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

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EDITORIAL NOTICE.

We draw attention to a note in IAU Commission 20 Circ. No. 11 deploring the premature announcement of new names of minor planets. Following action at the 1982 IAU meeting, all new names are to be submitted for review by the Commission 20 Minor Planet Names Committee. While the Committee tries to accommodate proposals made by the discoverers, not all the names proposed are felt to be suitable. Official announcement of the acceptance of a name appears in these Circulars, and it can therefore be confusing if preliminary announcements are published in the popular press or other astronomical literature. The Committee makes every attempt to expedite its approval of specific proposals, but the waiting period of two months following the numbering of a new object does not seem unreasonable. If the discoverer is deceased, names can be proposed by other individuals associated with the discoverer or who have contributed to our knowledge of the minor planet involved; in such a case there is a minimum waiting period of six months following the numbering of the object.

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ERRATA.

MPC	Line	
8623	20	Add The 1984 observations were made on films exposed by S. J. Bus and E. H. Bus.
8670	19	Delete The identification is by T. Furuta (JAM 878).
8684	- 6	Add The double designation 1951 ER = 1951 GO (NAZ 13, 3) is invalid.

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OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

046 Klet. Observers A. Mrkos and Z. Vavrova.
061 Uzhgorod. Observer S. I. Ignatovich. From Kiev Komet. Tsirk. No. 323.
095 Crimean Astrophysical Observatory. Observers Abramenko, Pavlenko and Medvedev. From Kiev Komet. Tsirk. No. 319.
102 Zvenigorod. Observers V. P. Osipenko, Yu. V. Rusin and V. A. Yurevich. Measured by V. I. Panferova. From Kiev Komet. Tsirk. No. 322.
114 Kazan Zelenchukskaya Station. Observers V. G. Efremov and V. N. Kitkin. From Kiev Komet. Tsirk. Nos. 320 and 324.
119 Abastumani. Observers G. N. Kimeridze and G. A. Majsuradze. From Kiev Komet. Tsirk. No. 322.
123 Byurakan. Observers L. G. Akhverdyan. Measured by I. V. Ledovskaya. From Kiev Komet. Tsirk. Nos. 319 and 321.

168 Ural'skij Universitet, Kourovskaya. Observers T. I. Levitskaya, S. N. Timofeev and A. R. Tearo. Revised Long. and Parallax 59.50, -233, -356 (see MPC 7759). From Kiev Komet. Tsirk. Nos. 321 and 323.
186 Kitab. Observers E. Rakhmatov, E. Mirmakhmudov and G. Charieva. From Kiev Komet. Tsirk. No. 323.
190 Gissar. Observer S. I. Gerasimenko. Measured by E. M. Loginova and A. G. Krylova. From Kiev Komet. Tsirk. No. 322.
210 Alma Ata. Observers K. I. Churyumov, I. Yu. Bocharov and D. I. Gorodetskij. From Kiev Komet. Tsirk. No. 321.
372 Geisei. Observer T. Seki. From Orient. Astron. Assoc. Comet Bull. No. 259.
381 Tokyo Observatory's Kiso Station. 1.05-m Schmidt. Observer H. Kosai (assisted by J. Watanabe). Special IHW star catalogue used for P/Crommelin, otherwise AGK3.
474 Mt. John University Observatory. Observer A. C. Gilmore. Measured by P. M. Kilmartin (assisted by R. McIntosh and W. M. Kissling).
494 Stakenbridge. Observer B. Manning.
567 Osservatorio Chaonis. Observer J. M. Baur. Reduced using SAO Catalogue.
657 Victoria. Observers D. D. Balam and J. B. Tatum.
675 Palomar. Observations of comet 1984f by C. and E. Shoemaker with the 0.46-m Schmidt. Observations of comets 1983n and 1984g by J. Gibson with the 1.2-m Schmidt.
688 Lowell Observatory, Anderson Mesa Station. Observer B. A. Skiff.
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).
809 European Southern Observatory. 1.0-m Schmidt. Observer H.-E. Schuster. Measured by R. M. West.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
		Periodic Comet Smirnova-Chernykh				
/1975 VII	1984	04 29.12057	11 19 23.53	+13 10 01.4		801
/1975 VII	1984	05 06.09926	11 18 54.86	+12 56 15.5		801
/1975 VII	1984	05 26.08243	11 22 07.91	+11 47 45.1		801
		Periodic Comet Encke				
/1980 XI	1984	04 23.74815	23 32 39.01	-15 12 17.5		474
/1980 XI	1984	04 23.75544	23 32 38.51	-15 12 24.7		474
		Comet IRAS-Araki-Alcock (1983d)				
/1983d	1983	05 09.77035	16 07 15.21	+72 29 31.5		114
/1983d	1983	05 09.78493	16 04 27.83	+72 35 22.3		114
/1983d	1983	05 09.80265	16 00 55.32	+72 42 29.2		114
/1983d	1983	05 09.80872	15 59 41.73	+72 44 52.4		114
/1983d	1983	05 09.81376	15 58 42.07	+72 46 46.0		114
/1983d	1983	05 09.89641	15 40 45.34	+73 16 38.2		114
/1983d	1983	05 10.02910	15 07 18.03	+73 52 42.0		114
/1983d	1983	05 10.79698	11 08 22.66	+66 46 11.1		095
/1983d	1983	05 10.79705	11 08 21.67	+66 46 04.8		095
/1983d	1983	05 10.79711	11 08 20.73	+66 45 59.3		095
/1983d	1983	05 10.79718	11 08 19.78	+66 45 53.0		095
/1983d	1983	05 10.79725	11 08 18.91	+66 45 47.5		095
/1983d	1983	05 10.79732	11 08 17.83	+66 45 40.5		095
/1983d	1983	05 10.79737	11 08 16.86	+66 45 34.4		095
/1983d	1983	05 10.79743	11 08 15.95	+66 45 28.9		095
/1983d	1983	05 10.79944	11 07 46.25	+66 42 26.8		095
/1983d	1983	05 10.79951	11 07 45.18	+66 42 20.3		095
/1983d	1983	05 10.79956	11 07 44.23	+66 42 14.6		095

/1983d	1983	05	10.79963	11	07	43.35	+66	42	08.7	095
/1983d	1983	05	10.79970	11	07	42.33	+66	42	02.7	095
/1983d	1983	05	10.79976	11	07	41.47	+66	41	57.7	095
/1983d	1983	05	10.79983	11	07	40.43	+66	41	50.8	095
/1983d	1983	05	10.79989	11	07	39.52	+66	41	44.9	095
/1983d	1983	05	10.79996	11	07	38.55	+66	41	38.9	095
/1983d	1983	05	10.80003	11	07	37.57	+66	41	32.8	095
/1983d	1983	05	11.85575	08	54	36.78	+25	50	44.3	114

Comet Sugano-Saigusa-Fujikawa (1983e)

/1983e	1983	06	08.9889	22	54	15.0	+34	23	48	123
/1983e	1983	06	11.9204	20	33	43.3	+12	44	49	123
/1983e	1983	06	13.8625	18	02	24.5	-19	28	05	123
/1983e	1983	06	13.8653	18	02	12.7	-19	30	14	123

Comet IRAS (1983k)

/1983k	1984	04	01.44375	11	33	02.61	-08	46	25.6	474
/1983k	1984	04	01.46933	11	33	00.46	-08	46	00.4	474
/1983k	1984	04	29.09911	11	04	48.82	-02	05	00.5	801
/1983k	1984	05	06.08375	11	00	17.30	-00	45	30.1	1 801

Comet Cernis (1983l)

/1983l	1984	05	31.76564	00	37	14.03	-40	47	26.6	474
/1983l	1984	05	31.78346	00	37	14.18	-40	47	40.6	474

Periodic Comet Crommelin

/1983n	1984	01	06.59030	21	50	19.22	+06	00	08.6	190
/1983n	1984	01	27.63263	23	06	13.15	+04	52	33.0	168
/1983n	1984	01	29.60659	23	14	36.32	+04	41	02.6	168
/1983n	1984	01	29.62118	23	14	40.30	+04	40	56.9	168
/1983n	1984	01	30.60521	23	18	56.88	+04	34	40.3	168
/1983n	1984	01	30.61094	23	18	57.69	+04	34	41.8	168
/1983n	1984	01	30.61805	23	19	00.33	+04	34	35.6	168
/1983n	1984	02	03.60382	23	36	52.92	+04	04	15.7	168
/1983n	1984	02	03.60799	23	36	54.29	+04	04	15.1	168
/1983n	1984	02	03.61042	23	36	55.10	+04	04	15.1	168
/1983n	1984	02	03.62743	23	36	59.42	+04	04	06.4	168
/1983n	1984	02	06.60590	23	50	58.40	+03	35	58.9	168
/1983n	1984	02	06.61074	23	50	59.72	+03	35	49.7	168
/1983n	1984	02	06.63166	23	51	05.60	+03	35	37.1	168
/1983n	1984	02	07.60324	23	55	46.28	+03	25	19.0	168
/1983n	1984	02	07.60671	23	55	47.29	+03	25	22.1	168
/1983n	1984	02	08.60318	00	00	37.88	+03	14	01.6	168
/1983n	1984	02	08.60666	00	00	39.00	+03	13	58.9	168
/1983n	1984	02	08.61013	00	00	39.96	+03	13	57.9	168
/1983n	1984	02	10.60810	00	10	32.86	+02	49	28.2	168
/1983n	1984	02	10.61534	00	10	34.73	+02	49	26.2	168
/1983n	1984	02	13.60388	00	25	46.43	+02	07	29.7	168
/1983n	1984	02	13.61638	00	25	49.78	+02	07	19.2	168
/1983n	1984	02	18.60523	00	52	10.61	+00	42	29.5	168
/1983n	1984	02	18.72951	00	52	50.11	+00	40	17.2	061
/1983n	1984	02	18.73125	00	52	50.87	+00	40	03.3	061
/1983n	1984	02	18.73368	00	52	51.56	+00	40	05.7	061
/1983n	1984	02	18.73906	00	52	53.50	+00	39	56.9	061
/1983n	1984	02	19.61082	00	57	37.94	+00	23	13.4	168
/1983n	1984	02	19.61282	00	57	38.12	+00	23	07.8	168
/1983n	1984	02	22.60666	01	14	08.82	-00	38	51.9	168
/1983n	1984	02	22.61221	01	14	10.81	-00	38	58.3	168

/1983n	1984	02	22.61429	01	14	11.22	-00	39	01.2			168
/1983n	1984	02	22.63825	01	14	19.32	-00	39	31.5			168
/1983n	1984	02	22.68611	01	14	34.90	-00	40	34.3			102
/1983n	1984	02	23.60049	01	19	42.43	-01	00	46.5		2	190
/1983n	1984	02	24.61579	01	25	25.89	-01	23	49.1			186
/1983n	1984	02	25.61499	01	31	07.06	-01	47	20.2			168
/1983n	1984	02	25.62193	01	31	09.50	-01	47	31.2			168
/1983n	1984	02	25.62402	01	31	10.32	-01	47	34.5			168
/1983n	1984	02	25.67507	01	31	27.65	-01	48	45.6			123
/1983n	1984	02	25.69878	01	31	35.77	-01	49	20.1			123
/1983n	1984	02	25.71360	01	31	40.67	-01	49	40.2			123
/1983n	1984	02	27.67105	01	42	56.10	-02	37	23.0			123
/1983n	1984	02	27.68178	01	42	59.62	-02	37	40.7			123
/1983n	1984	02	27.69401	01	43	04.09	-02	37	57.0			123
/1983n	1984	02	27.70027	01	43	06.27	-02	38	06.2			102
/1983n	1984	02	27.70339	01	43	07.32	-02	38	12.7			102
/1983n	1984	02	27.70847	01	43	09.40	-02	38	17.6			102
/1983n	1984	02	28.68263	01	48	48.72	-03	02	55.6			123
/1983n	1984	02	28.69686	01	48	53.62	-03	03	16.7			123
/1983n	1984	02	29.61568	01	54	16.69	-03	26	54.9			168
/1983n	1984	02	29.61916	01	54	17.88	-03	27	01.0			168
/1983n	1984	02	29.62645	01	54	20.05	-03	27	13.2			168
/1983n	1984	03	01.62627	02	00	13.09	-03	53	25.0			168
/1983n	1984	03	01.63044	02	00	14.58	-03	53	32.2			168
/1983n	1984	03	01.73854	02	00	52.47	-03	56	19.3			061
/1983n	1984	03	01.74201	02	00	53.91	-03	56	26.7			061
/1983n	1984	03	01.74502	02	00	55.13	-03	56	27.6			061
/1983n	1984	03	02.62323	02	06	07.75	-04	19	56.3			168
/1983n	1984	03	02.62541	02	06	08.54	-04	19	58.1			168
/1983n	1984	03	08.64861	02	42	39.29	-07	06	22.4			168
/1983n	1984	03	09.65243	02	48	52.20	-07	34	47.3			168
/1983n	1984	03	10.70347	02	55	24.93	-08	04	23.1			102
/1983n	1984	03	13.60317	03	13	41.07	-09	25	56.5			210
/1983n	1984	03	13.61590	03	13	45.96	-09	26	22.2			210
/1983n	1984	03	20.00347	03	54	50.82	-12	17	27.7			809
/1983n	1984	03	20.02431	03	54	58.97	-12	17	59.6			809
/1983n	1984	03	22.61256	04	11	52.01	-13	22	08.3			210
/1983n	1984	03	23.60727	04	18	23.54	-13	45	26.2			210
/1983n	1984	03	24.60572	04	24	56.07	-14	08	24.0			210
/1983n	1984	03	25.60443	04	31	29.54	-14	30	06.2			210
/1983n	1984	03	26.44119	04	36	58.59	-14	48	24.9			381
/1983n	1984	03	26.61337	04	38	06.37	-14	52	04.7			210
/1983n	1984	03	26.62753	04	38	11.55	-14	52	24.6			210
/1983n	1984	03	30.70663	05	04	52.48	-16	11	18.4			119
/1983n	1984	03	30.72135	05	04	58.51	-16	11	26.3			119
/1983n	1984	03	31.71777	05	11	26.90	-16	28	40.6			119
/1983n	1984	03	31.72226	05	11	28.33	-16	28	45.8			119
/1983n	1984	04	01.40764	05	15	54.45	-16	39	50.4			474
/1983n	1984	04	01.41609	05	15	57.80	-16	40	00.2			474
/1983n	1984	04	02.00894	05	19	47.71	-16	49	36.0			801
/1983n	1984	04	23.38073	07	25	22.01	-19	28	05.3		3	474
/1983n	1984	04	23.40382	07	25	28.88	-19	28	06.1		3	474
/1983n	1984	05	07.17295	08	28	51.22	-19	13	22.5			675

Comet IRAS (1983o)

/1983o	1984	03	22.94375	13	41	00.55	+14	25	46.6	15.5T	4	567
/1983o	1984	03	22.95417	13	40	58.67	+14	26	16.8		4	567
/1983o	1984	03	28.69874	13	26	51.22	+18	32	26.6			381
/1983o	1984	04	29.17028	12	13	15.14	+33	28	13.1			801

/1983o	1984	05	07.08323	11	59	56.47	+35	10	16.7			801
/1983o	1984	05	28.08160	11	37	41.49	+37	20	53.2		5	801
/1983o	1984	06	01.55578	11	35	07.41	+37	31	54.8	17 T		381
/1983o	1984	06	05.12634	11	33	32.66	+37	38	03.0		6	801
			Periodic Comet Wild 2									
/1983s	1984	04	01.86118	04	54	49.50	+20	54	02.4			494
/1983s	1984	04	29.05555	05	49	06.78	+22	20	23.9			801
			Periodic Comet Taylor									
/1983u	1984	05	03.06366	08	29	41.12	+33	37	18.9		7	801
			Periodic Comet Hartley-IRAS									
/1983v	1984	02	25.95561	20	47	08.86	+37	26	26.7			168
/1983v	1984	02	25.98235	20	47	08.67	+37	27	23.7			168
/1983v	1984	02	26.02193	20	47	08.35	+37	28	49.8			168
/1983v	1984	02	26.06395	20	47	08.04	+37	30	23.4			168
/1983v	1984	02	27.07240	20	47	00.33	+38	06	57.2			114
/1983v	1984	03	01.65104	20	46	23.57	+40	20	35.7			168
/1983v	1984	03	02.05590	20	46	18.23	+40	36	04.3			168
/1983v	1984	03	03.02185	20	46	05.03	+41	13	22.3			168
/1983v	1984	03	22.81082	20	32	54.74	+55	41	57.7			168
/1983v	1984	03	27.93808	20	24	24.28	+59	56	51.4			114
/1983v	1984	03	27.95005	20	24	22.73	+59	57	29.6			114
/1983v	1984	03	28.77028	20	22	39.74	+60	39	03.0			381
/1983v	1984	03	29.95090	20	19	57.21	+61	39	11.1			114
/1983v	1984	03	31.89688	20	14	52.95	+63	18	52.1			114
/1983v	1984	04	02.90646	20	08	39.39	+65	02	14.4			114
/1983v	1984	04	03.86691	20	05	15.68	+65	51	38.3			114
/1983v	1984	06	04.10806	11	45	22.50	+53	37	18.2			801
			Periodic Comet Bradfield									
/1984a	1984	04	01.72222	23	09	35.09	-50	15	43.3			474
/1984a	1984	04	01.73229	23	09	36.56	-50	15	36.6			474
/1984a	1984	04	02.72894	23	12	06.78	-50	02	34.7			474
/1984a	1984	05	26.69675	00	33	07.43	-43	26	57.6	18 N		474
/1984a	1984	05	26.72985	00	33	08.90	-43	26	56.1			474
/1984a	1984	05	30.74851	00	35	44.82	-43	24	13.0			474
/1984a	1984	05	30.77999	00	35	46.25	-43	24	09.8		8	474
			Periodic Comet Neujmin 1									
/1984c	1984	04	23.69554	18	18	22.81	-42	37	30.8			474
/1984c	1984	04	23.70712	18	18	23.42	-42	37	36.5			474
/1984c	1984	05	26.63807	18	36	38.75	-47	12	07.1		9	474
/1984c	1984	05	26.66017	18	36	38.81	-47	12	19.0		9	474
			Periodic Comet Russell 4									
/1984d	1984	03	26.54167	13	23	11.38	+01	40	28.4	16 T		372
/1984d	1984	03	28.67792	13	21	45.05	+01	46	08.6			381
/1984d	1984	04	19.87935	13	05	44.78	+02	18	28.9	14.8T		046
/1984d	1984	04	19.89359	13	05	44.21	+02	18	29.6			046
/1984d	1984	04	22.92865	13	03	48.97	+02	17	17.5		A	046
/1984d	1984	04	24.89720	13	02	39.20	+02	15	39.5			046
/1984d	1984	04	24.91144	13	02	38.76	+02	15	43.3			046
/1984d	1984	04	25.87459	13	02	06.09	+02	14	40.4			046
/1984d	1984	04	25.88872	13	02	05.56	+02	14	40.4			046
/1984d	1984	04	29.21436	13	00	21.07	+02	09	51.0			801
/1984d	1984	05	07.21649	12	57	09.29	+01	50	13.8			801

Comet Shoemaker (1984f)

/1984f	1984	05	27.40625	16	36	57.84	+13	49	26.6	14	T	675
/1984f	1984	05	29.36875	16	34	40.72	+13	46	02.9			675
/1984f	1984	05	31.34406	16	32	21.45	+13	42	00.7			657
/1984f	1984	05	31.60834	16	32	02.67	+13	41	27.7		B	474
/1984f	1984	05	31.63057	16	32	01.20	+13	41	24.3	15	T	474
/1984f	1984	06	01.34804	16	31	10.47	+13	39	41.3			657
/1984f	1984	06	01.60633	16	30	52.10	+13	39	08.2	14	T	381
/1984f	1984	06	01.63381	16	30	50.15	+13	39	06.1	15	T	474
/1984f	1984	06	01.88017	16	30	32.54	+13	38	29.2	15.4	T	046
/1984f	1984	06	01.89429	16	30	31.73	+13	38	27.0			046
/1984f	1984	06	02.90836	16	29	19.67	+13	35	52.5			046
/1984f	1984	06	02.92253	16	29	18.94	+13	35	51.0			046
/1984f	1984	06	03.13573	16	29	03.61	+13	35	17.8	15	T	801
/1984f	1984	06	04.16045	16	27	50.70	+13	32	30.6			801
/1984f	1984	06	04.25347	16	27	44.04	+13	32	14.1			688
/1984f	1984	06	04.31146	16	27	39.88	+13	32	03.9			688
/1984f	1984	06	05.17600	16	26	38.39	+13	29	34.2			801
/1984f	1984	06	26.29201	16	02	13.05	+11	51	59.6			657
/1984f	1984	06	30.34389	15	57	53.02	+11	25	51.5			657

Periodic Comet Wolf-Harrington

/1984g	1984	06	04.46051	02	22	01.74	+24	53	12.2	17	T	675

Note 1: poor image. 2: observatory code incorrectly given as 191 on MPC 8698. 3: image slightly trailed. 4: diffuse, measurement difficult. 5: very weak, uncertain. 6: diffuse, uncertain image. 7: very weak. 8: doubtful image. 9: stellar appearance. A: interference from clouds. B: image on star trail.

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

Plates with the 0.6-m Maksutov reflector. Verification and assistance with identifications from D. W. E. Green and B. G. Marsden. Contact: A. Mrkos, Department of Astronomy and Astrophysics, Charles University, Svedska 8, C-15000 Prague 5, Czechoslovakia.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
21	1984	04 26.01788	14 57 09.37	-13 30 42.1			046
21	1984	04 26.03206	14 57 08.60	-13 30 43.1			046
102	1984	04 19.91778	13 38 31.18	-10 41 20.2			046
102	1984	04 19.93190	13 38 30.44	-10 41 14.9			046
102	1984	04 25.94630	13 33 32.81	-10 04 51.3			046
102	1984	04 25.96042	13 33 32.11	-10 04 46.9			046
102	1984	04 27.93993	13 31 56.47	-09 52 53.5			046
102	1984	04 27.95428	13 31 55.77	-09 52 49.4			046
158	1984	04 19.91778	13 37 11.85	-11 39 02.1			046
158	1984	04 19.93190	13 37 11.17	-11 38 58.8			046
158	1984	04 25.94630	13 32 24.77	-11 10 31.8			046
158	1984	04 25.96042	13 32 24.15	-11 10 27.8			046
158	1984	04 27.93993	13 30 53.05	-11 01 12.9			046
158	1984	04 27.95428	13 30 52.40	-11 01 09.5			046
242	1984	06 02.00569	17 21 02.27	-10 14 16.9			046
242	1984	06 02.02126	17 21 01.45	-10 14 12.5			046
274	1984	05 22.98383	15 33 16.05	-15 41 21.5			046
274	1984	05 22.99801	15 33 15.30	-15 41 20.1			046
274	1984	05 26.92718	15 30 04.59	-15 35 43.0			046
274	1984	05 26.94205	15 30 03.87	-15 35 42.3			046
289	1984	05 19.96086	15 42 08.16	-11 28 13.0			046

289	1984	05	19.97498	15	42	07.51	-11	28	08.9	046
368	1984	05	02.88564	13	15	27.91	-11	55	23.4	046
368	1984	05	02.89987	13	15	27.32	-11	55	18.6	046
368	1984	05	19.91340	13	06	40.88	-10	18	09.4	046
368	1984	05	19.92752	13	06	40.56	-10	18	05.2	046
429	1984	05	22.98383	15	32	10.42	-14	39	35.6	046
429	1984	05	22.99801	15	32	09.49	-14	39	30.8	046
429	1984	05	26.92718	15	28	46.79	-14	17	06.0	046
429	1984	05	26.94205	15	28	45.97	-14	17	01.2	046
460	1984	06	01.97132	16	31	41.27	-16	45	55.4	046
460	1984	06	01.98544	16	31	40.35	-16	45	52.8	046
471	1984	05	22.93678	15	32	41.92	-08	41	09.6	046
471	1984	05	22.95096	15	32	41.21	-08	41	08.9	046
471	1984	05	26.89240	15	29	22.62	-08	41	14.9	046
471	1984	05	26.90657	15	29	21.83	-08	41	15.6	046
505	1984	05	02.84796	12	27	34.37	+11	28	52.9	046
505	1984	05	02.86208	12	27	33.91	+11	28	51.9	046
509	1984	06	02.00569	17	21	42.70	-08	32	38.1	046
509	1984	06	02.02126	17	21	41.89	-08	31	34.5	046
599	1984	05	02.84796	12	26	34.84	+09	46	50.6	046
599	1984	05	02.86208	12	26	34.28	+09	46	49.3	046
714	1984	06	01.97132	16	26	50.87	-15	30	30.9	046
714	1984	06	01.98544	16	26	50.08	-15	30	25.3	046
748	1984	05	02.88564	13	14	05.25	-10	34	13.8	046
748	1984	05	02.89987	13	14	04.71	-10	34	10.1	046
857	1984	04	19.87935	13	03	51.06	+02	05	57.2	046
857	1984	04	19.89359	13	03	50.22	+02	06	00.3	046
857	1984	04	22.92865	13	00	56.71	+02	16	10.9	046
857	1984	04	23.93981	13	00	00.70	+02	19	12.3	046
857	1984	04	23.95833	12	59	59.52	+02	19	14.5	046
857	1984	04	24.89720	12	59	08.79	+02	21	51.0	046
857	1984	04	24.91144	12	59	08.02	+02	21	53.4	046
857	1984	04	25.87459	12	58	16.65	+02	24	23.2	046
857	1984	04	25.88872	12	58	15.87	+02	24	25.5	046
857	1984	04	27.90376	12	56	31.94	+02	29	00.3	046
857	1984	04	27.91788	12	56	31.18	+02	29	02.0	046
866	1984	05	02.84796	12	24	37.92	+09	38	25.5	046
866	1984	05	02.86208	12	24	37.57	+09	38	25.2	046
1211	1984	04	19.84480	13	26	06.03	+09	33	38.1	046
1211	1984	04	19.85898	13	26	05.36	+09	33	41.4	046
1211	1984	04	23.90226	13	23	06.69	+09	50	02.5	046
1211	1984	04	23.91632	13	23	06.19	+09	50	05.2	046
1211	1984	04	24.93333	13	22	22.32	+09	53	44.0	046
1211	1984	04	24.94751	13	22	21.62	+09	53	45.9	046
1211	1984	04	25.90932	13	21	40.46	+09	57	06.1	046
1211	1984	04	25.92350	13	21	39.79	+09	57	07.9	046
1271	1984	04	19.87935	13	08	19.06	+02	12	28.7	046
1271	1984	04	19.89359	13	08	18.45	+02	12	32.2	046
1271	1984	04	25.87459	13	04	23.23	+02	33	59.2	046
1271	1984	04	25.88872	13	04	22.79	+02	34	01.4	046
1480	1984	04	19.95007	13	44	53.88	-05	08	17.0	046
1480	1984	04	19.96188	13	44	52.71	-05	08	13.2	046
1480	1984	04	25.98212	13	38	39.28	-04	51	24.9	046
1480	1984	04	25.99659	13	38	38.58	-04	51	25.1	046
1480	1984	04	28.00764	13	36	38.94	-04	46	42.1	046
1480	1984	04	28.01869	13	36	38.49	-04	46	40.8	046
1480	1984	05	02.92273	13	32	05.17	-04	37	39.4	046
1480	1984	05	02.93685	13	32	04.11	-04	37	39.7	046
1504	1984	06	01.97132	16	33	21.43	-13	53	46.7	046

1504		1984	06	01.98544	16	33	20.54	-13	53	48.2			046
1668		1984	05	22.93678	15	30	07.19	-11	49	17.7			046
1668		1984	05	22.95096	15	30	06.24	-11	49	14.5			046
2207		1984	04	25.98212	13	40	42.96	-03	42	29.3			046
2207		1984	04	25.99659	13	40	42.52	-03	42	26.9			046
2207		1984	04	28.00764	13	39	45.91	-03	36	30.5			046
2207		1984	04	28.01869	13	39	45.48	-03	36	28.0			046
2404		1984	04	26.01788	14	58	52.04	-12	54	12.2			046
2404		1984	04	26.03206	14	58	51.22	-12	54	11.5			046
2407		1984	04	19.91778	13	27	06.93	-11	45	55.2		1	046
2407		1984	04	19.93190	13	27	06.24	-11	45	50.4		1	046
2407		1984	04	25.94630	13	22	23.66	-11	19	58.6			046
2407		1984	04	25.96042	13	22	22.84	-11	19	55.3			046
2407		1984	04	27.93993	13	20	52.73	-11	11	28.2			046
2407		1984	04	27.95428	13	20	52.01	-11	11	25.3			046
2407		1984	05	02.88564	13	17	16.91	-10	50	48.2			046
2407		1984	05	02.89987	13	17	16.24	-10	50	45.7			046
2531		1984	04	19.84480	13	21	14.68	+09	11	21.7			046
2531		1984	04	19.85898	13	21	14.09	+09	11	23.2			046
2531		1984	04	23.90226	13	18	14.66	+09	20	26.4			046
2531		1984	04	23.91632	13	18	14.16	+09	20	27.7			046
2531		1984	04	24.93333	13	17	30.64	+09	22	13.2			046
2531		1984	04	24.94751	13	17	29.95	+09	22	15.1			046
2531		1984	04	25.90932	13	16	49.11	+09	23	46.6			046
2531		1984	04	25.92350	13	16	48.53	+09	23	48.3			046
2679		1984	04	26.01788	14	52	35.87	-12	39	06.7			046
2679		1984	04	26.03206	14	52	35.01	-12	39	00.2			046
2792		1984	04	19.91778	13	27	42.91	-12	22	03.7			046
2792		1984	04	19.93190	13	27	41.95	-12	22	00.8			046
1978	RS1	1984	04	19.87935	12	58	21.80	+02	04	18.0			046
1978	RS1	1984	04	19.89359	12	58	20.74	+02	04	20.9			046
1983	TJ1	1983	10	09.88096	01	25	10.05	+07	25	46.2			046
1983	TJ1	1983	10	09.89074	01	25	09.42	+07	25	40.6			046
1984	FA	1984	04	19.87935	13	01	36.96	+03	49	06.8	16.8		046
1984	FA	1984	04	19.89359	13	01	36.21	+03	49	10.8			046
1984	FA	1984	04	25.87459	12	57	17.23	+04	10	41.3			046
1984	FA	1984	04	25.88872	12	57	16.63	+04	10	43.3			046
1984	FA	1984	04	27.90376	12	55	55.60	+04	16	38.2			046
1984	FA	1984	04	27.91788	12	55	55.04	+04	16	40.8			046
1984	FM	1984	04	19.87935	13	01	13.90	+03	24	08.0	16.0		046
1984	FM	1984	04	19.89359	13	01	12.55	+03	23	53.0			046
1984	FM	1984	04	22.92865	12	56	43.49	+02	33	53.7		2	046
1984	FM	1984	04	24.89720	12	53	57.69	+02	00	52.6			046
1984	FM	1984	04	24.91144	12	53	56.67	+02	00	41.7			046
1984	FM	1984	04	25.87459	12	52	38.77	+01	44	34.8			046
1984	FM	1984	04	25.88872	12	52	37.59	+01	44	22.2			046
1984	FM	1984	04	27.90376	12	50	00.72	+01	10	15.8			046
1984	FM	1984	04	27.91788	12	49	59.60	+01	09	59.7			046
1984	GF	1984	04	19.87935	13	02	31.52	+02	52	31.9			046
1984	GF	1984	04	19.89359	13	02	30.78	+02	52	37.2			046
1984	GF	1984	04	24.89720	12	58	29.97	+03	21	40.8			046
1984	GF	1984	04	24.91144	12	58	29.16	+03	21	45.8			046
1984	GF	1984	04	25.87459	12	57	46.14	+03	26	38.1			046
1984	GF	1984	04	25.88872	12	57	45.38	+03	26	41.2			046
1984	GF	1984	04	27.90376	12	56	18.88	+03	36	05.8			046
1984	GF	1984	04	27.91788	12	56	18.14	+03	36	09.8			046
1984	HD *	1984	04	19.84480	13	22	15.34	+06	54	52.1	16.4		046
1984	HD	1984	04	19.85898	13	22	14.60	+06	54	50.1			046
1984	HD	1984	04	24.93333	13	17	02.15	+06	33	28.8			046

1984	HD		1984	04	24.94751	13	17	01.34	+06	33	22.6	046
1984	HD		1984	04	25.90932	13	16	04.64	+06	28	36.5	1 046
1984	HD		1984	04	25.92350	13	16	03.72	+06	28	33.8	1 046
1984	HE	*	1984	04	19.84480	13	23	27.34	+07	08	37.0	16.3 046
1984	HE		1984	04	19.85898	13	23	26.73	+07	08	44.0	046
1984	HE		1984	04	24.93333	13	20	00.63	+07	50	22.2	046
1984	HE		1984	04	24.94751	13	20	00.08	+07	50	29.4	046
1984	HE		1984	04	25.90932	13	19	23.25	+07	57	35.8	046
1984	HE		1984	04	25.92350	13	19	22.58	+07	57	42.6	046
1984	HF	*	1984	04	19.87935	13	01	23.23	+03	34	19.5	17.0 046
1984	HF		1984	04	19.89359	13	01	22.42	+03	34	24.6	046
1984	HG	*	1984	04	19.91778	13	28	53.46	-11	40	42.4	16.8 046
1984	HG		1984	04	19.93190	13	28	52.96	-11	40	34.9	046
1984	HH	*	1984	04	19.91778	13	37	36.67	-11	51	38.0	16.4 046
1984	HH		1984	04	19.93190	13	37	35.81	-11	51	33.9	046
1984	HH		1984	04	25.94630	13	31	48.15	-11	19	09.7	046
1984	HH		1984	04	25.96042	13	31	47.17	-11	19	05.3	046
1984	HH		1984	04	27.93993	13	29	57.37	-11	08	30.3	046
1984	HH		1984	04	27.95428	13	29	56.58	-11	08	27.8	046
1984	HJ	*	1984	04	19.95007	13	47	14.95	-05	04	29.8	16.7 046
1984	HJ		1984	04	19.96188	13	47	14.18	-05	04	21.6	046
1984	HJ		1984	04	25.98212	13	41	55.31	-04	40	06.3	046
1984	HJ		1984	04	25.99659	13	41	54.77	-04	40	06.1	046
1984	HK	*	1984	04	19.95007	13	47	18.45	-06	00	11.0	16.6 046
1984	HK		1984	04	19.96188	13	47	17.72	-06	00	04.8	046
1984	HK		1984	04	25.98212	13	41	34.23	-05	27	19.8	046
1984	HK		1984	04	25.99659	13	41	33.27	-05	27	14.5	046
1984	HL	*	1984	04	19.95007	13	49	52.57	-03	16	56.8	16.3 046
1984	HL		1984	04	19.96188	13	49	51.83	-03	16	53.0	16.3 046
1984	HL		1984	04	25.98212	13	45	11.09	-02	42	47.7	046
1984	HL		1984	04	25.99659	13	45	10.32	-02	42	45.2	046
1984	HL		1984	04	28.00764	13	43	39.19	-02	32	15.1	046
1984	HL		1984	04	28.01869	13	43	38.60	-02	32	12.9	046
1984	HM	*	1984	04	19.95007	13	50	01.42	-05	12	52.9	16.8 046
1984	HM		1984	04	19.96188	13	50	00.87	-05	12	52.7	046
1984	HN	*	1984	04	19.95007	13	51	47.70	-02	22	06.4	17.0 046
1984	HN		1984	04	19.96188	13	51	46.99	-02	22	01.6	046
1984	HO	*	1984	04	19.95007	13	53	07.16	-02	41	25.2	16.4 046
1984	HO		1984	04	19.96188	13	53	06.53	-02	41	23.2	046
1984	HP	*	1984	04	19.95007	13	54	41.84	-02	47	27.7	16.8 046
1984	HP		1984	04	19.96188	13	54	41.25	-02	47	24.4	046
1984	HQ	*	1984	04	19.95007	13	56	13.68	-04	11	53.8	16.8 046
1984	HQ		1984	04	19.96188	13	56	12.66	-04	11	52.3	046
1984	HQ		1984	04	25.98212	13	49	42.82	-03	49	45.2	046
1984	HQ		1984	04	25.99659	13	49	41.85	-03	49	39.7	046
1984	HR	*	1984	04	25.94630	13	35	49.73	-11	19	32.1	16.8 046
1984	HR		1984	04	25.96042	13	35	48.93	-11	19	27.5	046
1984	HS	*	1984	04	25.98212	13	39	32.50	-05	43	29.3	16.4 046
1984	HS		1984	04	25.99659	13	39	31.77	-05	43	37.4	046
1984	HT	*	1984	04	26.01788	14	56	26.60	-11	19	20.3	17.2 046
1984	HT		1984	04	26.03206	14	56	25.70	-11	19	15.0	046
1984	HU	*	1984	04	26.01788	15	04	06.27	-10	56	20.9	17.0 046
1984	HU		1984	04	26.03206	15	04	05.43	-10	56	18.2	046
1984	HA1	*	1984	04	19.87935	12	57	07.19	+03	31	50.6	15.6 046
1984	HA1		1984	04	19.89359	12	57	06.78	+03	31	54.7	046
1984	HA1		1984	04	24.89720	12	55	01.09	+03	54	45.1	046
1984	HA1		1984	04	24.91144	12	55	00.70	+03	54	48.9	046
1984	HA1		1984	04	25.87459	12	54	37.50	+03	58	58.5	046
1984	HA1		1984	04	25.88872	12	54	37.10	+03	59	01.9	046

1984	HA1		1984	04	27.90376	12	53	49.53	+04	07	31.4	046
1984	HA1		1984	04	27.91788	12	53	49.16	+04	07	34.9	046
1984	HB1	*	1984	04	19.84480	13	26	12.30	+08	06	49.3	16.5 046
1984	HB1		1984	04	19.85898	13	26	11.63	+08	06	49.4	046
1984	HB1		1984	04	25.90932	13	21	47.94	+08	14	33.0	046
1984	HB1		1984	04	25.92350	13	21	47.34	+08	14	38.6	046
1984	HC1	*	1984	04	19.87935	12	57	58.36	+05	00	52.2	046
1984	HC1		1984	04	19.89359	12	57	57.53	+03	00	54.7	046
1984	HC1		1984	04	27.90376	12	51	48.06	+03	14	52.6	046
1984	HC1		1984	04	27.91788	12	51	47.31	+03	14	52.5	046
1984	JC	*	1984	05	02.88564	13	06	59.25	-12	02	11.4	16.8 046
1984	JC		1984	05	02.89987	13	06	58.40	-12	02	11.7	046
1984	JD	*	1984	05	02.88564	13	07	48.02	-11	02	12.1	16.0 046
1984	JD		1984	05	02.89987	13	07	47.56	-11	02	07.9	3 046
1984	JE	*	1984	05	02.88564	13	11	41.14	-10	03	20.8	16.7 046
1984	JE		1984	05	02.89987	13	11	40.39	-10	03	20.6	046
1984	KG	*	1984	05	19.96086	15	34	08.51	-10	28	18.9	16.8 046
1984	KG		1984	05	19.97498	15	34	07.59	-10	28	13.1	046
1984	KH	*	1984	05	22.93678	15	29	23.85	-10	14	56.9	17.2 046
1984	KH		1984	05	22.95096	15	29	22.90	-10	14	50.4	046
1984	KJ	*	1984	05	22.98383	15	36	48.33	-14	34	55.8	046
1984	KJ		1984	05	22.99801	15	36	47.44	-14	34	56.8	046
1984	KJ		1984	05	26.92718	15	32	38.38	-14	30	51.8	046
1984	KJ		1984	05	26.94205	15	32	37.85	-14	30	43.9	17.0 046
1984	KK	*	1984	05	26.92718	15	31	48.32	-13	27	12.9	17.0 046
1984	KK		1984	05	26.94205	15	31	47.54	-13	27	14.6	046
1984	KL	*	1984	05	26.92718	15	33	24.22	-14	17	58.3	17.2 046
1984	KL		1984	05	26.94205	15	33	23.79	-14	17	52.4	046
1984	LA	*	1984	06	01.91507	16	07	49.08	-13	54	17.9	17.0 046
1984	LA		1984	06	01.92925	16	07	48.28	-13	54	11.9	046
1984	LB	*	1984	06	01.91507	16	10	59.63	-15	24	32.0	16.9 046
1984	LB		1984	06	01.92925	16	10	58.81	-15	24	22.0	046
1984	LC	*	1984	06	01.91507	16	15	39.68	-14	10	40.4	17.2 046
1984	LC		1984	06	01.92925	16	15	38.92	-14	10	34.2	046

Note 1: edge of plate. 2: clouds. 3: diffuse image.

OBSERVATIONS MADE AT KVISTABERG BY C.-I. LAGERKVIST.

Plates taken with the 1.0-m Schmidt telescope. Reductions by G. De Sanctis and V. Zappala. Assistance from B. G. Marsden with identifications.

