 54.70	-31 26.4	1.210	2.042	-2.44	+2.5	15.8
1984	08 18	17 56.34	-30 50.7					
1984	08 28	18 01.83	-30 14.1	1.362	2.018	-2.07	+1.4	16.1
1984	09 07	18 10.76	-29 37.1					
1984	09 17	18 22.63	-28 58.5	1.544	1.998	-1.79	-0.1	16.4

1980 VL1 a,e,i = 3.19, 0.04, 21 Elements MPC 8060

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 47.70	-18 38.6	2.875	3.181	98.5	18.2	17.2
1984	04 20	18 51.90	-17 38.2					
1984	04 30	18 54.02	-16 35.3	2.597	3.173	116.2	16.6	17.0
1984	05 10	18 53.93	-15 30.9					
1984	05 20	18 51.59	-14 26.2	2.364	3.166	135.4	13.0	16.7
1984	05 30	18 47.11	-13 22.8					
1984	06 09	18 40.76	-12 22.3	2.207	3.158	155.4	7.7	16.4
1984	06 19	18 33.05	-11 26.9					
1984	06 29	18 24.65	-10 38.4	2.151	3.151	167.3	4.1	16.2
1984	07 09	18 16.37	-09 58.8					
1984	07 19	18 08.97	-09 28.8	2.207	3.144	152.7	8.5	16.4
1984	07 29	18 03.07	-09 08.8					
1984	08 08	17 59.12	-08 57.9	2.358	3.137	132.9	13.7	16.7
1984	08 18	17 57.34	-08 54.6					
1984	08 28	17 57.76	-08 57.0	2.578	3.130	114.2	17.1	16.9
1984	09 07	18 00.33	-09 03.0					
1984	09 17	18 04.88	-09 10.6	2.834	3.124	97.2	18.6	17.2

(2898) 1938 DN a,e,i = 2.56, 0.02, 14 Elements MPC 8057

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 41.19	-12 21.1	2.171	2.535	99.4	22.9	17.2
1984	04 20	18 47.82	-12 09.4					
1984	04 30	18 52.14	-12 02.5	1.923	2.531	115.9	21.0	16.9
1984	05 10	18 53.88	-12 03.1					
1984	05 20	18 52.88	-12 13.8	1.711	2.527	134.6	16.6	16.6
1984	05 30	18 49.10	-12 36.7					
1984	06 09	18 42.75	-13 13.0	1.564	2.522	155.4	9.7	16.2
1984	06 19	18 34.38	-14 02.2					
1984	06 29	18 24.86	-15 02.1	1.508	2.519	171.7	3.4	15.9
1984	07 09	18 15.31	-16 09.3					
1984	07 19	18 06.89	-17 19.9	1.557	2.515	154.9	9.9	16.2
1984	07 29	18 00.52	-18 30.4					
1984	08 08	17 56.83	-19 38.3	1.699	2.512	134.0	16.9	16.5
1984	08 18	17 56.09	-20 41.8					
1984	08 28	17 58.29	-21 40.0	1.906	2.508	115.2	21.4	16.9
1984	09 07	18 03.27	-22 32.1					
1984	09 17	18 10.77	-23 17.3	2.149	2.506	98.7	23.4	17.2

1983 BM a,e,i = 2.65, 0.10, 11 Elements MPC 7829

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	04 10	18 51.25	-35 26.4	2.234	2.586	-1.20	-3.4	17.9
1984	04 20	18 59.05	-35 52.2					
1984	04 30	19 04.09	-36 20.8	2.011	2.607	-1.35	-4.4	17.7
1984	05 10	19 06.02	-36 52.0					
1984	05 20	19 04.63	-37 23.9	1.825	2.628	-1.56	-4.9	17.4
1984	05 30	18 59.87	-37 53.0					
1984	06 09	18 52.02	-38 14.3	1.704	2.648	-1.75	-4.5	17.1
1984	06 19	18 41.85	-38 22.4					
1984	06 29	18 30.48	-38 13.6	1.673	2.669	-1.82	-3.1	17.0
1984	07 09	18 19.34	-37 46.7					
1984	07 19	18 09.77	-37 04.3	1.746	2.689	-1.70	-1.7	17.2
1984	07 29	18 02.71	-36 11.1					
1984	08 08	17 58.70	-35 12.7	1.910	2.708	-1.49	-1.1	17.5
1984	08 18	17 57.84	-34 13.2					
1984	08 28	17 59.95	-33 15.5	2.140	2.727	-1.26	-1.1	17.9
1984	09 07	18 04.76	-32 20.8					
1984	09 17	18 11.89	-31 29.1	2.408	2.746	-1.08	-1.5	18.2