Contact: V. Zappala, Osservatorio Astronomico di Torino, I-10025 Pino Torinese, Italy.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
74	1978	09 30.88612	01 35 47.70	+10 00 14.6	049
74	1978	09 30.89929	01 35 47.18	+10 00 09.6	049
74	1978	10 01.10913	01 35 39.43	+09 58 50.0	049
74	1978	10 01.12022	01 35 39.02	+09 58 45.9	049
74	1978	10 01.87873	01 35 12.25	+09 53 54.4	049
74	1978	10 01.88738	01 35 11.94	+09 53 51.5	049
150	1978	09 30.91072	01 15 13.65	+08 40 14.7	049
150	1978	09 30.92421	01 15 13.07	+08 40 10.6	049
150	1978	10 01.09216	01 15 05.67	+08 39 18.1	049
150	1978	11 01.90367	00 52 28.91	+05 49 25.2	049
150	1978	11 01.91267	00 52 28.63	+05 49 22.7	049
184	1978	11 24.84215	03 45 28.75	+21 31 45.3	049
184	1978	11 24.85669	03 45 28.01	+21 31 43.0	049
184	1978	11 24.91002	03 45 25.27	+21 31 35.0	049
184	1978	11 24.91971	03 45 24.76	+21 31 33.4	049
277	1978	09 30.88612	01 37 51.42	+11 13 23.3	049
277	1978	09 30.89929	01 37 50.79	+11 13 20.2	049

277		1978	10	01.10913	01	37	41.86	+11 12 26.9	049
277		1978	10	01.12022	01	37	41.37	+11 12 24.3	049
277		1978	10	01.87873	01	37	09.79	+11 09 10.0	049
277		1978	10	01.88738	01	37	09.48	+11 09 07.9	049
331		1978	09	30.88612	01	37	23.20	+09 38 16.8	049
331		1978	09	30.89929	01	37	22.55	+09 38 15.0	049
331		1978	10	01.10913	01	37	12.93	+09 37 49.6	049
331		1978	10	01.12022	01	37	12.38	+09 37 48.6	049
331		1978	10	01.87873	01	36	38.47	+09 36 15.9	049
331		1978	10	01.88738	01	36	38.17	+09 36 15.1	049
343		1978	10	01.06135	01	43	43.52	+08 04 22.7	049
343		1978	10	01.07382	01	43	43.00	+08 04 21.5	049
462		1978	11	01.85520	02	06	52.66	+07 46 53.7	049
462		1978	11	01.86973	02	06	51.90	+07 46 50.7	049
463		1978	11	01.88082	01	35	58.72	+07 45 50.4	049
463		1978	11	01.89329	01	35	57.86	+07 45 55.0	049
503		1978	11	24.81653	03	29	01.56	+17 09 15.7	049
503		1978	11	24.83038	03	29	00.75	+17 09 14.6	049
503		1978	11	24.88925	03	28	57.19	+17 09 12.5	049
503		1978	11	24.89894	03	28	56.59	+17 09 11.7	049
533		1978	10	01.06135	01	43	11.96	+07 11 46.6	049
533		1978	10	01.07382	01	43	11.46	+07 11 41.8	049
533		1978	11	24.76458	01	09	27.77	+02 41 49.7	049
533		1978	11	24.78051	01	09	27.48	+02 41 48.0	049
637		1978	11	24.84215	03	39	11.92	+19 53 39.6	049
637		1978	11	24.85669	03	39	11.14	+19 53 36.9	049
637		1978	11	24.91002	03	39	08.28	+19 53 27.8	049
637		1978	11	24.91971	03	39	07.80	+19 53 25.7	049
753		1978	11	24.86847	02	53	25.79	+13 41 56.9	049
753		1978	11	24.87816	02	53	25.16	+13 41 56.8	049
755		1978	10	01.06135	01	53	15.92	+09 31 32.9	049
755		1978	10	01.07382	01	53	15.44	+09 31 29.6	049
755		1978	11	01.88082	01	31	15.16	+07 06 55.7	049
755		1978	11	01.89329	01	31	14.64	+07 06 52.3	049
901		1978	11	24.84215	03	36	48.72	+22 17 05.1	049
901		1978	11	24.85669	03	36	47.66	+22 16 59.9	049
901		1978	11	24.91002	03	36	44.01	+22 16 40.5	049
901		1978	11	24.91971	03	36	43.35	+22 16 37.1	049
953		1978	10	01.06135	01	46	12.52	+06 43 57.6	049
953		1978	10	01.07382	01	46	11.88	+06 43 56.3	049
953		1978	11	24.76458	01	04	26.16	+05 47 19.2	049
953		1978	11	24.78051	01	04	25.86	+05 47 19.9	049
1048		1978	11	24.84215	03	36	50.77	+21 49 39.6	049
1048		1978	11	24.85669	03	36	49.84	+21 49 40.2	049
1048		1978	11	24.91002	03	36	46.56	+21 49 41.0	049
1048		1978	11	24.91971	03	36	45.95	+21 49 40.8	049
1071		1978	11	24.76458	01	08	50.92	+04 30 48.2	049
1071		1978	11	24.78051	01	08	50.66	+04 30 49.5	049
1136		1978	09	30.85912	23	20	43.49	+05 32 56.6	049
1136		1978	09	30.87228	23	20	43.15	+05 32 46.9	049
1137		1978	11	24.76458	01	14	33.61	+02 55 39.9	049
1137		1978	11	24.78051	01	14	33.44	+02 55 42.5	049
1202		1978	10	01.06135	01	52	06.68	+09 04 28.2	049
1202		1978	10	01.07382	01	52	06.22	+09 04 26.6	049
1202		1978	11	01.88082	01	31	13.83	+07 33 23.6	049
1202		1978	11	01.89329	01	31	13.33	+07 33 21.9	049
1225		1978	09	30.91072	01	22	25.56	+09 02 07.7	049
1225		1978	09	30.92421	01	22	24.82	+09 02 04.7	049
1225		1978	10	01.09216	01	22	15.17	+09 01 27.5	049

1225	1978	11	01.90367	00	51	11.75	+06	47	31.3	049
1225	1978	11	01.91267	00	51	11.28	+06	47	29.4	049
1249	1978	09	30.85912	23	29	17.98	+05	46	39.9	049
1249	1978	09	30.87228	23	29	17.27	+05	46	34.4	049
1319	1978	11	24.84215	03	46	02.40	+21	02	54.2	049
1319	1978	11	24.85669	03	46	01.64	+21	02	50.4	049
1319	1978	11	24.91002	03	45	58.86	+21	02	41.3	049
1319	1978	11	24.91971	03	45	58.30	+21	02	39.5	049
1340	1978	09	30.88612	01	33	49.10	+10	08	50.9	049
1340	1978	09	30.89929	01	33	48.52	+10	08	48.3	049
1340	1978	10	01.10913	01	33	40.05	+10	08	01.2	049
1340	1978	10	01.12022	01	33	39.60	+10	07	57.6	049
1377	1978	09	30.85912	23	28	30.58	+04	12	59.1	049
1377	1978	09	30.87228	23	28	29.97	+04	12	53.0	049
1472	1978	09	30.93530	02	21	02.09	+09	52	56.2	049
1472	1978	09	30.94852	02	21	01.63	+09	52	56.7	049
1472	1978	10	01.13199	02	20	55.10	+09	52	58.4	049
1472	1978	10	01.14307	02	20	54.73	+09	52	58.3	049
1472	1978	11	01.85520	01	52	05.10	+09	35	30.2	049
1472	1978	11	01.86973	01	52	04.21	+09	35	29.5	049
1472	1978	11	01.99440	01	51	56.76	+09	35	27.1	049
1472	1978	11	02.00617	01	51	56.04	+09	35	26.5	049
1522	1978	11	24.86847	02	48	56.68	+14	49	06.9	049
1522	1978	11	24.87816	02	48	56.13	+14	49	06.7	049
1713	1978	11	24.84215	03	34	14.83	+18	56	32.5	049
1713	1978	11	24.85669	03	34	15.92	+18	56	35.3	049
1713	1978	11	24.91002	03	34	10.29	+18	56	26.2	049
1713	1978	11	24.91971	03	34	11.10	+18	56	29.2	049
1767	1978	11	01.85520	02	06	39.76	+06	52	00.3	049
1767	1978	11	01.86973	02	06	39.10	+06	51	54.8	049
1767	1978	11	01.99440	02	06	33.35	+06	51	05.2	049
1767	1978	11	02.00617	02	06	32.88	+06	51	00.8	049
1805	1978	10	01.06135	01	48	49.76	+08	06	08.3	049
1805	1978	10	01.07382	01	48	49.36	+08	06	06.2	049
1805	1978	11	01.88082	01	25	46.06	+06	02	06.0	049
1805	1978	11	01.89329	01	25	45.64	+06	02	02.9	049
1846	1978	11	01.90367	00	55	30.72	+06	40	40.6	049
1846	1978	11	01.91267	00	55	30.32	+06	40	39.5	049
1857	1978	11	24.81653	03	19	51.67	+18	09	08.6	049
1857	1978	11	24.83038	03	19	50.88	+18	09	02.5	049
1897	1978	11	24.81653	03	26	59.00	+18	03	07.1	049
1897	1978	11	24.83038	03	26	58.13	+18	03	04.3	049
1897	1978	11	24.88925	03	26	54.08	+18	03	00.5	049
1897	1978	11	24.89894	03	26	53.46	+18	02	59.6	049
1924	1978	11	01.90367	00	51	54.57	+08	17	33.4	049
1924	1978	11	01.91267	00	51	54.17	+08	17	30.6	049
1978	1978	09	30.93530	02	33	37.49	+10	28	02.3	049
1978	1978	09	30.94852	02	33	36.95	+10	28	02.0	049
1978	1978	10	01.13199	02	33	29.28	+10	27	47.5	049
1978	1978	10	01.14307	02	33	28.78	+10	27	47.3	049
1978	1978	11	01.85520	02	01	24.97	+09	20	24.5	049
1978	1978	11	01.86973	02	01	24.04	+09	20	22.8	049
1978	1978	11	01.99440	02	01	15.74	+09	20	08.5	049
1978	1978	11	02.00617	02	01	14.99	+09	20	06.5	049
2144	1978	11	24.81653	03	32	43.76	+14	38	16.0	049
2144	1978	11	24.83038	03	32	43.06	+14	38	12.8	049
2144	1978	11	24.88925	03	32	39.87	+14	38	03.2	049
2144	1978	11	24.89894	03	32	39.31	+14	38	02.2	049
2369	1978	11	24.86847	02	53	41.08	+16	51	49.4	049

2369		1978	11	24.87816	02	53	40.62	+16	51	47.2	049
2415		1978	11	01.85520	01	56	37.49	+08	35	45.1	049
2415		1978	11	01.86973	01	56	36.79	+08	35	40.4	049
2415		1978	11	01.99440	01	56	30.16	+08	35	11.6	049
2415		1978	11	02.00617	01	56	29.56	+08	35	07.5	049
2426		1978	11	24.84215	03	42	56.72	+19	18	47.7	049
2426		1978	11	24.85669	03	42	55.81	+19	18	43.2	049
2426		1978	11	24.91002	03	42	53.10	+19	18	27.2	049
2426		1978	11	24.91971	03	42	52.55	+19	18	24.9	049
2503		1978	09	30.88612	01	40	54.15	+11	46	52.1	049
2503		1978	09	30.89929	01	40	53.42	+11	46	55.7	049
2503		1978	10	01.10913	01	40	42.64	+11	47	51.2	049
2503		1978	10	01.12022	01	40	42.09	+11	47	54.3	049
2545		1978	09	30.85912	23	26	06.77	+03	50	48.1	049
2545		1978	09	30.87228	23	26	06.00	+03	50	44.8	049
2659		1978	11	24.86847	02	49	24.36	+14	21	49.8	049
2659		1978	11	24.87816	02	49	23.94	+14	21	47.7	049
2771		1978	11	01.90367	00	46	04.06	+06	33	40.7	049
2771		1978	11	01.91267	00	46	03.90	+06	33	35.2	049
2810		1978	09	30.91072	01	26	24.45	+07	40	07.8	049
2810		1978	09	30.92421	01	26	23.92	+07	39	58.8	049
2810		1978	10	01.09216	01	26	16.95	+07	38	15.9	049
1978	RV5	1978	09	30.91072	01	24	14.94	+10	28	44.2	049
1978	RV5	1978	09	30.92421	01	24	14.20	+10	28	42.1	049
1978	RV5	1978	10	01.09216	01	24	04.76	+10	28	18.0	049
1978	RX5	1978	11	01.90367	00	55	36.51	+04	44	07.3	049
1978	RX5	1978	11	01.91267	00	55	36.12	+04	44	07.8	049
1978	RD6	1978	10	01.06135	01	44	31.12	+10	26	48.8	049
1978	RD6	1978	10	01.07382	01	44	30.63	+10	26	40.7	049
1978	SN4	1978	09	30.91072	01	21	26.88	+06	37	52.6	049
1978	SN4	1978	09	30.92421	01	21	26.37	+06	37	50.0	049
1978	SN4	1978	10	01.09216	01	21	18.88	+06	37	10.6	049
1978	SN4	1978	11	01.90367	00	58	23.56	+04	36	24.8	049
1978	SN4	1978	11	01.91267	00	58	23.24	+04	36	23.7	049
1978	SO4	1978	09	30.91072	01	22	56.51	+09	19	57.3	049
1978	SO4	1978	09	30.92421	01	22	55.97	+09	19	55.0	049
1978	SO4	1978	10	01.09216	01	22	49.35	+09	19	32.3	049
1978	SP4	1978	09	30.91072	01	23	19.35	+08	29	34.3	049
1978	SP4	1978	09	30.92421	01	23	18.86	+08	29	33.3	049
1978	SP4	1978	10	01.09216	01	23	10.40	+08	29	19.9	049
1978	SX4	1978	09	30.88612	01	36	24.40	+09	26	10.6	049
1978	SX4	1978	09	30.89929	01	36	24.07	+09	26	00.5	049
1978	SX4	1978	10	01.10913	01	36	18.94	+09	23	02.8	049
1978	SX4	1978	10	01.12022	01	36	18.61	+09	22	52.5	049
1978	SX4	1978	10	01.87873	01	36	01.79	+09	12	00.0	049
1978	SX4	1978	10	01.88738	01	36	01.63	+09	11	55.0	049
1978	SJ5	1978	10	01.06135	01	43	33.54	+07	31	13.1	049
1978	SJ5	1978	10	01.07382	01	43	32.90	+07	31	11.9	049
1978	SD8	1978	11	01.90367	00	51	17.03	+06	41	13.2	049
1978	SD8	1978	11	01.91267	00	51	16.67	+06	41	14.1	049
1978	SG8 *	1978	09	30.91072	01	26	50.90	+07	58	36.3	049
1978	SG8	1978	09	30.92421	01	26	50.07	+07	58	18.9	049
1978	TA1	1978	09	30.85912	23	17	24.56	+05	35	00.6	049
1978	TA1	1978	09	30.87228	23	17	23.84	+05	34	58.1	049
1978	TB1	1978	09	30.85912	23	20	37.93	+05	45	19.5	049
1978	TB1	1978	09	30.87228	23	20	37.38	+05	45	12.9	049
1978	TC1	1978	09	30.85912	23	31	57.87	+04	58	30.0	049
1978	TC1	1978	09	30.87228	23	31	57.30	+04	58	25.9	049
1978	TB2	1978	09	30.91072	01	24	19.88	+08	22	53.1	049

1978 TB2	1978 09 30.92421	01 24 19.22	+08 22 46.7		049
1978 TB2	1978 10 01.09216	01 24 11.23	+08 21 30.2		049
1978 TJ9 *	1978 10 01.06135	01 41 29.02	+09 13 06.1		049
1978 TJ9	1978 10 01.07382	01 41 28.38	+09 13 05.2		049
1978 VT16*	1978 11 01.85520	02 03 15.97	+08 08 25.8		049
1978 VT16	1978 11 01.86973	02 03 15.21	+08 08 24.1		049
1978 VU16*	1978 11 01.88082	01 33 45.39	+07 49 59.9		049
1978 VU16	1978 11 01.89329	01 33 44.82	+07 49 57.3		049
1978 VV16*	1978 11 01.88082	01 37 21.11	+07 18 02.5		049
1978 VV16	1978 11 01.89329	01 37 20.55	+07 18 03.6		049
1978 VW16*	1978 11 01.90367	00 45 50.07	+05 38 28.4		049
1978 VW16	1978 11 01.91267	00 45 49.24	+05 38 34.9		049
1978 WN14	1978 11 24.81653	03 32 54.95	+15 59 31.4		049
1978 WN14	1978 11 24.83038	03 32 54.22	+15 59 29.3		049
1978 WN14	1978 11 24.88925	03 32 51.24	+15 59 22.5		049
1978 WN14	1978 11 24.89894	03 32 50.77	+15 59 20.7		049
1978 WZ14*	1978 11 24.84215	03 35 10.23	+21 12 58.5		049
1978 WZ14	1978 11 24.85669	03 35 09.28	+21 12 52.5		049
1978 WZ14	1978 11 24.91002	03 35 05.62	+21 12 28.6		049
1978 WZ14	1978 11 24.91971	03 35 05.04	+21 12 24.3		049
1978 WA15*	1978 11 24.86847	02 42 07.91	+14 54 38.8		049
1978 WA15	1978 11 24.87816	02 42 07.50	+14 54 37.5		049
1978 WB15*	1978 11 24.86847	02 44 20.94	+13 28 39.9		049
1978 WB15	1978 11 24.87816	02 44 20.52	+13 28 40.2		049
1978 WC15*	1978 11 24.86847	02 54 50.11	+13 49 05.4		049
1978 WC15	1978 11 24.87816	02 54 49.60	+13 49 04.0		049

OBSERVATIONS MADE AT THE SOUTH AFRICAN ASTRONOMICAL OBSERVATORY, CAPE TOWN.
Contact: J. Churms, South African Astronomical Observatory, P.O. Box 9, Observatory, Cape 7935, South Africa.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1984 KD	1984 06 14.72199	13 48 00.86	-08 45 10.2		051
1984 KD	1984 06 14.72546	13 47 58.48	-08 46 26.0		051

OBSERVATIONS MADE AT THE CRIMEAN ASTROPHYSICAL OBSERVATORY.
Plates taken with the 0.4-m f/4 astrograph at the Sternberg Crimean Station by N. V. Metlova. Copied from Kiev Komet. Tsirk. No. 324. Contact: N. V. Metlova, GAISH Crimean Station, P/O Nauchnyj, Crimea 334413, U.S.S.R.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
3044	1983 08 15.9870	23 15 04.91	+17 53 35.2		16	095
3044	1983 08 17.0313	23 14 31.97	+17 54 21.6		16	095
3044	1983 08 21.0340	23 12 14.01	+17 54 13.4		16	095
1983 RF3	1983 09 30.8594	22 50 31.10	+14 38 43.2		16	095
1983 RF3	1983 10 07.8552	22 45 53.07	+13 53 56.9		16	095
1983 RF3	1983 10 07.8885	22 45 51.83	+13 53 42.9			095
1983 RF3	1983 10 08.8392	22 45 19.81	+13 47 20.0		16	095

OBSERVATION MADE AT THE PERTH OBSERVATORY.
Plate taken with the 0.33-m astrograph by P. Jekabsons and Kinnear. Measured by M. P. Candy. Contact: M. P. Candy, Perth Observatory, Bickley, WA 6076, Australia.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1984 KD	1984 06 14.46632	13 50 36.15	-07 14 31.8		12	323

OBSERVATION MADE AT THE PURPLE MOUNTAIN OBSERVATORY BY J.-x. YANG.
Contact: J.-x. Zhang, Purple Mountain Observatory, Nanjing, Peoples Republic of China.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1984 KD	1984 06 16.51456	13 24 12.83	-21 51 22.0		12	330

OBSERVATIONS MADE AT THE TOKYO OBSERVATORY'S KISO STATION BY H. KOSAI.

Plates taken with the 1.05-m Schmidt. J. Watanabe assisted. Reduction using AGK3. Contact: H. Kosai, Tokyo Astronomical Observatory, Mitaka, Tokyo 181, Japan.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 VA	1984 03	28.72548	14 19 11.90	+22 56 45.9		381
1983 VA	1984 03	28.74666	14 19 08.12	+22 56 42.0		381
1984 KB	1984 06	01.62654	17 17 30.34	+06 14 50.4	14.0	381
1984 KB	1984 06	01.64038	17 17 25.43	+06 13 43.2		381

OBSERVATIONS MADE WITH THE 1.2-M U.K. SCHMIDT TELESCOPE AT SIDING SPRING BY M. HARTLEY AND J. BARROW.

Contact: M. Hartley, U.K. Schmidt Telescope Unit, Siding Spring Observatory, Coonabarabran, N.S.W. 2857, Australia.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1984 KD	1984 06	20.40321	11 13 29.99	-58 26 04.3	413
1984 KD	1984 06	20.40668	11 13 16.89	-58 27 34.2	413

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

Plates taken by J. Dawe, J. Barrow, M. Hartley, D. Morgan, K. Russell and A. Savage in the course of the U.K.-Caltech Asteroid Survey under the direction of E. Helin and E. Shoemaker. Scanned and measured by S. J. Bus (with assistance from R. S. Dunbar). Contact: S. J. Bus, Lowell Observatory, P.O. Box 1269, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
279	1981 03	11.66134	12 13 41.56	+01 40 08.8	13.0V	413
279	1981 03	11.70301	12 13 40.14	+01 40 18.6		413
279	1981 03	15.69509	12 11 28.75	+01 54 45.2		413
279	1981 03	15.73328	12 11 27.45	+01 54 54.2		413
279	1981 04	05.55430	11 59 47.65	+03 07 16.1		413
279	1981 04	05.58312	11 59 46.81	+03 07 20.7		413
279	1981 04	06.56195	11 59 15.77	+03 10 21.1		413
279	1981 04	06.59668	11 59 14.66	+03 10 27.0		413
279	1981 04	07.56303	11 58 44.50	+03 13 22.9		413
279	1981 04	07.59776	11 58 43.39	+03 13 29.4		413
279	1981 04	10.52714	11 57 14.54	+03 21 56.8		413
279	1981 04	10.56186	11 57 13.50	+03 22 01.5		413
435	1981 03	02.63403	12 17 30.71	-00 34 44.8	13.5V	413
435	1981 03	02.67917	12 17 28.64	-00 34 32.9		413
435	1981 03	06.60816	12 14 26.28	-00 16 05.1		413
435	1981 03	06.64983	12 14 24.21	-00 15 52.5		413
435	1981 03	11.70301	12 10 10.25	+00 09 37.9		413
435	1981 03	15.73328	12 06 36.87	+00 30 55.4		413
435	1981 04	05.55430	11 48 05.68	+02 18 45.9		413
435	1981 04	05.58312	11 48 04.44	+02 18 51.6		413
435	1981 04	06.56195	11 47 16.88	+02 23 18.4		413
435	1981 04	06.59668	11 47 15.21	+02 23 27.3		413
435	1981 04	07.56303	11 46 29.32	+02 27 44.9		413
435	1981 04	07.59776	11 46 27.67	+02 27 54.1		413
435	1981 04	10.52714	11 44 14.00	+02 40 14.2		413
435	1981 04	10.56186	11 44 12.43	+02 40 21.3		413
1767	1981 03	01.59302	12 16 02.07	-05 21 12.6	16.5V	413
1767	1981 03	01.63816	12 16 00.53	-05 20 58.9		413
1767	1981 03	02.63403	12 15 27.19	-05 15 33.6		413
1767	1981 03	02.67917	12 15 25.63	-05 15 19.6		413
1767	1981 03	06.60816	12 13 06.21	-04 52 43.4		413
1767	1981 03	06.64983	12 13 04.69	-04 52 29.6		413
1767	1981 03	06.66426	12 13 04.02	-04 52 22.2		413
1767	1981 03	06.70593	12 13 02.47	-04 52 08.3		413

1767		1981	03	08.68165	12	11	48.19	-04	40	05.0	413
1767		1981	03	08.72332	12	11	46.59	-04	39	50.5	413
1767		1981	03	11.66134	12	09	52.00	-04	21	13.7	413
1767		1981	03	11.70301	12	09	50.29	-04	20	57.0	413
1767		1981	03	12.58070	12	09	15.39	-04	15	12.2	413
1767		1981	03	12.61890	12	09	13.83	-04	14	57.7	413
1767		1981	03	15.69509	12	07	08.25	-03	54	27.6	413
1767		1981	03	15.73328	12	07	06.63	-03	54	11.7	413
1767		1981	04	05.55430	11	52	46.44	-01	27	15.1	413
1767		1981	04	05.58312	11	52	45.46	-01	27	05.2	413
1767		1981	04	06.56195	11	52	08.23	-01	20	19.1	413
1767		1981	04	06.59668	11	52	06.99	-01	20	06.1	413
1767		1981	04	07.56303	11	51	30.84	-01	13	29.3	413
1767		1981	04	07.59776	11	51	29.64	-01	13	16.3	413
1767		1981	04	10.52714	11	49	44.39	-00	53	38.9	413
1767		1981	04	10.56186	11	49	43.16	-00	53	26.5	413
2264		1981	03	02.63403	12	20	33.88	-02	25	38.0	15.0V 413
2264		1981	03	02.67917	12	20	32.29	-02	25	27.8	413
2264		1981	03	06.60816	12	18	09.50	-02	10	08.1	413
2264		1981	03	06.64983	12	18	07.97	-02	09	57.5	413
2264		1981	03	11.66134	12	14	50.47	-01	48	44.0	413
2264		1981	03	11.70301	12	14	48.72	-01	48	31.6	413
2264		1981	03	15.69509	12	12	02.25	-01	30	33.1	413
2264		1981	03	15.73328	12	12	00.56	-01	30	21.4	413
2264		1981	04	05.55430	11	57	00.68	+00	07	26.6	413
2264		1981	04	05.58312	11	56	59.61	+00	07	33.4	413
2264		1981	04	06.56195	11	56	19.66	+00	11	55.3	413
2264		1981	04	06.59668	11	56	18.26	+00	12	03.9	413
2264		1981	04	07.56303	11	55	39.41	+00	16	18.5	413
2264		1981	04	10.52714	11	53	43.92	+00	28	56.6	413
2264		1981	04	10.56186	11	53	42.63	+00	29	03.7	413
2296		1981	03	02.63403	12	06	29.72	+00	51	57.6	15.0V 413
2296		1981	03	02.67917	12	06	28.02	+00	52	07.2	413
2296		1981	04	05.55430	11	42	17.85	+03	16	07.3	413
2296		1981	04	05.58312	11	42	16.94	+03	16	11.7	413
2296		1981	04	06.56195	11	41	40.77	+03	19	29.8	413
2296		1981	04	06.59668	11	41	39.58	+03	19	35.0	413
2296		1981	04	07.59776	11	41	03.90	+03	22	49.1	413
2296		1981	04	10.56186	11	39	24.05	+03	31	41.4	413
1981	DT3 *	1981	02	28.55482	12	25	34.70	-16	01	03.6	19.0V 413
1981	DT3	1981	03	06.54930	12	21	52.70	-15	54	37.5	413
1981	DT3	1981	03	08.56669	12	20	31.55	-15	51	14.2	413
1981	DT3	1981	03	08.60836	12	20	29.57	-15	51	08.9	413
1981	DT3	1981	03	12.63230	12	17	40.67	-15	42	29.2	413
1981	DT3	1981	03	12.67049	12	17	39.14	-15	42	23.4	413
1981	EG37*	1981	03	01.57987	11	42	52.37	-05	14	38.6	20.0V 413
1981	EG37	1981	03	11.58909	11	34	09.10	-03	45	51.0	413
1981	EG37	1981	03	15.64523	11	30	27.34	-03	05	52.2	413
1981	EH37*	1981	03	01.53473	11	44	54.53	-04	01	18.9	20.0V 413
1981	EH37	1981	03	01.57987	11	44	51.90	-04	01	00.3	413
1981	EH37	1981	03	11.54742	11	36	08.73	-02	50	32.4	413
1981	EH37	1981	03	15.68342	11	32	27.64	-02	19	13.8	413
1981	EJ37*	1981	03	01.53473	11	47	23.70	-02	53	20.6	19.5V 413
1981	EJ37	1981	03	07.70735	11	41	24.69	-02	37	32.9	413
1981	EJ37	1981	03	11.58909	11	37	28.49	-02	25	28.7	413
1981	EJ37	1981	03	15.68342	11	33	16.56	-02	11	32.4	413
1981	EK37*	1981	03	01.57987	11	48	29.09	-02	36	41.1	20.0V 413
1981	EK37	1981	03	02.57859	11	47	47.76	-02	28	46.9	413
1981	EK37	1981	03	02.62373	11	47	45.92	-02	28	27.5	413

1981	EK37	1981	03	03.56736	11	47	05.84	-02	20	47.9	413
1981	EK37	1981	03	07.64918	11	44	02.17	-01	45	51.6	413
1981	EK37	1981	03	11.64518	11	40	49.85	-01	08	52.3	413
1981	EL37*	1981	03	01.53473	11	49	34.39	-07	49	12.2	20.0V 413
1981	EL37	1981	03	01.57987	11	49	32.86	-07	49	01.9	413
1981	EL37	1981	03	07.66569	11	45	37.37	-07	17	00.4	413
1981	EL37	1981	03	07.70735	11	45	35.59	-07	16	45.6	413
1981	EL37	1981	03	11.58909	11	42	57.11	-06	54	01.4	413
1981	EL37	1981	03	15.64523	11	40	08.80	-06	28	50.1	413
1981	EM37*	1981	03	01.57987	11	50	21.34	-04	12	34.8	20.0V 413
1981	EM37	1981	03	07.70735	11	44	32.08	-03	39	04.0	413
1981	EM37	1981	03	11.54742	11	40	42.33	-03	15	37.1	413
1981	EM37	1981	03	11.58909	11	40	39.94	-03	15	24.6	413
1981	EM37	1981	03	15.64523	11	36	33.30	-02	49	13.2	413
1981	EM37	1981	03	15.68342	11	36	31.41	-02	49	01.5	413
1981	EM37	1981	04	12.62048	11	12	42.78	+00	08	03.9	413
1981	EM37	1981	04	12.65521	11	12	41.66	+00	08	12.4	413
1981	EN37*	1981	03	01.53473	11	52	35.62	-05	11	05.2	19.5V 413
1981	EN37	1981	03	01.57987	11	52	33.98	-05	10	50.3	413
1981	EN37	1981	03	07.70735	11	48	16.40	-04	28	14.3	413
1981	EN37	1981	03	11.54742	11	45	25.61	-03	59	21.7	413
1981	EO37*	1981	03	01.53473	11	55	00.21	-02	43	07.6	20.5V 413
1981	EO37	1981	03	02.62373	11	54	08.51	-02	36	37.8	413
1981	EO37	1981	03	07.60751	11	50	00.82	-02	04	57.2	413
1981	EO37	1981	03	07.66569	11	49	58.09	-02	04	39.1	413
1981	EO37	1981	03	11.60352	11	46	32.04	-01	37	48.2	413
1981	EO37	1981	03	11.64518	11	46	29.74	-01	37	31.7	413
1981	EP37*	1981	03	01.53473	11	56	52.01	-03	55	41.9	20.0V 413
1981	EP37	1981	03	01.57987	11	56	50.32	-03	55	31.3	413
1981	EP37	1981	03	07.66569	11	51	58.63	-03	27	06.4	413
1981	EP37	1981	03	11.54742	11	48	43.22	-03	07	03.2	413
1981	EP37	1981	03	11.58909	11	48	41.22	-03	06	53.6	413
1981	EP37	1981	03	15.64523	11	45	11.99	-02	44	46.4	413
1981	EQ37*	1981	03	01.53473	11	57	12.11	-03	14	59.6	20.0V 413
1981	EQ37	1981	03	11.58909	11	48	55.43	-02	36	17.1	413
1981	EQ37	1981	03	15.64523	11	45	22.52	-02	18	13.9	413
1981	EQ37	1981	03	15.68342	11	45	20.71	-02	18	04.6	413
1981	ER37*	1981	03	01.53473	12	00	45.53	-08	13	02.0	19.5V 413
1981	ER37	1981	03	01.57987	12	00	44.15	-08	12	41.9	413
1981	ER37	1981	03	11.54742	11	54	00.99	-06	33	13.7	413
1981	ER37	1981	03	15.64523	11	50	56.37	-05	46	39.2	413
1981	ER37	1981	03	15.68342	11	50	54.73	-05	46	15.7	413
1981	ES37*	1981	03	01.53473	12	00	52.23	-07	06	24.6	19.5V 413
1981	ES37	1981	03	11.58909	11	53	36.84	-06	15	07.6	413
1981	ES37	1981	03	15.64523	11	50	16.63	-05	48	22.1	413
1981	ET37*	1981	03	01.53473	12	00	58.87	-04	56	47.4	19.5V 413
1981	ET37	1981	03	01.57987	12	00	56.60	-04	56	31.9	413
1981	ET37	1981	03	07.66569	11	55	57.93	-04	22	44.9	413
1981	ET37	1981	03	07.70735	11	55	55.35	-04	22	27.9	413
1981	ET37	1981	03	11.54742	11	52	26.83	-03	57	35.5	413
1981	ET37	1981	03	15.64523	11	48	30.59	-03	28	28.0	413
1981	ET37	1981	03	15.68342	11	48	28.18	-03	28	10.1	413
1981	ET37	1981	04	12.62048	11	23	05.85	+00	10	45.3	413
1981	ET37	1981	04	12.65521	11	23	04.58	+00	10	56.5	413
1981	EU37*	1981	03	01.53473	12	02	39.61	-07	39	39.2	20.5V 413
1981	EU37	1981	03	01.57987	12	02	37.11	-07	39	28.6	413
1981	EU37	1981	03	11.54742	11	54	54.80	-06	57	51.9	413
1981	EU37	1981	03	15.68342	11	51	28.66	-06	36	49.2	413
1981	EU37	1981	04	12.65521	11	30	34.89	-03	55	24.1	413

1981	EV37*	1981	03	01.53473	12	03	01.78	-07	28	05.6	20.5V 413
1981	EV37	1981	03	07.66569	11	58	19.75	-06	47	14.2	413
1981	EV37	1981	03	11.58909	11	55	03.78	-06	17	25.3	413
1981	EW37*	1981	03	01.53473	12	03	27.59	-06	10	00.6	20.0V 413
1981	EW37	1981	03	01.57987	12	03	25.76	-06	09	54.2	413
1981	EW37	1981	03	07.66569	11	58	38.69	-05	52	43.1	413
1981	EW37	1981	03	11.54742	11	55	20.10	-05	38	55.3	413
1981	EW37	1981	03	11.58909	11	55	17.87	-05	38	48.5	413
1981	EW37	1981	03	15.64523	11	51	41.36	-05	22	27.1	413
1981	EW37	1981	04	06.46361	11	32	55.84	-03	38	02.1	413
1981	EW37	1981	04	06.49834	11	32	54.46	-03	37	54.0	413
1981	EX37*	1981	03	01.53473	12	03	38.72	-04	01	03.8	19.5V 413
1981	EX37	1981	03	01.57987	12	03	36.34	-04	00	44.4	413
1981	EX37	1981	03	07.66569	11	58	53.23	-03	21	44.6	413
1981	EX37	1981	03	11.54742	11	55	33.16	-02	53	30.2	413
1981	EX37	1981	03	11.58909	11	55	30.99	-02	53	13.2	413
1981	EX37	1981	03	15.68342	11	51	48.05	-02	21	11.8	413
1981	EY37*	1981	03	01.53473	12	03	43.43	-03	14	09.1	19.0V 413
1981	EY37	1981	03	01.57987	12	03	41.63	-03	14	01.4	413
1981	EY37	1981	03	11.58909	11	55	20.94	-02	32	48.7	413
1981	EY37	1981	03	15.68342	11	51	28.51	-02	11	52.3	413
1981	EZ37*	1981	03	01.53473	12	03	56.49	-03	16	09.1	20.0V 413
1981	EZ37	1981	03	01.57987	12	03	55.06	-03	15	55.8	413
1981	EZ37	1981	03	07.66569	12	00	07.69	-02	41	29.1	413
1981	EZ37	1981	03	07.70735	12	00	06.27	-02	41	16.9	413
1981	EZ37	1981	03	11.54742	11	57	32.71	-02	17	51.9	413
1981	EZ37	1981	03	11.58909	11	57	31.06	-02	17	37.2	413
1981	EZ37	1981	03	15.69509	11	54	41.27	-01	51	34.0	413
1981	EZ37	1981	03	15.73328	11	54	40.00	-01	51	22.6	413
1981	EZ37	1981	04	05.55430	11	40	45.00	+00	22	25.9	413
1981	EA38*	1981	03	01.53473	12	03	59.00	-05	21	06.5	20.5V 413
1981	EA38	1981	03	01.57987	12	03	57.12	-05	21	03.1	413
1981	EA38	1981	03	11.58909	11	56	34.27	-04	59	48.8	413
1981	EA38	1981	03	15.64523	11	53	17.00	-04	48	08.4	413
1981	EA38	1981	03	15.68342	11	53	14.96	-04	47	59.8	413
1981	EB38*	1981	03	01.57987	12	05	36.44	-03	35	03.1	19.5V 413
1981	EB38	1981	03	02.63403	12	04	51.73	-03	32	24.1	413
1981	EB38	1981	03	07.66569	12	01	03.55	-03	17	42.3	413
1981	EB38	1981	03	07.70735	12	01	01.59	-03	17	33.2	413
1981	EB38	1981	03	11.66134	11	57	49.16	-03	04	11.1	413
1981	EB38	1981	03	11.70301	11	57	46.75	-03	04	01.1	413
1981	EB38	1981	03	15.68342	11	54	24.74	-02	49	06.7	413
1981	EB38	1981	04	12.62048	11	32	29.50	-00	58	32.5	413
1981	EC38*	1981	03	01.53473	12	06	01.10	-04	15	40.5	19.5V 413
1981	EC38	1981	03	07.70735	12	00	53.41	-03	42	44.9	413
1981	EC38	1981	03	11.58909	11	57	23.70	-03	19	29.8	413
1981	EC38	1981	03	15.64523	11	53	36.26	-02	53	35.0	413
1981	EC38	1981	03	15.68342	11	53	34.14	-02	53	20.3	413
1981	ED38*	1981	03	01.59302	12	06	39.76	-10	49	16.2	20.0V 413
1981	ED38	1981	03	06.70593	12	03	21.14	-10	18	04.3	413
1981	ED38	1981	03	08.68165	12	01	59.07	-10	04	38.9	413
1981	EE38*	1981	03	01.53473	12	06	45.30	-02	58	55.8	19.5V 413
1981	EE38	1981	03	01.57987	12	06	43.48	-02	58	45.4	413
1981	EE38	1981	03	02.63403	12	05	58.49	-02	54	50.9	413
1981	EE38	1981	03	02.67917	12	05	56.97	-02	54	43.1	413
1981	EE38	1981	03	07.66569	12	02	12.79	-02	34	33.3	413
1981	EE38	1981	03	11.58909	11	59	06.69	-02	17	14.6	413
1981	EE38	1981	03	11.70301	11	59	01.09	-02	16	44.1	413
1981	EF38*	1981	03	01.59302	12	06	55.55	-08	24	24.4	20.0V 413

1981	EF38	1981	03	06.66426	12	03	21.85	-08	03	44.5	413
1981	EF38	1981	03	06.70593	12	03	19.84	-08	03	29.0	413
1981	EF38	1981	03	08.68165	12	01	47.75	-07	53	44.8	413
1981	EF38	1981	03	08.72332	12	01	45.82	-07	53	32.6	413
1981	EF38	1981	03	12.58070	11	58	34.51	-07	31	49.7	413
1981	EG38*	1981	03	01.59302	12	07	56.18	-08	41	23.2	18.0V 413
1981	EG38	1981	03	01.63816	12	07	54.59	-08	41	03.0	413
1981	EG38	1981	03	06.66426	12	04	50.89	-07	58	03.9	413
1981	EG38	1981	03	08.68165	12	03	31.50	-07	39	30.0	413
1981	EG38	1981	03	08.72332	12	03	29.82	-07	39	08.6	413
1981	EG38	1981	03	12.58070	12	00	51.25	-07	01	40.4	413
1981	EG38	1981	03	12.61890	12	00	49.67	-07	01	20.0	413
1981	EG38	1981	04	06.61147	11	43	52.32	-02	34	55.7	413
1981	EG38	1981	04	06.64619	11	43	51.29	-02	34	37.9	413
1981	EG38	1981	04	08.55338	11	42	49.73	-02	15	12.0	413
1981	EG38	1981	04	08.58810	11	42	48.74	-02	14	54.0	413
1981	EG38	1981	04	09.50909	11	42	20.39	-02	05	40.2	413
1981	EG38	1981	04	09.54382	11	42	19.32	-02	05	20.7	413
1981	EH38*	1981	03	01.63816	12	09	24.92	-05	35	43.3	19.0V 413
1981	EH38	1981	03	06.66426	12	05	46.00	-05	08	23.1	413
1981	EH38	1981	03	08.68165	12	04	09.13	-04	55	59.9	413
1981	EH38	1981	03	08.72332	12	04	07.23	-04	55	45.9	413
1981	EH38	1981	03	11.70301	12	01	37.93	-04	36	12.3	413
1981	EH38	1981	03	15.73328	11	58	04.94	-04	07	39.0	413
1981	EH38	1981	04	05.55430	11	39	33.14	-01	23	01.7	413
1981	EH38	1981	04	05.58312	11	39	31.97	-01	22	50.5	413
1981	EH38	1981	04	06.56195	11	38	45.72	-01	15	11.5	413
1981	EH38	1981	04	10.52714	11	35	51.79	-00	45	28.5	413
1981	EJ38*	1981	03	01.59302	12	10	03.00	-06	29	30.0	17.0V 413
1981	EJ38	1981	03	01.63816	12	10	01.36	-06	29	13.0	413
1981	EJ38	1981	03	06.66426	12	06	58.31	-05	53	25.6	413
1981	EJ38	1981	03	06.70593	12	06	56.72	-05	53	09.1	413
1981	EJ38	1981	03	08.68165	12	05	37.94	-05	37	46.2	413
1981	EJ38	1981	03	08.72332	12	05	36.26	-05	37	27.9	413
1981	EJ38	1981	03	12.58070	12	02	54.31	-05	05	34.5	413
1981	EJ38	1981	03	12.61890	12	02	52.57	-05	05	15.8	413
1981	EJ38	1981	04	05.55430	11	45	25.13	-01	22	47.8	413
1981	EJ38	1981	04	05.58312	11	45	24.25	-01	22	35.4	413
1981	EJ38	1981	04	06.56195	11	44	47.17	-01	13	40.0	413
1981	EJ38	1981	04	06.59668	11	44	46.00	-01	13	24.2	413
1981	EJ38	1981	04	07.56303	11	44	10.62	-01	04	42.1	413
1981	EJ38	1981	04	07.59776	11	44	09.45	-01	04	27.0	413
1981	EJ38	1981	04	10.52714	11	42	28.67	-00	38	48.1	413
1981	EJ38	1981	04	10.56186	11	42	27.53	-00	38	32.5	413
1981	EK38*	1981	03	01.59302	12	10	04.38	-06	29	53.7	20.0V 413
1981	EK38	1981	03	01.63816	12	10	02.18	-06	29	49.3	413
1981	EK38	1981	03	06.70593	12	06	03.36	-06	16	24.1	413
1981	EK38	1981	03	08.68165	12	04	21.36	-06	09	46.1	413
1981	EK38	1981	03	08.72332	12	04	19.52	-06	09	38.9	413
1981	EK38	1981	03	12.58070	12	00	51.06	-05	54	52.4	413
1981	EK38	1981	04	09.54382	11	35	59.76	-03	31	42.9	413
1981	EL38*	1981	03	01.59302	12	11	04.39	-06	53	23.0	19.0V 413
1981	EL38	1981	03	01.63816	12	11	02.69	-06	53	03.0	413
1981	EL38	1981	03	06.66426	12	07	55.14	-06	09	45.3	413
1981	EL38	1981	03	06.70593	12	07	53.14	-06	09	25.1	413
1981	EL38	1981	03	08.68165	12	06	33.57	-05	51	11.3	413
1981	EL38	1981	03	08.72332	12	06	31.96	-05	50	50.3	413
1981	EL38	1981	03	12.58070	12	03	49.21	-05	13	34.6	413
1981	EL38	1981	03	12.61890	12	03	47.56	-05	13	14.4	413

1981	EM38*	1981	03	01.63816	12	16	45.91	-07	28	20.1	20.0V 413
1981	EM38	1981	03	06.66426	12	13	10.05	-07	15	33.9	413
1981	EM38	1981	03	06.70593	12	13	08.48	-07	15	29.2	413
1981	EM38	1981	03	08.68165	12	11	36.88	-07	09	22.2	413
1981	EM38	1981	03	08.72332	12	11	34.83	-07	09	13.5	413
1981	EM38	1981	03	12.58070	12	08	29.00	-06	55	52.1	413
1981	EM38	1981	03	12.61890	12	08	27.28	-06	55	43.8	413
1981	EM38	1981	04	09.50909	11	45	53.45	-04	48	03.6	413
1981	EM38	1981	04	09.54382	11	45	52.10	-04	47	54.8	413
1981	EN38*	1981	03	01.59302	12	18	46.09	-08	22	02.9	20.0V 413
1981	EN38	1981	03	06.66426	12	16	08.30	-07	51	07.2	413
1981	EN38	1981	03	06.70593	12	16	06.69	-07	50	50.1	413
1981	EN38	1981	03	08.68165	12	14	59.55	-07	37	36.7	413
1981	EN38	1981	03	08.72332	12	14	58.07	-07	37	20.5	413
1981	EN38	1981	03	12.61890	12	12	38.29	-07	09	45.5	413
1981	EN38	1981	04	09.50909	11	54	52.49	-03	19	40.0	413
1981	EN38	1981	04	09.54382	11	54	51.35	-03	19	24.0	413
1981	EO38*	1981	03	01.59302	12	18	57.21	-06	04	39.4	19.5V 413
1981	EO38	1981	03	01.63816	12	18	55.68	-06	04	21.7	413
1981	EO38	1981	03	06.66426	12	15	46.73	-05	25	52.7	413
1981	EO38	1981	03	06.70593	12	15	45.13	-05	25	34.5	413
1981	EO38	1981	03	08.68165	12	14	24.30	-05	09	19.1	413
1981	EO38	1981	03	08.72332	12	14	22.64	-05	08	59.4	413
1981	EO38	1981	03	12.61890	12	11	35.07	-04	35	22.5	413
1981	EO38	1981	04	05.55430	11	53	10.42	-00	46	48.5	413
1981	EO38	1981	04	10.56186	11	49	47.72	-00	01	00.0	413
1981	EP38*	1981	03	01.59302	12	21	02.08	-06	04	24.9	20.0V 413
1981	EP38	1981	03	01.63816	12	21	00.70	-06	04	10.7	413
1981	EP38	1981	03	06.66426	12	18	09.65	-05	35	31.7	413
1981	EP38	1981	03	06.70593	12	18	08.23	-05	35	17.9	413
1981	EP38	1981	03	08.68165	12	16	56.00	-05	23	12.0	413
1981	EP38	1981	03	08.72332	12	16	54.46	-05	22	57.1	413
1981	EP38	1981	03	12.58070	12	14	26.51	-04	58	08.6	413
1981	EP38	1981	03	12.61890	12	14	25.21	-04	57	55.5	413
1981	EQ38*	1981	03	01.63816	12	21	02.14	-06	14	35.6	20.0V 413
1981	EQ38	1981	03	11.66134	12	15	32.81	-04	26	09.7	413
1981	EQ38	1981	03	11.70301	12	15	31.01	-04	25	38.4	413
1981	EQ38	1981	03	15.69509	12	12	53.60	-03	37	06.3	413
1981	ER38*	1981	03	01.59302	12	21	03.62	-06	25	01.7	18.5V 413
1981	ER38	1981	03	01.63816	12	21	01.95	-06	24	40.5	413
1981	ER38	1981	03	06.66426	12	17	55.57	-05	43	10.1	413
1981	ER38	1981	03	06.70593	12	17	53.99	-05	42	49.9	413
1981	ER38	1981	03	08.68165	12	16	34.01	-05	25	19.9	413
1981	ER38	1981	03	08.72332	12	16	32.40	-05	24	59.8	413
1981	ER38	1981	03	12.58070	12	13	48.28	-04	49	18.8	413
1981	ER38	1981	04	05.55430	11	56	01.71	-00	52	16.2	413
1981	ER38	1981	04	05.58312	11	56	00.61	-00	52	00.7	413
1981	ER38	1981	04	06.56195	11	55	22.28	-00	42	50.4	413
1981	ER38	1981	04	06.59668	11	55	21.03	-00	42	32.8	413
1981	ER38	1981	04	10.52714	11	52	56.71	-00	06	56.2	413
1981	ES38*	1981	03	01.59302	12	21	45.52	-06	03	41.1	19.5V 413
1981	ES38	1981	03	06.66426	12	18	13.68	-05	33	09.8	413
1981	ES38	1981	03	06.70593	12	18	11.91	-05	32	55.0	413
1981	ES38	1981	03	08.72332	12	16	40.29	-05	19	36.4	413
1981	ES38	1981	03	12.58070	12	13	36.06	-04	52	36.7	413
1981	ES38	1981	03	12.61890	12	13	34.07	-04	52	19.6	413
1981	ET38*	1981	03	01.59302	12	23	10.65	-06	18	44.9	18.0V 413
1981	ET38	1981	03	01.63816	12	23	09.03	-06	18	30.0	413
1981	ET38	1981	03	06.66426	12	20	02.69	-05	49	47.1	413

1981	ET38	1981	03	06.70593	12	20	01.16	-05	49	34.1	413
1981	ET38	1981	03	08.68165	12	18	42.59	-05	37	26.1	413
1981	ET38	1981	03	08.72332	12	18	40.89	-05	37	11.1	413
1981	ET38	1981	03	12.58070	12	16	00.57	-05	12	18.3	413
1981	ET38	1981	03	12.61890	12	15	58.94	-05	12	03.4	413
1981	ET38	1981	04	05.55430	11	58	22.31	-02	20	26.2	413
1981	ET38	1981	04	05.58312	11	58	21.45	-02	20	16.9	413
1981	ET38	1981	04	10.52714	11	55	04.47	-01	45	40.8	413
1981	ET38	1981	04	10.56186	11	55	03.25	-01	45	29.9	413
1981	EU38*	1981	03	01.59302	12	24	28.35	-05	33	50.6	17.0V 413
1981	EU38	1981	03	01.63816	12	24	26.83	-05	33	39.2	413
1981	EU38	1981	03	06.70593	12	21	18.61	-05	08	06.7	413
1981	EU38	1981	03	08.68165	12	19	54.96	-04	56	39.7	413
1981	EU38	1981	03	08.72332	12	19	53.16	-04	56	25.3	413
1981	EU38	1981	03	11.66134	12	17	39.40	-04	37	59.1	413
1981	EU38	1981	03	11.70301	12	17	37.38	-04	37	43.0	413
1981	EU38	1981	03	12.58070	12	16	55.66	-04	31	53.7	413
1981	EU38	1981	03	12.61890	12	16	53.84	-04	31	38.7	413
1981	EU38	1981	03	15.69509	12	14	20.39	-04	10	17.2	413
1981	EU38	1981	04	05.55430	11	55	45.21	-01	25	24.4	413
1981	EU38	1981	04	05.58312	11	55	43.91	-01	25	12.8	413
1981	EU38	1981	04	06.56195	11	54	55.87	-01	17	33.6	413
1981	EU38	1981	04	06.59668	11	54	54.19	-01	17	18.6	413
1981	EU38	1981	04	07.56303	11	54	07.96	-01	09	51.7	413
1981	EU38	1981	04	07.59776	11	54	06.45	-01	09	37.9	413
1981	EU38	1981	04	10.52714	11	51	53.29	-00	47	44.2	413
1981	EU38	1981	04	10.56186	11	51	51.87	-00	47	31.8	413
1981	EV38*	1981	03	01.59302	12	24	52.62	-06	41	32.2	19.0V 413
1981	EV38	1981	03	01.63816	12	24	51.10	-06	41	27.6	413
1981	EV38	1981	03	06.66426	12	21	52.60	-06	31	57.4	413
1981	EV38	1981	03	06.70593	12	21	51.11	-06	31	52.1	413
1981	EV38	1981	03	08.68165	12	20	34.34	-06	27	16.4	413
1981	EV38	1981	03	08.72332	12	20	32.77	-06	27	10.2	413
1981	EV38	1981	04	09.54382	11	57	14.30	-04	33	28.5	413
1981	EW38*	1981	03	01.59302	12	28	42.15	-09	46	10.4	18.5V 413
1981	EW38	1981	03	08.68165	12	24	12.03	-09	30	09.1	413
1981	EW38	1981	03	08.72332	12	24	10.15	-09	30	00.6	413
1981	EW38	1981	03	12.58070	12	21	22.14	-09	17	44.7	413
1981	EW38	1981	03	12.61890	12	21	19.99	-09	17	34.9	413
1981	EW38	1981	04	09.50909	11	58	53.89	-07	00	56.1	413
1981	EW38	1981	04	09.54382	11	58	52.49	-07	00	45.7	413
1981	EX38*	1981	03	02.52074	11	41	00.22	-09	56	17.6	19.0V 413
1981	EX38	1981	03	02.56588	11	40	58.11	-09	56	11.1	413
1981	EX38	1981	03	07.55280	11	36	36.23	-09	38	43.5	413
1981	EX38	1981	03	07.59447	11	36	34.29	-09	38	35.8	413
1981	EX38	1981	03	10.53941	11	33	52.72	-09	26	09.4	413
1981	EX38	1981	03	10.58108	11	33	50.72	-09	26	00.1	413
1981	EY38*	1981	03	02.52074	11	41	47.47	-14	29	28.3	18.5V 413
1981	EY38	1981	03	07.55280	11	37	13.13	-14	11	33.6	413
1981	EY38	1981	03	10.53941	11	34	20.76	-13	57	40.2	413
1981	EY38	1981	03	10.58108	11	34	18.29	-13	57	28.7	413
1981	EY38	1981	03	12.56765	11	32	20.86	-13	46	56.4	413
1981	EZ38*	1981	03	02.57859	11	41	51.35	+01	59	14.8	20.0V 413
1981	EZ38	1981	03	03.61076	11	41	02.12	+02	04	58.3	413
1981	EZ38	1981	03	07.60751	11	37	42.95	+02	28	04.4	413
1981	EZ38	1981	03	11.60352	11	34	18.30	+02	51	43.2	413
1981	EZ38	1981	03	11.64518	11	34	16.22	+02	51	56.6	413
1981	EA39*	1981	03	02.57859	11	42	36.40	+00	00	15.5	19.5V 413
1981	EA39	1981	03	03.61076	11	41	44.12	+00	04	41.6	413

1981	EA39	1981	03	07.60751	11	38	11.86	+00	23	17.0	413
1981	EA39	1981	03	11.64518	11	34	25.88	+00	43	36.8	413
1981	EA39	1981	03	16.69028	11	29	36.75	+01	10	20.4	413
1981	EB39*	1981	03	02.57859	11	42	56.03	-01	36	53.7	19.5V 413
1981	EB39	1981	03	02.62373	11	42	54.01	-01	36	32.5	413
1981	EB39	1981	03	03.61076	11	42	10.08	-01	27	38.2	413
1981	EB39	1981	03	07.60751	11	39	01.98	-00	49	38.3	413
1981	EB39	1981	03	07.64918	11	38	59.84	-00	49	15.1	413
1981	EB39	1981	03	11.64518	11	35	40.50	-00	08	53.0	413
1981	EB39	1981	03	16.69028	11	31	19.92	+00	44	29.6	413
1981	EB39	1981	03	29.52805	11	20	37.43	+03	02	39.9	413
1981	EB39	1981	03	29.56451	11	20	35.70	+03	03	00.7	413
1981	EB39	1981	04	11.60069	11	12	21.02	+05	06	52.7	413
1981	EC39*	1981	03	02.57859	11	43	59.66	-02	41	05.9	20.0V 413
1981	EC39	1981	03	03.56736	11	43	24.27	-02	30	22.5	413
1981	EC39	1981	03	03.61076	11	43	22.72	-02	29	55.9	413
1981	EC39	1981	03	07.64918	11	40	52.70	-01	44	44.9	413
1981	EC39	1981	03	11.60352	11	38	19.68	-00	58	50.8	413
1981	EC39	1981	03	11.64518	11	38	18.12	-00	58	24.5	413
1981	ED39*	1981	03	02.57859	11	44	14.75	-01	35	11.2	20.5V 413
1981	ED39	1981	03	07.64918	11	39	32.80	-01	06	37.8	413
1981	ED39	1981	03	11.60352	11	35	45.15	-00	42	39.8	413
1981	ED39	1981	03	11.64518	11	35	42.74	-00	42	25.9	413
1981	EE39*	1981	03	02.57859	11	44	41.40	+02	28	13.5	20.5V 413
1981	EE39	1981	03	02.62373	11	44	39.86	+02	28	26.3	413
1981	EE39	1981	03	07.60751	11	41	15.08	+03	00	09.4	413
1981	EE39	1981	03	11.60352	11	38	25.53	+03	26	01.3	413
1981	EE39	1981	03	11.64518	11	38	23.33	+03	26	18.8	413
1981	EF39*	1981	03	02.62373	11	44	53.83	+01	26	52.2	20.0V 413
1981	EF39	1981	03	07.60751	11	40	21.10	+01	49	06.4	413
1981	EF39	1981	03	07.64918	11	40	18.97	+01	49	15.4	413
1981	EF39	1981	03	11.60352	11	36	34.78	+02	07	40.5	413
1981	EF39	1981	03	16.69028	11	31	42.63	+02	31	44.9	413
1981	EF39	1981	03	16.73195	11	31	40.74	+02	31	49.4	413
1981	EG39*	1981	03	02.57859	11	45	53.34	+01	12	59.4	20.0V 413
1981	EG39	1981	03	02.62373	11	45	51.50	+01	13	06.9	413
1981	EG39	1981	03	03.56736	11	45	11.94	+01	16	24.7	413
1981	EG39	1981	03	03.61076	11	45	10.44	+01	16	32.1	413
1981	EG39	1981	03	07.64918	11	42	17.33	+01	31	00.5	413
1981	EG39	1981	03	11.60352	11	39	23.01	+01	45	43.7	413
1981	EH39*	1981	03	02.57859	11	46	24.70	-01	33	46.3	20.5V 413
1981	EH39	1981	03	02.62373	11	46	22.68	-01	33	38.3	413
1981	EH39	1981	03	03.61076	11	45	32.56	-01	30	09.9	413
1981	EH39	1981	03	11.60352	11	38	17.94	-00	57	39.1	413
1981	EJ39*	1981	03	02.57859	11	46	26.99	+01	27	16.4	17.5V 413
1981	EJ39	1981	03	02.62373	11	46	25.24	+01	27	25.9	413
1981	EJ39	1981	03	03.56736	11	45	44.92	+01	31	43.2	413
1981	EJ39	1981	03	03.61076	11	45	43.03	+01	31	55.2	413
1981	EJ39	1981	03	07.60751	11	42	47.92	+01	50	26.4	413
1981	EJ39	1981	03	11.60352	11	39	48.03	+02	09	26.5	413
1981	EJ39	1981	03	11.64518	11	39	46.17	+02	09	37.6	413
1981	EJ39	1981	03	16.73195	11	35	55.15	+02	33	59.6	413
1981	EK39*	1981	03	02.57859	11	46	57.97	+00	40	37.7	20.0V 413
1981	EK39	1981	03	02.62373	11	46	56.29	+00	40	50.2	413
1981	EK39	1981	03	07.60751	11	42	30.86	+01	15	59.6	413
1981	EK39	1981	03	11.64518	11	38	47.86	+01	45	25.9	413
1981	EL39*	1981	03	02.57859	11	47	16.98	+00	44	52.7	19.5V 413
1981	EL39	1981	03	03.61076	11	46	23.49	+00	51	37.0	413
1981	EL39	1981	03	07.60751	11	42	50.74	+01	18	21.0	413

1981	EL39	1981	03	07.64918	11	42	48.79	+01	18	34.8	413
1981	EL39	1981	03	11.64518	11	39	09.50	+01	46	05.7	413
1981	EM39*	1981	03	02.57859	11	47	29.44	+02	58	31.9	18.5V 413
1981	EM39	1981	03	02.62373	11	47	27.01	+02	58	38.5	413
1981	EM39	1981	03	03.61076	11	46	31.77	+03	01	30.0	413
1981	EM39	1981	03	07.60751	11	42	37.64	+03	13	42.8	413
1981	EM39	1981	03	07.64918	11	42	35.08	+03	13	49.5	413
1981	EM39	1981	03	11.60352	11	38	32.07	+03	26	32.4	413
1981	EM39	1981	03	11.64518	11	38	29.48	+03	26	39.7	413
1981	EM39	1981	03	16.73195	11	33	09.23	+03	43	06.8	413
1981	EM39	1981	03	29.52805	11	20	21.59	+04	19	00.1	413
1981	EM39	1981	03	29.56451	11	20	19.68	+04	19	03.8	413
1981	EM39	1981	04	08.50490	11	12	26.97	+04	34	50.0	413
1981	EM39	1981	04	08.53962	11	12	25.61	+04	34	50.9	413
1981	EM39	1981	04	11.56596	11	10	34.09	+04	36	44.4	413
1981	EM39	1981	04	11.60069	11	10	32.81	+04	36	43.5	413
1981	EN39*	1981	03	02.62373	11	47	34.69	-00	05	20.1	20.0V 413
1981	EN39	1981	03	03.56736	11	46	53.22	-00	00	01.8	413
1981	EN39	1981	03	03.61076	11	46	51.25	+00	00	13.0	413
1981	EN39	1981	03	07.60751	11	43	52.13	+00	23	15.5	413
1981	EN39	1981	03	11.60352	11	40	44.98	+00	47	29.1	413
1981	EN39	1981	03	11.64518	11	40	42.99	+00	47	43.6	413
1981	EN39	1981	03	29.52805	11	26	50.14	+02	37	35.2	413
1981	EO39*	1981	03	02.57859	11	47	36.26	+02	03	22.3	20.0V 413
1981	EO39	1981	03	02.62373	11	47	34.04	+02	03	36.4	413
1981	EO39	1981	03	07.60751	11	43	40.87	+02	32	38.7	413
1981	EO39	1981	03	07.64918	11	43	38.71	+02	32	54.3	413
1981	EO39	1981	03	11.60352	11	40	26.31	+02	56	35.9	413
1981	EP39*	1981	03	02.57859	11	48	07.95	+00	44	39.3	20.0V 413
1981	EP39	1981	03	02.62373	11	48	05.85	+00	44	57.2	413
1981	EP39	1981	03	07.60751	11	44	04.51	+01	24	13.1	413
1981	EP39	1981	03	07.64918	11	44	02.15	+01	24	33.8	413
1981	EP39	1981	03	11.64518	11	40	36.94	+01	57	34.8	413
1981	EQ39*	1981	03	02.57859	11	49	51.09	+00	22	53.5	19.5V 413
1981	EQ39	1981	03	02.62373	11	49	49.31	+00	23	04.2	413
1981	EQ39	1981	03	03.56736	11	49	10.62	+00	27	13.9	413
1981	EQ39	1981	03	07.60751	11	46	18.15	+00	45	46.9	413
1981	EQ39	1981	03	11.64518	11	43	16.10	+01	05	27.8	413
1981	EQ39	1981	04	08.50490	11	23	30.86	+03	16	21.9	413
1981	EQ39	1981	04	08.53962	11	23	29.80	+03	16	28.4	413
1981	EQ39	1981	04	11.56596	11	21	57.66	+03	26	58.8	413
1981	ER39*	1981	03	02.57859	11	53	29.30	+01	57	43.6	20.0V 413
1981	ER39	1981	03	02.62373	11	53	27.11	+01	57	55.0	413
1981	ER39	1981	03	07.60751	11	49	08.08	+02	17	57.9	413
1981	ER39	1981	03	07.64918	11	49	05.85	+02	18	11.1	413
1981	ER39	1981	03	11.60352	11	45	29.08	+02	34	58.3	413
1981	ES39*	1981	03	02.57859	11	55	08.42	-01	39	45.3	20.0V 413
1981	ES39	1981	03	02.62373	11	55	06.74	-01	39	35.6	413
1981	ES39	1981	03	07.60751	11	51	24.10	-01	17	16.5	413
1981	ES39	1981	03	07.64918	11	51	22.32	-01	17	06.5	413
1981	ES39	1981	03	11.60352	11	48	17.77	-00	58	10.0	413
1981	ES39	1981	03	11.64518	11	48	15.85	-00	57	58.7	413
1981	ET39*	1981	03	02.57859	11	55	31.63	-01	46	55.0	19.5V 413
1981	ET39	1981	03	02.62373	11	55	29.85	-01	46	47.0	413
1981	ET39	1981	03	03.61076	11	54	47.83	-01	43	42.7	413
1981	ET39	1981	03	07.60751	11	51	51.54	-01	30	29.4	413
1981	ET39	1981	03	07.64918	11	51	49.70	-01	30	21.7	413
1981	ET39	1981	03	11.60352	11	48	48.69	-01	16	14.7	413
1981	ET39	1981	03	11.64518	11	48	46.86	-01	16	06.8	413

1981	EU39*	1981	03	02.62373	11	55	45.40	+03	33	20.1	19.5V 413
1981	EU39	1981	03	03.61076	11	54	52.75	+03	35	38.3	413
1981	EU39	1981	03	07.60751	11	51	12.49	+03	45	21.1	413
1981	EU39	1981	03	07.64918	11	51	09.78	+03	45	27.7	413
1981	EU39	1981	03	11.60352	11	47	22.83	+03	55	21.6	413
1981	EU39	1981	03	11.64518	11	47	20.43	+03	55	26.5	413
1981	EU39	1981	03	16.73195	11	42	22.59	+04	08	01.8	413
1981	EU39	1981	03	29.56451	11	30	15.66	+04	34	51.3	413
1981	EU39	1981	04	08.50490	11	22	19.40	+04	46	20.3	413
1981	EU39	1981	04	11.60069	11	20	15.06	+04	47	40.9	413
1981	EV39*	1981	03	02.57859	11	56	45.80	-00	44	36.0	20.5V 413
1981	EV39	1981	03	03.56736	11	56	04.51	-00	38	18.9	413
1981	EV39	1981	03	03.61076	11	56	02.28	-00	37	57.7	413
1981	EV39	1981	03	07.60751	11	53	08.60	-00	11	37.6	413
1981	EV39	1981	03	07.64918	11	53	06.37	-00	11	18.1	413
1981	EW39*	1981	03	02.57859	11	58	31.97	+01	45	26.7	20.0V 413
1981	EW39	1981	03	02.62373	11	58	29.73	+01	45	29.1	413
1981	EW39	1981	03	03.56736	11	57	47.76	+01	47	24.0	413
1981	EW39	1981	03	07.60751	11	54	39.78	+01	55	57.6	413
1981	EW39	1981	03	11.60352	11	51	25.24	+02	04	57.7	413
1981	EW39	1981	03	11.64518	11	51	23.16	+02	05	03.6	413
1981	EW39	1981	03	16.69028	11	47	09.71	+02	16	48.9	413
1981	EX39*	1981	03	02.62373	11	58	52.89	-02	21	16.6	20.5V 413
1981	EX39	1981	03	07.60751	11	54	42.27	-01	54	27.0	413
1981	EX39	1981	03	11.60352	11	51	11.07	-01	31	23.0	413
1981	EX39	1981	03	11.64518	11	51	08.89	-01	31	08.6	413
1981	EX39	1981	03	16.69028	11	46	34.30	-01	00	37.5	413
1981	EX39	1981	03	16.73195	11	46	32.69	-01	00	26.3	413
1981	EY39*	1981	03	02.57859	11	59	44.80	-00	36	34.3	19.5V 413
1981	EY39	1981	03	02.62373	11	59	42.70	-00	36	21.5	413
1981	EY39	1981	03	07.64918	11	55	40.93	-00	07	03.0	413
1981	EY39	1981	03	11.60352	11	52	13.50	+00	18	04.6	413
1981	EY39	1981	03	11.64518	11	52	11.01	+00	18	22.3	413
1981	EY39	1981	03	16.69028	11	47	33.76	+00	51	58.8	413
1981	EY39	1981	03	29.52805	11	36	04.45	+02	16	29.5	413
1981	EY39	1981	03	29.56451	11	36	02.79	+02	16	42.0	413
1981	EY39	1981	04	08.50490	11	28	55.04	+03	10	33.5	413
1981	EZ39*	1981	03	02.57859	11	59	46.12	+01	12	29.1	19.5V 413
1981	EZ39	1981	03	03.56736	11	58	51.43	+01	16	40.8	413
1981	EZ39	1981	03	07.60751	11	54	58.52	+01	34	39.8	413
1981	EZ39	1981	03	07.64918	11	54	56.25	+01	34	50.5	413
1981	EZ39	1981	03	16.69028	11	45	43.91	+02	17	29.1	413
1981	EZ39	1981	03	16.73195	11	45	41.41	+02	17	40.0	413
1981	EA40*	1981	03	02.57859	12	00	07.65	+02	45	20.2	20.0V 413
1981	EA40	1981	03	02.62373	12	00	05.87	+02	45	33.6	413
1981	EA40	1981	03	07.60751	11	56	51.15	+03	10	26.7	413
1981	EA40	1981	03	07.64918	11	56	49.61	+03	10	37.5	413
1981	EA40	1981	03	11.60352	11	54	06.39	+03	30	59.4	413
1981	EA40	1981	03	11.64518	11	54	04.66	+03	31	11.7	413
1981	EA40	1981	03	16.69028	11	50	29.16	+03	57	27.3	413
1981	EA40	1981	03	29.52805	11	41	20.23	+05	01	40.8	413
1981	EA40	1981	03	29.56451	11	41	17.87	+05	01	54.8	413
1981	EB40*	1981	03	02.57859	12	00	21.38	+00	38	38.1	19.0V 413
1981	EB40	1981	03	03.56736	11	59	41.10	+00	42	55.6	413
1981	EB40	1981	03	03.61076	11	59	39.02	+00	43	09.4	413
1981	EB40	1981	03	07.60751	11	56	50.40	+01	00	59.8	413
1981	EB40	1981	03	07.64918	11	56	48.64	+01	01	10.9	413
1981	EB40	1981	03	11.60352	11	53	53.53	+01	19	37.7	413
1981	EB40	1981	03	16.73195	11	50	00.24	+01	44	04.6	413

1981	EC40*	1981	03	02.52074	12	00	21.55	-13	48	03.0	20.0V 413
1981	EC40	1981	03	02.56588	12	00	19.74	-13	48	00.2	413
1981	EC40	1981	03	07.55280	11	56	21.76	-13	37	35.3	413
1981	EC40	1981	03	07.59447	11	56	19.80	-13	37	29.8	413
1981	EC40	1981	03	10.53941	11	53	52.95	-13	29	27.6	413
1981	EC40	1981	03	10.58108	11	53	51.37	-13	29	20.3	413
1981	ED40*	1981	03	02.62373	12	00	47.45	-01	26	15.6	19.0V 413
1981	ED40	1981	03	03.56736	12	00	11.98	-01	18	34.4	413
1981	ED40	1981	03	07.60751	11	57	33.48	-00	44	53.5	413
1981	ED40	1981	03	07.64918	11	57	31.89	-00	44	34.5	413
1981	ED40	1981	03	11.60352	11	54	49.17	-00	10	32.2	413
1981	ED40	1981	03	16.69028	11	51	14.80	+00	33	48.3	413
1981	EE40*	1981	03	02.57859	12	01	22.90	+02	04	49.7	20.0V 413
1981	EE40	1981	03	07.64918	11	57	22.66	+02	27	56.1	413
1981	EE40	1981	03	11.60352	11	53	57.79	+02	47	14.1	413
1981	EE40	1981	03	11.64518	11	53	55.60	+02	47	25.5	413
1981	EF40*	1981	03	02.57859	12	01	54.96	+01	34	21.8	20.0V 413
1981	EF40	1981	03	02.62373	12	01	52.87	+01	34	29.9	413
1981	EF40	1981	03	03.61076	12	01	07.83	+01	36	52.6	413
1981	EF40	1981	03	07.60751	11	57	58.26	+01	46	59.6	413
1981	EF40	1981	03	07.64918	11	57	56.12	+01	47	06.9	413
1981	EF40	1981	03	11.60352	11	54	40.55	+01	57	39.8	413
1981	EF40	1981	03	11.64518	11	54	38.38	+01	57	46.7	413
1981	EF40	1981	04	08.53962	11	32	14.84	+03	04	39.4	413
1981	EF40	1981	04	11.60069	11	30	16.65	+03	09	02.0	413
1981	EG40*	1981	03	02.57859	12	02	24.20	+01	03	06.3	19.5V 413
1981	EG40	1981	03	03.61076	12	01	44.36	+01	08	00.1	413
1981	EG40	1981	03	07.64918	11	59	01.77	+01	27	41.6	413
1981	EG40	1981	03	11.64518	11	56	14.28	+01	47	44.9	413
1981	EH40*	1981	03	02.62373	12	03	10.14	+01	13	02.3	20.0V 413
1981	EH40	1981	03	03.56736	12	02	28.85	+01	16	04.9	413
1981	EH40	1981	03	03.61076	12	02	26.97	+01	16	13.2	413
1981	EH40	1981	03	07.60751	11	59	23.38	+01	29	45.7	413
1981	EH40	1981	03	11.60352	11	56	07.66	+01	44	13.4	413
1981	EH40	1981	03	11.64518	11	56	05.54	+01	44	21.9	413
1981	EH40	1981	03	29.52805	11	40	41.74	+02	50	26.4	413
1981	EH40	1981	04	11.56596	11	31	12.02	+03	25	45.1	413
1981	EH40	1981	04	11.60069	11	31	10.73	+03	25	49.2	413
1981	EJ40*	1981	03	02.52074	12	03	26.55	-12	26	40.2	20.0V 413
1981	EJ40	1981	03	02.56588	12	03	24.10	-12	26	46.2	413
1981	EJ40	1981	03	07.55280	11	58	06.31	-12	35	04.5	413
1981	EJ40	1981	03	07.59447	11	58	03.86	-12	35	08.2	413
1981	EJ40	1981	03	10.53941	11	54	49.74	-12	38	19.9	413
1981	EJ40	1981	03	12.56765	11	52	34.70	-12	39	51.0	413
1981	EK40*	1981	03	02.63403	12	04	47.13	-02	01	21.3	19.0V 413
1981	EK40	1981	03	06.60816	12	01	58.95	-01	38	34.8	413
1981	EK40	1981	03	11.60352	11	58	14.48	-01	08	10.6	413
1981	EK40	1981	03	11.64518	11	58	12.57	-01	07	55.5	413
1981	EK40	1981	03	11.66134	11	58	11.74	-01	07	48.9	413
1981	EK40	1981	03	11.70301	11	58	10.01	-01	07	34.4	413
1981	EK40	1981	03	15.69509	11	55	03.37	-00	42	10.5	413
1981	EK40	1981	03	16.69028	11	54	16.52	-00	35	50.5	413
1981	EK40	1981	03	16.73195	11	54	14.60	-00	35	34.7	413
1981	EK40	1981	04	05.55430	11	39	18.35	+01	29	17.4	413
1981	EK40	1981	04	05.58312	11	39	17.35	+01	29	22.9	413
1981	EK40	1981	04	06.59668	11	38	37.01	+01	35	13.4	413
1981	EK40	1981	04	10.52714	11	36	09.35	+01	56	49.0	413
1981	EL40*	1981	03	02.63403	12	05	10.74	-02	24	13.3	19.5V 413
1981	EL40	1981	03	11.66134	11	57	53.49	-02	01	50.4	413

1981	EL40	1981	03	11.70301	11	57	50.75	-02	01	40.9	413
1981	EL40	1981	03	15.64523	11	54	23.05	-01	49	39.9	413
1981	EL40	1981	03	15.68342	11	54	21.11	-01	49	32.1	413
1981	EL40	1981	03	15.73328	11	54	17.78	-01	49	18.8	413
1981	EM40*	1981	03	02.57859	12	05	35.57	+02	57	26.0	20.5V 413
1981	EM40	1981	03	07.60751	12	01	53.71	+03	26	59.4	413
1981	EM40	1981	03	11.60352	11	58	46.43	+03	51	05.8	413
1981	EN40*	1981	03	02.63403	12	05	42.18	-02	12	09.3	18.5V 413
1981	EN40	1981	03	06.64983	12	02	29.25	-01	47	30.7	413
1981	EN40	1981	03	11.70301	11	58	07.66	-01	13	57.3	413
1981	EN40	1981	03	16.73195	11	53	35.07	-00	38	41.4	413
1981	EO40*	1981	03	02.63403	12	05	44.23	+00	15	16.1	19.5V 413
1981	EO40	1981	03	02.67917	12	05	42.92	+00	15	31.5	413
1981	EO40	1981	03	03.56736	12	05	08.30	+00	23	12.1	413
1981	EO40	1981	03	06.60816	12	03	05.02	+00	50	07.2	413
1981	EO40	1981	03	11.66134	11	59	27.56	+01	36	17.2	413
1981	EO40	1981	03	11.70301	11	59	25.73	+01	36	37.6	413
1981	EP40*	1981	03	02.67917	12	06	00.80	-04	12	35.8	19.0V 413
1981	EP40	1981	03	06.60816	12	02	55.37	-03	45	15.2	413
1981	EP40	1981	03	07.66569	12	02	02.75	-03	37	30.8	413
1981	EP40	1981	03	11.54742	11	58	42.79	-03	07	44.8	413
1981	EP40	1981	03	11.58909	11	58	41.30	-03	07	30.7	413
1981	EP40	1981	03	15.64523	11	55	02.81	-02	34	37.3	413
1981	EP40	1981	03	15.68342	11	55	00.69	-02	34	17.7	413
1981	EQ40*	1981	03	02.67917	12	06	16.61	-00	58	30.1	19.5V 413
1981	EQ40	1981	03	06.60816	12	02	51.75	-00	33	45.2	413
1981	EQ40	1981	03	11.60352	11	58	09.22	+00	00	10.8	413
1981	EQ40	1981	03	11.64518	11	58	06.74	+00	00	28.5	413
1981	EQ40	1981	03	11.70301	11	58	03.33	+00	00	54.4	413
1981	EQ40	1981	03	16.69028	11	53	06.30	+00	36	32.4	413
1981	ER40*	1981	03	02.63403	12	06	39.65	-02	28	56.1	20.0V 413
1981	ER40	1981	03	02.67917	12	06	37.45	-02	28	46.8	413
1981	ER40	1981	03	11.66134	11	59	25.85	-01	50	51.5	413
1981	ER40	1981	03	15.73328	11	55	50.65	-01	30	55.1	413
1981	ES40*	1981	03	02.63403	12	06	51.94	-03	51	31.2	19.0V 413
1981	ES40	1981	03	06.64983	12	03	55.40	-03	20	49.7	413
1981	ES40	1981	03	11.70301	11	59	59.80	-02	40	03.1	413
1981	ES40	1981	03	15.69509	11	56	47.51	-02	06	35.7	413
1981	ET40*	1981	03	02.63403	12	07	31.78	-04	09	56.4	20.0V 413
1981	ET40	1981	03	11.66134	12	00	24.79	-03	36	45.1	413
1981	ET40	1981	03	15.69509	11	56	57.36	-03	19	10.7	413
1981	EU40*	1981	03	02.67917	12	07	35.38	-04	00	47.3	19.5V 413
1981	EU40	1981	03	11.70301	11	59	54.61	-03	08	15.3	413
1981	EU40	1981	03	15.69509	11	56	14.81	-02	42	11.8	413
1981	EV40*	1981	03	02.67917	12	07	57.52	-00	02	37.2	20.0V 413
1981	EV40	1981	03	06.60816	12	04	25.33	+00	02	29.2	413
1981	EV40	1981	03	11.66134	11	59	37.58	+00	10	18.6	413
1981	EV40	1981	03	11.70301	11	59	35.05	+00	10	22.1	413
1981	EV40	1981	03	15.73328	11	55	37.95	+00	17	14.1	413
1981	EW40*	1981	03	02.63403	12	08	07.38	-01	29	08.5	20.0V 413
1981	EW40	1981	03	11.70301	11	59	29.86	-01	07	01.4	413
1981	EW40	1981	03	15.73328	11	55	22.91	-00	55	25.4	413
1981	EX40*	1981	03	02.63403	12	08	14.37	-02	50	08.8	19.5V 413
1981	EX40	1981	03	06.64983	12	05	10.50	-02	43	57.7	413
1981	EX40	1981	03	11.66134	12	01	06.57	-02	34	30.5	413
1981	EX40	1981	03	15.69509	11	57	42.59	-02	25	49.7	413
1981	EX40	1981	03	15.73328	11	57	40.76	-02	25	44.8	413
1981	EY40*	1981	03	02.67917	12	08	36.22	-02	26	39.5	20.0V 413
1981	EY40	1981	03	11.66134	12	01	54.45	-01	41	38.1	413

1981	EY40	1981	03	15.69509	11	58	37.48	-01	19	12.3	413
1981	EZ40*	1981	03	02.63403	12	09	01.15	-01	53	04.2	19.5V 413
1981	EZ40	1981	03	02.67917	12	08	58.88	-01	52	55.6	413
1981	EZ40	1981	03	06.60816	12	05	26.10	-01	38	05.9	413
1981	EZ40	1981	03	06.64983	12	05	24.08	-01	37	59.7	413
1981	EZ40	1981	03	11.66134	12	00	34.66	-01	17	05.1	413
1981	EZ40	1981	03	15.73328	11	56	30.00	-00	58	54.5	413
1981	EA41*	1981	03	02.63403	12	09	17.91	-02	13	14.3	19.0V 413
1981	EA41	1981	03	02.67917	12	09	16.41	-02	13	00.8	413
1981	EA41	1981	03	06.60816	12	06	54.55	-01	50	08.9	413
1981	EA41	1981	03	11.66134	12	03	37.42	-01	18	48.0	413
1981	EA41	1981	03	11.70301	12	03	35.64	-01	18	33.2	413
1981	EA41	1981	03	15.73328	12	00	50.51	-00	52	22.5	413
1981	EB41*	1981	03	02.63403	12	09	27.70	-04	17	12.0	19.5V 413
1981	EB41	1981	03	06.60816	12	06	47.47	-03	46	16.6	413
1981	EB41	1981	03	06.64983	12	06	45.91	-03	45	59.7	413
1981	EB41	1981	03	11.66134	12	03	02.64	-03	03	16.4	413
1981	EB41	1981	03	15.69509	11	59	51.21	-02	26	40.1	413
1981	EC41*	1981	03	02.63403	12	09	31.36	-01	37	58.6	19.5V 413
1981	EC41	1981	03	11.66134	12	01	53.08	-00	51	53.4	413
1981	EC41	1981	03	15.69509	11	58	11.98	-00	29	18.4	413
1981	EC41	1981	03	15.73328	11	58	09.84	-00	29	05.7	413
1981	ED41*	1981	03	02.67917	12	10	09.30	-00	30	59.6	19.5V 413
1981	ED41	1981	03	06.60816	12	07	26.02	-00	06	24.4	413
1981	ED41	1981	03	11.66134	12	03	27.16	+00	28	24.2	413
1981	ED41	1981	03	11.70301	12	03	25.10	+00	28	42.7	413
1981	ED41	1981	03	15.69509	11	59	59.65	+00	58	04.9	413
1981	ED41	1981	04	05.55430	11	41	38.12	+03	31	36.2	413
1981	EE41*	1981	03	02.67917	12	11	18.96	-02	45	28.1	20.0V 413
1981	EE41	1981	03	11.70301	12	04	24.91	-01	32	32.0	413
1981	EE41	1981	03	15.69509	12	01	05.20	-00	57	50.0	413
1981	EE41	1981	03	15.73328	12	01	03.24	-00	57	30.0	413
1981	EF41*	1981	03	02.63403	12	11	51.56	-02	10	30.1	19.5V 413
1981	EF41	1981	03	02.67917	12	11	49.56	-02	10	15.2	413
1981	EF41	1981	03	06.60816	12	08	39.55	-01	46	49.8	413
1981	EF41	1981	03	11.66134	12	04	16.69	-01	14	27.8	413
1981	EF41	1981	03	15.69509	12	00	38.15	-00	47	27.2	413
1981	EG41*	1981	03	02.63403	12	12	25.07	-01	13	36.7	20.5V 413
1981	EG41	1981	03	06.60816	12	09	15.51	-01	09	10.9	413
1981	EG41	1981	03	11.70301	12	04	49.10	-01	01	35.4	413
1981	EH41*	1981	03	02.63403	12	12	49.15	-04	41	38.3	17.0V 413
1981	EH41	1981	03	02.67917	12	12	47.58	-04	41	23.7	413
1981	EH41	1981	03	06.60816	12	10	27.66	-04	16	50.8	413
1981	EH41	1981	03	06.64983	12	10	26.21	-04	16	35.8	413
1981	EH41	1981	03	11.66134	12	07	12.08	-03	42	42.6	413
1981	EH41	1981	03	15.69509	12	04	26.75	-03	13	45.7	413
1981	EH41	1981	03	15.73328	12	04	25.22	-03	13	28.9	413
1981	EH41	1981	04	05.55430	11	50	00.70	-00	35	59.9	413
1981	EH41	1981	04	05.58312	11	49	59.80	-00	35	50.3	413
1981	EH41	1981	04	06.56195	11	49	22.74	-00	28	39.4	413
1981	EH41	1981	04	07.56303	11	48	45.73	-00	21	24.7	413
1981	EH41	1981	04	07.59776	11	48	44.44	-00	21	11.4	413
1981	EH41	1981	04	10.52714	11	47	00.68	-00	00	28.4	413
1981	EH41	1981	04	10.56186	11	46	59.60	-00	00	16.7	413
1981	EJ41*	1981	03	02.67917	12	12	50.48	-01	52	03.5	20.5V 413
1981	EJ41	1981	03	11.66134	12	07	12.30	-00	55	54.9	413
1981	EJ41	1981	03	11.70301	12	07	10.70	-00	55	38.5	413
1981	EJ41	1981	03	15.69509	12	04	26.00	-00	28	56.3	413
1981	EK41*	1981	03	02.63403	12	12	54.91	-04	33	46.5	17.5V 413