1983 CE a,e,i = 2.65, 0.10, 14 Elements MPC 7829

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	04 10	18 48.76	-11 46.5	2.228	2.560	-1.01	+3.2	17.8
1984	04 20	18 55.25	-11 30.0					
1984	04 30	18 59.41	-11 18.2	2.003	2.582	-1.14	+3.4	17.5
1984	05 10	19 00.99	-11 13.6					
1984	05 20	18 59.90	-11 18.8	1.810	2.604	-1.29	+3.6	17.2
1984	05 30	18 56.11	-11 35.6					
1984	06 09	18 49.88	-12 05.3	1.679	2.626	-1.44	+3.8	17.0
1984	06 19	18 41.76	-12 47.5					
1984	06 29	18 32.57	-13 40.3	1.640	2.648	-1.49	+4.0	16.7
1984	07 09	18 23.35	-14 40.7					
1984	07 19	18 15.14	-15 45.1	1.708	2.670	-1.43	+4.1	17.0
1984	07 29	18 08.78	-16 50.2					
1984	08 08	18 04.84	-17 53.6	1.871	2.692	-1.28	+4.0	17.4
1984	08 18	18 03.58	-18 53.3					
1984	08 28	18 04.99	-19 48.2	2.105	2.713	-1.13	+3.6	17.7
1984	09 07	18 08.94	-20 37.5					
1984	09 17	18 15.18	-21 20.5	2.378	2.734	-0.99	+3.1	18.1

1981 QH2 a,e,i = 2.20, 0.19, 4 Elements MPC 6514

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	04 10	18 34.53	-17 48.5	1.779	2.210	-1.52	+0.0	19.2
1984	04 20	18 44.18	-17 18.6					
1984	04 30	18 51.52	-16 48.2	1.515	2.165	-1.82	-0.5	18.7
1984	05 10	18 56.17	-16 19.8					
1984	05 20	18 57.77	-15 56.0	1.285	2.119	-2.22	-0.9	18.2
1984	05 30	18 56.05	-15 39.6					
1984	06 09	18 50.97	-15 32.7	1.111	2.074	-2.62	-0.9	17.7
1984	06 19	18 42.94	-15 36.7					
1984	06 29	18 32.86	-15 51.7	1.016	2.029	-2.83	-0.3	17.2
1984	07 09	18 22.20	-16 16.6					
1984	07 19	18 12.62	-16 49.3	1.012	1.985	-2.71	+0.6	17.4
1984	07 29	18 05.56	-17 27.4					
1984	08 08	18 02.04	-18 08.7	1.088	1.943	-2.37	+1.1	17.7
1984	08 18	18 02.47	-18 50.6					
1984	08 28	18 06.83	-19 30.9	1.218	1.904	-2.04	+1.1	18.1
1984	09 07	18 14.88	-20 07.2					
1984	09 17	18 26.18	-20 37.0	1.376	1.869	-1.80	+0.6	18.4

1978 GB a,e,i = 1.98, 0.05, 29 Elements MPC 6470

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 41.93	+12 40.8	1.648	2.014	95.9	29.7	18.3
1984	04 20	18 51.67	+14 54.8					
1984	04 30	18 58.84	+17 08.2	1.476	2.004	106.0	28.9	18.0
1984	05 10	19 03.06	+19 14.6					
1984	05 20	19 04.07	+21 06.3	1.323	1.993	116.5	27.0	17.7
1984	05 30	19 01.67	+22 33.7					
1984	06 09	18 55.94	+23 25.3	1.200	1.982	126.7	24.3	17.4
1984	06 19	18 47.43	+23 29.8					
1984	06 29	18 37.09	+22 38.2	1.123	1.970	134.1	21.8	17.2
1984	07 09	18 26.36	+20 46.6					
1984	07 19	18 16.79	+17 59.4	1.107	1.959	134.6	21.7	17.2
1984	07 29	18 09.63	+14 28.2					
1984	08 08	18 05.76	+10 29.4	1.161	1.948	127.0	24.5	17.3
1984	08 18	18 05.51	+06 20.1					
1984	08 28	18 08.84	+02 14.6	1.280	1.937	115.1	28.2	17.6
1984	09 07	18 15.52	-01 36.6					
1984	09 17	18 25.19	-05 06.8	1.447	1.927	102.2	30.6	17.9