1981	EK41	1981	03	02.67917	12	12	52.90	-04	33	28.2	413
1981	EK41	1981	03	06.60816	12	10	00.01	-04	05	17.1	413
1981	EK41	1981	03	06.64983	12	09	58.01	-04	04	59.1	413
1981	EK41	1981	03	11.66134	12	05	53.96	-03	25	16.1	413
1981	EK41	1981	03	11.70301	12	05	51.87	-03	24	56.1	413
1981	EK41	1981	03	15.73328	12	02	22.05	-02	50	33.8	413
1981	EK41	1981	04	05.55430	11	44	19.28	+00	15	34.3	413
1981	EK41	1981	04	05.58312	11	44	18.33	+00	15	43.5	413
1981	EK41	1981	04	06.56195	11	43	33.92	+00	23	58.0	413
1981	EK41	1981	04	06.59668	11	43	32.38	+00	24	13.3	413
1981	EK41	1981	04	07.56303	11	42	49.90	+00	32	10.6	413
1981	EK41	1981	04	07.59776	11	42	48.63	+00	32	23.8	413
1981	EL41*	1981	03	02.67917	12	13	40.22	+00	48	58.9	20.0V 413
1981	EL41	1981	03	06.64983	12	10	44.19	+00	56	34.0	413
1981	EL41	1981	03	11.66134	12	06	46.25	+01	07	11.6	413
1981	EL41	1981	03	11.70301	12	06	44.42	+01	07	17.4	413
1981	EL41	1981	03	15.73328	12	03	23.40	+01	16	22.1	413
1981	EM41*	1981	03	02.67917	12	14	27.25	-04	17	10.1	19.0V 413
1981	EM41	1981	03	06.60816	12	11	49.88	-04	06	14.2	413
1981	EM41	1981	03	06.64983	12	11	47.89	-04	06	03.7	413
1981	EM41	1981	03	11.66134	12	08	13.46	-03	50	14.0	413
1981	EM41	1981	04	05.55430	11	49	43.96	-02	18	25.2	413
1981	EM41	1981	04	05.58312	11	49	43.23	-02	18	23.0	413
1981	EM41	1981	04	10.52714	11	46	26.48	-02	00	50.3	413
1981	EN41*	1981	03	02.63403	12	14	40.92	+00	40	17.2	19.5V 413
1981	EN41	1981	03	11.66134	12	08	27.44	+01	32	10.0	413
1981	EN41	1981	03	11.70301	12	08	25.39	+01	32	24.8	413
1981	EN41	1981	03	15.69509	12	05	20.16	+01	56	58.9	413
1981	EO41*	1981	03	02.67917	12	14	48.06	+00	55	10.6	19.0V 413
1981	EO41	1981	03	06.60816	12	11	45.75	+01	06	06.2	413
1981	EO41	1981	03	11.66134	12	07	35.85	+01	21	11.8	413
1981	EO41	1981	03	15.69509	12	04	07.47	+01	33	45.9	413
1981	EP41*	1981	03	02.67917	12	15	06.62	-01	39	52.1	20.0V 413
1981	EP41	1981	03	11.66134	12	07	16.05	-00	58	23.7	413
1981	EP41	1981	03	15.69509	12	03	28.30	-00	37	59.9	413
1981	EP41	1981	03	15.73328	12	03	26.18	-00	37	46.5	413
1981	EQ41*	1981	03	02.63403	12	15	39.33	-04	17	03.7	20.5V 413
1981	EQ41	1981	03	06.64983	12	12	43.15	-04	05	14.2	413
1981	EQ41	1981	03	11.66134	12	08	47.89	-03	48	29.8	413
1981	EQ41	1981	03	11.70301	12	08	45.79	-03	48	21.8	413
1981	EQ41	1981	03	15.69509	12	05	29.26	-03	33	33.3	413
1981	EQ41	1981	04	05.55430	11	48	23.55	-02	08	55.3	413
1981	ER41*	1981	03	02.63403	12	15	45.52	+00	50	03.8	19.0V 413
1981	ER41	1981	03	06.60816	12	11	55.89	+00	40	05.7	413
1981	ER41	1981	03	06.64983	12	11	53.67	+00	40	01.2	413
1981	ER41	1981	03	11.66134	12	06	41.96	+00	28	06.5	413
1981	ER41	1981	03	15.69509	12	02	17.94	+00	18	51.4	413
1981	ER41	1981	03	15.73328	12	02	15.59	+00	18	45.8	413
1981	ES41*	1981	03	02.63403	12	15	55.72	-01	12	12.6	17.0V 413
1981	ES41	1981	03	06.60816	12	13	20.20	-00	58	17.9	413
1981	ES41	1981	03	06.64983	12	13	18.57	-00	58	08.2	413
1981	ES41	1981	03	11.66134	12	09	44.74	-00	38	50.9	413
1981	ES41	1981	03	11.70301	12	09	43.02	-00	38	41.3	413
1981	ES41	1981	03	15.69509	12	06	43.41	-00	22	22.3	413
1981	ES41	1981	03	15.73328	12	06	41.76	-00	22	13.3	413
1981	ET41*	1981	03	02.67917	12	16	51.88	-01	05	15.2	19.5V 413
1981	ET41	1981	03	06.64983	12	13	57.10	-00	33	30.1	413
1981	ET41	1981	03	11.66134	12	09	56.62	+00	08	50.7	413
1981	ET41	1981	03	11.70301	12	09	54.55	+00	09	12.1	413

1981	ET41	1981	03	15.69509	12	06	31.36	+00	44	10.3	413
1981	ET41	1981	03	15.73328	12	06	29.45	+00	44	29.3	413
1981	ET41	1981	04	06.56195	11	47	58.32	+03	50	17.1	413
1981	ET41	1981	04	06.59668	11	47	56.80	+03	50	31.2	413
1981	EU41*	1981	03	02.63403	12	17	09.63	-03	40	11.8	20.0V 413
1981	EU41	1981	03	06.60816	12	14	02.27	-03	17	11.5	413
1981	EU41	1981	03	11.66134	12	09	42.28	-02	44	58.3	413
1981	EU41	1981	03	11.70301	12	09	39.96	-02	44	40.8	413
1981	EU41	1981	03	15.69509	12	06	03.02	-02	17	30.2	413
1981	EU41	1981	03	15.73328	12	06	00.99	-02	17	14.8	413
1981	EV41*	1981	03	02.63403	12	17	23.33	-04	03	24.9	19.0V 413
1981	EV41	1981	03	02.67917	12	17	21.39	-04	03	16.6	413
1981	EV41	1981	03	06.60816	12	14	33.32	-03	50	14.1	413
1981	EV41	1981	03	11.66134	12	10	37.36	-03	30	53.7	413
1981	EV41	1981	03	15.69509	12	07	17.74	-03	13	49.2	413
1981	EV41	1981	04	05.55430	11	49	58.74	-01	37	42.0	413
1981	EV41	1981	04	05.58312	11	49	57.86	-01	37	36.6	413
1981	EW41*	1981	03	02.67917	12	17	26.81	-00	51	22.6	20.0V 413
1981	EW41	1981	03	06.64983	12	14	28.26	-00	29	00.5	413
1981	EW41	1981	03	11.66134	12	10	20.40	+00	01	29.2	413
1981	EW41	1981	03	15.69509	12	06	46.18	+00	27	34.7	413
1981	EX41*	1981	03	02.63403	12	18	32.04	-02	41	54.2	18.5V 413
1981	EX41	1981	03	06.60816	12	16	04.75	-02	25	18.3	413
1981	EX41	1981	03	06.64983	12	16	03.48	-02	25	08.8	413
1981	EX41	1981	03	11.66134	12	12	44.19	-02	02	38.8	413
1981	EX41	1981	03	11.70301	12	12	42.56	-02	02	26.6	413
1981	EX41	1981	03	15.69509	12	09	56.84	-01	43	39.4	413
1981	EX41	1981	03	15.73328	12	09	55.15	-01	43	27.3	413
1981	EX41	1981	04	06.59668	11	54	44.78	+00	01	20.8	413
1981	EX41	1981	04	10.52714	11	52	19.67	+00	18	22.6	413
1981	EY41*	1981	03	02.67917	12	19	17.72	-03	03	36.8	20.0V 413
1981	EY41	1981	03	06.60816	12	16	38.63	-02	42	38.7	413
1981	EY41	1981	03	11.66134	12	12	46.46	-02	12	13.0	413
1981	EY41	1981	03	15.73328	12	09	22.99	-01	45	35.1	413
1981	EZ41*	1981	03	02.63403	12	19	18.46	-00	05	02.7	19.5V 413
1981	EZ41	1981	03	11.66134	12	11	31.61	+00	28	25.0	413
1981	EZ41	1981	03	15.69509	12	07	45.88	+00	44	38.0	413
1981	EZ41	1981	03	15.73328	12	07	43.81	+00	44	47.4	413
1981	EA42*	1981	03	02.67917	12	19	22.63	-01	31	25.5	20.0V 413
1981	EA42	1981	03	06.60816	12	16	24.91	-00	57	23.0	413
1981	EA42	1981	03	06.64983	12	16	22.99	-00	57	00.4	413
1981	EA42	1981	03	11.66134	12	12	13.21	-00	10	50.3	413
1981	EA42	1981	03	11.70301	12	12	10.98	-00	10	29.6	413
1981	EB42*	1981	03	02.67917	12	19	34.74	-01	57	35.1	20.0V 413
1981	EB42	1981	03	06.64983	12	17	12.44	-01	36	03.6	413
1981	EB42	1981	03	11.66134	12	13	57.37	-01	07	03.5	413
1981	EB42	1981	03	11.70301	12	13	55.80	-01	06	49.3	413
1981	EB42	1981	03	15.73328	12	11	08.80	-00	42	23.2	413
1981	EC42*	1981	03	02.67917	12	20	30.13	-01	34	56.7	20.0V 413
1981	EC42	1981	03	06.60816	12	17	57.89	-01	12	37.9	413
1981	EC42	1981	03	11.66134	12	14	14.93	-00	41	00.5	413
1981	EC42	1981	03	15.69509	12	11	00.46	-00	14	01.3	413
1981	EC42	1981	03	15.73328	12	10	58.23	-00	13	44.0	413
1981	ED42*	1981	03	02.67917	12	20	48.36	-00	50	11.5	19.5V 413
1981	ED42	1981	03	06.60816	12	18	37.65	-00	28	14.0	413
1981	ED42	1981	03	11.70301	12	15	28.70	+00	02	17.5	413
1981	ED42	1981	03	15.69509	12	12	48.33	+00	27	27.6	413
1981	EE42*	1981	03	02.63403	12	20	55.42	-00	33	30.0	19.5V 413
1981	EE42	1981	03	02.67917	12	20	53.67	-00	33	08.8	413

1981	EE42	1981	03	11.66134	12	15	41.78	+00	37	07.5	413
1981	EE42	1981	03	15.69509	12	13	07.93	+01	09	57.5	413
1981	EE42	1981	03	15.73328	12	13	06.48	+01	10	16.2	413
1981	EF42*	1981	03	02.63403	12	20	59.10	-00	13	35.5	19.0V 413
1981	EF42	1981	03	02.67917	12	20	57.46	-00	13	26.1	413
1981	EF42	1981	03	06.60816	12	18	22.68	+00	02	49.0	413
1981	EF42	1981	03	11.70301	12	14	38.75	+00	25	55.7	413
1981	EF42	1981	03	15.69509	12	11	28.81	+00	45	11.6	413
1981	EF42	1981	04	05.55430	11	54	08.85	+02	25	04.4	413
1981	EF42	1981	04	05.58312	11	54	07.58	+02	25	11.3	413
1981	EG42*	1981	03	02.63403	12	21	14.73	-04	09	45.9	19.0V 413
1981	EG42	1981	03	11.70301	12	14	21.07	-03	07	51.4	413
1981	EG42	1981	03	15.69509	12	10	49.02	-02	36	13.1	413
1981	EG42	1981	03	15.73328	12	10	46.89	-02	35	54.2	413
1981	EH42*	1981	03	02.63403	12	21	22.88	-04	10	14.9	20.0V 413
1981	EH42	1981	03	02.67917	12	21	20.82	-04	10	03.9	413
1981	EH42	1981	03	06.60816	12	18	16.30	-03	50	41.4	413
1981	EH42	1981	03	11.66134	12	13	50.69	-03	22	07.5	413
1981	EH42	1981	03	11.70301	12	13	48.35	-03	21	52.4	413
1981	EH42	1981	03	15.69509	12	10	03.61	-02	57	09.0	413
1981	EH42	1981	03	15.73328	12	10	01.48	-02	56	54.2	413
1981	EJ42*	1981	03	02.67917	12	21	27.42	-04	15	50.8	20.0V 413
1981	EJ42	1981	03	06.60816	12	19	28.32	-03	46	59.5	413
1981	EJ42	1981	03	06.64983	12	19	27.41	-03	46	46.5	413
1981	EJ42	1981	03	11.66134	12	16	35.89	-03	06	56.5	413
1981	EJ42	1981	03	11.70301	12	16	34.75	-03	06	40.7	413
1981	EK42*	1981	03	02.63403	12	21	30.79	-04	47	50.0	19.0V 413
1981	EK42	1981	03	02.67917	12	21	29.41	-04	47	38.2	413
1981	EK42	1981	03	06.60816	12	19	14.86	-04	27	50.8	413
1981	EK42	1981	03	06.64983	12	19	13.10	-04	27	35.8	413
1981	EK42	1981	03	11.66134	12	16	03.16	-03	59	39.5	413
1981	EK42	1981	03	15.73328	12	13	17.89	-03	35	15.5	413
1981	EK42	1981	04	05.55430	11	58	48.66	-01	22	14.4	413
1981	EK42	1981	04	05.58312	11	58	47.74	-01	22	05.8	413
1981	EK42	1981	04	10.52714	11	55	48.08	-00	52	40.0	413
1981	EK42	1981	04	10.56186	11	55	46.87	-00	52	27.5	413
1981	EL42*	1981	03	02.63403	12	21	49.84	-02	34	58.1	20.0V 413
1981	EL42	1981	03	02.67917	12	21	47.11	-02	34	41.8	413
1981	EL42	1981	03	11.70301	12	15	30.32	-01	58	00.5	413
1981	EL42	1981	03	15.69509	12	12	28.05	-01	40	02.9	413
1981	EL42	1981	03	15.73328	12	12	26.11	-01	39	50.4	413
1981	EM42*	1981	03	02.63403	12	22	13.27	-04	16	24.4	19.5V 413
1981	EM42	1981	03	02.67917	12	22	11.54	-04	16	07.4	413
1981	EM42	1981	03	06.60816	12	19	53.45	-03	53	25.0	413
1981	EM42	1981	03	06.64983	12	19	51.80	-03	53	09.8	413
1981	EM42	1981	03	11.66134	12	16	37.62	-03	21	38.2	413
1981	EM42	1981	03	11.70301	12	16	36.04	-03	21	23.9	413
1981	EM42	1981	03	15.69509	12	13	50.56	-02	54	40.2	413
1981	EM42	1981	04	05.55430	11	58	57.48	-00	28	14.3	413
1981	EM42	1981	04	05.58312	11	58	56.73	-00	28	07.3	413
1981	EN42*	1981	03	02.63403	12	22	16.71	-03	26	29.6	19.0V 413
1981	EN42	1981	03	02.67917	12	22	14.95	-03	26	18.8	413
1981	EN42	1981	03	06.64983	12	19	19.28	-03	06	25.2	413
1981	EN42	1981	03	11.70301	12	15	05.06	-02	37	27.4	413
1981	EN42	1981	03	15.69509	12	11	26.29	-02	12	17.4	413
1981	EN42	1981	03	15.73328	12	11	24.14	-02	12	01.0	413
1981	EN42	1981	04	05.58312	11	51	04.91	+00	11	53.0	413
1981	EN42	1981	04	06.59668	11	50	09.95	+00	18	32.9	413
1981	EO42*	1981	03	02.63403	12	22	22.63	-01	01	19.0	18.0V 413

1981	EO42	1981	03	02.67917	12	22	20.60	-01	01	10.5	413
1981	EO42	1981	03	06.64983	12	19	13.00	-00	47	25.8	413
1981	EO42	1981	03	11.66134	12	14	56.86	-00	28	29.2	413
1981	EO42	1981	03	11.70301	12	14	54.63	-00	28	18.8	413
1981	EO42	1981	03	15.69509	12	11	19.33	-00	12	14.9	413
1981	EO42	1981	03	15.73328	12	11	17.36	-00	12	06.1	413
1981	EO42	1981	04	05.55430	11	52	24.69	+01	10	48.3	413
1981	EO42	1981	04	05.58312	11	52	23.54	+01	10	53.1	413
1981	EO42	1981	04	06.56195	11	51	34.88	+01	14	15.9	413
1981	EO42	1981	04	06.59668	11	51	33.28	+01	14	22.3	413
1981	EO42	1981	04	07.56303	11	50	46.32	+01	17	36.5	413
1981	EO42	1981	04	07.59776	11	50	44.87	+01	17	43.0	413
1981	EO42	1981	04	10.52714	11	48	28.04	+01	26	59.8	413
1981	EO42	1981	04	10.56186	11	48	26.59	+01	27	04.6	413
1981	EP42*	1981	03	02.63403	12	22	23.02	-03	34	18.3	19.0V 413
1981	EP42	1981	03	02.67917	12	22	21.38	-03	34	04.9	413
1981	EP42	1981	03	06.64983	12	19	40.89	-03	13	16.5	413
1981	EP42	1981	03	11.66134	12	15	58.68	-02	44	34.6	413
1981	EP42	1981	03	15.69509	12	12	49.38	-02	20	04.4	413
1981	EP42	1981	03	15.73328	12	12	47.62	-02	19	50.9	413
1981	EQ42*	1981	03	02.63403	12	22	34.11	-02	46	57.0	18.0V 413
1981	EQ42	1981	03	02.67917	12	22	32.65	-02	46	48.1	413
1981	EQ42	1981	03	06.60816	12	20	14.32	-02	31	37.1	413
1981	EQ42	1981	03	06.64983	12	20	12.93	-02	31	27.7	413
1981	EQ42	1981	03	11.66134	12	16	58.58	-02	10	06.0	413
1981	EQ42	1981	03	11.70301	12	16	56.86	-02	09	54.4	413
1981	EQ42	1981	03	15.69509	12	14	11.01	-01	51	36.9	413
1981	EQ42	1981	03	15.73328	12	14	09.48	-01	51	25.7	413
1981	ER42*	1981	03	02.67917	12	22	53.72	-01	55	10.4	20.0V 413
1981	ER42	1981	03	06.60816	12	20	25.47	-01	40	25.8	413
1981	ER42	1981	03	11.66134	12	16	58.82	-01	19	50.9	413
1981	ER42	1981	03	11.70301	12	16	57.12	-01	19	40.9	413
1981	ER42	1981	03	15.73328	12	14	02.96	-01	02	18.7	413
1981	ES42*	1981	03	02.67917	12	23	06.06	-01	20	56.2	19.0V 413
1981	ES42	1981	03	06.60816	12	20	12.14	-01	04	40.2	413
1981	ES42	1981	03	06.64983	12	20	10.25	-01	04	30.5	413
1981	ES42	1981	03	11.66134	12	16	07.53	-00	41	50.1	413
1981	ES42	1981	03	11.70301	12	16	05.23	-00	41	36.6	413
1981	ES42	1981	03	15.69509	12	12	40.05	-00	22	30.0	413
1981	ES42	1981	04	05.55430	11	54	47.99	+01	15	19.4	413
1981	ES42	1981	04	05.58312	11	54	46.95	+01	15	24.6	413
1981	ES42	1981	04	06.56195	11	54	02.03	+01	19	20.6	413
1981	ES42	1981	04	06.59668	11	54	00.59	+01	19	27.7	413
1981	ET42*	1981	03	02.63403	12	23	22.34	-03	48	52.2	19.0V 413
1981	ET42	1981	03	11.66134	12	16	11.31	-03	11	10.5	413
1981	ET42	1981	03	11.70301	12	16	09.50	-03	11	00.2	413
1981	ET42	1981	03	15.69509	12	12	33.13	-02	51	15.7	413
1981	ET42	1981	03	15.73328	12	12	30.94	-02	51	02.7	413
1981	EU42*	1981	03	02.67917	12	24	59.77	-03	12	15.8	20.0V 413
1981	EU42	1981	03	11.66134	12	19	22.57	-02	35	15.0	413
1981	EU42	1981	03	15.69509	12	16	36.99	-02	16	57.7	413
1981	EV42*	1981	03	02.63403	12	25	02.14	-02	07	56.5	20.0V 413
1981	EV42	1981	03	06.60816	12	21	46.10	-02	02	04.6	413
1981	EV42	1981	03	06.64983	12	21	43.77	-02	02	01.9	413
1981	EV42	1981	03	11.66134	12	17	07.78	-01	52	17.7	413
1981	EV42	1981	03	15.69509	12	13	07.02	-01	42	59.2	413
1981	EW42*	1981	03	02.63403	12	25	37.64	-01	11	53.1	20.0V 413
1981	EW42	1981	03	06.64983	12	22	20.28	-00	59	37.3	413
1981	EW42	1981	03	11.70301	12	17	41.44	-00	41	46.6	413

1981	EW42	1981	03	15.69509	12	13	41.54	-00	26	08.3	413
1981	EW42	1981	03	15.73328	12	13	39.30	-00	25	59.4	413
1981	EX42*	1981	03	02.63403	12	26	12.01	-02	39	12.4	20.0V 413
1981	EX42	1981	03	02.67917	12	26	09.57	-02	38	59.9	413
1981	EX42	1981	03	06.64983	12	22	55.33	-02	24	29.0	413
1981	EX42	1981	03	11.70301	12	18	26.51	-02	03	44.4	413
1981	EY42*	1981	03	02.63403	12	26	32.19	-03	34	14.3	20.0V 413
1981	EY42	1981	03	02.67917	12	26	30.65	-03	34	05.2	413
1981	EY42	1981	03	06.60816	12	24	05.87	-03	17	57.2	413
1981	EY42	1981	03	06.64983	12	24	04.34	-03	17	45.2	413
1981	EY42	1981	03	11.70301	12	20	27.10	-02	53	25.8	413
1981	EY42	1981	03	15.69509	12	17	15.80	-02	31	47.5	413
1981	EY42	1981	03	15.73328	12	17	13.80	-02	31	33.6	413
1981	EY42	1981	04	05.55430	11	59	13.12	-00	26	44.3	413
1981	EY42	1981	04	05.58312	11	59	11.57	-00	26	34.1	413
1981	EY42	1981	04	10.56186	11	55	25.17	+00	00	20.3	413
1981	EZ42*	1981	03	02.67917	12	26	46.13	-03	15	07.5	19.0V 413
1981	EZ42	1981	03	06.60816	12	24	08.67	-02	56	28.7	413
1981	EZ42	1981	03	06.64983	12	24	06.59	-02	56	13.5	413
1981	EZ42	1981	03	11.66134	12	20	12.56	-02	28	39.1	413
1981	EZ42	1981	03	15.69509	12	16	42.32	-02	03	52.1	413
1981	EZ42	1981	03	15.73328	12	16	40.26	-02	03	37.2	413
1981	EA43*	1981	03	02.67917	12	26	48.01	-04	05	43.4	20.0V 413
1981	EA43	1981	03	11.66134	12	19	15.07	-03	23	24.5	413
1981	EA43	1981	03	15.69509	12	15	30.72	-03	01	46.0	413
1981	EB43*	1981	03	02.67917	12	27	07.49	-02	14	24.7	20.0V 413
1981	EB43	1981	03	06.60816	12	24	24.77	-01	59	58.7	413
1981	EB43	1981	03	11.66134	12	20	30.26	-01	38	57.0	413
1981	EB43	1981	03	15.69509	12	17	06.83	-01	20	29.6	413
1981	EB43	1981	03	15.73328	12	17	04.72	-01	20	17.3	413
1981	EB43	1981	04	10.52714	11	54	39.91	+00	40	21.4	413
1981	EB43	1981	04	10.56186	11	54	38.53	+00	40	25.5	413
1981	EC43*	1981	03	02.63403	12	27	55.23	-04	30	45.1	19.0V 413
1981	EC43	1981	03	02.67917	12	27	53.32	-04	30	29.6	413
1981	EC43	1981	03	06.60816	12	25	08.62	-04	06	31.0	413
1981	EC43	1981	03	06.64983	12	25	06.85	-04	06	14.7	413
1981	EC43	1981	03	11.66134	12	21	10.65	-03	32	09.1	413
1981	EC43	1981	03	11.70301	12	21	08.57	-03	31	51.0	413
1981	EC43	1981	03	15.69509	12	17	44.31	-03	02	25.3	413
1981	EC43	1981	03	15.73328	12	17	42.14	-03	02	04.8	413
1981	EC43	1981	04	05.55430	11	58	41.10	-00	15	17.7	413
1981	EC43	1981	04	05.58312	11	58	39.79	-00	15	07.6	413
1981	EC43	1981	04	06.56195	11	57	48.87	-00	07	28.9	413
1981	EC43	1981	04	06.59668	11	57	47.42	-00	07	15.8	413
1981	ED43*	1981	03	02.67917	12	27	56.40	-00	40	34.5	18.5V 413
1981	ED43	1981	03	06.60816	12	25	11.02	-00	29	37.9	413
1981	ED43	1981	03	11.66134	12	21	17.50	-00	13	58.5	413
1981	ED43	1981	03	15.73328	12	17	55.45	-00	00	21.1	413
1981	ED43	1981	04	05.55430	11	59	37.19	+01	10	45.8	413
1981	ED43	1981	04	05.58312	11	59	36.03	+01	10	50.7	413
1981	ED43	1981	04	06.56195	11	58	46.21	+01	13	49.7	413
1981	ED43	1981	04	06.59668	11	58	44.56	+01	13	55.3	413
1981	EE43*	1981	03	02.63403	12	28	02.28	-00	30	47.3	17.0V 413
1981	EE43	1981	03	02.67917	12	28	00.24	-00	30	42.1	413
1981	EE43	1981	03	06.60816	12	24	52.89	-00	23	14.9	413
1981	EE43	1981	03	06.64983	12	24	51.06	-00	23	09.3	413
1981	EE43	1981	03	11.66134	12	20	33.84	-00	12	21.6	413
1981	EE43	1981	03	11.70301	12	20	31.61	-00	12	14.6	413
1981	EE43	1981	03	15.73328	12	16	54.46	-00	02	49.3	413

1981	EE43	1981	04	05.55430	11	58	06.90	+00	44	25.3	413
1981	EE43	1981	04	05.58312	11	58	05.77	+00	44	27.7	413
1981	EE43	1981	04	06.56195	11	57	17.20	+00	46	15.2	413
1981	EE43	1981	04	06.59668	11	57	15.59	+00	46	18.4	413
1981	EE43	1981	04	07.56303	11	56	28.66	+00	47	59.6	413
1981	EE43	1981	04	07.59776	11	56	27.04	+00	48	02.9	413
1981	EE43	1981	04	10.52714	11	54	10.11	+00	52	40.0	413
1981	EF43*	1981	03	02.67917	12	28	28.83	-04	30	35.0	20.0V 413
1981	EF43	1981	03	06.64983	12	25	43.90	-04	07	43.3	413
1981	EF43	1981	03	15.69509	12	18	42.21	-03	09	30.4	413
1981	EG43*	1981	03	03.56736	11	40	51.86	+01	46	44.7	18.5V 413
1981	EG43	1981	03	03.61076	11	40	49.76	+01	47	00.7	413
1981	EG43	1981	03	07.60751	11	37	25.60	+02	14	55.2	413
1981	EG43	1981	03	11.60352	11	33	51.60	+02	44	00.4	413
1981	EG43	1981	03	11.64518	11	33	49.45	+02	44	16.0	413
1981	EH43*	1981	03	03.61076	11	41	01.40	-02	13	26.4	20.5V 413
1981	EH43	1981	03	07.64918	11	37	20.36	-01	45	44.6	413
1981	EH43	1981	03	11.64518	11	33	36.45	-01	16	58.2	413
1981	EJ43*	1981	03	03.56736	11	41	48.74	-01	01	22.5	18.5V 413
1981	EJ43	1981	03	03.61076	11	41	46.46	-01	01	13.9	413
1981	EJ43	1981	03	07.60751	11	38	10.01	-00	45	09.4	413
1981	EJ43	1981	03	07.64918	11	38	07.81	-00	45	00.0	413
1981	EJ43	1981	03	11.60352	11	34	24.41	-00	27	25.7	413
1981	EJ43	1981	03	11.64518	11	34	22.11	-00	27	15.6	413
1981	EJ43	1981	03	16.69028	11	29	33.12	-00	03	19.5	413
1981	EJ43	1981	03	16.73195	11	29	31.06	-00	03	10.1	413
1981	EJ43	1981	03	29.56451	11	18	15.47	+00	57	19.8	413
1981	EJ43	1981	04	08.50490	11	11	51.33	+01	35	14.5	413
1981	EJ43	1981	04	08.53962	11	11	50.32	+01	35	19.0	413
1981	EJ43	1981	04	11.56596	11	10	27.49	+01	44	07.3	413
1981	EJ43	1981	04	11.60069	11	10	26.72	+01	44	12.1	413
1981	EK43*	1981	03	03.56736	11	42	08.98	+02	16	27.6	20.0V 413
1981	EK43	1981	03	07.60751	11	38	44.71	+02	24	17.9	413
1981	EK43	1981	03	07.64918	11	38	42.78	+02	24	20.4	413
1981	EK43	1981	03	11.60352	11	35	16.62	+02	32	31.1	413
1981	EL43*	1981	03	03.56736	11	45	34.48	-00	20	31.3	20.0V 413
1981	EL43	1981	03	03.61076	11	45	32.29	-00	20	18.2	413
1981	EL43	1981	03	07.60751	11	42	20.36	+00	00	16.5	413
1981	EL43	1981	03	07.64918	11	42	18.40	+00	00	28.5	413
1981	EL43	1981	03	11.60352	11	39	01.88	+00	21	51.6	413
1981	EM43*	1981	03	03.56736	11	52	14.45	+00	23	41.9	20.0V 413
1981	EM43	1981	03	07.60751	11	48	42.21	+00	42	34.1	413
1981	EM43	1981	03	07.64918	11	48	40.09	+00	42	44.0	413
1981	EM43	1981	03	11.64518	11	45	00.08	+01	02	31.8	413
1981	EN43*	1981	03	03.56736	11	57	27.00	+03	30	34.9	20.5V 413
1981	EN43	1981	03	07.60751	11	54	18.59	+03	41	35.4	413
1981	EN43	1981	03	07.64918	11	54	16.66	+03	41	40.2	413
1981	EN43	1981	03	11.60352	11	51	05.62	+03	52	38.6	413
1981	EN43	1981	03	11.64518	11	51	03.67	+03	52	45.1	413
1981	EN43	1981	03	29.52805	11	36	31.63	+04	38	30.2	413
1981	EO43*	1981	03	03.61076	11	59	12.94	-00	17	26.6	20.0V 413
1981	EO43	1981	03	07.60751	11	56	16.53	-00	04	16.4	413
1981	EO43	1981	03	07.64918	11	56	14.37	-00	04	07.2	413
1981	EO43	1981	03	11.64518	11	53	08.44	+00	10	04.3	413
1981	EP43*	1981	03	03.56736	12	03	14.26	-00	59	05.7	20.5V 413
1981	EP43	1981	03	07.60751	12	00	09.24	-00	39	50.8	413
1981	EP43	1981	03	11.64518	11	56	53.08	-00	19	20.1	413
1981	EQ43*	1981	03	03.56736	12	05	06.42	-01	13	07.7	20.0V 413
1981	EQ43	1981	03	06.60816	12	02	52.82	-00	56	42.5	413

1981	EQ43	1981	03	07.60751	12	02	06.59	-00	51	01.7	413
1981	EQ43	1981	03	11.60352	11	58	53.29	-00	27	19.8	413
1981	EQ43	1981	03	11.64518	11	58	51.20	-00	27	05.4	413
1981	EQ43	1981	03	15.73328	11	55	21.83	-00	01	21.0	413
1981	EQ43	1981	03	29.52805	11	43	20.35	+01	28	06.7	413
1981	ER43*	1981	03	06.60816	12	01	36.67	-01	34	39.7	20.0V 413
1981	ER43	1981	03	07.64918	12	00	51.84	-01	29	58.2	413
1981	ER43	1981	03	11.64518	11	57	53.07	-01	11	21.0	413
1981	ER43	1981	03	11.70301	11	57	50.52	-01	11	05.6	413
1981	ER43	1981	03	15.73328	11	54	45.22	-00	51	30.4	413
1981	ER43	1981	04	10.52714	11	36	06.39	+01	10	47.0	413
1981	ES43*	1981	03	06.60816	12	01	51.57	-01	54	19.0	19.0V 413
1981	ES43	1981	03	11.66134	11	58	28.55	-01	30	11.0	413
1981	ES43	1981	03	11.70301	11	58	27.06	-01	29	59.8	413
1981	ES43	1981	03	15.69509	11	55	40.23	-01	09	55.8	413
1981	ES43	1981	03	15.73328	11	55	38.72	-01	09	45.0	413
1981	ES43	1981	04	05.55430	11	41	28.34	+00	35	52.2	413
1981	ES43	1981	04	06.56195	11	40	52.00	+00	40	34.2	413
1981	ES43	1981	04	06.59668	11	40	50.68	+00	40	41.8	413
1981	ET43*	1981	03	06.70593	12	04	05.56	-10	52	03.9	19.0V 413
1981	ET43	1981	03	08.72332	12	02	55.34	-10	26	59.4	413
1981	ET43	1981	03	12.61890	12	00	33.72	-09	36	21.3	413
1981	ET43	1981	04	06.61147	11	45	14.19	-03	34	03.0	413
1981	ET43	1981	04	06.64619	11	45	13.34	-03	33	39.4	413
1981	ET43	1981	04	08.55338	11	44	15.67	-03	06	10.1	413
1981	ET43	1981	04	08.58810	11	44	14.66	-03	05	43.5	413
1981	ET43	1981	04	09.50909	11	43	48.02	-02	52	33.5	413
1981	ET43	1981	04	09.54382	11	43	47.04	-02	52	06.3	413
1981	EU43*	1981	03	06.54930	12	04	39.16	-14	55	40.6	20.0V 413
1981	EU43	1981	03	06.59096	12	04	37.24	-14	55	45.4	413
1981	EU43	1981	03	08.56669	12	02	46.52	-14	55	30.8	413
1981	EU43	1981	03	12.63230	11	58	51.56	-14	52	54.0	413
1981	EU43	1981	03	12.67049	11	58	49.38	-14	52	52.2	413
1981	EV43*	1981	03	06.60816	12	04	52.15	+00	45	51.2	20.0V 413
1981	EV43	1981	03	06.64983	12	04	49.97	+00	45	58.8	413
1981	EV43	1981	03	11.66134	12	00	23.61	+01	04	07.5	413
1981	EV43	1981	03	15.69509	11	56	38.81	+01	19	29.3	413
1981	EW43*	1981	03	06.60816	12	05	33.73	+00	38	38.8	19.5V 413
1981	EW43	1981	03	11.66134	12	01	03.43	+00	43	49.4	413
1981	EW43	1981	03	11.70301	12	01	01.25	+00	43	51.2	413
1981	EW43	1981	03	15.69509	11	57	18.86	+00	48	32.7	413
1981	EX43*	1981	03	06.66426	12	06	55.47	-05	10	39.5	19.0V 413
1981	EX43	1981	03	08.68165	12	05	17.07	-04	57	28.1	413
1981	EX43	1981	03	08.72332	12	05	15.26	-04	57	13.6	413
1981	EX43	1981	03	11.66134	12	02	47.45	-04	37	00.6	413
1981	EX43	1981	03	15.69509	11	59	17.45	-04	07	47.9	413
1981	EX43	1981	04	10.52714	11	37	52.96	-00	51	01.7	413
1981	EX43	1981	04	10.56186	11	37	51.53	-00	50	49.3	413
1981	EY43*	1981	03	06.66426	12	08	28.22	-07	51	24.7	20.5V 413
1981	EY43	1981	03	08.68165	12	06	48.37	-07	42	47.6	413
1981	EY43	1981	03	12.58070	12	03	27.40	-07	24	21.3	413
1981	EY43	1981	04	09.50909	11	40	10.35	-04	39	53.1	413
1981	EY43	1981	04	09.54382	11	40	09.18	-04	39	43.8	413
1981	EZ43*	1981	03	06.60816	12	11	03.85	-02	44	37.0	20.5V 413
1981	EZ43	1981	03	11.66134	12	07	15.75	-02	32	30.2	413
1981	EZ43	1981	03	15.73328	12	04	03.79	-02	21	44.7	413
1981	EA44*	1981	03	06.60816	12	11	16.72	-02	17	21.2	19.5V 413
1981	EA44	1981	03	06.64983	12	11	14.81	-02	16	59.0	413
1981	EA44	1981	03	11.66134	12	07	42.54	-01	37	11.8	413

1981	EA44	1981	03	15.69509	12	04	42.74	-01	03	50.0	413
1981	EA44	1981	03	15.73328	12	04	40.98	-01	03	29.6	413
1981	EB44*	1981	03	06.60816	12	16	24.02	-03	02	18.2	20.0V 413
1981	EB44	1981	03	06.64983	12	16	22.18	-03	02	16.5	413
1981	EB44	1981	03	11.70301	12	11	48.49	-02	53	27.5	413
1981	EB44	1981	03	15.69509	12	07	52.83	-02	44	31.7	413
1981	EB44	1981	03	15.73328	12	07	50.77	-02	44	26.9	413
1981	EC44*	1981	03	06.64983	12	17	26.30	+00	36	44.3	20.0V 413
1981	EC44	1981	03	11.66134	12	13	27.73	+00	45	45.0	413
1981	EC44	1981	03	11.70301	12	13	25.92	+00	45	49.7	413
1981	EC44	1981	03	15.69509	12	10	05.80	+00	53	33.1	413
1981	ED44*	1981	03	06.70593	12	21	46.28	-05	21	37.6	19.5V 413
1981	ED44	1981	03	08.68165	12	20	00.53	-05	17	42.2	413
1981	ED44	1981	03	12.58070	12	16	20.76	-05	08	24.4	413
1981	ED44	1981	04	09.54382	11	49	04.09	-03	33	02.9	413
1981	EE44*	1981	03	06.66426	12	21	59.90	-08	36	47.9	20.0V 413
1981	EE44	1981	03	06.70593	12	21	57.79	-08	36	29.2	413
1981	EE44	1981	03	08.68165	12	20	37.84	-08	24	49.7	413
1981	EE44	1981	03	08.72332	12	20	36.10	-08	24	33.8	413
1981	EE44	1981	03	12.58070	12	17	51.89	-08	00	06.5	413
1981	EE44	1981	04	09.54382	11	56	58.31	-04	29	44.9	413
1981	EF44*	1981	03	06.66426	12	22	01.89	-05	33	17.3	19.0V 413
1981	EF44	1981	03	06.70593	12	22	00.19	-05	33	10.7	413
1981	EF44	1981	03	08.68165	12	20	40.57	-05	28	05.2	413
1981	EF44	1981	03	08.72332	12	20	38.98	-05	27	58.9	413
1981	EF44	1981	03	12.58070	12	17	54.95	-05	16	51.6	413
1981	EF44	1981	03	12.61890	12	17	53.28	-05	16	45.2	413
1981	EF44	1981	04	09.50909	11	56	21.39	-03	31	44.7	413
1981	EF44	1981	04	09.54382	11	56	20.01	-03	31	37.1	413
1981	EG44*	1981	03	06.60816	12	22	52.53	+01	13	24.5	18.0V 413
1981	EG44	1981	03	06.64983	12	22	50.72	+01	13	32.2	413
1981	EG44	1981	03	11.66134	12	19	01.82	+01	25	08.7	413
1981	EG44	1981	03	11.70301	12	18	59.86	+01	25	15.1	413
1981	EG44	1981	03	15.73328	12	15	44.56	+01	35	08.0	413
1981	EG44	1981	04	05.55430	11	58	29.78	+02	21	44.5	413
1981	EG44	1981	04	05.58312	11	58	28.74	+02	21	46.8	413
1981	EG44	1981	04	06.56195	11	57	43.40	+02	23	24.8	413
1981	EG44	1981	04	07.59776	11	56	56.70	+02	25	02.2	413
1981	EG44	1981	04	10.52714	11	54	48.48	+02	29	10.7	413
1981	EG44	1981	04	10.56186	11	54	47.03	+02	29	12.6	413
1981	EH44*	1981	03	06.70593	12	23	30.54	-06	22	32.8	19.5V 413
1981	EH44	1981	03	08.68165	12	21	48.24	-06	16	10.6	413
1981	EH44	1981	03	08.72332	12	21	46.05	-06	16	02.3	413
1981	EH44	1981	03	12.58070	12	18	17.13	-06	02	03.3	413
1981	EH44	1981	04	09.50909	11	52	20.24	-03	52	16.1	413
1981	EH44	1981	04	09.54382	11	52	18.63	-03	52	06.8	413
1981	EJ44*	1981	03	07.66569	11	37	07.14	-02	23	43.3	20.0V 413
1981	EJ44	1981	03	11.58909	11	34	25.43	-01	58	43.1	413
1981	EJ44	1981	03	11.60352	11	34	24.71	-01	58	33.7	413
1981	EJ44	1981	03	15.64523	11	31	35.81	-01	31	55.4	413
1981	EJ44	1981	03	15.68342	11	31	34.36	-01	31	42.3	413
1981	EK44*	1981	03	07.66569	11	37	54.76	-06	31	27.2	20.5V 413
1981	EK44	1981	03	07.70735	11	37	52.82	-06	31	22.6	413
1981	EK44	1981	03	11.54742	11	34	43.50	-06	23	17.3	413
1981	EK44	1981	03	11.58909	11	34	41.53	-06	23	12.4	413
1981	EK44	1981	03	15.64523	11	31	18.94	-06	13	18.9	413
1981	EL44*	1981	03	07.70735	11	38	27.83	-06	41	27.6	20.5V 413
1981	EL44	1981	03	11.58909	11	34	28.80	-06	25	13.4	413
1981	EL44	1981	03	15.68342	11	30	14.86	-06	06	03.5	413

1981	EM44*	1981	03	07.66569	11	41	23.43	-07	51	52.8	20.0V 413
1981	EM44	1981	03	11.54742	11	38	32.22	-07	36	36.1	413
1981	EM44	1981	03	11.58909	11	38	30.30	-07	36	26.5	413
1981	EM44	1981	03	15.64523	11	35	29.34	-07	19	03.2	413
1981	EM44	1981	03	15.68342	11	35	27.78	-07	18	53.8	413
1981	EN44*	1981	03	07.66569	11	41	28.03	-07	29	42.8	20.5V 413
1981	EN44	1981	03	11.54742	11	37	52.14	-07	14	21.8	413
1981	EN44	1981	03	15.64523	11	34	01.34	-06	56	27.0	413
1981	EO44*	1981	03	07.60751	11	41	38.65	+00	39	53.8	20.0V 413
1981	EO44	1981	03	07.64918	11	41	35.91	+00	40	05.8	413
1981	EO44	1981	03	11.60352	11	37	44.50	+01	01	17.7	413
1981	EO44	1981	03	16.69028	11	32	42.31	+01	29	16.6	413
1981	EP44*	1981	03	07.64918	11	41	56.19	+00	33	12.1	20.5V 413
1981	EP44	1981	03	11.60352	11	38	35.53	+01	09	17.3	413
1981	EP44	1981	03	16.73195	11	34	08.28	+01	57	24.6	413
1981	EQ44*	1981	03	07.70735	11	41	58.84	-07	05	15.1	19.0V 413
1981	EQ44	1981	03	11.58909	11	37	51.58	-06	50	15.3	413
1981	EQ44	1981	03	15.64523	11	33	27.22	-06	32	04.0	413
1981	ER44*	1981	03	07.66569	11	42	32.52	-07	46	28.2	20.5V 413
1981	ER44	1981	03	11.58909	11	38	53.69	-07	31	26.7	413
1981	ER44	1981	03	15.64523	11	35	05.79	-07	14	11.6	413
1981	ES44*	1981	03	07.66569	11	43	51.36	-07	00	16.9	20.0V 413
1981	ES44	1981	03	11.54742	11	39	52.04	-07	02	40.0	413
1981	ES44	1981	03	11.58909	11	39	49.75	-07	02	42.5	413
1981	ES44	1981	03	15.64523	11	35	32.78	-07	02	57.4	413
1981	ET44*	1981	03	07.66569	11	44	42.93	-07	27	45.3	20.5V 413
1981	ET44	1981	03	07.70735	11	44	40.51	-07	27	36.3	413
1981	ET44	1981	03	11.54742	11	40	58.79	-07	11	36.7	413
1981	ET44	1981	03	15.64523	11	36	54.28	-06	52	07.5	413
1981	EU44*	1981	03	07.66569	11	45	54.41	-08	23	23.9	20.0V 413
1981	EU44	1981	03	11.54742	11	42	55.00	-07	58	04.0	413
1981	EU44	1981	03	15.64523	11	39	39.70	-07	29	00.5	413
1981	EV44*	1981	03	07.66569	11	47	32.11	-06	13	06.0	20.5V 413
1981	EV44	1981	03	11.58909	11	44	00.86	-05	56	09.4	413
1981	EV44	1981	03	15.68342	11	40	13.23	-05	36	10.2	413
1981	EW44*	1981	03	07.60751	11	49	29.00	-00	42	00.9	20.5V 413
1981	EW44	1981	03	11.60352	11	46	12.19	-00	16	41.5	413
1981	EW44	1981	03	11.64518	11	46	10.05	-00	16	25.8	413
1981	EW44	1981	03	16.69028	11	41	50.97	+00	17	24.7	413
1981	EX44*	1981	03	07.66569	11	49	38.17	-06	59	30.3	20.0V 413
1981	EX44	1981	03	07.70735	11	49	36.19	-06	59	18.6	413
1981	EX44	1981	03	11.58909	11	45	54.36	-06	37	49.2	413
1981	EX44	1981	03	15.64523	11	41	57.66	-06	13	22.1	413
1981	EY44*	1981	03	07.66569	11	49	44.05	-04	00	46.4	20.0V 413
1981	EY44	1981	03	11.54742	11	47	02.00	-03	37	24.5	413
1981	EY44	1981	03	11.58909	11	47	00.33	-03	37	10.7	413
1981	EY44	1981	03	15.64523	11	44	04.61	-03	11	14.2	413
1981	EY44	1981	03	15.68342	11	44	03.18	-03	11	00.5	413
1981	EZ44*	1981	03	07.66569	11	51	46.15	-05	07	27.1	20.0V 413
1981	EZ44	1981	03	07.70735	11	51	44.17	-05	07	14.1	413
1981	EZ44	1981	03	11.54742	11	48	24.49	-04	39	33.6	413
1981	EZ44	1981	03	15.68342	11	44	42.15	-04	07	51.2	413
1981	EA45*	1981	03	07.66569	11	53	08.97	-07	27	45.2	20.0V 413
1981	EA45	1981	03	11.54742	11	49	19.59	-07	15	17.2	413
1981	EA45	1981	03	15.64523	11	45	05.86	-06	59	18.4	413
1981	EB45*	1981	03	07.66569	11	57	30.32	-04	39	11.4	20.0V 413
1981	EB45	1981	03	07.70735	11	57	28.61	-04	38	57.9	413
1981	EB45	1981	03	11.58909	11	54	25.99	-04	14	58.5	413
1981	EB45	1981	03	15.64523	11	51	09.20	-03	48	33.7	413

1981	EC45*	1981	03	07.66569	11	58	44.98	-06 33 12.6	20.0V	413
1981	EC45	1981	03	07.70735	11	58	43.06	-06 32 55.2		413
1981	EC45	1981	03	11.54742	11	56	06.08	-06 07 29.2		413
1981	EC45	1981	03	15.64523	11	53	12.76	-05 38 40.4		413
1981	EC45	1981	03	15.68342	11	53	11.15	-05 38 24.3		413
1981	EC45	1981	04	09.50909	11	36	46.00	-02 34 07.0		413
1981	ED45*	1981	03	07.66569	12	00	06.43	-06 44 24.2	20.0V	413
1981	ED45	1981	03	07.70735	12	00	04.16	-06 44 19.5		413
1981	ED45	1981	03	11.54742	11	56	25.89	-06 35 29.4		413
1981	ED45	1981	03	11.58909	11	56	23.46	-06 35 22.9		413
1981	ED45	1981	03	15.64523	11	52	22.73	-06 23 37.8		413
1981	EE45*	1981	03	11.66134	12	20	57.03	+01 27 16.8	17.5V	413
1981	EE45	1981	03	11.70301	12	20	54.85	+01 27 22.7		413
1981	EE45	1981	03	15.69509	12	17	20.48	+01 35 41.4		413
1981	EE45	1981	03	15.73328	12	17	18.34	+01 35 47.5		413
1981	EE45	1981	04	05.55430	11	57	52.00	+02 14 40.2		413
1981	EE45	1981	04	05.58312	11	57	50.72	+02 14 42.2		413
1981	EE45	1981	04	06.56195	11	56	59.38	+02 15 55.6		413
1981	EE45	1981	04	06.59668	11	56	57.75	+02 15 57.8		413
1981	EE45	1981	04	07.56303	11	56	07.95	+02 17 03.7		413
1981	EE45	1981	04	07.59776	11	56	06.25	+02 17 06.1		413
1981	EE45	1981	04	10.56186	11	53	39.21	+02 19 55.5		413
1981	EF45*	1981	03	15.73328	12	07	47.67	+02 03 27.6	18.5V	413
1981	EF45	1981	04	05.55430	11	51	52.18	+03 33 56.6		413
1981	EF45	1981	04	05.58312	11	51	50.87	+03 34 01.3		413
1981	EF45	1981	04	06.56195	11	51	09.97	+03 37 32.9		413
1981	EF45	1981	04	06.59668	11	51	08.63	+03 37 39.0		413
1981	EF45	1981	04	10.52714	11	48	33.49	+03 50 34.3		413
1981	EF45	1981	04	10.56186	11	48	32.08	+03 50 39.4		413

OBSERVATIONS MADE AT MT. STROMLO BY C.-I. LAGERKVIST.

Plates taken with the 0.50-m Schmidt telescope at the Uppsala Southern Station, then located at Mt. Stromlo. Reductions by G. De Sanctis using the SAO Catalogue. Contact: V. Zappala, Osservatorio Astronomico di Torino, I-10025 Pino Torinese, Italy.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
33	1980	10 04.45994	22 36 25.28	-09 44 57.5	414
33	1980	10 04.47380	22 36 25.17	-09 44 55.6	414
33	1980	10 12.40867	22 36 48.01	-09 26 33.0	414
33	1980	10 12.42079	22 36 48.13	-09 26 31.3	414
33	1980	10 26.44073	22 42 24.99	-08 27 42.0	414
33	1980	10 26.45321	22 42 25.41	-08 27 37.9	414
33	1980	10 28.40965	22 43 40.78	-08 16 55.7	414
33	1980	10 28.42212	22 43 41.23	-08 16 51.4	414
33	1980	11 03.41336	22 48 10.53	-07 40 33.4	414
33	1980	11 03.42582	22 48 11.08	-07 40 28.3	414
269	1980	10 05.41635	22 33 10.83	-11 22 24.7	414
269	1980	10 05.43159	22 33 10.57	-11 22 27.8	414
532	1980	10 05.62482	02 57 22.57	-06 18 27.0	414
532	1980	10 05.63728	02 57 22.10	-06 18 31.0	414
532	1980	10 13.62063	02 52 19.08	-07 02 10.9	414
532	1980	10 13.63276	02 52 18.57	-07 02 14.9	414
532	1980	10 28.56132	02 40 31.15	-08 06 23.1	414
532	1980	10 28.57137	02 40 30.64	-08 06 25.3	414
532	1980	11 29.57713	02 15 12.26	-08 10 57.4	414
532	1980	11 29.58995	02 15 11.76	-08 10 55.3	414
532	1980	12 08.47742	02 10 36.55	-07 36 26.0	414
532	1980	12 08.49485	02 10 36.10	-07 36 21.4	414
562	1980	10 04.52574	23 34 30.83	-20 36 37.2	414

562	1980	10	04.54097	23	34	30.20	-20	36	36.7	414
562	1980	10	05.44890	23	33	53.13	-20	36	20.6	414
562	1980	10	05.46414	23	33	52.49	-20	36	20.6	414
562	1980	10	12.51291	23	29	32.71	-20	27	50.3	414
562	1980	10	12.52468	23	29	32.32	-20	27	49.3	414
562	1980	10	28.42904	23	23	40.68	-19	30	35.6	414
562	1980	10	28.44428	23	23	40.45	-19	30	30.7	414
864	1980	10	05.41635	22	32	50.36	-11	39	29.7	414
864	1980	10	05.43159	22	32	50.34	-11	39	34.4	414
1215	1980	10	05.59780	02	42	08.71	-12	34	14.9	414
1215	1980	10	05.60957	02	42	08.35	-12	34	21.0	414
1215	1980	10	11.70054	02	38	29.57	-13	27	26.6	414
1215	1980	10	11.71630	02	38	28.93	-13	27	34.9	414
1215	1980	10	28.54123	02	25	01.17	-15	05	52.3	414
1215	1980	10	28.55301	02	25	00.48	-15	05	54.7	414
1215	1980	11	03.58372	02	19	44.87	-15	18	14.9	414
1215	1980	11	03.59549	02	19	44.23	-15	18	16.3	414
1215	1980	11	29.53732	02	02	45.78	-13	40	48.0	414
1215	1980	11	29.55220	02	02	45.42	-13	40	40.9	414
1215	1980	12	09.45495	02	00	37.81	-12	10	08.6	414
1215	1980	12	09.47122	02	00	37.69	-12	09	58.8	414
1428	1980	10	05.54032	01	51	03.79	-19	04	29.2	414
1428	1980	10	05.55210	01	51	03.27	-19	04	34.5	414
1428	1980	10	11.62817	01	46	22.91	-19	42	48.5	414
1428	1980	10	11.64306	01	46	22.15	-19	42	53.6	414
1428	1980	10	28.50141	01	32	46.40	-20	27	02.0	414
1428	1980	10	28.51353	01	32	45.83	-20	27	01.7	414
1428	1980	11	03.54251	01	28	25.26	-20	18	53.2	414
1428	1980	11	03.55602	01	28	24.61	-20	18	50.6	414
1428	1980	11	29.48919	01	18	24.53	-17	37	17.5	414
1428	1980	11	29.50442	01	18	24.41	-17	37	08.5	414
1461	1980	10	05.56802	01	53	52.69	-12	23	01.5	414
1461	1980	10	05.58326	01	53	52.07	-12	23	06.8	414
1461	1980	10	12.53512	01	48	46.34	-12	56	37.4	414
1461	1980	10	13.59777	01	47	57.64	-13	01	03.8	414
1461	1980	10	13.60990	01	47	57.03	-13	01	07.2	414
1461	1980	10	28.52115	01	36	25.29	-13	40	02.6	414
1461	1980	10	28.53292	01	36	24.70	-13	40	04.1	414
1461	1980	11	03.56398	01	32	02.86	-13	42	07.6	414
1461	1980	11	03.57610	01	32	02.29	-13	42	07.3	414
1461	1980	11	29.51307	01	19	37.10	-12	21	09.8	414
1461	1980	11	29.52796	01	19	36.84	-12	21	05.3	414
1484	1980	10	12.45541	23	36	57.70	-27	38	01.2	414
1484	1980	10	12.47343	23	36	56.94	-27	37	58.9	414
1484	1980	10	26.46499	23	29	16.49	-26	50	33.2	414
1484	1980	10	26.48022	23	29	16.15	-26	50	29.5	414
1484	1980	10	29.46163	23	28	09.95	-26	35	41.0	414
1484	1980	10	29.47688	23	28	09.67	-26	35	36.3	414
1484	1980	11	03.45075	23	26	45.53	-26	07	45.3	414
1484	1980	11	03.46668	23	26	45.33	-26	07	39.3	414
1512	1980	10	05.41635	22	34	26.04	-12	54	00.2	414
1512	1980	10	05.43159	22	34	25.69	-12	54	01.6	414
1614	1980	10	05.47678	00	31	37.90	-06	05	10.8	414
1614	1980	10	05.48977	00	31	37.36	-06	05	16.4	414
1614	1980	10	11.59735	00	27	27.48	-06	49	34.4	414
1614	1980	10	11.61088	00	27	26.92	-06	49	41.0	414
1614	1980	10	28.45277	00	17	45.96	-08	23	24.5	414
1614	1980	10	28.46887	00	17	45.48	-08	23	28.3	414
1614	1980	11	03.49715	00	15	18.05	-08	44	55.1	414

1614		1980	11	03.51240	00	15	17.71	-08	44	57.2	414
1627		1980	10	05.65182	03	48	12.76	+00	41	55.0	414
1627		1980	10	05.66776	03	48	11.94	+00	41	45.0	414
1627		1980	10	13.64383	03	40	20.85	-00	33	41.2	414
1627		1980	10	13.65560	03	40	20.01	-00	33	47.3	414
1627		1980	10	29.54439	03	18	02.43	-02	22	28.3	414
1627		1980	10	29.56066	03	18	00.94	-02	22	32.0	414
1627		1980	11	29.59791	02	38	47.69	-01	44	32.3	414
1627		1980	11	29.60969	02	38	47.15	-01	44	27.7	414
1629		1980	10	05.50569	01	00	04.22	-08	45	39.4	414
1629		1980	10	05.52475	01	00	03.10	-08	45	48.8	414
1629		1980	10	12.49074	00	53	26.99	-09	34	31.9	414
1629		1980	10	12.50251	00	53	26.37	-09	34	35.8	414
1629		1980	10	28.47752	00	40	14.46	-10	42	13.7	414
1629		1980	10	28.49277	00	40	13.82	-10	42	15.2	414
1629		1980	11	03.52035	00	36	31.87	-10	50	23.0	414
1629		1980	11	03.53524	00	36	31.35	-10	50	23.5	414
1711		1980	10	05.50569	00	59	47.66	-09	28	54.5	414
1711		1980	10	05.52475	00	59	46.78	-09	29	02.3	414
1711		1980	10	12.49073	00	54	45.28	-10	12	53.2	414
1711		1980	10	12.50251	00	54	44.81	-10	12	56.6	414
1711		1980	10	28.47752	00	44	28.42	-11	15	48.8	414
1711		1980	10	28.49277	00	44	27.89	-11	15	50.2	414
1711		1980	11	03.52035	00	41	32.91	-11	24	11.4	414
1711		1980	11	03.53524	00	41	32.51	-11	24	11.6	414
1980	TG15*	1980	10	05.47678	00	28	30.10	-06	09	36.3	414
1980	TG15	1980	10	05.48977	00	28	29.33	-06	09	34.3	414

OBSERVATIONS MADE AT MOUNT JOHN UNIVERSITY OBSERVATORY.

Plates taken with the 0.6-m f/14 and 0.6-m f/16 Cassegrain reflectors by A. C. Gilmore, measured by P. M. Kilmartin. Computational support from R. McIntosh and W. M. Kissling. Reductions using field plates from the Carter Observatory, AGK3, SAO Catalogue and Cape zone catalogue. Contact: A. C. Gilmore, P.O. Box 57, Lake Tekapo, New Zealand.

Object		Date	UT	R. A. (1950)			Decl.			Mag.	N	Obs.
1922		1983	12 05.59385	10	02	21.02	-27	45	47.5			474
1922		1983	12 05.61770	10	02	21.66	-27	46	06.5			474
1922		1984	01 30.51978	09	54	51.35	-37	17	49.1			474
1922		1984	01 30.53807	09	54	50.52	-37	17	54.5			474
2101		1984	06 23.48659	18	57	52.12	-30	15	39.9	17		474
2101		1984	06 23.50892	18	57	48.12	-30	16	16.6			474
2101		1984	06 26.44818	18	47	45.82	-31	50	10.1	16		474
2101		1984	06 26.46369	18	47	41.53	-31	50	45.8			474
3039		1984	01 03.50275	04	52	30.27	+01	37	14.7			474
3039		1984	01 03.52914	04	52	29.09	+01	37	16.8			474
3046		1984	01 03.55681	06	21	24.57	-05	18	48.3			474
3046		1984	01 03.57880	06	21	23.57	-05	18	46.0			474
1971	MG	1983	02 14.53169	11	41	47.34	-16	04	13.2			474
1971	MG	1983	02 14.55576	11	41	46.50	-16	04	14.5			474
1971	MG	1983	02 15.52591	11	41	10.99	-16	05	15.4			474
1971	MG	1983	02 15.54830	11	41	10.12	-16	05	18.1			474
1971	MG	1983	03 20.50326	11	14	41.96	-14	50	57.4			474
1971	MG	1983	03 20.52549	11	14	40.83	-14	50	50.6			474
1971	MG	1984	05 29.63740	18	09	53.91	-29	19	58.5			474
1971	MG	1984	05 29.65962	18	09	52.85	-29	19	53.1			474
1980	XE	1984	02 27.56412	11	49	26.34	-30	31	43.2			474
1980	XE	1984	02 27.58611	11	49	24.84	-30	31	58.8			474
1981	ET3	1984	04 01.66493	17	21	26.61	-53	12	10.9			474
1981	ET3	1984	04 01.69363	17	21	28.94	-53	12	39.7			474

1981 ET3		1984 05 26.53645	17 35 12.80	-70 25 46.5							474
1981 ET3		1984 05 26.55902	17 35 09.63	-70 26 09.3							474
1981 GX		1984 05 26.48425	17 19 26.86	-23 59 55.4							474
1981 GX		1984 05 26.50572	17 19 25.16	-23 59 35.6							474
1981 GX		1984 05 29.57814	17 15 27.10	-23 10 07.1							474
1981 GX		1984 05 29.60730	17 15 24.93	-23 09 40.5							474
1981 PB		1984 05 26.58541	18 01 15.65	-34 58 41.0						1	474
1981 PB		1984 05 26.60751	18 01 15.19	-34 58 49.5						1	474
1981 PB		1984 05 30.55904	18 00 06.89	-35 23 02.7							474
1981 PB		1984 05 30.58624	18 00 06.17	-35 23 11.9							474
1981 PL		1984 04 23.59167	14 36 29.87	-25 23 29.9							474
1981 PL		1984 04 23.61476	14 36 28.61	-25 23 21.9							474
1981 PL		1984 04 28.54167	14 31 58.61	-24 53 45.1							474
1981 PL		1984 04 28.57060	14 31 56.92	-24 53 34.2							474
1981 QJ1		1984 02 27.47141	10 03 11.03	+16 26 08.6							474
1981 QJ1		1984 02 27.51898	10 03 08.10	+16 26 05.6							474
1982 KD1		1983 10 05.53263	22 18 33.96	-26 59 53.8							474
1982 KD1		1983 10 05.55855	22 18 33.40	-26 59 47.7							474
1983 CB		1984 05 29.43091	15 52 41.82	-53 50 03.5							474
1983 CB		1984 05 29.45302	15 52 39.96	-53 50 01.8							474
1983 CW1		1984 05 29.38010	15 49 51.24	-36 39 30.2							474
1983 CW1		1984 05 29.40267	15 49 49.90	-36 39 24.9							474
1984 HX	*	1984 04 23.59167	14 37 23.23	-25 25 05.0					18		474
1984 HX		1984 04 23.61476	14 37 21.70	-25 24 59.8							474
1984 HX		1984 04 28.54167	14 32 11.74	-25 04 34.0							474
1984 HX		1984 04 28.57060	14 32 09.76	-25 04 25.6							474
1984 HX		1984 05 03.47652	14 26 58.02	-24 40 25.0							474
1984 HX		1984 05 03.50510	14 26 56.23	-24 40 16.9							474
1984 HX		1984 05 21.37720	14 09 59.50	-22 54 45.9							474
1984 HX		1984 05 21.41458	14 09 57.65	-22 54 32.4							474
1984 HX		1984 05 30.47490	14 03 51.19	-22 00 04.9							474
1984 HX		1984 05 30.52050	14 03 49.59	-21 59 49.7							474
1984 KD		1984 06 15.28751	13 41 40.38	-12 22 52.9					12		474
1984 KD		1984 06 15.29654	13 41 33.35	-12 26 36.6							474
1984 KD		1984 06 15.32779	13 41 08.67	-12 39 27.1							474
1984 KD		1984 06 15.32953	13 41 07.27	-12 40 09.9							474
1984 KD		1984 06 15.50904	13 38 42.20	-13 55 07.6							474
1984 KD		1984 06 15.51078	13 38 40.78	-13 55 51.9							474
1984 KD		1984 06 16.27536	13 28 11.57	-19 46 30.8					12		474
1984 KD		1984 06 16.27779	13 28 09.13	-19 47 42.8							474
1984 KD		1984 06 16.48751	13 24 31.83	-21 32 08.1							474
1984 KD		1984 06 16.48925	13 24 29.99	-21 33 00.5							474

Note 1: image at edge of film.

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

Plates taken with the 0.4-m f/5 double astrograph at the Centro Astronomico of the National Astronomical Observatory of the National Geographical Institute. Measurements using an ASCORECORD II Coordinatometer, reductions using about eight SAO Catalogue reference stars. Contact: M. de Pascual M., Observatorio Astronomico de Madrid, Alfonso XII 3, Spain.

Object	Date	UT	R. A. (1950)	Decl.	N Obs.
1	1983 08 04.06866	21 59 32.03	-26 47 08.6		491
1	1983 08 04.07212	21 59 31.90	-26 47 09.6		491
1	1983 08 04.07558	21 59 31.72	-26 47 11.2		491
1	1983 09 07.97293	21 30 31.51	-29 24 39.0		491
1	1983 09 07.97708	21 30 31.31	-29 24 40.2		491
1	1983 09 07.98124	21 30 31.15	-29 24 39.3		491
1	1983 09 08.93522	21 29 52.28	-29 26 00.4		491

1		1983	09	08.93868	21	29	52.09	-29	26 00.1	491
1		1983	09	08.94214	21	29	51.94	-29	26 01.0	491
1		1983	10	04.96627	21	19	57.35	-29	02 04.8	491
1		1983	10	04.97181	21	19	57.34	-29	02 03.8	491
1		1983	10	04.97735	21	19	57.05	-29	02 02.8	491
1		1983	10	05.99654	21	19	54.01	-28	59 03.3	491
1		1983	10	06.00070	21	19	54.06	-28	59 01.8	491
1		1983	10	06.00486	21	19	54.10	-28	59 02.1	491
2		1983	08	02.95988	18	27	19.60	+19	13 31.5	491
2		1983	08	02.96473	18	27	19.45	+19	13 28.6	491
2		1983	08	02.96958	18	27	19.26	+19	13 25.9	491
2		1983	08	04.05480	18	26	44.77	+19	02 39.3	491
2		1983	08	04.05896	18	26	44.62	+19	02 37.0	491
2		1983	08	04.06311	18	26	44.50	+19	02 34.5	491
2		1983	09	07.90263	18	20	43.02	+12	21 17.5	491
2		1983	09	07.90679	18	20	43.04	+12	21 14.5	491
2		1983	09	07.91094	18	20	43.07	+12	21 11.7	491
2		1983	09	08.88674	18	20	54.16	+12	09 34.6	491
2		1983	09	08.89020	18	20	54.24	+12	09 31.7	491
2		1983	09	08.89366	18	20	54.28	+12	09 30.2	491
2		1983	10	04.89193	18	32	08.39	+07	21 00.2	491
2		1983	10	04.89747	18	32	08.57	+07	20 56.5	491
2		1983	10	04.90301	18	32	08.77	+07	20 53.6	491
2		1983	10	05.92469	18	32	48.78	+07	10 41.3	491
2		1983	10	05.92815	18	32	48.93	+07	10 39.5	491
2		1983	10	05.93162	18	32	49.06	+07	10 37.2	491
3		1983	08	04.09699	01	50	36.91	+07	50 29.7	491
3		1983	08	04.10045	01	50	37.19	+07	50 30.1	491
3		1983	08	04.10576	01	50	37.56	+07	50 29.8	491
3		1983	09	08.06088	02	21	14.71	+05	17 38.7	491
3		1983	09	08.06434	02	21	14.82	+05	17 37.1	491
3		1983	09	08.06849	02	21	14.89	+05	17 35.0	491
3		1983	09	09.02352	02	21	41.27	+05	09 21.1	491
3		1983	09	09.02699	02	21	41.36	+05	09 19.6	491
3		1983	09	09.03045	02	21	41.43	+05	09 18.6	491
4		1983	10	05.17814	05	46	55.98	+18	00 32.2	491
4		1983	10	05.18229	05	46	56.10	+18	00 32.5	491
4		1983	10	05.18645	05	46	56.20	+18	00 32.5	491
4		1983	10	06.16155	05	47	27.93	+18	00 23.3	491
4		1983	10	06.16709	05	47	28.10	+18	00 23.4	491
4		1983	10	06.17263	05	47	28.27	+18	00 23.2	491
6		1983	06	07.07847	17	50	38.78	-03	21 11.9	491
6		1983	06	07.08193	17	50	38.61	-03	21 11.8	491
6		1983	06	07.08539	17	50	38.41	-03	21 11.7	491
6		1983	06	10.05977	17	47	53.49	-03	22 44.4	491
6		1983	06	10.06323	17	47	53.26	-03	22 44.6	491
6		1983	06	10.06669	17	47	53.01	-03	22 45.6	491
6		1983	07	05.95813	17	22	53.73	-04	51 08.3	491
6		1983	07	05.96159	17	22	53.53	-04	51 09.7	491
6		1983	07	05.96506	17	22	53.36	-04	51 10.9	491
6		1983	07	06.95587	17	22	02.38	-04	57 03.7	491
6		1983	07	06.95933	17	22	02.20	-04	57 04.6	491
6		1983	07	06.96279	17	22	02.02	-04	57 05.4	491
6		1983	08	02.97408	17	07	45.30	-08	24 22.2	491
6		1983	08	02.97893	17	07	45.26	-08	24 24.7	491
6		1983	08	02.98378	17	07	45.20	-08	24 27.6	491
6		1983	08	03.96546	17	07	36.93	-08	33 06.3	491
6		1983	08	03.96892	17	07	36.92	-08	33 07.8	491
6		1983	08	03.97238	17	07	36.86	-08	33 09.7	491

6	1983	09	07.89121	17	20	43.90	-13	42	53.0	491
6	1983	09	07.89467	17	20	44.04	-13	42	54.5	491
6	1983	09	07.89813	17	20	44.27	-13	42	56.6	491
6	1983	09	08.87254	17	21	34.07	-13	51	04.5	491
6	1983	09	08.87670	17	21	34.26	-13	51	06.3	491
6	1983	09	08.88085	17	21	34.48	-13	51	08.5	491
6	1983	10	04.84207	17	51	12.71	-17	03	25.3	491
6	1983	10	04.84761	17	51	13.16	-17	03	27.9	491
6	1983	10	04.85315	17	51	13.62	-17	03	29.7	491
6	1983	10	06.82795	17	54	00.68	-17	15	50.4	491
6	1983	10	06.83418	17	54	01.18	-17	15	52.4	491
6	1983	10	06.84042	17	54	01.73	-17	15	55.3	491
7	1983	07	05.94447	17	06	27.55	-21	46	36.9	491
7	1983	07	05.94786	17	06	27.34	-21	46	36.0	491
7	1983	07	05.95132	17	06	27.19	-21	46	35.7	491
7	1983	07	06.93855	17	05	37.07	-21	43	57.6	491
7	1983	07	06.94201	17	05	36.84	-21	43	56.8	491
7	1983	07	06.94548	17	05	36.65	-21	43	56.4	491
7	1983	10	04.86666	17	34	06.18	-20	54	33.2	491
7	1983	10	06.80891	17	36	37.25	-20	55	11.2	491
7	1983	10	06.81376	17	36	37.65	-20	55	11.1	491
7	1983	10	06.81860	17	36	37.95	-20	55	11.4	491
25	1983	06	06.96367	12	33	40.20	-03	45	30.6	491
25	1983	06	06.97267	12	33	40.51	-03	45	25.8	491
25	1983	06	14.92069	12	37	51.85	-02	58	31.2	491
25	1983	06	14.92554	12	37	51.98	-02	58	30.0	491
40	1983	07	05.99010	19	53	36.33	-23	05	22.8	491
40	1983	07	07.06286	19	52	34.80	-23	10	56.8	1 491
40	1983	09	07.92757	19	13	43.89	-26	02	49.4	491
40	1983	09	07.93172	19	13	43.95	-26	02	49.2	491
40	1983	09	07.93588	19	13	43.97	-26	02	49.0	491
40	1983	09	08.89817	19	14	02.13	-26	02	26.5	491
40	1983	09	08.90163	19	14	02.17	-26	02	26.5	491
40	1983	09	08.90509	19	14	02.23	-26	02	26.0	491
40	1983	10	04.90873	19	32	44.87	-25	24	41.4	491
40	1983	10	04.91219	19	32	45.08	-25	24	40.8	491
40	1983	10	04.91565	19	32	45.29	-25	24	40.3	491
54	1983	07	06.10646	22	26	25.07	-09	40	27.3	1 491
54	1983	07	07.02650	22	26	23.24	-09	34	20.4	1 491
103	1983	07	05.99010	20	04	30.27	-16	48	58.6	491
103	1983	07	07.06286	20	03	41.16	-16	53	18.3	1 491
296	1983	07	05.99010	19	58	56.59	-20	02	03.2	491
296	1983	07	07.06286	19	57	57.71	-20	05	53.7	2 491
371	1983	07	05.99010	19	39	11.22	-20	13	39.9	491
371	1983	07	07.06286	19	38	11.27	-20	12	31.9	491
389	1983	06	07.89549	13	43	05.97	-21	14	43.0	491
389	1983	06	07.91627	13	43	05.91	-21	14	36.4	491
389	1983	06	10.92648	13	43	03.76	-20	58	04.8	491
389	1983	06	10.93444	13	43	03.78	-20	58	01.9	491
389	1983	07	06.90670	13	52	41.57	-19	33	27.6	491
389	1983	07	06.91154	13	52	41.72	-19	33	27.1	491
389	1983	07	08.90885	13	54	05.55	-19	31	11.1	491
389	1983	07	08.91543	13	54	05.87	-19	31	10.6	491
389	1983	08	02.87626	14	17	47.74	-19	44	31.1	1 491
480	1983	07	06.03478	18	53	17.43	+02	07	37.3	491
480	1983	07	06.04170	18	53	17.05	+02	07	39.2	491
480	1983	07	06.04863	18	53	16.58	+02	07	40.8	491
480	1983	07	06.99291	18	52	23.91	+02	11	04.4	491
480	1983	07	06.99845	18	52	23.60	+02	11	05.6	491

480		1983	07	07.00399	18	52	23.29	+02	11	06.6	491
504		1983	07	06.06490	22	03	47.26	-20	50	00.0	1 491
504		1983	07	07.09506	22	03	56.55	-20	59	18.0	491
532		1983	07	06.01538	18	06	04.09	-18	03	15.4	491
532		1983	07	06.01884	18	06	03.93	-18	03	16.7	491
532		1983	07	06.02230	18	06	03.71	-18	03	17.8	491
532		1983	07	06.97006	18	05	12.60	-18	09	31.0	491
532		1983	07	06.97456	18	05	12.33	-18	09	33.7	491
532		1983	07	06.97941	18	05	12.04	-18	09	34.6	491
628		1983	07	05.99010	20	05	11.66	-20	37	25.0	491
628		1983	07	07.06286	20	04	20.03	-20	45	38.2	491
656		1983	07	05.99010	19	46	51.35	-20	28	20.5	491
656		1983	07	07.06286	19	46	01.06	-20	30	28.7	3 491
1075		1983	07	06.06490	21	45	04.18	-21	50	22.8	491
1075		1983	07	07.09506	21	44	50.26	-21	57	28.9	491
1909		1983	07	05.99010	19	48	46.21	-17	59	26.1	491
1909		1983	07	07.06286	19	47	45.36	-18	01	36.3	491
2670		1983	10	05.03563	23	53	46.70	+14	45	10.2	491
2670		1983	10	06.04537	23	53	02.82	+14	40	03.0	491
2831		1983	07	06.06490	21	54	16.21	-18	22	57.8	1 491
2831		1983	07	07.09506	21	54	26.45	-18	27	11.9	491
2831		1983	09	07.95354	21	18	16.27	-24	20	34.1	491
2831		1983	09	08.92171	21	17	50.00	-24	21	22.0	491
2831		1983	10	04.93972	21	19	39.35	-23	15	00.2	491
2942		1983	07	05.99010	19	43	02.86	-19	20	20.2	491
2942		1983	07	07.06286	19	42	06.97	-19	28	58.1	3 491
1981	EM4	1983	10	05.03563	23	57	56.81	+13	58	35.7	491
1981	EM4	1983	10	06.04537	23	56	59.78	+13	55	20.7	491
1983	TC	1983	10	05.03563	23	54	51.87	+15	12	06.3	491

Note 1: close to edge of plate. 2: uncertain; image diffuse and difficult to measure. 3: very uncertain; image very diffuse and difficult to measure.

OBSERVATIONS MADE WITH THE INFRARED ASTRONOMICAL SATELLITE.

Reported by S. Green, University of Leicester, from data obtained with the IRAS Observatory. Contact: J. Davies, Dept. of Astronomy, University of Leicester, Leicester LE1 7RH, England.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 SN	*	1983	09 26.26624	17 04.34	+00 15.4	16	500
1983 SN		1983	09 26.33779	17 05.42	+00 25.6		500
1983 SN		1983	09 26.40933	17 06.66	+00 35.8		500
1983 SN		1983	09 26.48088	17 07.64	+00 45.9		500
1983 SN		1983	09 26.55242	17 08.80	+00 55.9		500

OBSERVATIONS MADE AT FALKENSEE BY M. GRESSMANN.

Plates taken with the 0.34-m Schmidt. Contact: M. Gressmann, Sternwarte Falkensee, DDR-1542 Falkensee, Democratic Republic of Germany.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
11	1984	03 27.88871	12 14 18.45	+05 21 56.1		542
76	1984	04 24.87734	13 02 06.38	-06 44 58.3		542
76	1984	04 24.90378	13 02 05.36	-06 44 48.8		542
76	1984	04 24.93306	13 02 04.17	-06 44 41.9		542
130	1984	04 23.92663	13 25 56.19	+17 43 05.4	1	542
226	1984	04 24.89392	13 14 22.57	+16 48 54.3	2	542
226	1984	04 24.92296	13 14 21.17	+16 49 00.9		542
226	1984	04 24.95317	13 14 20.07	+16 49 11.5	2	542
246	1983	06 06.90507	16 48 08.15	+04 14 36.0	2	542
246	1983	06 06.91218	16 48 07.70	+04 14 35.1		542
246	1983	06 06.93057	16 48 06.80	+04 14 35.3		542
354	1983	06 06.90507	16 56 41.52	+03 27 35.5		542

354		1983	06	06.91218	16	56	41.03	+03	27	34.8	542
354		1983	06	06.93057	16	56	40.10	+03	27	32.6	542
487		1984	04	24.96323	14	38	06.11	+00	39	00.7	542
487		1984	04	24.98668	14	38	05.10	+00	39	05.6	542
487		1984	04	24.99457	14	38	04.78	+00	39	07.6	542
505		1984	03	27.90008	12	54	43.44	+10	13	38.7	542
753		1984	04	23.91045	13	08	31.04	+05	46	09.3	542
753		1984	04	23.93549	13	08	29.48	+05	46	08.7	542
753		1984	04	24.88533	13	07	31.76	+05	44	18.3	542
753		1984	04	24.91341	13	07	30.11	+05	44	16.9	542
753		1984	04	24.94351	13	07	28.17	+05	44	13.5	542

Note 1: near edge of plate. 2: measurement uncertain.

OBSERVATIONS MADE AT PISZKESTETO BY M. ANTAL.

Plates taken with the 0.60-m (60/90/180-cm) Schmidt telescope of the Hungarian Academy of Sciences. Scanned and measured by M. Antal. Reduction by E. Pittich. Reference stars from SAO Catalogue. I. Toth assisted at the telescope. Identifications by B. G. Marsden. Contact: M. Antal, Rastislavova 2, Piestany, Czechoslovakia.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
3026		1982	08 23.04618	00 09 04.39	+10 50 54.0	17.2	561
3026		1982	08 23.07951	00 09 03.58	+10 50 49.2		561
3026		1982	08 24.01042	00 08 40.93	+10 48 19.7		561
3026		1982	08 24.04688	00 08 39.93	+10 48 12.8		561
3026		1982	08 25.00903	00 08 15.56	+10 45 29.1		561
3026		1982	08 25.04653	00 08 14.55	+10 45 23.2		561
3026		1982	08 25.98264	00 07 49.86	+10 42 31.9		561
3026		1982	08 26.03819	00 07 48.33	+10 42 21.9		561
1942	RN	1983	05 16.00347	17 57 02.83	-09 10 31.4	15.7	561
1942	RN	1983	05 16.03756	17 57 01.72	-09 10 24.8		561
1942	RN	1983	05 20.02014	17 54 44.82	-08 57 51.5		561
1942	RN	1983	05 20.04792	17 54 43.76	-08 57 46.4		561
1942	RN	1983	05 21.02569	17 54 07.27	-08 54 52.9		561
1942	RN	1983	05 21.05451	17 54 06.07	-08 54 48.6		561
1982	QY1 *	1982	08 23.04618	23 51 31.30	+11 05 00.5	17.2	561
1982	QY1	1982	08 23.07951	23 51 30.31	+11 04 58.7		561
1982	QY1	1982	08 24.07431	23 51 02.31	+11 04 11.7		561
1982	QY1	1982	08 24.09549	23 51 01.52	+11 04 09.8		561
1982	QY1	1982	08 25.02708	23 50 34.21	+11 03 11.8		561
1982	QY1	1982	08 25.06389	23 50 33.10	+11 03 08.6		561
1982	QY1	1982	08 26.00278	23 50 04.21	+11 01 57.2		561
1982	QY1	1982	08 26.05417	23 50 02.36	+11 01 53.3		561
1982	QZ1 *	1982	08 23.04618	00 04 28.60	+12 24 43.5	17.7	561
1982	QZ1	1982	08 23.07951	00 04 27.77	+12 24 46.6		561
1982	QZ1	1982	08 24.01042	00 04 08.52	+12 25 42.4		561
1982	QZ1	1982	08 24.04688	00 04 07.66	+12 25 45.1		561
1982	QZ1	1982	08 25.00903	00 03 45.72	+12 26 23.8		561
1982	QZ1	1982	08 25.04653	00 03 44.74	+12 26 24.6		561
1982	QZ1	1982	08 25.98264	00 03 21.68	+12 26 43.5		561
1982	QZ1	1982	08 26.03819	00 03 20.03	+12 26 44.2		561
1982	QA2 *	1982	08 23.04618	00 07 47.91	+10 30 23.1	17.7	561
1982	QA2	1982	08 23.07951	00 07 46.87	+10 30 25.8		561
1982	QA2	1982	08 24.01042	00 07 17.80	+10 32 15.8		561
1982	QA2	1982	08 24.04688	00 07 16.54	+10 32 19.7		561
1982	QA2	1982	08 25.00903	00 06 44.75	+10 33 54.8		561
1982	QA2	1982	08 25.04653	00 06 43.35	+10 33 59.6		561
1982	QA2	1982	08 25.98264	00 06 10.85	+10 35 18.0		561
1982	QA2	1982	08 26.03819	00 06 08.71	+10 35 23.2		561
1982	RN1	1982	08 24.01042	00 11 28.53	+10 16 53.2	16.7	561

1982 RN1	1982 08 24.04688	00 11 27.73	+10 16 40.8		561
1982 RN1	1982 08 25.00903	00 11 09.12	+10 10 35.4		561
1982 RN1	1982 08 25.04653	00 11 08.30	+10 10 19.9		561
1982 RN1	1982 08 25.98264	00 10 48.82	+10 04 09.2		561
1982 RN1	1982 08 26.03819	00 10 47.50	+10 03 46.4		561

OBSERVATIONS MADE AT BASSANO BRESCIANO BY U. QUADRI AND V. MARINELLO.

Plates taken with an 0.15-m astrometric reflector, measured with a one-axis machine, reduced using a modified dependence method and SAO reference-star positions. Contact: U. Quadri, Osservatorio Astronomico Brixia, Via S. Michele 4, I-25020 Bassano Bresciano, Brescia, Italy.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
11	1984 04	22.88970	11 54 47.18	+07 25 03.7	565
11	1984 04	22.92454	11 54 46.01	+07 25 08.8	565
17	1984 04	23.86736	11 11 56.21	+12 50 45.6	565
17	1984 04	23.90694	11 11 55.72	+12 50 45.1	565
19	1984 04	23.84375	10 53 57.74	+05 47 01.4	565
19	1984 04	23.88750	10 53 57.22	+05 47 07.1	565
60	1984 03	06.88432	09 06 51.56	+12 02 24.7	565
60	1984 03	06.91654	09 06 50.74	+12 02 35.0	565
64	1984 04	19.85160	11 39 57.74	+00 14 42.9	565
64	1984 04	19.88542	11 39 56.73	+00 14 49.6	565
85	1984 03	06.84271	08 43 27.50	+03 16 04.8	565
85	1984 03	06.85127	08 43 27.20	+03 16 08.7	565
85	1984 03	06.89882	08 43 25.71	+03 16 27.6	565
93	1984 03	05.88613	08 44 04.96	+26 55 59.7	565
93	1984 03	05.92141	08 44 03.66	+26 55 56.7	565
324	1984 03	04.86295	08 46 27.38	+20 19 27.6	565
324	1984 03	04.90588	08 46 25.92	+20 19 27.6	565

OBSERVATIONS MADE AT OSSERVATORIO GIORDANO BRUNO, CAVRIANA.