(2902) 1980 FN3 a,e,i = 2.20, 0.20, 4 Elements MPC 8058

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 30.29	-17 56.6	1.633	2.094	102.6	27.8	18.8
1984	04 20	18 41.24	-17 17.0					
1984	04 30	18 49.91	-16 34.6	1.380	2.047	117.2	26.0	18.4
1984	05 10	18 55.86	-15 52.1					
1984	05 20	18 58.74	-15 12.2	1.162	2.001	133.9	21.4	17.8
1984	05 30	18 58.23	-14 38.1					
1984	06 09	18 54.24	-14 13.2	0.996	1.957	153.3	13.5	17.3
1984	06 19	18 47.17	-13 59.9					
1984	06 29	18 37.89	-14 00.1	0.905	1.915	170.6	5.0	16.8
1984	07 09	18 27.90	-14 13.9					
1984	07 19	18 18.95	-14 39.9	0.899	1.877	157.0	12.2	16.9
1984	07 29	18 12.55	-15 15.5					
1984	08 08	18 09.77	-15 57.4	0.969	1.843	136.7	22.2	17.3
1984	08 18	18 11.04	-16 41.7					
1984	08 28	18 16.32	-17 25.2	1.092	1.815	119.3	29.0	17.7
1984	09 07	18 25.34	-18 04.3					
1984	09 17	18 37.62	-18 35.9	1.245	1.792	105.1	32.8	18.0

1981 YS a,e,i = 2.93, 0.16, 15 Elements MPC 7942

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	19 01.34	-24 14.8	3.089	3.343	95.9	17.3	18.5
1984	04 20	19 05.82	-24 38.4					
1984	04 30	19 08.31	-25 07.4	2.817	3.354	113.9	15.9	18.2
1984	05 10	19 08.62	-25 42.3					
1984	05 20	19 06.65	-26 22.8	2.584	3.363	133.7	12.6	18.0
1984	05 30	19 02.40	-27 07.8					
1984	06 09	18 56.05	-27 54.9	2.423	3.371	155.0	7.3	17.7
1984	06 19	18 48.02	-28 41.2					
1984	06 29	18 38.95	-29 23.4	2.364	3.377	173.6	1.9	17.4
1984	07 09	18 29.64	-29 59.1					
1984	07 19	18 20.97	-30 26.8	2.420	3.381	157.4	6.6	17.7
1984	07 29	18 13.68	-30 46.5					
1984	08 08	18 08.37	-30 59.5	2.579	3.384	136.1	12.0	18.0
1984	08 18	18 05.34	-31 07.1					
1984	08 28	18 04.69	-31 11.0	2.813	3.385	116.4	15.5	18.3
1984	09 07	18 06.40	-31 12.3					
1984	09 17	18 10.29	-31 11.7	3.090	3.385	98.3	17.1	18.5

(2899) 1964 TR2 a,e,i = 2.26, 0.16, 3 Elements MPC 8058

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	04 10	18 33.16	-26 24.1	1.655	2.111	102.4	27.6	17.4
1984	04 20	18 44.72	-26 37.0					
1984	04 30	18 53.88	-26 52.2	1.412	2.077	117.3	25.5	16.9
1984	05 10	19 00.15	-27 11.7					
1984	05 20	19 03.11	-27 36.7	1.204	2.045	134.5	20.7	16.4
1984	05 30	19 02.39	-28 07.0					
1984	06 09	18 57.89	-28 40.2	1.051	2.015	154.5	12.5	15.9
1984	06 19	18 50.02	-29 11.9					
1984	06 29	18 39.82	-29 36.3	0.975	1.988	173.3	3.4	15.4
1984	07 09	18 28.96	-29 48.6					
1984	07 19	18 19.36	-29 47.4	0.987	1.964	157.3	11.5	15.7
1984	07 29	18 12.59	-29 34.9					
1984	08 08	18 09.68	-29 14.6	1.078	1.944	136.7	21.0	16.1
1984	08 18	18 10.94	-28 50.1					
1984	08 28	18 16.17	-28 23.0	1.224	1.928	119.1	27.3	16.5
1984	09 07	18 25.00	-27 53.6					
1984	09 17	18 36.88	-27 20.8	1.402	1.917	104.4	30.5	16.8