Plates taken with the 0.40-m reflector by L. Lai, I. Ronchetti, M. Ruzza and G. Vesentini. Blinked by Lai, measured and reduced by E. Colombini at Osservatorio S. Vittore. Reference stars from the SAO Catalogue. Contact: L. Lai, via Mantovana 130/A, I-37062 Verona, Italy.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
54	1983 09	04.89097	21 42 43.75	-06 11 55.3	11.2	1	571
54	1983 09	04.90486	21 42 42.73	-06 11 54.7		1	571
167	1983 12	05.86181	03 35 37.42	+16 02 37.7	14.7	1	571
167	1983 12	05.87639	03 35 36.67	+16 02 34.1		1	571
277	1983 11	01.91528	02 00 00.75	+12 48 02.8	14.5	1	571
277	1983 11	01.94826	01 59 59.09	+12 47 51.3		1	571
559	1983 12	05.88958	03 24 07.95	+07 08 14.5	14.7	3	571
559	1983 12	05.90486	03 24 07.35	+07 08 12.4		3	571
897	1983 09	27.85208	21 26 25.09	+08 13 43.4	15.6	1	571
897	1983 09	27.86944	21 26 25.16	+08 13 49.0		1	571
1456	1983 09	06.92708	21 53 38.19	+01 51 12.6	15.4	1	571
1456	1983 09	06.95139	21 53 37.13	+01 51 08.9		1	571
1547	1983 09	06.92708	21 55 24.70	+01 20 02.1	15.6	1	571
1547	1983 09	06.95139	21 55 23.41	+01 19 57.3		1	571
1633	1983 12	05.86181	03 33 01.73	+16 00 06.2	16.5	1	571
1633	1983 12	05.87639	03 33 00.91	+16 00 03.9		1	571
1705	1983 12	05.88958	03 28 28.80	+07 05 17.6	16.1	1	571
1705	1983 12	05.90486	03 28 28.04	+07 05 16.7		1	571
1851	1983 11	01.91528	02 02 07.49	+12 56 27.9	16.2	1	571
1851	1983 11	01.94826	02 02 05.91	+12 56 20.0		1	571
2439	1983 10	31.91181	02 12 01.36	+12 50 29.7	16.0	1	571
2439	1983 10	31.95833	02 11 59.09	+12 50 16.3		1	571

2439	1983 11 01.93056	02 11 11.62	+12 46 13.4		1 571
2439	1983 11 01.96285	02 11 10.03	+12 46 04.4		1 571

Note 1: new observatory code 571, Long. and Parallax 10.63, -302, -300 (see MPC 7759). 2: near edge of plate. 3 = 1 + 2.

OBSERVATIONS MADE AT VICTORIA BY J. B. TATUM AND D. D. BALAM.

Films (Kodak 2415 emulsion) taken with a 0.25-m f/2 Schmidt (Celestron 10). Measurements on single-coordinate engine. Generally 6-8 reference stars from SAO Catalogue, least-squares plate-constants solution (Tatum 1982, J. Roy. Astron. Soc. Canada 76, 97). Contact: J. B. Tatum, Dept of Physics, University of Victoria, P.O. Box 1700, Victoria, BC, V8W 2Y2, Canada.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
2802	1984 05	07.40940	15 21 40.72	-03 20 50.5	657
1981 XK2	1984 05	21.40154	17 52 40.45	-17 50 13.1	657
1984 KB	1984 05	31.35691	17 25 07.74	+08 03 04.4	657
1984 KD	1984 06	14.29201	13 52 07.90	-06 19 37.7	657

OBSERVATIONS MADE AT THE LICK OBSERVATORY BY A. R. KLEMOLA AND E. A. HARLAN.

Plates taken with the yellow lens of the 0.51-m Carnegie double astrograph, measured using the second upgraded version of the Lick Gaertner automatic measuring system. Reference-star positions from Perth 70 and AGK3R. Copied from Astron. J. 89, 879, 1984. Contact: A. R. Klemola, Lick Observatory, University of California, Santa Cruz, CA 95064, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1	1982 05	21.31319	15 06 14.22	-09 04 09.6	662
1	1982 05	21.31528	15 06 14.11	-09 04 09.5	662
1	1982 05	21.31736	15 06 14.00	-09 04 09.7	662
1	1983 07	20.41562	22 09 15.49	-25 03 42.2	662
1	1983 07	20.41840	22 09 15.39	-25 03 43.6	662
2	1983 05	03.47569	19 18 34.34	+17 50 53.6	662
2	1983 05	03.47847	19 18 34.33	+17 50 55.2	662
2	1983 05	03.48125	19 18 34.34	+17 50 56.8	662
2	1983 05	18.34062	19 17 38.57	+20 00 28.6	662
2	1983 05	18.34201	19 17 38.56	+20 00 29.3	662
2	1983 05	18.34340	19 17 38.54	+20 00 29.8	662
2	1983 05	18.35972	19 17 38.32	+20 00 37.6	662
2	1983 05	18.36181	19 17 38.28	+20 00 38.8	662
2	1983 05	18.36389	19 17 38.26	+20 00 39.8	662
2	1983 05	18.37118	19 17 38.14	+20 00 43.2	662
2	1983 05	18.37257	19 17 38.11	+20 00 43.9	662
2	1983 05	18.37396	19 17 38.12	+20 00 44.6	662
3	1983 06	04.45972	00 21 59.58	+03 56 16.8	662
3	1983 06	04.46250	00 21 59.84	+03 56 18.0	662
3	1983 06	04.46458	00 22 00.04	+03 56 19.2	662
19	1982 08	24.40139	01 32 17.52	+10 55 13.2	662
19	1982 08	24.40347	01 32 17.57	+10 55 13.1	662
19	1982 08	24.40556	01 32 17.60	+10 55 13.3	662
19	1982 09	08.31701	01 33 58.69	+10 58 31.1	662
19	1982 09	08.31979	01 33 58.66	+10 58 31.2	662
19	1982 09	08.32257	01 33 58.62	+10 58 31.0	662
19	1982 09	12.34479	01 33 14.56	+10 51 54.3	662
19	1982 09	12.34757	01 33 14.52	+10 51 54.0	662
19	1982 09	12.35035	01 33 14.46	+10 51 53.6	662
51	1983 06	17.42292	23 32 17.76	+02 07 13.0	662
51	1983 06	17.42708	23 32 17.98	+02 07 14.2	662
51	1983 06	17.43056	23 32 18.16	+02 07 15.2	662
51	1983 09	01.32222	23 39 29.83	+00 02 02.8	662
51	1983 09	01.32431	23 39 29.74	+00 02 01.7	662
51	1983 09	01.32639	23 39 29.63	+00 02 00.5	662

51	1983	09	01.32847	23	39	29.52	+00	01	59.5	662
51	1983	09	01.33576	23	39	29.19	+00	01	55.5	662
51	1983	09	01.33715	23	39	29.14	+00	01	54.9	662
51	1983	09	01.33854	23	39	29.06	+00	01	54.2	662
51	1983	09	01.33993	23	39	29.00	+00	01	53.4	662
52	1982	09	08.50104	07	16	10.47	+18	11	55.6	662
52	1982	09	08.50382	07	16	10.73	+18	11	55.3	662
52	1982	09	08.50660	07	16	10.96	+18	11	54.9	662
52	1983	01	14.42361	08	15	42.49	+17	45	27.6	662
52	1983	01	14.42535	08	15	42.38	+17	45	28.2	662
52	1983	01	14.42708	08	15	42.31	+17	45	28.8	662
52	1983	04	17.22257	08	03	38.93	+21	55	42.6	662
52	1983	04	17.22743	08	03	39.19	+21	55	42.4	662
52	1983	04	17.23160	08	03	39.40	+21	55	42.0	662
53	1983	09	01.35278	23	51	51.85	-04	46	12.4	662
53	1983	09	01.35625	23	51	51.71	-04	46	13.7	662
53	1983	09	01.35972	23	51	51.56	-04	46	15.1	662
65	1983	06	17.39653	20	37	58.97	-15	16	17.7	662
65	1983	06	17.40278	20	37	58.87	-15	16	18.0	662
65	1983	06	17.40903	20	37	58.77	-15	16	18.4	662
71	1983	04	04.18715	08	31	49.13	+11	39	53.0	662
71	1983	04	04.19132	08	31	49.15	+11	39	51.7	662
71	1983	04	04.19549	08	31	49.17	+11	39	50.4	662
80	1983	07	20.43750	01	24	53.78	+17	05	45.9	662
80	1983	07	20.43958	01	24	53.98	+17	05	47.0	662
80	1983	07	20.44167	01	24	54.19	+17	05	48.1	662
83	1983	06	04.40972	18	37	18.11	-30	26	44.3	662
83	1983	06	04.41458	18	37	17.87	-30	26	45.3	662
83	1983	06	04.41944	18	37	17.63	-30	26	46.3	662
93	1982	11	16.23333	03	39	16.11	+29	59	58.8	662
93	1982	11	16.23542	03	39	16.00	+29	59	59.3	662
93	1982	11	16.23750	03	39	15.85	+29	59	58.8	662
120	1983	08	12.18299	17	20	06.27	-31	09	33.8	662
120	1983	08	12.19201	17	20	06.31	-31	09	32.0	662
164	1982	05	26.21528	13	14	19.08	+18	55	02.1	662
164	1982	05	26.22639	13	14	18.64	+18	54	56.9	662
194	1983	11	08.48125	08	58	56.99	+03	23	39.2	662
194	1983	11	08.48472	08	58	57.10	+03	23	38.2	662
194	1983	11	08.48819	08	58	57.21	+03	23	36.8	662
283	1982	11	16.12222	22	27	56.99	-01	01	43.8	662
375	1982	11	09.24028	02	45	13.42	+39	23	10.4	662
375	1982	11	09.24236	02	45	13.27	+39	23	10.2	662
375	1982	11	09.24444	02	45	13.17	+39	23	10.0	662
451	1983	08	12.20764	18	04	06.67	-28	50	06.5	662
451	1983	08	12.21736	18	04	06.49	-28	50	07.6	662
452	1983	03	15.08542	13	20	04.71	-03	19	10.2	1 662
452	1983	03	16.04861	13	19	31.12	-03	14	58.7	1 662
481	1982	08	24.42639	02	34	43.06	+04	19	01.7	662
481	1982	08	24.43264	02	34	43.27	+04	19	02.2	662
481	1982	08	24.43889	02	34	43.44	+04	19	03.0	662
511	1983	06	17.37639	19	28	08.69	-20	31	49.4	662
511	1983	06	17.37986	19	28	08.54	-20	31	50.5	662
511	1983	06	17.38333	19	28	08.41	-20	31	51.2	662
521	1983	05	03.39375	15	49	32.83	-11	05	57.1	662
690	1982	08	24.45660	03	36	04.72	+27	13	19.0	662
690	1982	08	24.46076	03	36	04.94	+27	13	19.6	662
690	1982	08	24.46493	03	36	05.16	+27	13	20.1	662
690	1982	11	09.25625	03	39	36.64	+25	29	32.8	662
690	1982	11	09.25972	03	39	36.49	+25	29	31.4	662

690		1982	11	09.26319	03	39	36.29	+25	29	30.3	662
704		1983	05	03.26667	13	13	13.77	-31	49	51.0	662
704		1983	05	03.27153	13	13	13.55	-31	49	48.7	662
704		1983	05	03.27569	13	13	13.36	-31	49	47.2	662
747		1983	07	27.27361	19	13	11.07	-14	21	55.7	662
747		1983	07	27.27708	19	13	10.90	-14	21	57.1	662
747		1983	07	27.28056	19	13	10.71	-14	21	58.6	662
2060		1983	09	12.43750	04	04	28.46	+17	09	23.9	2 662

Note 1: observation with the 0.9-m Crossley reflector, reduced using secondary reference-star positions from astrograph plate. 2: image extremely weak.

OBSERVATIONS MADE AT PALOMAR BY C. SHOEMAKER AND E. SHOEMAKER.

Four-minute exposures with the 0.46-m Schmidt telescope. Film pairs scanned by C. Shoemaker with a stereomicroscope; measured by her with a Mann comparator at the U.S. Geological Survey in Flagstaff. Reference stars from the SAO Catalogue. P. Shoemaker, P. Kempchinsky and F. Salazar assisted at the telescope. Contact: C. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1506		1984	04 27.29444	11 57 51.95	-13 15 40.4	17	675
1506		1984	04 29.24236	11 57 04.26	-12 54 03.2		675
1591		1984	05 28.17847	12 54 33.25	+28 32 48.2		675
1591		1984	05 29.26180	12 54 35.06	+28 12 06.8		675
1591		1984	05 30.20000	12 54 38.92	+27 54 00.8		675
2014		1984	03 28.41250	13 40 36.75	-14 10 39.3		675
2014		1984	03 30.42500	13 39 24.48	-13 39 44.1		675
1982	QQ	1984	04 30.17152	12 38 20.75	+09 13 55.1		675
1984	FM	1984	04 27.22430	12 50 52.79	+01 21 46.9		675
1984	FM	1984	04 29.23194	12 48 22.52	+00 47 44.4		675
1984	FN	1984	04 29.29375	13 28 49.58	+08 10 54.0		675
1984	FN	1984	04 30.26388	13 27 32.59	+07 56 11.2		675
1984	FO	1984	04 27.38611	14 30 26.32	+14 53 22.4		675
1984	FO	1984	04 29.34861	14 29 03.44	+15 27 39.2		675
1984	FO	1984	04 29.36666	14 29 02.66	+15 27 57.3		675
1984	FO	1984	05 26.23888	14 13 20.28	+20 03 23.5		675
1984	FO	1984	05 27.22013	14 13 02.11	+20 06 15.7		675
1984	FO	1984	05 29.28402	14 12 28.73	+20 10 41.6		675
1984	HB *	1984	04 27.22430	12 37 24.73	+01 34 30.2	15.5	675
1984	HB	1984	04 29.23194	12 35 58.50	+01 24 03.0		675
1984	HC *	1984	04 29.29375	13 25 17.35	+08 06 17.9	16	675
1984	HC	1984	04 30.26388	13 24 29.73	+08 03 42.9		675
1984	HV *	1984	04 27.29930	13 57 38.91	+21 01 04.7	17	675
1984	HV	1984	04 27.36875	13 57 35.85	+21 01 14.6		675
1984	HV	1984	04 29.26736	13 56 15.14	+21 05 42.7		675
1984	HV	1984	04 29.28958	13 56 14.25	+21 05 44.9		675
1984	HW *	1984	04 29.39791	14 56 20.53	+11 09 00.5	16	675
1984	HW	1984	05 01.37569	14 54 47.21	+11 10 28.1		675
1984	HW	1984	05 01.39236	14 54 46.29	+11 10 29.2		675
1984	KB *	1984	05 27.44930	17 58 12.20	+15 27 01.7	13.5	675
1984	KB	1984	05 27.47153	17 57 56.99	+15 23 53.9		675
1984	KB	1984	05 29.37778	17 39 42.20	+11 24 20.5		675
1984	KB	1984	05 29.39861	17 39 31.34	+11 21 59.8		675
1984	KB	1984	05 29.42852	17 39 15.84	+11 18 36.0		675
1984	KB	1984	05 29.44588	17 39 06.75	+11 16 37.7		675
1984	KB	1984	05 30.36875	17 31 56.10	+09 38 16.7		675
1984	KD *	1984	05 27.19097	14 52 49.50	+23 08 58.1	15	675
1984	KD	1984	05 27.21597	14 52 46.93	+23 08 30.8		675
1984	KD	1984	05 27.25486	14 52 42.80	+23 07 49.0		675

1984 KD		1984 05	27.27152	14	52	41.09	+23	07	28.9	675
1984 KD		1984 05	30.22303	14	48	13.40	+21	57	43.0	675
1984 KE	*	1984 05	26.31527	15	27	48.57	+10	35	35.8	16.5 675
1984 KE		1984 05	28.30277	15	26	13.63	+10	59	43.3	17 675
1984 KE		1984 05	29.32986	15	25	25.56	+11	11	27.3	17 675
1984 KF	*	1984 05	26.23888	14	05	43.60	+21	25	45.2	16.5 675
1984 KF		1984 05	27.22013	14	05	22.71	+21	23	58.3	675
1984 KF		1984 05	29.28402	14	04	40.59	+21	19	44.8	675

OBSERVATIONS MADE AT PALOMAR BY J. GIBSON.

Plates taken with the 1.2-m Schmidt. Coordination with J. G. Williams and with the Minor Planet Center. Reference stars from AGK3 north of declination -2 , otherwise from SAO Catalogue. Contact: J. Gibson, Jet Propulsion Laboratory, MS 264-781, Pasadena, CA 91109, U.S.A.

Object		Date	UT	R. A. (1950)			Decl.			Mag.	Obs.
1973 SZ1		1984 04	21.18614	06	40	21.46	+24	44	07.4		675
1981 RF		1984 04	21.35836	15	23	45.09	-13	21	14.9	17.5	675
1981 RF		1984 05	07.31461	15	09	28.72	-12	20	28.8		675
1981 RF		1984 05	08.36531	15	08	27.03	-12	16	28.7		675
1981 RF		1984 05	09.37642	15	07	27.57	-12	12	39.4	18	675
1983 XF		1984 05	19.22086	09	23	27.08	+20	00	53.7		675
1984 AB		1984 05	19.23822	08	54	21.69	+32	10	05.6		675
1984 CE		1984 04	21.23614	09	33	21.75	+27	39	33.3		675
1984 FM		1984 05	08.26739	12	39	08.78	-01	46	06.5		675
1984 FM		1984 05	09.30836	12	38	18.56	-02	03	45.7		675
1984 FO		1984 05	08.27989	14	22	47.28	+17	41	15.0		675
1984 FO		1984 05	09.31531	14	22	05.48	+17	54	08.0		675
1984 HZ	*	1984 04	21.35836	15	24	13.95	-13	12	35.4	17	675
1984 JH		1984 05	07.31461	15	03	07.53	-12	35	21.6		675
1984 JH		1984 05	08.36531	15	02	14.54	-12	32	08.4		675
1984 JH	*	1984 05	09.37642	15	01	23.82	-12	29	03.4	18	675
1984 JJ		1984 05	07.31461	15	04	23.82	-11	55	47.5		675
1984 JJ		1984 05	08.36531	15	03	23.42	-11	49	42.2		675
1984 JJ	*	1984 05	09.37642	15	02	25.61	-11	43	54.2	17	675
1984 JK		1984 05	07.31461	15	04	40.84	-12	05	25.8		675
1984 JK		1984 05	08.36531	15	03	42.32	-11	59	47.7		675
1984 JK	*	1984 05	09.37642	15	02	46.05	-11	54	24.0	18.5	675
1984 JL		1984 05	07.31461	15	04	50.89	-12	40	38.7		675
1984 JL		1984 05	08.36531	15	03	48.48	-12	37	20.8		675
1984 JL	*	1984 05	09.37642	15	02	48.55	-12	34	12.1	16.5	675
1984 JM		1984 05	07.31461	15	05	13.51	-12	31	15.0		675
1984 JM		1984 05	08.36531	15	04	21.69	-12	29	17.5		675
1984 JM	*	1984 05	09.37642	15	03	31.95	-12	27	26.0	18.5	675
1984 JN		1984 04	21.35836	15	21	37.08	-13	13	29.0	17	675
1984 JN		1984 05	07.31461	15	07	11.71	-12	22	05.6		675
1984 JN		1984 05	08.36531	15	06	10.47	-12	18	54.5		675
1984 JN	*	1984 05	09.37642	15	05	11.71	-12	15	52.5	18	675
1984 JO		1984 05	07.31461	15	07	53.18	-11	26	59.3		675
1984 JO		1984 05	08.36531	15	06	53.13	-11	26	35.9		675
1984 JO	*	1984 05	09.37642	15	05	55.25	-11	26	16.9	17.5	675
1984 JP		1984 05	07.31461	15	08	23.36	-12	00	54.3		675
1984 JP		1984 05	08.36531	15	07	26.05	-11	57	40.6		675
1984 JP	*	1984 05	09.37642	15	06	30.77	-11	54	36.0	18	675
1984 JQ		1984 05	07.31461	15	11	02.16	-12	16	40.8		675
1984 JQ		1984 05	08.36531	15	09	54.52	-12	14	05.0		675
1984 JQ	*	1984 05	09.37642	15	08	49.29	-12	11	35.8	17.5	675
1984 JR		1984 04	08.43058	15	31	07.89	-14	01	25.2		675
1984 JR		1984 05	07.31461	15	11	56.68	-12	43	19.6		675
1984 JR		1984 05	08.36531	15	10	56.71	-12	40	17.9		675

1984 JR	*	1984 05 09.37642	15 09 58.84	-12 37 25.9		18	675
1984 KA	*	1984 05 19.23822	08 55 20.58	+31 53 49.3		18	675
1984 KC	*	1984 05 19.18961	11 05 54.86	+02 39 35.3		19	675

OBSERVATIONS MADE AT PALOMAR BY E. HELIN AND R. S. DUNBAR.

Plates taken with the 1.2-m Schmidt, measured by S. Swanson. Contact: E. Helin, Jet Propulsion Laboratory, MS 183-501, Pasadena, CA 91109, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1978 GB		1984 05 04.46528	19 01 17.17	+18 05 27.7		17.5	675
1978 GB		1984 05 04.48611	19 01 17.64	+18 05 40.4			675
1978 GB		1984 05 05.46319	19 01 42.52	+18 18 05.0			675
1978 GB		1984 05 05.48403	19 01 43.01	+18 18 17.6			675
1984 JA	*	1984 05 06.43263	16 32 52.51	-12 55 51.8		17	675
1984 JB	*	1984 05 06.43263	16 44 03.39	-15 22 48.1		17	675

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

The positions in each case refer to the ends of trails. Contact: C. T. Kowal, Dept. of Astrophysics, California Insitute of Technology, Pasadena, CA 91125, U.S.A.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
2101		1977 02 26.22847	10 18 15.17	+12 01 22.4			1	675
2101		1977 02 26.23542	10 18 13.90	+12 01 28.1			1	675
1984 HD1	*	1984 04 24.35278	14 30 44.15	-34 37 23.3		16	2	675
1984 HD1		1984 04 24.37361	14 30 30.39	-34 31 06.0			2	675
1984 KB		1984 06 03.34722	17 08 48.88	+04 08 24.2		14.0		675
1984 KB		1984 06 03.36111	17 08 45.03	+04 07 29.3				675

Note 1: exposure by S. Kent. 2: sense of motion unclear; it is possible that the positions should be interchanged.

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT PALOMAR BY R. WINDHORST. MEASURED BY C. SHOEMAKER.

Contact: C. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1591	1984 05 26.23194	12 54 35.08	+29 09 24.4		675
1591	1984 05 27.28750	12 54 33.05	+28 49 38.2		675
1591	1984 05 28.21389	12 54 33.11	+28 32 06.3		675

OBSERVATIONS MADE AT PALOMAR.

Palomar-Leiden Survey plates taken with the 1.2-m Schmidt by T. Gehrels, scanned and measured by C. J. van Houten and I. van Houten-Groeneveld at Leiden. Computational support from the late P. Herget.

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2037 P-L	*	1960 09 24.45000	00 43 35.12	+08 33 24.4		18.8	675
2037 P-L		1960 09 26.37010	00 41 55.16	+08 31 51.9			675
2037 P-L		1960 09 28.45140	00 40 05.65	+08 29 55.3			675
2037 P-L		1960 09 29.44510	00 39 13.22	+08 28 55.4			675
2037 P-L		1960 10 17.30420	00 23 55.23	+08 05 32.9			675
2037 P-L		1960 10 22.27920	00 20 07.51	+07 58 45.9			675
2037 P-L		1960 10 25.37570	00 17 56.14	+07 54 52.4			675
2037 P-L		1960 10 26.36840	00 17 15.93	+07 53 41.3			675
4031 P-L	*	1960 09 24.37573	00 30 58.83	+07 40 51.0		17.6	675
4031 P-L		1960 09 25.42780	00 29 57.07	+07 38 22.3			675
4031 P-L		1960 09 26.30558	00 29 05.47	+07 36 12.6			675
4031 P-L		1960 09 28.36808	00 27 01.89	+07 30 46.4			675
4031 P-L		1960 10 17.27085	00 08 44.55	+06 30 06.3			675
4031 P-L		1960 10 22.22293	00 04 51.70	+06 15 02.0			675
4031 P-L		1960 10 24.35836	00 03 23.18	+06 09 09.9			675
4031 P-L		1960 10 26.32573	00 02 09.18	+06 04 09.5			675
4063 P-L	*	1960 09 24.37573	00 23 05.55	+07 25 49.1		19.1	675

4063	P-L		1960	09	25.42780	00	22	05.40	+07	22	01.1	675
4063	P-L		1960	09	26.30558	00	21	15.18	+07	18	45.9	675
4063	P-L		1960	09	28.36808	00	19	15.31	+07	10	48.5	675
4063	P-L		1960	10	17.27085	00	01	58.36	+05	49	31.5	675
4063	P-L		1960	10	22.22293	23	58	23.36	+05	29	42.8	675
4063	P-L		1960	10	24.35836	23	57	02.02	+05	21	51.9	675
4063	P-L		1960	10	26.32573	23	55	54.14	+05	15	06.3	675
6299	P-L	*	1960	09	24.33613	00	08	34.89	+05	46	04.9	19.1 675
6299	P-L		1960	09	25.32502	00	07	50.98	+05	37	13.3	675
6299	P-L		1960	09	26.27573	00	07	08.58	+05	28	35.9	675
6299	P-L		1960	09	28.32780	00	05	37.01	+05	09	52.0	675
6299	P-L		1960	10	17.27085	23	52	48.12	+02	17	52.9	675

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION.
Plates with the 0.33-m photographic telescope. Observer B. A. Skiff. Measured by Skiff and E. L. G. Bowell using a PDS scanning micro-densitometer. SAO reference stars, global solutions. Contact: E. L. G. Bowell, Lowell Observatory, P.O. Box 1269, Flagstaff, Arizona 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N Obs.
51	1983	09 04.28194	23 37 15.69	-00 24 36.8		688
51	1983	09 04.32222	23 37 13.74	-00 24 58.7		688
53	1983	09 04.28194	23 49 49.48	-05 06 38.1		688
53	1983	09 04.32222	23 49 47.75	-05 06 54.6		688
163	1983	09 02.27778	23 14 18.38	-05 31 45.6		688
163	1983	09 02.30903	23 14 16.67	-05 32 00.0		688
184	1983	10 04.28958	01 02 04.00	+07 48 23.9		688
184	1983	10 04.31597	01 02 02.82	+07 48 17.9		688
189	1984	05 04.17014	12 29 55.13	-03 30 51.8		688
189	1984	05 04.21458	12 29 53.85	-03 30 39.1		688
203	1983	09 04.28194	23 49 05.70	-00 52 36.5		688
203	1983	09 04.32222	23 49 03.82	-00 52 44.8		688
214	1983	09 04.28194	23 45 34.41	-00 40 43.0		688
214	1983	09 04.32222	23 45 32.38	-00 40 50.8		688
251	1983	09 04.28194	23 54 41.92	-05 09 14.6		688
251	1983	09 04.32222	23 54 40.55	-05 09 30.4		688
272	1983	10 04.28958	01 01 41.46	+03 33 45.2		688
272	1983	10 04.31597	01 01 40.08	+03 33 39.3		688
311	1984	05 04.17014	12 38 14.42	+00 17 31.9		688
311	1984	05 04.21458	12 38 13.08	+00 17 36.0		688
331	1983	09 04.28194	23 52 01.21	-06 18 31.2		688
331	1983	09 04.32222	23 51 59.43	-06 18 38.3		688
533	1983	10 04.28958	00 47 25.09	+03 03 39.3		688
533	1983	10 04.31597	00 47 23.91	+03 03 29.6		688
658	1983	09 04.32222	23 34 05.62	-02 54 58.5		688
708	1983	10 04.28958	00 53 25.99	+07 32 09.4		688
708	1983	10 04.31597	00 53 24.53	+07 32 03.6		688
718	1984	05 04.17014	12 26 26.67	+00 48 54.3		688
718	1984	05 04.21458	12 26 25.50	+00 48 50.3		688
808	1983	10 04.28958	01 02 43.38	+04 49 51.1		688
808	1983	10 04.31597	01 02 42.10	+04 49 40.5		688
922	1984	05 04.21458	12 44 38.34	-05 18 26.5		688
991	1983	10 04.28958	00 49 44.40	+02 35 03.6	16.5	688
991	1983	10 04.31597	00 49 43.19	+02 34 57.5		688
1014	1983	09 04.28194	23 37 49.16	+01 10 24.4		688
1014	1983	09 04.32222	23 37 47.16	+01 10 14.4		688
1014	1983	09 12.26250	23 31 40.31	+00 32 01.0		688
1014	1983	09 12.29306	23 31 38.69	+00 31 48.3		688
1083	1983	09 02.27778	23 19 15.68	-13 30 57.5		688
1083	1983	09 02.30903	23 19 13.80	-13 31 11.4		688

1084		1984	05	04.17014	12	38	53.62	-02	30	40.7			688
1084		1984	05	04.21458	12	38	52.16	-02	30	29.4			688
1135		1984	05	04.17014	12	21	26.64	-05	40	49.9			688
1135		1984	05	04.21458	12	21	25.30	-05	40	45.2			688
1156		1983	09	04.28194	23	37	38.11	-05	05	14.9			688
1156		1983	09	04.32222	23	37	35.95	-05	05	30.5			688
1188		1984	05	04.17014	12	27	22.60	-05	12	40.3			688
1188		1984	05	04.21458	12	27	20.80	-05	12	33.2			688
1190		1983	09	04.28194	23	44	38.92	-05	19	43.2			688
1190		1983	09	04.32222	23	44	37.03	-05	19	53.9			688
1263		1983	09	02.27778	23	24	20.38	-09	55	47.4			688
1263		1983	09	02.30903	23	24	19.02	-09	56	18.4			688
1376		1984	05	04.17014	12	38	18.06	-00	06	26.2			688
1376		1984	05	04.21458	12	38	16.24	-00	06	14.1			688
1435		1983	10	04.28958	00	57	33.90	+05	38	33.1		16.5	688
1435		1983	10	04.31597	00	57	32.47	+05	38	21.0			688
1446		1983	09	02.27778	23	10	44.30	-10	59	45.8			688
1446		1983	09	02.30903	23	10	42.32	-10	59	54.1			688
1495		1984	05	04.17014	12	21	18.84	-05	19	36.7		16.5	688
1495		1984	05	04.21458	12	21	17.17	-05	19	40.8			688
1576		1984	05	04.17014	12	21	37.82	-01	41	55.4			688
1576		1984	05	04.21458	12	21	36.73	-01	41	48.5			688
1578		1984	05	04.17014	12	29	45.60	-02	16	13.3			688
1578		1984	05	04.21458	12	29	44.49	-02	16	07.1			688
1686		1984	05	04.17014	12	38	17.04	-04	21	20.9			688
1686		1984	05	04.21458	12	38	15.65	-04	21	12.3			688
1761		1983	10	04.28958	00	49	48.87	+01	52	24.0			688
1761		1983	10	04.31597	00	49	47.72	+01	52	16.7			688
1802		1983	09	04.28194	23	57	36.61	-02	29	10.3			688
1802		1983	09	04.32222	23	57	34.92	-02	29	23.5			688
1805		1983	09	04.28194	23	45	58.72	-05	20	06.9			688
1805		1983	09	04.32222	23	45	57.13	-05	20	18.2			688
1841		1983	09	04.28194	23	42	39.18	-05	03	56.5			688
1841		1983	09	04.32222	23	42	37.71	-05	04	06.3			688
2066		1983	10	04.28958	01	04	46.11	+00	32	21.3			688
2066		1983	10	04.31597	01	04	44.53	+00	32	10.1			688
2164		1983	09	02.27778	23	14	39.31	-08	09	43.0			688
2164		1983	09	02.30903	23	14	37.84	-08	09	53.7			688
2177		1983	10	04.28958	01	03	56.02	+05	17	46.4			688
2177		1983	10	04.31597	01	03	54.86	+05	17	39.5			688
2243		1984	05	04.17014	12	30	46.28	-03	19	44.5			688
2243		1984	05	04.21458	12	30	44.31	-03	19	40.8			688
2438		1984	05	04.17014	12	33	26.89	+00	51	39.0			688
2438		1984	05	04.21458	12	33	25.43	+00	51	34.3			688
2441		1983	09	04.28194	23	57	55.67	-04	17	18.7			688
2441		1983	09	04.32222	23	57	54.26	-04	17	38.1			688
2452		1983	09	04.28194	23	54	04.88	-03	55	05.8			688
2452		1983	09	04.32222	23	54	02.93	-03	55	10.9			688
2468		1983	09	12.26250	23	12	11.46	+03	51	55.9			688
2468		1983	09	12.29306	23	12	09.78	+03	51	40.6			688
2492		1983	09	04.28194	23	45	22.11	-02	17	05.9		16.2	688
2492		1983	09	04.32222	23	45	20.39	-02	17	15.0			688
2625		1983	09	02.27778	23	15	57.07	-10	18	17.4			688
2625		1983	09	02.30903	23	15	55.35	-10	18	33.4			688
2626		1983	09	04.28194	23	47	05.45	-01	36	33.6			688
2626		1983	09	04.32222	23	47	03.64	-01	36	44.4			688
2688		1983	09	02.27778	23	12	24.82	-10	26	43.9			688
2688		1983	09	02.30903	23	12	23.37	-10	26	54.1			688
2709		1983	09	12.26250	23	24	26.11	+01	03	27.5			688

2709		1983	09	12.29306	23	24	24.45	+01	03	17.4		3	688
2715		1983	10	04.28958	00	50	56.79	+07	12	09.4			688
2715		1983	10	04.31597	00	50	55.51	+07	11	56.7			688
2731		1983	09	02.27778	23	15	22.99	-09	41	01.6	15.8		688
2731		1983	09	02.30903	23	15	21.67	-09	41	19.2			688
2775		1983	09	02.27778	23	15	11.01	-11	23	02.7			688
2775		1983	09	02.30903	23	15	09.23	-11	23	15.3			688
2919		1983	10	04.28958	01	00	08.41	+05	14	22.0	17.2		688
2919		1983	10	04.31597	01	00	07.30	+05	14	14.2			688
2955		1983	09	02.27778	23	17	52.29	-10	13	57.2			688
2955		1983	09	02.30903	23	17	50.24	-10	14	06.4			688
2963		1983	10	04.28958	00	56	39.86	+03	23	26.5	16.8		688
2963		1983	10	04.31597	00	56	38.60	+03	23	20.8			688
3035		1984	05	04.17014	12	34	04.85	-01	51	07.2	16.5		688
3035		1984	05	04.21458	12	34	03.77	-01	50	58.9			688
1949	GK	1984	05	04.17014	12	44	17.88	-01	38	47.9	16.8		688
1949	GK	1984	05	04.21458	12	44	16.84	-01	38	39.5			688
1978	SR6	1983	09	04.28194	23	34	23.37	-05	58	47.7	17.5		688
1978	SR6	1983	09	04.32222	23	34	21.35	-05	58	54.2		3	688
1978	WN14	1983	09	02.27778	23	27	33.71	-06	44	25.6	17.2		688
1978	WN14	1983	09	02.30903	23	27	32.26	-06	44	34.6			688
1979	HF5	1983	09	04.28194	23	37	34.42	-00	05	42.0	17.0		688
1979	HF5	1983	09	04.32222	23	37	32.49	-00	06	01.9			688
1981	EX16	1983	09	04.28194	23	41	21.95	-04	39	09.0	16.8		688
1981	EX16	1983	09	04.32222	23	41	19.50	-04	39	05.6			688
1981	EY25	1983	10	04.28958	01	03	47.05	+05	07	57.8	17.2		688
1981	EY25	1983	10	04.31597	01	03	45.93	+05	07	49.4			688
1983	RT	1983	09	04.28194	23	32	32.80	-00	57	50.8	16.8		688
1983	RT	1983	09	04.32222	23	32	30.57	-00	58	00.8			688
1983	RU	1983	09	04.28194	23	33	31.14	-01	44	24.1	16.8		688
1983	RU	1983	09	04.32222	23	33	29.52	-01	44	34.0			688
1983	RV	1983	09	04.28194	23	35	56.46	-00	27	38.7	16.2		688
1983	RV	1983	09	04.32222	23	35	55.01	-00	27	47.8			688
1983	RY	1983	09	12.26250	23	06	43.20	-01	25	16.4	16.2		688
1983	RY	1983	09	12.29306	23	06	41.51	-01	25	23.9			688
1983	RZ	1983	09	04.28194	23	51	17.88	-02	44	07.8	16.0		688
1983	RZ	1983	09	04.32222	23	51	16.52	-02	44	31.4			688
1983	RA1	1983	09	04.28194	23	52	47.90	-01	17	52.4	17.5		688
1983	RA1	1983	09	04.32222	23	52	46.02	-01	18	01.7			688
1983	RV1	1983	09	12.26250	23	11	29.48	-01	03	19.1	16.5		688
1983	RV1	1983	09	12.29306	23	11	27.80	-01	03	38.9			688
1983	RX1	1983	09	02.27778	23	09	17.00	-10	57	12.3	17.0		688
1983	RX1	1983	09	02.30903	23	09	14.82	-10	57	17.7			688
1983	RZ1	1983	09	02.27778	23	14	28.52	-10	05	18.7	16.8	1	688
1983	RZ1	1983	09	02.30903	23	14	26.72	-10	05	24.3			688
1983	RB2	1983	09	04.28194	23	34	32.35	+00	38	02.4	17.0		688
1983	RB2	1983	09	04.32222	23	34	30.61	+00	37	29.6			688
1983	RY3 *	1983	09	02.27778	23	17	55.49	-11	28	09.1	17.0	4	688
1983	RY3	1983	09	02.30903	23	17	53.92	-11	28	13.7			688
1983	RZ3 *	1983	09	02.27778	23	20	08.38	-12	36	03.8	16.5	4	688
1983	RZ3	1983	09	02.30903	23	20	06.99	-12	36	26.6			688
1983	RA4 *	1983	09	02.27778	23	22	45.02	-08	04	53.0	17.0	4	688
1983	RA4	1983	09	02.30903	23	22	43.30	-08	04	51.4			688
1983	RB4 *	1983	09	02.27778	23	26	26.28	-09	51	49.6	16.8	C	688
1983	RB4	1983	09	02.30903	23	26	24.81	-09	51	56.7		8	688
1983	RC4 *	1983	09	02.27778	23	27	57.94	-08	25	02.5	16.5	4	688
1983	RC4	1983	09	02.30903	23	27	56.85	-08	25	26.4			688
1983	RD4 *	1983	09	02.27778	23	29	54.01	-13	00	15.4	17.0	4	688
1983	RD4	1983	09	02.30903	23	29	51.97	-13	00	30.6			688

1983 RE4	*	1983	09	04.28194	23	34	22.24	-02	40	42.4	16.8	4 688
1983 RE4		1983	09	04.32222	23	34	20.68	-02	41	05.8		688
1983 TL2	*	1983	10	04.28958	00	44	17.68	+04	17	14.4	17.0	4 688
1983 TL2		1983	10	04.31597	00	44	15.16	+04	17	21.0		688
1983 TM2	*	1983	10	04.28958	00	45	16.19	+04	21	21.1	16.5	4 688
1983 TM2		1983	10	04.31597	00	45	14.73	+04	21	07.3		688
1983 TN2	*	1983	10	04.28958	00	45	19.59	+07	45	13.9	16.8	4 688
1983 TN2		1983	10	04.31597	00	45	17.88	+07	45	13.6		688
1983 TO2	*	1983	10	04.28958	00	56	22.21	+05	25	38.7	17.5	4 688
1983 TO2		1983	10	04.31597	00	56	19.43	+05	25	46.8		688
1983 TP2	*	1983	10	04.28958	00	59	48.85	+06	28	23.8	17.5	4 688
1983 TP2		1983	10	04.31597	00	59	46.96	+06	28	25.8		688
1983 TQ2	*	1983	10	04.28958	01	00	09.96	+00	17	41.1	17.2	4 688
1983 TQ2		1983	10	04.31597	01	00	08.69	+00	17	26.8		688
1983 TR2	*	1983	10	04.28958	01	02	41.95	+02	42	08.7	16.2	4 688
1983 TR2		1983	10	04.31597	01	02	40.37	+02	42	10.8		688
1983 TS2	*	1983	10	04.28958	01	04	09.65	+06	11	06.6	17.0	4 688
1983 TS2		1983	10	04.31597	01	04	08.01	+06	10	53.5		1 688
1983 TT2	*	1983	10	04.28958	01	04	12.76	+03	48	32.4	17.5	6 688
1983 TT2		1983	10	04.31597	01	04	11.82	+03	48	23.5		2 688
1983 TU2	*	1983	10	04.28958	01	06	37.01	+01	53	27.3	17.0	4 688
1983 TU2		1983	10	04.31597	01	06	35.38	+01	53	18.6		688
1984 FC		1984	05	04.17014	12	24	26.90	-01	43	47.3	17.2	688
1984 FC		1984	05	04.21458	12	24	25.50	-01	43	46.4		688
1984 FG		1984	05	04.17014	12	37	43.32	-01	36	46.4	16.8	688
1984 FG		1984	05	04.21458	12	37	41.90	-01	36	45.6		688
1984 FH		1984	05	04.17014	12	40	46.11	-01	14	33.0	17.2	688
1984 FH		1984	05	04.21458	12	40	45.01	-01	14	20.1		688
1984 FM		1984	05	04.17014	12	42	54.01	-00	36	25.2	16.0	688
1984 FM		1984	05	04.21458	12	42	51.30	-00	37	09.7		688
1984 GA		1984	05	04.17014	12	25	41.72	-05	24	24.6	17.2	688
1984 GA		1984	05	04.21458	12	25	40.21	-05	24	18.4		688
1984 JG	*	1984	05	04.17014	12	32	53.69	+00	56	12.4	15.5	7 688
1984 JG		1984	05	04.21458	12	32	52.13	+00	55	56.9		688
1984 KB		1984	06	02.23611	17	14	15.17	+05	27	34.5		688
1984 KB		1984	06	04.26597	17	04	49.81	+03	09	00.4		688
1984 KB		1984	06	04.27708	17	04	46.68	+03	08	17.6		688
1984 KB		1984	06	04.28194	17	04	45.39	+03	07	55.8		688
1984 KB		1984	06	04.28750	17	04	44.44	+03	07	40.8		688
1984 KB		1984	06	04.29861	17	04	41.17	+03	06	55.8		688

Note 1: right ascension uncertain. 2: declination uncertain. 3 = 1 + 2. 4: discoverer N. G. Thomas. 6 = 4 + 2. 7: discoverer B. A. Skiff. 8: image somewhat diffuse. C = 8 + 4.

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION.
Plates with the 0.33-m photographic telescope. Observer S. J. Bus. Measured by Bus and C. Shoemaker, with assistance from F. Salazar. Contact: C. Shoemaker, P.O. Box 984, Flagstaff, AZ 86002, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1984 KD	1984 06	13.18854	14 01 33.16	-00 49 57.6	688
1984 KD	1984 06	13.21181	14 01 21.22	-00 56 04.8	688
1984 KD	1984 06	15.21181	13 42 24.48	-11 56 58.1	688
1984 KD	1984 06	15.21528	13 42 21.73	-11 58 21.7	688
1984 KD	1984 06	15.25486	13 41 50.69	-12 14 22.1	688

OBSERVATIONS MADE AT THE LINCOLN LABORATORY ETS, NEW MEXICO.
Real-time observations conducted under the direction of L. G. Taff; see Bull. Am. Astron. Soc. 11, 619; 12, 666; and 12, 743 (1980); and Publ. Astron. Soc. Pacific 93, 658 (1981). Observers are D. E. Beatty, E. R.

Chavez, R. L. Irelan, D. F. Kostishack, R. C. Ramsey, J. M. Sorvari, L. G. Taff, P. J. Trujillo and L. R. Ward. Contact: L. G. Taff, MIT Lincoln Laboratory, Lexington, MA 02173, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
11	1984 03	02.38482	12 34 39.21	+02 26 15.0	704
11	1984 03	02.39946	12 34 38.51	+02 26 20.8	704
11	1984 03	02.40686	12 34 38.23	+02 26 22.9	704
11	1984 03	02.42923	12 34 37.47	+02 26 30.1	704
166	1984 03	02.19756	10 47 51.46	+17 22 59.0	704
166	1984 03	02.24237	10 47 48.88	+17 23 18.2	704
191	1984 03	02.20090	10 01 14.28	+10 07 26.8	704
191	1984 03	02.24589	10 01 12.48	+10 07 44.9	704
332	1984 03	02.17754	09 37 20.05	+18 08 20.3	704
332	1984 03	02.22904	09 37 17.50	+18 08 28.6	704
335	1984 03	02.18262	09 43 23.65	+13 56 32.5	704
335	1984 03	02.23115	09 43 20.91	+13 56 50.6	704
733	1984 03	02.30370	10 58 12.80	+05 40 28.8	704
733	1984 03	02.34779	10 58 10.33	+05 40 30.7	704
1092	1984 03	02.29156	11 53 58.96	-05 45 20.5	704
1092	1984 03	02.34070	11 53 56.89	-05 45 12.0	704
1137	1984 03	02.29513	12 04 36.22	+06 52 45.8	704
1137	1984 03	02.34413	12 04 33.68	+06 53 02.5	704
1157	1984 03	02.19167	10 12 40.97	+11 35 48.4	704
1157	1984 03	02.23945	10 12 38.60	+11 35 54.2	704
1585	1984 03	02.18622	09 40 29.02	+13 31 51.6	704
1585	1984 03	02.23473	09 40 26.90	+13 32 27.2	704
1830	1984 03	02.20459	10 44 01.01	+09 51 12.2	704
1830	1984 03	02.24972	10 43 58.41	+09 51 34.4	704

OBSERVATIONS MADE WITH THE 0.4-M ASTROGRAPH AT THE OAK RIDGE OBSERVATORY.

Plates taken by G. Schwartz and R. E. McCrosky. Measured by McCrosky and D. W. E. Green. Contact: R. E. McCrosky, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	N	Obs.
1984 KD	1984 06	13.08504	14 02 19.52	-00 22 56.4		801
1984 KD	1984 06	13.10839	14 02 07.83	-00 29 03.4		801
1984 KD	1984 06	15.08566	13 43 53.90	-11 07 07.5		801
1984 KD	1984 06	16.10187	13 30 38.12	-18 27 55.2	1	801

Note 1: irregular trail.

OBSERVATIONS MADE AT OAK RIDGE OBSERVATORY BY R. E. McCROSKY, C.-Y. SHAO AND G. SCHWARTZ.

Plates with the 1.5-m reflector, reduced using the Astrographic Catalogue. Coordination and verification by, and assistance with identifications from, C. M. Bardwell. Contact: R. E. McCrosky, Harvard-Smithsonian Center for Astrophysics, 60 Garden Street, Cambridge, MA 02138, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
429	1984 04	29.32654	15 52 13.15	-16 59 31.1			801
1188	1984 05	06.15148	12 26 11.28	-05 07 15.7	17		801
1365	1984 04	30.04707	07 41 17.31	+16 56 24.1			801
1685	1984 04	29.07939	08 36 13.18	+05 50 06.2			801
1685	1984 05	06.04191	08 52 06.62	+05 18 25.0			801
1872	1984 04	29.30757	15 40 42.10	-06 45 10.5			801
1872	1984 06	03.22853	15 23 54.91	-05 03 33.3			801
1873	1984 04	29.28277	15 05 26.12	-04 09 13.4			801
1873	1984 06	03.16033	14 49 28.82	-01 54 49.3			801
1989	1975 11	05.22617	04 14 39.94	+28 14 50.1			801
2810	1981 06	29.18720	17 38 39.41	-04 58 39.2			801
3004	1984 02	08.20091	07 25 10.60	+42 53 23.2			801

3041		1984	04	29.23049	13	15	06.18	+12	49	50.2			801
1935	TE	1984	04	29.14147	12	06	03.94	+12	21	29.3			801
1949	GK	1984	05	26.13813	12	45	19.40	-01	37	06.8			801
1971	UP	1984	02	02.17464	08	10	17.98	+28	10	51.6			801
1972	KE	1984	04	30.21659	14	15	48.92	+03	35	01.2			801
1972	KE	1984	05	26.18584	13	56	41.37	+03	56	06.6			801
1974	MH	1984	04	04.18596	13	25	21.61	-16	34	29.2			801
1974	MH	1984	05	06.21149	12	54	11.58	-15	25	49.3			801
1975	XP3	1984	05	06.18585	12	28	16.12	-04	26	18.2			801
1977	DX8	1984	04	04.11871	12	59	41.77	-02	51	20.5			801
1977	DX8	1984	05	07.17546	12	32	27.64	-00	20	59.4			801
1977	QB1	1984	05	01.27772	15	18	07.14	-13	30	47.7			801
1977	QB1	1984	05	27.20751	14	53	45.90	-11	11	57.8			801
1978	GB	1984	06	03.32291	18	59	49.61	+23	00	29.0			801
1978	RS1	1984	04	30.17764	12	50	04.80	+03	05	50.7			801
1979	FE2	1984	05	03.34781	18	33	09.75	-03	01	03.9			801
1979	FE2	1984	05	26.31324	18	28	36.08	-00	38	39.3			801
1979	YE9	1984	04	30.19817	13	05	28.99	-09	56	16.6			801
1980	DA	1984	04	29.19283	12	12	48.14	-07	35	22.4			801
1980	DA	1984	05	07.09813	12	09	46.41	-06	58	07.4			801
1980	FB12	1984	05	01.33885	16	30	30.58	-18	16	40.8			801
1980	FB12	1984	05	25.25010	16	13	01.14	-16	57	49.3			801
1980	OD	1984	05	07.30197	15	12	31.37	-02	53	30.1			801
1980	OD	1984	06	05.21305	14	52	13.87	-01	53	20.3		1	801
1981	EY15	1984	03	27.13147	08	57	26.29	+18	14	22.9			801
1981	EB20	1984	06	04.08391	10	22	02.00	+08	55	35.5			801
1981	QA	1984	04	29.25725	14	45	16.64	-02	43	54.2			801
1981	QC1	1984	04	02.24393	11	52	36.52	+05	13	08.8			801
1981	QC1	1984	05	26.10931	11	37	25.54	+08	18	58.4			801
1981	QF2	1984	04	01.32561	14	49	45.81	-13	10	18.3			801
1981	QF2	1984	05	01.25782	14	25	48.05	-11	03	43.5			801
1981	RF	1984	05	03.29758	15	13	20.68	-12	35	58.3			801
1981	UX9	1984	04	30.26852	14	45	41.74	-03	54	34.3			801
1981	UX9	1984	05	28.21399	14	26	58.56	-02	04	13.4			801
1981	VB	1984	05	03.27248	14	22	58.32	-06	03	12.9			801
1981	WE	1984	04	02.27654	14	01	42.42	-16	07	52.6			801
1981	WE	1984	05	03.24632	13	37	01.01	-11	41	05.4			801
1981	WD4	1983	02	20.29032	11	38	48.35	+09	38	04.5			801
1981	WD4	1984	05	06.29978	16	22	38.21	-19	18	08.1	17.5		801
1981	WD4	1984	05	28.26638	16	05	29.70	-18	52	40.5	17.7		801
1981	WD4	1984	06	03.25520	16	00	43.30	-18	45	29.7			801
1981	XK2	1984	04	01.39115	17	45	46.70	-14	24	22.0			801
1981	XK2	1984	05	06.34112	17	58	07.82	-16	23	24.7			801
1981	XK2	1984	05	07.34413	17	57	58.44	-16	28	24.3			801
1981	XK2	1984	05	26.29637	17	49	32.10	-18	23	35.9			801
1982	AN	1984	05	03.31998	16	31	39.26	-09	08	57.4			801
1982	AN	1984	05	25.27322	16	16	38.42	-07	48	29.5			801
1982	BB	1984	04	30.24256	14	31	38.37	+28	39	27.5			801
1982	BB	1984	05	07.26663	14	20	02.35	+29	03	41.6			801
1982	BB	1984	06	03.19164	13	47	47.60	+26	08	09.5			801
1982	QQ	1984	04	30.16046	12	38	20.85	+09	13	43.5			801
1982	QQ	1984	05	07.19983	12	35	44.87	+10	58	53.0			801
1983	AM	1984	04	03.18281	12	10	04.96	-14	09	25.8			801
1983	AM	1984	05	06.12776	11	51	27.26	-11	34	53.1			801
1983	CF	1984	05	01.31825	16	13	20.30	-17	07	59.8			801
1983	CF	1984	05	25.23246	15	48	38.61	-16	44	12.2			801
1983	VA	1984	05	03.21115	13	15	02.86	+17	30	42.5			801
1983	XF	1984	04	30.09629	08	26	40.92	+24	18	31.9			801
1983	XF	1984	05	25.07654	09	39	43.21	+18	32	51.7		2	801

1984 AB		1984	04	30.06852	08	01	10.14	+35	14	02.5		801
1984 AC1		1984	05	03.09831	09	00	48.30	+23	07	41.2		801
1984 BC		1984	05	25.12647	12	05	24.44	+35	12	04.3		801
1984 EZ		1984	06	05.14581	11	45	09.45	+12	50	15.0		801
1984 FK1	*	1984	03	27.15917	10	59	47.91	+04	19	55.4	17	801
1984 FL1	*	1984	03	28.20933	11	38	26.86	+07	50	08.1	18.5 3	801
1984 GO	*	1984	04	01.37086	15	05	30.60	-07	31	59.4	17.5 4	801
1984 HY	*	1984	04	30.21659	14	14	58.43	+03	48	42.7	17.5	801
1984 JF	*	1984	05	03.24632	13	36	34.66	-11	46	31.4	17.5	801
1984 KB		1984	06	03.11896	17	09	53.63	+04	23	54.5		801
1984 KB		1984	06	04.15156	17	05	18.19	+03	16	03.3		801
1984 KB		1984	06	05.16451	17	01	16.01	+02	15	27.7		801
1984 KB		1984	06	27.18915	16	26	24.90	-08	34	55.2		801
1984 KM	*	1984	05	26.18584	13	56	24.56	+03	49	17.3	17.5	801
2011 P-L		1984	05	06.32263	17	21	48.49	-14	27	51.6		801
2011 P-L		1984	05	27.27765	17	09	12.42	-13	03	26.1		801
4579 P-L		1984	05	28.26638	16	06	51.11	-18	44	34.9		801
4579 P-L		1984	06	03.25520	16	00	37.48	-18	30	57.2	17.5	801
6081 P-L		1984	05	06.06022	09	31	16.35	+12	30	17.9		801
6550 P-L		1984	05	06.15148	12	26	48.38	-05	05	40.1		801

Note 1: involved with star. 2: very faint. 3: measured in one direction only. 4: image trailed.

OBSERVATIONS MADE AT OAK RIDGE OBSERVATORY BY J. WAGNER.

Plates taken with the 1.5-m reflector. Contact: J. F. Wagner, 282 Massachusetts Avenue, Room 425, Cambridge, MA 02139, U.S.A.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1982 RZ1	1984	03 08.12745	08 15 19.00	+23 10 06.7	801
1984 AW	1984	03 08.08256	07 14 26.96	+26 29 49.5	801
1984 AZ	1984	03 08.10819	07 20 26.60	+27 57 47.0	801
1984 AB1	1984	03 07.21073	08 09 47.96	+23 21 16.5	801
1984 AC1	1984	03 07.18615	08 16 10.94	+25 41 56.0	801

OBSERVATIONS MADE WITH THE 1.0-M SCHMIDT TELESCOPE AT THE EUROPEAN SOUTHERN OBSERVATORY BY H.-E. SCHUSTER.

Plates measured by R. M. West. Contact: R. M. West, European Southern Observatory, Karl Schwarzschild Strasse 2, D-8046 Garching bei Munchen, Federal Republic of Germany.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
2101	1977	02 24.20561	10 25 30.76	+11 31 15.2	18.5		809
2101	1977	02 24.22639	10 25 25.46	+11 31 36.2			809
2101	1977	02 25.21258	10 21 45.42	+11 47 09.0	18.5		809
2101	1977	02 26.24032	10 18 11.87	+12 01 56.5	18.5		809
2101	1977	02 27.22512	10 15 02.02	+12 14 55.6	19.0		809
2101	1977	02 28.26602	10 11 55.16	+12 27 25.4	19.0		809
2101	1977	03 13.14257	09 48 20.16	+13 52 45.4		1	809

Note 1: trail extremely faint.

OBSERVATIONS MADE AT THE EUROPEAN SOUTHERN OBSERVATORY.

Plates taken with the 0.4-m GPO astrograph. Reductions using the AGK3 (when possible), otherwise the SAO Catalogue. Contact: G. de Sanctis, Osservatorio Astronomico di Torino, I-10025 Pino Torinese, Italy.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
249	1983	04 07.06413	13 29 05.72	-21 23 20.1	809
249	1983	04 07.07105	13 29 05.31	-21 23 18.6	809
249	1983	04 07.07799	13 29 04.88	-21 23 17.5	809
408	1983	04 11.31707	15 41 51.11	-30 52 48.5	809
408	1983	04 11.32399	15 41 50.91	-30 52 48.9	809
408	1983	04 11.33093	15 41 50.72	-30 52 48.8	809

408	1983	04	19.30942	15	37	31.77	-30	51	49.5	809
408	1983	04	19.31709	15	37	31.48	-30	51	49.3	809
408	1983	04	19.32477	15	37	31.18	-30	51	49.3	809
408	1983	04	20.23501	15	36	57.50	-30	51	14.2	809
408	1983	04	20.24610	15	36	57.07	-30	51	13.9	809
408	1983	04	20.25787	15	36	56.60	-30	51	13.5	809
408	1983	04	21.35036	15	36	14.84	-30	50	23.3	809
408	1983	04	21.36560	15	36	14.22	-30	50	22.7	809
408	1983	04	21.37887	15	36	13.70	-30	50	21.8	809
408	1983	04	22.10316	15	35	45.78	-30	49	43.5	809
408	1983	04	22.12463	15	35	44.93	-30	49	42.9	809
470	1983	04	18.18404	13	27	46.38	-01	48	11.8	809
470	1983	04	18.19096	13	27	46.01	-01	48	08.5	809
470	1983	04	18.19788	13	27	45.64	-01	48	05.0	809
501	1983	04	18.11478	13	10	17.99	-23	05	13.6	809
501	1983	04	18.12101	13	10	17.68	-23	05	13.3	809
501	1983	04	18.12725	13	10	17.33	-23	05	12.5	809
501	1983	04	19.13905	13	09	21.17	-23	03	48.1	809
501	1983	04	19.14598	13	09	20.82	-23	03	48.0	809
501	1983	04	19.15291	13	09	20.43	-23	03	47.3	809
501	1983	04	21.25860	13	07	24.69	-23	00	31.0	809
501	1983	04	21.26483	13	07	24.31	-23	00	29.9	809
501	1983	04	21.27106	13	07	24.01	-23	00	29.5	809
617	1983	04	09.19856	12	37	16.60	+14	18	16.1	809
617	1983	04	09.20550	12	37	16.40	+14	18	16.7	809
617	1983	04	09.21242	12	37	16.17	+14	18	17.3	809
617	1983	04	11.12558	12	36	18.38	+14	20	00.7	809
617	1983	04	11.13251	12	36	18.15	+14	20	01.2	809
617	1983	04	11.13943	12	36	17.94	+14	20	01.2	809
617	1983	04	16.10223	12	33	51.36	+14	23	06.3	809
617	1983	04	16.10916	12	33	51.17	+14	23	06.6	809
617	1983	04	19.16606	12	32	24.03	+14	23	57.8	809
617	1983	04	19.17229	12	32	23.85	+14	23	57.6	809
617	1983	04	19.17853	12	32	23.68	+14	23	57.8	809
617	1983	04	21.18899	12	31	28.00	+14	24	05.3	809
617	1983	04	21.20493	12	31	27.56	+14	24	04.9	809
652	1983	04	18.21174	14	10	27.05	+08	57	49.8	809
652	1983	04	18.21728	14	10	26.73	+08	57	51.1	809
652	1983	04	18.22281	14	10	26.40	+08	57	51.8	809
974	1983	04	10.14182	13	41	03.91	-02	20	17.7	809
974	1983	04	10.14874	13	41	03.51	-02	20	15.9	809
974	1983	04	10.15566	13	41	03.16	-02	20	14.0	809
974	1983	04	18.18404	13	33	51.77	-01	44	08.0	809
974	1983	04	18.19096	13	33	51.39	-01	44	06.4	809
974	1983	04	18.19788	13	33	51.01	-01	44	04.9	809
1189	1983	04	10.04208	10	26	41.38	-04	07	34.5	809
1189	1983	04	10.04902	10	26	41.19	-04	07	33.0	809
1189	1983	04	10.05594	10	26	41.05	-04	07	31.0	809
1189	1983	04	15.01770	10	25	12.70	-03	45	36.8	809
1189	1983	04	15.02462	10	25	12.57	-03	45	35.4	809
1189	1983	04	15.03155	10	25	12.46	-03	45	33.6	809
1189	1983	04	16.05307	10	24	58.06	-03	41	16.4	809
1189	1983	04	16.05999	10	24	57.96	-03	41	14.5	809
1189	1983	04	16.06691	10	24	57.86	-03	41	12.6	809
1189	1983	04	20.01998	10	24	14.81	-03	25	31.0	809
1189	1983	04	20.04769	10	24	14.52	-03	25	25.1	809
1431	1983	04	09.25397	15	11	02.24	+03	35	04.1	809
1431	1983	04	09.26089	15	11	02.00	+03	35	06.3	809
1431	1983	04	09.26782	15	11	01.73	+03	35	09.5	809

1431	1983	04	18.26022	15	05	09.82	+04	29	28.1	809
1431	1983	04	18.26714	15	05	09.51	+04	29	30.7	809
1431	1983	04	18.27406	15	05	09.21	+04	29	32.8	809
1431	1983	04	21.31296	15	02	50.89	+04	46	16.5	809
1431	1983	04	21.32544	15	02	50.31	+04	46	20.1	809
1431	1983	04	21.33731	15	02	49.75	+04	46	23.6	809
1464	1983	04	11.12558	12	40	28.67	+14	02	18.3	809
1464	1983	04	11.13251	12	40	28.31	+14	02	19.3	809
1464	1983	04	11.13943	12	40	28.00	+14	02	20.1	809
1464	1983	04	16.10223	12	36	45.61	+14	10	11.1	809
1464	1983	04	16.10916	12	36	45.33	+14	10	11.6	809
1464	1983	04	19.16606	12	34	36.52	+14	12	28.3	809
1464	1983	04	19.17229	12	34	36.27	+14	12	28.1	809
1464	1983	04	19.17853	12	34	36.03	+14	12	28.5	809
1464	1983	04	21.18899	12	33	15.51	+14	12	54.2	809
1464	1983	04	21.20493	12	33	14.86	+14	12	54.1	809
1685	1983	04	09.30972	17	11	05.25	-32	42	16.0	809
1685	1983	04	09.34712	17	11	05.58	-32	42	20.8	809
1685	1983	04	11.34650	17	11	19.40	-32	46	47.7	809
1685	1983	04	11.38668	17	11	19.51	-32	46	52.1	809
1685	1983	04	18.32255	17	10	37.53	-32	59	51.4	809
1685	1983	04	18.34332	17	10	37.16	-32	59	53.3	809
1685	1983	04	19.38941	17	10	17.81	-33	01	25.3	809
1685	1983	04	19.40545	17	10	17.46	-33	01	27.2	809
1685	1983	04	20.30670	17	09	58.40	-33	02	42.6	809
1685	1983	04	20.33094	17	09	57.74	-33	02	44.3	809
1839	1983	04	10.14182	13	36	02.51	-02	16	42.6	809
1839	1983	04	10.14874	13	36	02.13	-02	16	41.0	809
1839	1983	04	10.15566	13	36	01.76	-02	16	40.2	809
1839	1983	04	18.18404	13	29	08.31	-01	53	55.3	809
1839	1983	04	18.19096	13	29	07.96	-01	53	54.6	809
1839	1983	04	18.19788	13	29	07.63	-01	53	53.9	809
1842	1983	04	06.11395	14	44	48.54	-07	22	20.6	809
1842	1983	04	06.12087	14	44	48.33	-07	22	17.5	809
1842	1983	04	06.12780	14	44	48.15	-07	22	15.0	809
1842	1983	04	10.19514	14	42	38.42	-06	52	50.0	809
1842	1983	04	10.20206	14	42	38.17	-06	52	47.3	809
1842	1983	04	10.20899	14	42	37.87	-06	52	44.6	809
1842	1983	04	15.23169	14	39	20.26	-06	14	55.5	809
1842	1983	04	15.23862	14	39	19.95	-06	14	52.2	809
1842	1983	04	15.24554	14	39	19.67	-06	14	49.3	809
1842	1983	04	21.16545	14	34	43.42	-05	29	34.4	809
1842	1983	04	21.17722	14	34	42.78	-05	29	29.2	809
2500	1983	04	15.06686	12	19	01.95	+06	17	19.0	809
2500	1983	04	15.07380	12	19	01.55	+06	17	19.0	809
2500	1983	04	15.08072	12	19	01.20	+06	17	18.7	809
2500	1983	04	16.07730	12	18	09.34	+06	16	42.6	809
2500	1983	04	16.08422	12	18	09.02	+06	16	42.2	809
2500	1983	04	16.09116	12	18	08.62	+06	16	42.0	809
2500	1983	04	20.20455	12	14	50.34	+06	11	48.5	809
2500	1983	04	20.21286	12	14	49.94	+06	11	47.7	809
2500	1983	04	20.22117	12	14	49.54	+06	11	46.6	809
2544	1983	04	06.01388	09	40	56.05	-22	09	31.7	809
2544	1983	04	06.02080	09	40	55.85	-22	09	31.1	809
2544	1983	04	06.02772	09	40	55.67	-22	09	30.5	809
2544	1983	04	09.07113	09	39	56.10	-22	04	45.5	809
2544	1983	04	09.07807	09	39	55.67	-22	04	44.6	809
2544	1983	04	09.10646	09	39	55.57	-22	04	41.7	809
2544	1983	04	10.01439	09	39	43.45	-22	03	06.8	809

2544	1983	04	10.02131	09	39	43.34	-22	03	06.1	809
2544	1983	04	10.02823	09	39	43.23	-22	03	05.3	809
2544	1983	04	12.00719	09	39	24.56	-21	59	26.4	809
2544	1983	04	12.01412	09	39	24.50	-21	59	25.4	809
2544	1983	04	12.02104	09	39	24.43	-21	59	24.7	809
2544	1983	04	14.03774	09	39	16.87	-21	55	29.4	809
2544	1983	04	14.04605	09	39	16.87	-21	55	28.6	809
2544	1983	04	14.98719	09	39	17.57	-21	53	36.5	809
2544	1983	04	14.99758	09	39	17.56	-21	53	35.6	809
2544	1983	04	15.00523	09	39	17.54	-21	53	34.4	809
2544	1983	04	16.02675	09	39	20.92	-21	51	31.4	809
2544	1983	04	16.03436	09	39	20.91	-21	51	30.3	809
2544	1983	04	16.04198	09	39	20.95	-21	51	29.7	809
2544	1983	04	19.98535	09	40	01.65	-21	43	36.5	809
2544	1983	04	20.00613	09	40	01.88	-21	43	34.4	809
2567	1983	04	11.27275	14	25	12.49	-01	20	11.5	809
2567	1983	04	11.27968	14	25	12.22	-01	20	09.0	809
2567	1983	04	11.28660	14	25	11.86	-01	20	06.1	809
2567	1983	04	21.28596	14	17	35.71	-00	18	36.9	809
2567	1983	04	21.29358	14	17	35.40	-00	18	34.3	809
2567	1983	04	21.30119	14	17	35.01	-00	18	31.5	809
2577	1983	04	11.17441	14	14	58.87	+06	23	19.2	809
2577	1983	04	11.17995	14	14	58.58	+06	23	26.9	809
2577	1983	04	11.18549	14	14	58.28	+06	23	34.1	809
2577	1983	04	18.21174	14	08	30.96	+08	58	43.5	809
2577	1983	04	18.21728	14	08	30.61	+08	58	50.2	809
2577	1983	04	18.22281	14	08	30.28	+08	58	57.3	809
2599	1983	04	07.06413	13	26	17.07	-22	20	49.9	809
2599	1983	04	07.07105	13	26	16.59	-22	20	50.0	809
2599	1983	04	07.07799	13	26	16.13	-22	20	50.0	809
2599	1983	04	11.15051	13	21	50.18	-22	20	12.6	809
2599	1983	04	11.15744	13	21	49.67	-22	20	12.7	809
2599	1983	04	11.16436	13	21	49.21	-22	20	12.7	809
2599	1983	04	18.11478	13	14	06.43	-22	12	51.8	809
2599	1983	04	18.12101	13	14	06.02	-22	12	51.2	809
2599	1983	04	18.12725	13	14	05.58	-22	12	50.8	809
2599	1983	04	19.13905	13	12	58.54	-22	11	09.9	809
2599	1983	04	19.14598	13	12	58.01	-22	11	09.1	809
2599	1983	04	19.15291	13	12	57.55	-22	11	08.7	809
2599	1983	04	21.25860	13	10	38.80	-22	07	13.1	809
2599	1983	04	21.26483	13	10	38.34	-22	07	12.7	809
2599	1983	04	21.27106	13	10	37.98	-22	07	11.9	809
2601	1983	04	19.30942	15	35	28.76	-31	04	36.4	809
2601	1983	04	19.31709	15	35	28.50	-31	04	35.7	809
2601	1983	04	19.32477	15	35	28.17	-31	04	35.7	809
2601	1983	04	20.23501	15	34	54.21	-31	03	37.8	809
2601	1983	04	20.24610	15	34	53.76	-31	03	37.4	809
2601	1983	04	20.25787	15	34	53.31	-31	03	37.0	809
2601	1983	04	21.35036	15	34	11.07	-31	02	17.1	809
2601	1983	04	21.36560	15	34	10.47	-31	02	16.5	809
2601	1983	04	21.37887	15	34	09.93	-31	02	15.2	809
2601	1983	04	22.10316	15	33	41.76	-31	01	16.8	809
2601	1983	04	22.12463	15	33	40.85	-31	01	15.2	809
2604	1983	04	09.36063	17	03	09.31	+01	01	37.0	809
2604	1983	04	09.36755	17	03	09.59	+01	01	39.8	809
2604	1983	04	09.37448	17	03	09.84	+01	01	41.9	809
2604	1983	04	19.34093	17	08	32.81	+02	05	24.6	809
2604	1983	04	19.35339	17	08	33.07	+02	05	28.6	809
2604	1983	04	19.36517	17	08	33.28	+02	05	33.2	809

2604		1983	04	20.34652	17	08	54.19	+02	11	31.6	809
2604		1983	04	20.36037	17	08	54.41	+02	11	36.7	809
2604		1983	04	20.37699	17	08	54.70	+02	11	42.6	809
2604		1983	04	21.39295	17	09	14.01	+02	17	47.8	809
2604		1983	04	21.40681	17	09	14.26	+02	17	53.4	809
2604		1983	04	21.41927	17	09	14.45	+02	17	57.1	809
2652		1983	04	10.14182	13	40	07.34	-02	38	01.8	809
2652		1983	04	10.14874	13	40	07.00	-02	38	00.6	809
2652		1983	04	10.15566	13	40	06.63	-02	37	58.7	809
2652		1983	04	18.18404	13	32	55.87	-02	09	24.7	809
2652		1983	04	18.19096	13	32	55.45	-02	09	22.7	809
2652		1983	04	18.19788	13	32	55.03	-02	09	21.9	809
2813		1983	04	10.99848	10	15	44.46	-08	34	54.7	809
2813		1983	04	11.00542	10	15	44.40	-08	34	51.5	809
2813		1983	04	11.01235	10	15	44.34	-08	34	48.3	809
2813		1983	04	15.04193	10	15	30.52	-08	03	17.8	809
2813		1983	04	15.04887	10	15	30.48	-08	03	14.8	809
2813		1983	04	15.05579	10	15	30.47	-08	03	11.6	809
2813		1983	04	19.00955	10	15	38.95	-07	33	55.0	809
2813		1983	04	19.01786	10	15	38.96	-07	33	51.4	809
2813		1983	04	19.02617	10	15	39.00	-07	33	47.8	809
2813		1983	04	21.98578	10	15	59.38	-07	13	07.5	809
2813		1983	04	22.00793	10	15	59.53	-07	12	58.3	809
2865		1983	04	06.06132	10	29	19.53	-03	17	28.7	809
2865		1983	04	06.06824	10	29	19.27	-03	17	28.0	809
2865		1983	04	06.07516	10	29	19.00	-03	17	27.4	809
2865		1983	04	10.04208	10	27	14.32	-03	11	27.6	809
2865		1983	04	10.04902	10	27	14.11	-03	11	27.4	809
2865		1983	04	10.05594	10	27	13.93	-03	11	26.8	809
2865		1983	04	15.01770	10	25	16.18	-03	05	18.2	809
2865		1983	04	15.02462	10	25	16.03	-03	05	18.1	809
2865		1983	04	15.03155	10	25	15.88	-03	05	17.6	809
2865		1983	04	16.05307	10	24	56.98	-03	04	15.6	809
2865		1983	04	16.05999	10	24	56.83	-03	04	15.1	809
2865		1983	04	16.06691	10	24	56.71	-03	04	14.8	809
2865		1983	04	20.01998	10	24	01.30	-03	01	05.2	809
2865		1983	04	20.04769	10	24	00.97	-03	01	04.3	809
2903		1983	04	18.97977	09	54	01.72	-05	51	28.6	809
2903		1983	04	18.99778	09	54	02.02	-05	51	20.1	809
2962		1983	04	08.30690	14	34	45.91	-03	48	07.8	809
2962		1983	04	08.31936	14	34	45.19	-03	48	07.6	809
2962		1983	04	15.25801	14	28	17.25	-03	49	32.8	809
2962		1983	04	15.26493	14	28	16.76	-03	49	33.2	809
2962		1983	04	19.20692	14	24	16.84	-03	51	33.7	809
2962		1983	04	19.23116	14	24	15.24	-03	51	34.8	809
2962		1983	04	22.25171	14	21	05.23	-03	53	53.6	809
2962		1983	04	22.27560	14	21	03.63	-03	53	54.9	809
1983	HQ	1983	04	21.28596	14	18	06.19	+00	02	09.1	809
1983	HQ	1983	04	21.29358	14	18	05.75	+00	02	09.6	809
1983	HQ	1983	04	21.30119	14	18	05.24	+00	02	08.9	809

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ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are B = C. M. Bardwell, G = D. W. E. Green, K = G. R. Kastel', l = W. Landgraf, M = B. G. Marsden. For further information see MPC 7828.

Planet	B(1,0)	Epoch	M	Peri.	Node	Incl.	e	a	Arc	O	N	C
1978 RX5	15.0	781019	45.43	292.69	31.60	5.90	0.1237	2.3080	50	6		M
1978 SN4	13.0	781019	27.97	277.60	61.82	1.59	0.1919	3.1844	36	9		M
1978 SO4	12.5	780929	40.81	309.86	14.52	6.22	0.1482	3.9098	7	7		M
1978 SD8	15.9	781019	22.34	326.64	20.31	4.19	0.2114	2.2017	36	5		M
1981 DT3	15.0	810317	187.40	70.39	289.81	9.52	0.1397	3.0682	12	6		G
1981 EG37	18.5	810317	83.76	245.57	200.07	7.27	0.0464	2.1950	14	3		G
1981 EH37	17.5	810317	82.40	211.56	207.68	5.61	0.2937	2.5797	14	4		G
1981 EJ37	17.5	810317	88.16	106.89	330.36	6.59	0.0853	2.3766	14	4		G
1981 EK37	19.5	810317	12.08	327.95	190.87	4.49	0.1500	2.1666	10	6	1	G
1981 EL37	16.0	810317	229.65	107.63	208.88	10.52	0.1183	3.1224	14	6		G
1981 EM37	17.5	810317	149.35	116.33	262.04	2.96	0.1578	2.1827	42	8		G
1981 EN37	15.5	810317	250.93	124.91	189.90	14.53	0.3221	2.7867	10	4		G
1981 EO37	18.0	810317	173.56	160.51	200.60	4.12	0.1216	2.3857	10	6		G
1981 EP37	17.0	810317	131.54	130.69	263.45	2.62	0.1474	2.6081	14	6		G
1981 EQ37	17.5	810317	77.75	134.64	314.91	3.36	0.0832	2.6763	14	4		G
1981 ER37	17.5	810317	315.86	35.71	192.59	13.88	0.0748	2.4885	14	5		G
1981 ES37	18.5	810317	351.20	320.17	229.69	3.91	0.1545	2.3056	14	3		G
1981 ET37	17.5	810317	286.40	60.29	218.78	3.61	0.2448	2.2624	42	9		G
1981 EU37	17.5	810317	88.59	179.00	261.46	4.43	0.0845	2.7020	42	5		G
1981 EV37	18.5	810317	71.16	246.11	210.22	6.50	0.0943	2.3668	10	3		G
1981 EW37	17.5	810317	287.07	314.22	304.11	4.34	0.0625	2.5715	36	8		G
1981 EX37	18.0	810317	286.18	61.55	201.06	3.99	0.1008	2.2330	14	6		G
1981 EY37	17.5	810317	315.59	298.88	295.45	1.68	0.1393	2.2425	14	4		G
1981 EZ37	16.5	810317	115.60	228.29	190.21	7.23	0.0397	3.1326	35	9		G
1981 EA38	17.5	810317	314.98	276.01	323.47	5.66	0.1680	3.0402	14	5		G
1981 EB38	17.0	810317	320.32	254.87	328.23	3.95	0.0666	2.7627	42	8		G
1981 EC38	17.0	810317	197.93	112.48	231.44	2.50	0.1267	2.2811	14	5		G
1981 ED38	17.5	810317	61.96	258.75	210.22	10.82	0.0828	2.7643	7	3		G
1981 EE38	16.5	810317	54.13	147.40	310.49	1.93	0.2412	3.0218	10	7		G
1981 EF38	18.5	810317	314.04	4.71	233.90	4.47	0.1482	2.2862	11	6		G
1981 EH38	17.0	810317	283.05	62.95	210.88	4.23	0.1586	2.3347	40	0		G
1981 EJ38	14.5	810317	334.74	14.39	194.83	9.05	0.0887	2.6433	40	0		G
1981 EK38	18.5	810317	9.53	230.17	297.73	3.36	0.0718	2.3129	39	7		G
1981 EL38	16.5	810317	71.00	271.52	190.04	13.68	0.0610	2.6622	11	8		G
1981 EM38	17.5	810317	58.98	165.20	303.99	4.19	0.1201	2.7734	39	9		G
1981 EN38	16.5	810317	321.94	30.04	197.35	12.54	0.1000	3.2065	39	8		G
1981 EO38	16.5	810317	227.96	131.21	188.83	12.37	0.0951	2.5606	40	9		G
1981 EP38	16.0	810317	184.09	164.79	193.17	10.31	0.0582	3.0525	11	8		G
1981 EQ38	18.0	810317	348.01	10.58	184.83	13.75	0.1111	2.5451	14	4		G
1981 ER38	16.0	810317	67.78	266.03	189.07	11.63	0.1583	2.6673	40	0		G
1981 ES38	17.0	810317	201.44	146.01	197.81	6.43	0.1202	2.3810	11	6		G
1981 EU38	15.5	810317	307.18	43.15	203.71	3.17	0.1349	2.2512	40	0		G
1981 EV38	16.0	810317	344.90	241.03	320.65	4.02	0.1199	3.2177	39	7		G
1981 EW38	16.0	810317	324.58	301.71	281.43	4.10	0.0632	2.7519	39	7		G
1981 EX38	16.0	810317	255.75	29.08	271.66	7.22	0.1987	2.4846	8	6		G
1981 EY38	16.0	810317	278.34	38.20	249.81	9.47	0.2589	2.3198	10	5		G
1981 EZ38	18.0	810317	45.22	308.15	168.61	0.77	0.1261	2.6183	9	5		G
1981 EA39	18.0	810317	323.80	272.11	308.83	1.43	0.1363	2.3209	14	5		G
1981 EB39	18.0	810317	299.22	77.61	182.04	8.77	0.2205	2.3931	40	0		G
1981 EC39	16.5	810317	295.11	77.02	178.16	25.45	0.1437	3.1844	9	6		G
1981 ED39	19.0	810317	63.30	190.01	263.14	1.69	0.1627	2.3326	9	4		G
1981 EE39	17.0	810317	92.34	262.48	166.60	6.50	0.1083	3.1120	9	5		G
1981 EF39	17.0	810317	188.85	358.05	349.67	4.70	0.2114	2.4001	14	6		G
1981 EG39	15.5	810317	222.66	334.85	350.00	5.19	0.2064	3.1467	9	6		G
1981 EH39	19.0	810317	322.13	266.71	314.80	2.68	0.1109	2.3827	9	4		G
1981 EJ39	14.0	810317	83.14	82.64	350.12	0.34	0.1596	3.1481	14	8		G
1981 EK39	19.0	810317	42.65	284.32	181.27	1.63	0.2657	2.3773	9	4		G
1981 EL39	16.5	810317	166.36	184.51	178.47	3.12	0.2243	2.3188	9	5	1	M

1981	EM39	17.0	810317	316.39	227.11	358.25	5.27	0.0909	2.2912	40	0	G
1981	EN39	17.0	810317	257.57	95.04	187.90	3.11	0.0528	2.7780	27	7	G
1981	EO39	16.5	810317	186.92	187.50	161.45	2.54	0.1606	2.6487	9	5	G
1981	EP39	18.0	810317	265.77	106.75	173.82	5.61	0.1061	2.3832	9	5	G
1981	EQ39	17.0	810317	332.13	330.48	242.54	0.44	0.1564	3.0334	40	8	G
1981	ER39	19.0	810317	31.91	117.01	6.11	2.08	0.2500	2.4787	9	5	1 G
1981	ES39	17.0	810317	78.28	160.35	280.39	1.41	0.1506	2.9689	9	6	G
1981	ET39	16.0	810317	60.37	125.77	333.58	4.10	0.1553	3.2112	9	7	G
1981	EU39	17.0	810317	110.20	56.71	2.30	9.73	0.0529	2.6168	40	0	G
1981	EV39	17.5	810317	62.02	271.49	180.38	5.09	0.2000	2.9195	5	5	1 G
1981	EW39	16.5	810317	275.79	278.11	358.83	11.07	0.1464	3.1409	14	7	G
1981	EX39	17.5	810317	184.10	119.72	234.49	1.78	0.2444	2.3800	14	6	G
1981	EY39	18.5	810317	0.55	346.10	189.55	0.97	0.0953	2.2368	37	9	G
1981	EZ39	17.5	810317	108.88	52.59	1.60	3.90	0.1241	2.2805	14	6	M
1981	EA40	16.0	810317	253.04	169.68	132.72	2.79	0.1921	3.1877	27	9	G
1981	EB40	16.0	810317	65.31	67.60	32.73	0.68	0.1004	3.1015	14	7	G
1981	EC40	16.0	810317	136.86	92.60	297.42	10.27	0.2171	2.7564	8	6	G
1981	ED40	16.0	810317	56.78	274.48	178.12	11.87	0.2497	3.1570	14	6	1 M
1981	EE40	18.5	810317	325.53	192.56	29.03	1.86	0.1462	2.4309	9	4	G
1981	EF40	16.5	810317	120.88	48.42	0.77	9.50	0.0683	2.9816	40	9	G
1981	EG40	15.5	810317	96.61	277.67	145.87	1.78	0.1529	3.2142	9	4	1 M
1981	EH40	17.5	810317	319.94	222.86	6.01	3.95	0.1433	2.7939	40	9	G
1981	EJ40	16.0	810317	111.55	56.51	346.18	33.04	0.3226	2.7897	10	6	G
1981	EK40	15.5	810317	159.51	186.89	186.91	4.78	0.1310	2.7321	39	0	G
1981	EL40	17.5	810317	358.18	198.96	341.18	4.66	0.1153	2.6939	13	6	G
1981	EM40	17.5	810317	144.21	259.56	127.28	3.02	0.0913	2.7105	9	3	G
1981	EN40	16.5	810317	115.82	221.23	193.76	2.59	0.0678	2.3524	14	4	G
1981	EO40	16.0	810317	202.26	167.47	172.71	14.57	0.1330	2.6559	9	6	G
1981	EP40	16.5	810317	225.32	132.31	192.97	6.74	0.1801	2.2794	13	7	G
1981	EQ40	18.0	810317	145.28	208.27	180.42	1.19	0.0505	2.1346	14	6	G
1981	ER40	18.5	810317	20.26	199.16	312.09	1.37	0.1333	2.4618	13	4	G
1981	ES40	16.0	810317	111.05	218.69	186.04	10.91	0.2399	2.6141	13	4	G
1981	ET40	17.5	810317	17.76	207.13	312.33	2.84	0.0383	2.6408	13	3	G
1981	EU40	17.5	810317	98.58	203.12	225.11	2.28	0.1032	2.3471	13	3	G
1981	EV40	17.0	810317	133.33	36.88	357.03	15.02	0.1415	2.6688	13	5	G
1981	EW40	17.5	810317	198.92	350.51	352.74	9.67	0.1331	2.3680	13	3	G
1981	EX40	16.0	810317	110.01	74.60	349.56	10.54	0.0452	3.0191	13	5	G
1981	EY40	17.0	810317	261.92	84.70	213.88	1.52	0.2057	2.7076	13	3	G
1981	EZ40	17.0	810317	167.87	17.21	349.39	5.40	0.1815	2.2779	13	6	M
1981	EA41	15.5	810317	21.74	332.19	182.85	6.44	0.0453	3.1355	13	6	G
1981	EB41	17.5	810317	23.30	323.41	188.37	7.18	0.0690	2.4345	13	5	G
1981	EC41	17.5	810317	66.18	131.04	324.39	0.66	0.1464	2.4612	13	4	G
1981	ED41	18.0	810317	309.86	81.60	165.85	2.38	0.1926	2.3344	34	6	G
1981	EE41	17.5	810317	118.42	229.84	181.84	7.50	0.0884	2.4130	13	4	G
1981	EF41	17.5	810317	63.91	256.79	191.33	1.67	0.2316	2.5119	13	5	G
1981	EG41	18.0	810317	308.46	249.94	355.40	8.78	0.1514	2.7200	9	3	G
1981	EH41	13.5	810317	259.36	100.10	189.51	10.03	0.0825	2.9986	39	0	G
1981	EJ41	18.0	810317	33.93	309.39	178.79	5.24	0.2111	3.2094	13	4	G
1981	EK41	15.5	810317	225.55	124.50	191.70	6.00	0.0355	2.2583	36	0	G
1981	EL41	16.5	810317	11.43	162.15	4.17	9.86	0.0337	3.0733	13	5	1 M
1981	EM41	15.0	810317	161.65	33.28	340.73	5.97	0.1673	3.0756	39	7	G
1981	EN41	17.0	810317	330.29	75.21	139.86	2.25	0.1075	2.7218	13	4	G
1981	EO41	16.0	810317	79.92	73.57	7.40	7.66	0.1536	2.9058	13	4	G
1981	EP41	17.5	810317	114.49	52.89	355.39	2.61	0.1706	2.4112	13	4	G
1981	EQ41	17.0	810317	136.48	58.08	338.38	4.95	0.1029	2.8027	34	6	G
1981	ER41	16.0	810317	308.93	251.20	359.04	26.17	0.1996	3.1207	13	6	G
1981	ES41	14.0	810317	32.58	126.79	5.21	1.95	0.1939	3.2001	13	7	1 M
1981	ET41	17.0	810317	174.97	190.02	172.92	8.13	0.1331	2.3339	35	8	G
1981	EU41	18.0	810317	80.51	238.56	202.53	2.19	0.1550	2.3668	13	6	G

1981	EV41	16.0	810317	68.17	140.28	327.15	2.61	0.0423	2.7195	34	7	G
1981	EW41	17.5	810317	257.86	150.87	153.49	1.59	0.2247	2.4007	13	4 1	M
1981	EX41	14.5	810317	124.76	202.00	200.14	1.28	0.1667	3.1793	39	9	G
1981	EY41	18.5	810317	12.32	333.74	190.71	1.81	0.0968	2.3618	13	4	G
1981	EZ41	16.0	810317	179.73	353.12	6.40	7.71	0.2340	2.4205	13	4	G
1981	EA42	18.0	810317	145.38	214.22	173.23	7.71	0.1093	2.2063	9	5	G
1981	EB42	16.0	810317	244.68	134.49	177.41	6.22	0.1708	3.0153	13	5	G
1981	EC42	18.5	810317	340.06	37.46	166.18	2.19	0.0969	2.4365	13	5	G
1981	ED42	16.5	810317	307.40	87.35	167.42	5.12	0.2079	3.1865	13	4	G
1981	EE42	15.5	810317	101.24	254.16	173.87	14.86	0.1038	3.1932	13	5 1	M
1981	EF42	16.5	810317	304.66	208.86	41.37	1.69	0.1466	2.7588	34	7	G
1981	EG42	17.0	810317	288.42	102.05	188.40	5.09	0.3357	2.3513	13	4	G
1981	EH42	19.0	810317	51.54	223.81	245.76	0.96	0.1807	2.2474	13	7	G
1981	EJ42	17.0	810317	353.65	5.50	183.82	11.01	0.1309	3.1318	9	5	G
1981	EK42	16.0	810317	27.87	310.36	195.98	4.94	0.1148	3.1177	39	0	G
1981	EL42	16.5	810317	175.29	11.49	353.22	1.53	0.1170	2.8565	13	5	G
1981	EM42	16.0	810317	94.14	257.81	187.94	7.16	0.0120	2.9423	34	9	G
1981	EN42	17.0	810317	272.03	80.40	206.73	1.10	0.1693	2.2247	35	8	G
1981	EO42	15.0	810317	138.48	26.33	6.12	5.53	0.1361	2.5335	39	0	G
1981	EP42	16.5	810317	53.09	269.21	192.80	2.49	0.2374	2.8785	13	6 1	M
1981	EQ42	15.0	810317	13.06	315.79	209.19	0.41	0.1021	3.2227	13	8	M
1981	ER42	16.5	810317	90.99	64.87	13.05	1.45	0.1070	3.1512	13	5	G
1981	ES42	16.5	810317	66.03	78.77	16.53	1.94	0.1669	2.6649	35	0	G
1981	ET42	16.5	810317	260.33	327.35	332.40	1.78	0.1823	2.3677	13	5	G
1981	EU42	16.0	810317	148.14	179.17	208.41	0.71	0.1176	3.1536	13	3	G
1981	EV42	17.5	810317	272.25	288.01	358.88	8.46	0.1662	2.3689	13	5	G
1981	EW42	17.5	810317	273.88	292.38	5.13	6.10	0.2815	2.3035	13	5	G
1981	EX42	17.5	810317	69.99	82.84	358.76	3.54	0.2519	2.5770	9	4	G
1981	EY42	18.5	810317	328.30	9.85	211.85	0.63	0.1344	2.4103	39	0	G
1981	EZ42	19.0	810317	293.21	79.57	188.20	0.90	0.1815	2.2494	13	6	M
1981	EA43	17.5	810317	121.03	75.58	329.05	1.46	0.1785	2.3410	13	3	G
1981	EB43	17.5	810317	292.84	244.95	8.63	2.00	0.0515	2.5254	39	7	G
1981	EC43	16.5	810317	236.48	131.29	188.45	4.94	0.1761	2.2837	35	0	G
1981	ED43	15.0	810317	260.29	295.06	9.79	7.83	0.2291	2.8007	35	8	G
1981	EE43	14.0	810317	81.63	66.98	6.23	11.26	0.2282	2.8844	39	0	G
1981	EF43	16.5	810317	181.81	172.39	188.69	6.08	0.2545	2.4508	13	3	G
1981	EG43	17.0	810317	325.14	42.49	172.99	2.21	0.0973	2.3081	8	5	G
1981	EH43	18.0	810317	106.96	198.98	209.93	3.83	0.1803	2.3449	8	3	G
1981	EJ43	17.5	810317	10.12	209.81	311.73	2.34	0.1166	2.3148	39	0	G
1981	EK43	17.0	810317	346.89	196.97	351.84	9.22	0.0766	3.0163	8	4	G
1981	EL43	17.5	810317	97.96	186.94	243.74	1.18	0.0527	2.6959	8	5	G
1981	EM43	18.0	810317	52.34	134.18	343.69	1.77	0.0535	2.4237	8	4	G
1981	EN43	17.0	810317	149.99	15.75	4.74	10.57	0.0931	3.0602	26	6	G
1981	EO43	17.0	810317	10.77	173.54	350.16	3.60	0.0948	3.0294	8	4	G
1981	EP43	18.0	810317	64.26	170.74	300.09	0.46	0.0214	2.6597	8	3 1	M
1981	EQ43	18.0	810317	314.40	46.57	188.53	1.36	0.1316	2.4630	26	7	G
1981	ER43	16.5	810317	156.96	96.61	280.07	0.93	0.1082	2.9148	35	6	G
1981	ES43	15.5	810317	190.87	143.64	203.89	2.39	0.0096	3.2344	31	8	G
1981	ET43	16.0	810317	3.93	343.78	190.41	27.75	0.1110	3.1204	34	9	G
1981	EU43	16.5	810317	149.51	59.10	325.88	15.86	0.1702	2.5831	6	5	G
1981	EV43	18.0	810317	34.63	135.29	3.69	4.44	0.0541	2.5179	9	4	G
1981	EW43	17.0	810317	31.33	141.49	358.84	11.76	0.0913	2.9043	9	4	G
1981	EX43	16.5	810317	176.37	158.37	203.50	5.86	0.1387	2.3680	35	7	G
1981	EY43	18.0	810317	71.33	179.93	270.26	3.91	0.1618	2.5571	34	5	G
1981	EZ43	16.5	810317	207.97	346.32	353.09	10.67	0.1597	3.0453	9	3	G
1981	EA44	16.0	810317	202.87	163.29	180.77	13.75	0.2075	2.6563	9	5	G
1981	EB44	18.5	810317	304.03	262.26	349.96	5.91	0.1587	2.3196	9	5	G
1981	EC44	16.0	810317	249.83	305.57	4.39	15.69	0.2064	3.0577	9	4	G
1981	ED44	17.5	810317	78.07	109.90	342.77	6.14	0.0903	2.3561	34	4	G

1981	EE44	17.0	810317	112.32	211.76	207.31	8.54	0.1108	2.7320	34	6		G
1981	EF44	15.5	810317	294.01	290.73	332.54	4.28	0.1353	3.0844	34	8		G
1981	EG44	15.0	810317	58.21	104.68	12.20	9.65	0.0517	3.0722	35	0		G
1981	EJ44	16.0	810317	226.43	126.72	191.56	9.98	0.1435	3.0970	8	5		G
1981	EK44	16.5	810317	213.78	2.47	326.53	12.29	0.1147	3.0426	8	5		G
1981	EL44	18.5	810317	106.62	111.61	302.06	6.32	0.1494	2.2910	8	3		G
1981	EM44	16.0	810317	118.45	127.34	275.70	6.62	0.1690	3.1520	8	5		G
1981	EN44	17.0	810317	159.97	63.52	305.57	7.79	0.2473	2.4484	8	3		G
1981	EO44	18.0	810317	168.07	32.35	331.63	2.13	0.1021	2.2898	9	4		G
1981	EP44	19.5	810317	355.81	0.41	179.26	4.61	0.0988	2.2134	9	3	1	M
1981	EQ44	17.5	810317	215.74	24.50	300.85	5.95	0.0794	2.1288	8	3		G
1981	ER44	17.5	810317	106.78	98.11	306.70	7.89	0.2595	2.5925	8	3		G
1981	ES44	18.0	810317	330.00	243.15	331.26	12.05	0.1146	2.5775	8	4		G
1981	ET44	18.0	810317	262.14	10.80	286.74	5.57	0.2157	2.3493	8	4		G
1981	EU44	17.0	810317	266.66	78.56	212.91	9.83	0.1929	2.7241	8	3		G
1981	EV44	18.5	810317	306.42	317.60	279.18	4.19	0.0664	2.4212	8	3		G
1981	EW44	19.5	810317	351.77	344.39	202.55	1.71	0.1474	2.3481	9	4		G
1981	EX44	17.5	810317	156.24	112.85	261.44	4.69	0.1728	2.2617	8	4		G
1981	EY44	16.5	810317	297.13	69.81	200.92	7.33	0.2723	3.2087	8	5		G
1981	EZ44	17.5	810317	224.22	119.53	205.36	6.95	0.1784	2.3356	8	4		G
1981	EA45	18.5	810317	279.54	335.11	300.62	5.25	0.1528	2.2314	8	3		G
1981	EB45	16.0	810317	220.00	135.69	200.80	7.89	0.3384	2.5736	8	4		G
1981	EC45	16.5	810317	130.93	199.13	199.36	11.44	0.1171	2.9881	33	6		G
1981	ED45	18.5	810317	18.77	198.44	319.17	5.86	0.0554	2.3532	8	5		G
1981	EE45	15.0	810317	285.52	247.98	11.03	10.59	0.0384	2.7308	30	0		G
1981	EF45	15.5	810317	325.08	174.03	52.25	2.09	0.1602	3.0571	26	7		G
1981	YC	14.5	811202	137.01	34.33	245.09	21.81	0.0844	1.8629	49	8	2	M
1982	QY1	14.5	820819	20.87	56.16	251.09	6.52	0.3006	2.9900	3	4		M
1982	QZ1	16.0	820819	19.52	59.26	252.60	5.31	0.2402	2.2531	3	4		M
1982	QA2	15.5	820819	31.31	7.01	291.81	5.78	0.2169	2.3645	3	4		M
1982	UG7	15.5	821107	54.52	131.19	207.17	2.46	0.1889	2.1478	55	6	3	B
1982	UM7	14.0	821107	192.67	31.08	193.67	3.08	0.1033	2.1884	55	6	3	B
1983	RT	13.5	830903	286.29	121.48	329.04	3.36	0.2500	2.5147	5	8		M
1983	RU	14.5	830903	8.87	109.66	222.17	0.69	0.2524	2.9251	5	8		M
1983	RY	15.0	830903	349.74	67.73	292.02	2.42	0.1901	2.5087	10	8		M
1983	RB2	14.0	830903	327.46	213.41	174.38	17.12	0.1060	2.5586	5	8		M
1983	RF3	14.5	830903	303.32	142.02	280.99	12.53	0.1563	2.6139	35	0		K
1984	AB1	14.5	840121	68.87	286.11	110.96	4.47	0.1645	2.2455	59	7		M
1984	AC1	14.5	840301	58.06	300.29	112.47	7.49	0.2488	2.2486	116	0		B
1984	CE	14.5	840301	80.54	292.52	106.93	13.32	0.2409	2.5653	71	6		B
1984	EZ	13.5	840410	321.92	75.32	154.59	12.93	0.1232	2.6661	96	0		B
1984	FA	13.0	840410	115.72	306.52	124.33	6.55	0.1046	2.6888	32	8		M
1984	FC	14.0	840410	94.64	66.73	25.57	5.92	0.0651	2.4795	35	8		M
1984	FH	14.0	840410	330.08	58.73	186.26	6.19	0.2442	3.0360	34	6		M
1984	FM	15.0	840410	16.36	138.80	31.32	24.48	0.2294	2.3566	41	0		M
1984	FN	15.5	840410	39.97	81.49	47.62	23.58	0.3059	2.2965	32	6		B
1984	FO	14.0	840430	326.30	96.16	175.34	22.19	0.2522	2.3934	62	0		B
1984	GA	15.0	840410	331.22	229.11	358.79	3.10	0.0479	2.1535	35	8		M
1984	HD	14.5	840410	342.10	169.07	55.32	14.04	0.1814	2.5413	6	6		G
1984	HE	13.0	840410	49.09	300.98	173.16	18.95	0.3378	2.9879	6	6		G
1984	HL	13.0	840410	26.02	18.96	156.99	5.99	0.0666	2.7913	8	6		G
1984	HX	15.0	840520	159.13	118.03	305.38	5.82	0.1047	2.3041	37	0		M
1984	HA1	9.5	840410	286.74	105.15	178.34	23.56	0.1268	5.2380	8	8	1	B
1984	JH	15.5	840520	32.76	53.80	123.39	2.64	0.2500	2.9189	2	3	1	G
1984	JJ	13.5	840520	84.85	289.54	191.00	5.29	0.2169	2.4512	2	3	1	M
1984	JK	15.0	840520	201.27	202.41	193.51	6.11	0.2500	2.4176	2	3	1	G
1984	JL	13.0	840520	146.48	343.05	89.41	4.31	0.2000	2.4050	2	3	1	G
1984	JM	14.0	840520	96.98	32.65	72.72	7.63	0.2500	3.1548	2	3	1	G
1984	JN	15.5	840430	48.54	58.86	106.27	3.22	0.1197	2.4274	18	4		M

1984 JO	15.0	840520	331.77	195.47	72.90	7.75	0.1473	2.6678	2	3		G
1984 JP	14.5	840520	279.20	236.27	99.46	4.38	0.2179	2.7334	2	3		G
1984 JQ	15.0	840520	268.20	251.09	84.35	4.97	0.1098	2.2283	2	3	1	M
1984 JR	16.0	840430	325.97	169.23	102.71	3.09	0.1661	2.3677	31	4		M
1984 KE	14.5	840520	316.45	100.34	198.13	23.85	0.2000	2.3327	3	3	1	G
1984 KF	10.0	840520	312.34	133.90	138.11	27.94	0.1337	5.0976	3	3	1	B

Note 1: e assumed. 2: correction to MPC 8777. 3: double designations 1982
1982 UG7 = 1982 XR3 (l), 1982 UM7 = 1982 XY3 (l).

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

The identifications are by W. Landgraf unless otherwise stated.

(154) Bertha
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 281.75730		(1950.0)	P	Q
n 0.17374415	Peri.	153.71509	-0.96569613	+0.14496026
a 3.1807480	Node	36.71179	-0.25142812	-0.72939913
e 0.0961077	Incl.	21.12514	+0.06492212	-0.66855323
P 5.67	B(1,0)	8.5		

From 68 observations at 23 oppositions 1926-1980, mean residual 1".2.

(747) Winchester
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 12.72562		(1950.0)	P	Q
n 0.18988309	Peri.	275.98241	+0.66121723	-0.71072760
a 2.9978634	Node	129.63859	+0.75008668	+0.63176754
e 0.3422186	Incl.	18.16843	-0.01271795	+0.30941241
P 5.19	B(1,0)	8.8		

From 127 observations at 28 oppositions 1913-1982, mean residual 1".0.

(1153) Wallenbergia
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 203.31057		(1950.0)	P	Q
n 0.30289219	Peri.	28.22655	+0.61991031	+0.78257910
a 2.1958904	Node	280.14066	-0.73039514	+0.54881159
e 0.1603420	Incl.	3.33595	-0.28676496	+0.29389758
P 3.25	B(1,0)	13.4		

From 40 observations at 15 oppositions 1930-1984, mean residual 1".3.

(1224) Fantasia
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 97.94966		(1950.0)	P	Q
n 0.28179574	Peri.	128.78180	+0.88703542	-0.44183801
a 2.3041624	Node	257.80901	+0.36957390	+0.85340792
e 0.1987464	Incl.	7.87767	+0.27673686	+0.27653948
P 3.50	B(1,0)	12.8		

From 44 observations at 9 oppositions 1939-1984, mean residual 1".2.

(1797) Schaumasse
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 155.73586		(1950.0)	P	Q
n 0.29472080	Peri.	354.93448	+0.91156302	-0.41028317
a 2.2362938	Node	29.33421	+0.37911257	+0.81344808
e 0.0248002	Incl.	3.14103	+0.15914308	+0.41227411
P 3.34	B(1,0)	14.0		

From 20 observations at 11 oppositions 1929-1984, mean residual 1".0.

(2101) Adonis
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	23.95224	(1950.0)	P	Q
n	0.38390764	Peri. 41.58886	+0.84563548	-0.53374692
a	1.8749292	Node 350.66779	+0.48319962	+0.76857965
e	0.7637626	Incl. 1.36215	+0.22675704	+0.35270319
P	2.57	B(1,0) 19.5		

From 43 observations at 3 oppositions 1936-1984, mean residual 1".2.

(2169) Taiwan
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	97.56142	(1950.0)	P	Q
n	0.21176384	Peri. 358.19423	+0.34696632	-0.93753480
a	2.7876282	Node 71.50324	+0.86077842	+0.30759304
e	0.0522324	Incl. 1.53204	+0.37239076	+0.16252697
P	4.65	B(1,0) 13.3		

From 38 observations at 6 oppositions 1938-1984, mean residual 0".8.

(2550) 1976 UP20
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	128.80169	(1950.0)	P	Q
n	0.17355473	Peri. 246.89422	+0.70092443	-0.71005324
a	3.1830618	Node 158.14946	+0.70248427	+0.67095662
e	0.1783504	Incl. 10.41777	+0.12337259	+0.21363896
P	5.68	B(1,0) 12.5		

Residuals in seconds of arc

700828	095	(4.8-	2.6-)	761118	808	0.7-	0.1+	840128	688	0.2+	0.5-
700829	095	0.0	0.2-	761118	808	0.5+	0.3+	840205	688	0.2-	1.0-
700830	095	0.3+	1.9-	761122	808	0.1-	0.4-	840205	688	0.4+	0.6-
700909	095	(3.4+	2.3+)	810803	688	1.1+	1.7-	840306	688	0.1+	0.5-
761021	808	0.2+	0.1-	810803	688	0.5+	(4.1-)	840306	688	1.0-	0.1+
761021	808	0.3+	0.4+	810826	801	0.1-	1.7-	840329	688	1.4+	0.9-
761024	808	0.5-	0.8-	810929	801	1.4-	0.8-	840330	688	0.3-	1.2-
761024	808	0.3+	0.1-	821214	688	0.2-	0.4+	840331	688	0.1+	0.1+
761111	808	0.0	0.1+	821214	688	0.2+	1.0-	840331	688	0.3-	1.2-
761111	808	0.6+	0.2-	840128	688	1.4-	1.2-				

(2756) 1974 SG1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	163.47212	(1950.0)	P	Q
n	0.24189047	Peri. 19.35354	+0.98588398	-0.16655392
a	2.5510769	Node 350.18680	+0.13731255	+0.86276767
e	0.1146568	Incl. 5.75979	+0.09580210	+0.47738007
P	4.07	B(1,0) 14.5		

Residuals in seconds of arc

560309	024	0.2+	(3.1-)	780831	095	2.3-	0.3+	820817	801	0.0	0.7-
700927	095	1.4+	(8.5-)	780905	095	2.3-	0.2-	820818	801	0.9-	0.3-
701001	095	1.4-	(9.3-)	780927	095	0.9-	1.6+	820915	688	0.9+	0.0
740919	095	0.1+	0.3-	800122	095	1.0-	0.8+	820915	688	3.0+	0.9-
740923	095	1.9+	1.2+	820723	801	1.3+	0.7-	840128	688	2.0-	(5.6-)
741009	095	0.3+	0.7-	820724	801	1.5+	0.3-	840128	688	1.3+	2.1-

(2775) 1953 TX2
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	62.39616	(1950.0)	P	Q
n	0.26157604	Peri. 306.34177	+0.66469666	-0.74438420
a	2.4214234	Node 101.87044	+0.70462844	+0.59622180
e	0.1855472	Incl. 3.73803	+0.24834878	+0.30068543
P	3.77	B(1,0) 15.0		

Residuals in seconds of arc

531014 760	1.5-	1.0-	810202 046	1.7-	0.2+	820518 675	0.0	1.6+
531014 760	0.7-	0.2-	810209 046	1.8+	1.0-	820527 801	(4.9+)	1.8-
531031 760	2.5+	0.4-	810210 046	1.5+	0.3+	830902 688	2.2+	(3.2-)
531031 760	2.1+	0.1-	820515 675	1.4+	0.5-	830902 688	0.2+	2.3-
531105 760	0.9-	1.0+	820516 675	0.4-	0.2-	830906 688	0.0	2.3+
531105 760	0.4+	0.4+	820516 675	1.5-	1.1+	830906 688	2.6-	(2.9+)
810202 046	1.6-	0.1+	820517 675	0.5+	0.6-			

(2795) 1979 YM

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	97.38232		(1950.0)	P	Q
n	0.28337252	Peri.	283.85609	-0.72764066	-0.68355120
a	2.2956071	Node	213.07904	+0.66294742	-0.67926472
e	0.0281861	Incl.	6.03872	+0.17618109	-0.26712767
P	3.48	B(1,0)	14.0		

From 58 observations at 4 oppositions 1974-1984, mean residual 0".7.

(2970) 1978 UC

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	117.88972		(1950.0)	P	Q
n	0.23008296	Peri.	76.07847	+0.51555551	-0.85451822
a	2.6376251	Node	342.45047	+0.68257850	+0.45419991
e	0.1529603	Incl.	12.10936	+0.51796632	+0.25199417
P	4.28	B(1,0)	13.5		

Residuals in seconds of arc

500315 760	0.9-	1.5-	781124 026	0.5-	0.5-	840108 688	0.4-	1.2-
500315 760	0.5-	0.3+	781202 026	2.1-	0.7+	840108 688	0.3+	0.1-
540209 760	1.6+	2.6+	820915 688	1.1+	(3.4-)	840126 688	0.5+	1.0-
781027 026	0.9+	0.6+	820915 688	0.2+	(3.6-)	840126 688	0.5-	1.1-
781028 026	0.2+	0.7-	820921 688	0.0	0.5+	840204 688	0.7+	0.8-
781107 026	0.1-	0.1-	820921 688	0.6+	0.0	840204 688	1.6-	1.7+
781109 026	0.0-	0.9+	821011 801	(2.7+	4.4-)	840221 046	(5.6-)	0.8+
781124 026	0.6+	1.0-	821111 801	1.4-	1.6-	840221 046	(3.3-	3.7+)

(3067)* 1982 TE2 = 1938 SS = 1962 XV = 1972 XV = 1977 EV1 = 1980 BE5

Discovered 1982 Oct. 14 by L. G. Karachkina at the Crimean Astrophysical Observatory. The identifications 1982 TE2 = 1977 EV1 = 1980 BE5 were found independently by T. Furuta. The identifications 1982 TE2 = 1938 SS = 1962 XV = 1972 XV were found independently by S. Nakano.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	180.16800		(1950.0)	P	Q
n	0.29276315	Peri.	94.54463	+0.09135251	-0.99572796
a	2.2462519	Node	350.18353	+0.87949407	+0.08700261
e	0.1377242	Incl.	4.52026	+0.46705984	+0.03092530
P	3.37	B(1,0)	14.5		

Residuals in seconds of arc

380921 062	0.4-	0.8+	770322 095	2.0-	(4.5-)	821020 095	1.9-	2.0+
621202 760	(49.9-	43.9+)X	770325 095	1.3+	0.0	821022 095	(5.0-)	0.4-
721202 095	0.8+	2.7-	800122 095	0.3+	1.7+	821025 095	0.4+	0.3+
721206 095	(6.2+)	1.0-	800220 095	0.6+	0.6+	821109 095	0.7+	(3.8+)
770313 095	0.7+	0.2+	821014 095	0.1-	0.8+			

(3068)* 1982 YJ1 = 1955 UJ1 = 1957 HB1 = 1960 FG = 1970 EP3 = 1975 VV6 = 1978 SN1 = 1978 TY1

Discovered 1982 Dec. 23 by L. G. Karachkina at the Crimean Astrophysical Observatory. The identification and double designation 1982 YJ1 = 1978 SN1 = 1978 TY1 were found independently by T. Furuta.

The identifications 1982 YJ1 = 1955 UJ1 = 1957 HB1 = 1960 FG = 1975 VV6 were found independently by S. Nakano.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	148.32725		(1950.0)		P		Q
n	0.29591527	Peri.	132.94122		-0.89797061		-0.43818469
a	2.2302717	Node	21.16972		+0.36393108		-0.79125799
e	0.1022241	Incl.	6.44445		+0.24739229		-0.42650318
P	3.33	B(1,0)	14.5				

Residuals in seconds of arc

551025	760	(51.8-	35.5-)X	700307	095	0.3-	0.4+	821224	095	(2.5+)	0.4-
570424	076	(9.2-	4.2-)	751106	095	0.4-	0.7+	830106	095	(3.2-)	1.2+
570424	076	2.4-	1.1+	780928	095	0.2-	0.0	830109	095	0.2-	0.4+
570430	076	(5.5+	5.9-)	781008	095	(6.4-	3.9+)	830114	095	0.1+	0.5+
570430	076	3.5+	(6.7-)	821223	095	0.2+	(2.9-)				
600325	760	(44.3-	13.3+)X	821223	095	0.1+	1.8-				

1981 VW1 = 1979 KT

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	231.94740		(1950.0)		P		Q
n	0.18057945	Peri.	191.85484		+0.94004314		+0.34043864
a	3.0999678	Node	148.21775		-0.30962886		+0.87708615
e	0.1794914	Incl.	2.23109		-0.14299949		+0.33885307
P	5.46	B(1,0)	13.0				

Residuals in seconds of arc

790519	809	0.2-	0.1+	790523	809	0.2+	0.1+	811103	033	0.2-	0.1+
790519	809	0.1-	0.3-	790524	809	0.0	0.1-	811103	033	0.3-	0.2+
790521	809	0.3+	0.3+	811023	330	0.6-	(3.5-)				
790523	809	0.1-	0.1-	811028	330	1.2+	0.3-				

1984 CQ = 1954 JC = 1974 FE1

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	98.03041		(1950.0)		P		Q
n	0.29183789	Peri.	353.73291		-0.52986997		-0.84310304
a	2.2509971	Node	128.22413		+0.78304280		-0.52790671
e	0.0804831	Incl.	6.70570		+0.32570199		-0.10242932
P	3.38	B(1,0)	14.0				

Residuals in seconds of arc

540504	760	0.2-	1.4-	840205	688	1.0+	1.3-	840329	688	0.2-	0.2+
740321	095	0.0	1.6+	840226	688	0.8-	0.5+	840330	688	0.9-	0.2+
840128	688	1.5+	1.6-	840226	688	0.4-	0.9+	840331	688	1.5+	0.2+
840128	688	0.3+	1.0-	840306	688	1.1-	1.2+	840331	688	0.6+	0.6-
840205	688	0.6+	0.6-	840306	688	1.7-	0.8+				

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ORBITAL ELEMENTS BY M. KRETLOW, ASTRONOMICAL ASSOCIATION 'URANIA', WIESBADEN.

The identifications are by M. Kretlow.

1981 CK = 1976 GA1 = 1979 WG

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	236.31356		(1950.0)		P		Q
n	0.18525676	Peri.	177.41384		-0.90082092		-0.43418104
a	3.0475677	Node	336.85228		+0.39820951		-0.82347659
e	0.1107537	Incl.	0.42470		+0.17306315		-0.36520286
P	5.32	B(1,0)	13.5				

Residuals in seconds of arc

760401	095	(4.2+)	1.7-	760406	808	0.0	1.2+	810209	046	1.0+	1.1+
760402	095	2.0-	(3.2-)	791117	095	1.2-	0.6-	810209	046	0.9-	0.3+
760404	808	0.8+	0.1-	791125	046	0.9-	0.6-	810211	046	0.8+	1.6+
760404	808	1.0-	0.1+	791125	046	2.4+	0.5+	810211	046	0.6+	0.8-
760404	095	1.4+	1.4-	810203	330	(6.0+)	0.2+				
760406	808	0.5+	0.8+	810209	330	1.2-	1.4-				

1984 EB = 1973 DU = 1979 HS5
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	43.54934		(1950.0)	P	Q
n	0.18002375	Peri.	10.66703	-0.91583026	-0.37718008
a	3.1063438	Node	146.11803	+0.34780667	-0.91657955
e	0.0726408	Incl.	14.31132	+0.20071239	-0.13272946
P	5.47	B(1,0)	13.0		

Residuals in seconds of arc

730227	029	0.5-	2.6+	840301	688	0.7-	0.0	840329	688	0.6-	1.0-
730327	029	0.6+	1.1+	840306	688	0.0	0.6-	840331	688	0.9+	0.6+
730309	029	0.5+	1.7+	840306	688	0.9-	0.4-	840331	688	0.1+	1.3-
790428	095	0.2+	0.8+	840309	688	0.3+	0.8-				
840301	688	0.1-	1.1-	840309	688	0.4+	1.3-				

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ORBITAL ELEMENTS BY L. D. SCHMADEL, ASTRONOMISCHES RECHEN-INSTITUT.

(2234) Schmadel
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	229.46881		(1950.0)	P	Q
n	0.22206985	Peri.	271.78300	+0.12341218	+0.99139702
a	2.7006998	Node	5.86978	-0.65262700	+0.11418560
e	0.1989153	Incl.	25.23795	-0.74756099	+0.06398121
P	4.44	B(1,0)	13.4		

Residuals in seconds of arc

720412	095	0.1-	0.0	770621	809	0.7-	1.3-	791215	801	2.2-	1.6+
770427	809	0.2+	0.7-	770707	809	(5.1+	3.6-)	800114	033	0.8+	0.9-
770509	809	0.2-	0.7+	770903	809	0.7-	0.2-	800115	033	0.3+	0.1+
770510	809	0.1-	1.1+	770905	809	0.7-	1.0-	800212	801	0.4-	0.6+
770511	809	0.1+	0.2+	781008	033	0.2+	0.3+	820924	033	0.0	0.0
770512	809	0.4+	1.6+	781008	033	0.2+	0.4+	820924	033	0.5+	0.2-
770513	809	0.5+	0.4+	781031	801	0.1-	1.4+	821019	033	0.0	0.4-
770514	809	0.4+	0.8+	781101	033	0.6+	0.3+	821019	033	0.1+	0.6-
770515	809	0.5+	1.3+	781101	033	0.3+	0.4+	821115	688	(3.3+	4.8-)
770516	809	0.3+	0.6+	781102	381	0.7+	0.8+	821115	688	(2.0+	3.0-)
770520	809	0.5-	0.1+	781127	801	3.0-	0.5+	831229	033	0.2+	0.1-
770529	809	0.9-	0.3-	781220	801	0.2+	0.2-	831229	033	0.2+	0.3+
770609	809	1.0+	0.3+	781227	801	1.2-	0.4+				

(3069)* 1982 UG2 = 1953 TH2 = 1975 WN1 = 1978 NJ2 = 1978 PO
Discovered 1982 Oct. 16 by Z. Vavrova at Klet. The identifications were found independently by L. D. Schmadel and W. Landgraf.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	237.98095		(1950.0)	P	Q
n	0.27330459	Peri.	123.24627	+0.94205727	+0.33498346
a	2.3516432	Node	217.19086	-0.31669009	+0.87070167
e	0.2412687	Incl.	1.68033	-0.11061409	+0.36008984
P	3.61	B(1,0)	14.5		

Residuals in seconds of arc

531010	760	2.8+	0.1+	821016	046	0.8+	0.9-	821022	046	0.1-	0.1+
531010	760	2.4-	1.2-	821017	046	1.2-	0.1+	821025	095	1.8-	0.6+
751126	330	0.1+	1.3+	821020	095	1.8-	0.2+	821109	095	0.6-	0.2+
780706	095	0.1-	0.6+	821021	046	0.2-	0.3+	821114	095	0.8-	1.6-
780808	095	0.0	0.5+	821021	046	2.1+	0.5+				
821014	095	0.5+	1.0+	821022	046	3.0+	0.1-				

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

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

(3070)* 1949 GK = A907 HA = 1942 GQ

Discovered 1949 Apr. 4 at the Goethe Link Observatory, Indiana University. The identifications were independently found by K. Hurukawa (JAM 1293).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	40.00540		(1950.0)	P	Q
n	0.28142753	Peri.	52.14797	-0.74049362	+0.67202634
a	2.3061718	Node	170.06882	-0.62871748	-0.68898617
e	0.1977576	Incl.	2.34499	-0.23745215	-0.27143812
P	3.50	B(1,0)	15.0		

Residuals in seconds of arc

070419	803	(4.4-	10.6-)Y	490420	760	1.1+	0.4+	840331	688	0.5-	1.8-
420414	062	0.9-	1.7+	490425	760	0.3+	0.1-	840331	675	2.0-	0.2-
420414	062	0.7-	1.1+	490425	760	0.9+	0.7-	840403	688	3.4-	1.1+
420417	062	1.6-	3.5+	830114	801	0.2-	0.2+	840403	688	0.9-	0.7-
490404	760	1.1+	0.2+	840202	801	0.8+	0.5+	840504	688	1.1-	1.9-
490404	760	3.1+	1.1+	840330	675	3.9+	2.3-	840504	688	1.6-	1.2-
490420	760	0.1+	0.5-	840331	688	0.6+	0.2-	840526	801	1.3+	0.1-

(3071)* 1973 FT1 = A910 CA = 1950 EN = 1979 HT3 = 1982 UC7 = 1982 XD4

Discovered 1973 Mar. 28 by T. Smirnova at the Crimean Astrophysical Observatory. The identification 1973 FT1 = 1979 HT3 is by H. Oishi (JAM 1102) and F. Bowman, who found it independently. The double designation 1982 UC7 = 1982 XD4 is by W. Landgraf. The identifications with 1982 UC7, 1950 EN and A910 CA were independently found by T. Furuta, K. Hurukawa and S. Nakano, respectively.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	28.89452		(1950.0)	P	Q
n	0.17220993	Peri.	26.75268	-0.94597951	-0.32305693
a	3.1996115	Node	134.37079	+0.29013875	-0.88134574
e	0.0927770	Incl.	2.20582	+0.14471443	-0.34476645
P	5.72	B(1,0)	12.5		

Residuals in seconds of arc

100202	024	5.7-	1.5-	730401	095	0.9-	1.5+	821023	095	1.8-	0.3-
100209	024	6.0+	3.5+	730404	095	0.6-	1.7+	821112	095	1.2+	0.9+
100213	024	0.5+	0.7+	790425	095	0.4+	1.9+	821213	381	0.7-	0.8+
500315	760	0.6-	1.7-	790430	095	0.0	0.4+	821214	381	0.1-	0.8-
500315	760	0.5-	1.3-	790501	095	0.9+	1.2-	821214	381	0.3-	0.6-
730328	095	0.5+	3.1-	821021	095	1.9+	0.3-				

(3072)* 1978 RS1 = 1954 JA = 1968 UA2 = 1971 OB

Discovered 1978 Sept. 5 by N. S. Chernykh at the Crimean Astrophysical Observatory. The identifications are by L. D. Schmadel (MPC 7607).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	345.65618			
n	0.29420620	Peri. 139.15089	+0.36477771	+0.92996235
a	2.2389007	Node 152.15204	-0.87775693	+0.35991037
e	0.1797416	Incl. 5.63960	-0.31061226	+0.07506373
P	3.35	B(1,0) 15.0		

Residuals in seconds of arc

540504	760	0.3- 0.3+	780905	095	0.2- 0.9+	840331	688	0.2+ 4.0-
540504	760	0.6- 0.3-	780907	095	0.5- 0.2+	840404	801	0.4- 1.4+
681023	095	1.4+ 0.9+	780912	095	0.1- 1.5-	840419	046	1.4+ 2.0+
710717	095	0.7+ 0.7+	780928	095	0.2+ 1.5-	840419	046	2.7- 1.2-
780901	095	0.1- 1.5-	840331	688	1.1+ 2.1-	840430	801	0.2- 1.7+

(3073)* 1979 SW11 = 1969 VG1

Discovered 1979 Sept. 24 by N. S. Chernykh at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	143.53644			
n	0.29356272	Peri. 231.46724	+0.25564784	-0.96612118
a	2.2421712	Node 203.79296	+0.91203095	+0.25316176
e	0.1371404	Incl. 5.03581	+0.32069257	+0.05018958
P	3.36	B(1,0) 14.5		

Residuals in seconds of arc

691111	095	1.1+ 2.1+	840208	801	1.1+ 1.1-	840328	801	1.9+ 1.3+
691113	095	1.1- 2.2-	840301	688	0.6+ 1.4-	840329	688	0.2- 0.3+
790924	095	1.1- 0.5+	840301	688	1.6- 0.5-	840331	688	0.2- 1.9-
791014	095	1.4+ 1.1-	840303	801	1.1+ 0.6+	840331	688	0.1- 0.3-
791116	095	0.0 0.4+	840306	688	0.9- 1.4+			
791122	095	0.5- 0.9+	840306	688	1.8- 1.5+			

(3074)* 1979 YE9 = 1964 TZ = 1975 XK1 = 1978 RF14

Discovered 1979 Dec. 24 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	107.14592			
n	0.27543589	Peri. 150.61368	-0.75532240	-0.65529882
a	2.3394963	Node 348.43222	+0.59271130	-0.67756191
e	0.1103585	Incl. 2.41719	+0.27960934	-0.33390614
P	3.58	B(1,0) 14.0		

Residuals in seconds of arc

641008	330	1.4+ 4.2-	800123	095	0.2+ 0.2-	821108	095	0.4- 0.4-
751201	095	2.4+ 1.3-	800220	095	0.7+ 0.5-	821109	095	1.2- 1.2+
780906	809	0.2+ 1.6-	821020	095	1.9+ 2.4-	840331	688	1.1+ 1.3-
791224	095	0.2- 0.2-	821021	095	3.7- 6.6+	840331	688	0.3+ 1.4-
800122	095	2.0- 0.1+	821024	095	1.1+ 0.6-	840430	801	1.6- 0.9+

(3075)* 1981 EY15 = 1982 QK

Discovered 1981 Mar. 1 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

		(1950.0)	P	Q
M	223.08781			
n	0.28758678	Peri. 10.24869	+0.96195578	+0.26256732
a	2.2731256	Node 334.14378	-0.26130529	+0.80356567
e	0.1312980	Incl. 9.96859	-0.07975356	+0.53417283
P	3.43	B(1,0) 15.0		

Residuals in seconds of arc

810301	413	0.4+	0.4+	810408	413	2.1-	0.4+	820822	046	1.8+	0.0
810306	413	1.2-	0.1+	810408	413	1.3+	0.8-	820826	046	0.4-	2.2+
810308	413	0.5+	0.3+	810409	413	0.4-	0.7+	820826	046	1.6+	2.2+
810308	413	0.6+	1.0+	810409	413	1.4+	0.5+	840202	801	1.3+	2.3+
810312	413	1.4+	0.2+	820819	046	3.4-	1.9-	840303	801	0.4-	0.6+
810407	413	0.6-	0.6-	820819	046	1.3-	0.0	840327	801	0.6+	0.4-
810407	413	(8.0+	2.3-)	820822	046	0.6-	0.8+				

(3076)* 1982 RB1 = 1982 SJ = = A905 SD = 1942 VP = 1972 RU

Discovered 1982 Sept. 13 at the Oak Ridge Observatory. The double designation 1982 RB1 = 1982 SJ is by B. G. Marsden (MPC 7360).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	222.39110		(1950.0)	P	Q
n	0.29450742	Peri.	166.08441	+0.99919562	-0.01942294
a	2.2373738	Node	195.16001	+0.00901262	+0.96126207
e	0.1894102	Incl.	7.70978	+0.03907543	+0.27495085
P	3.35	B(1,0)	15.0		

Residuals in seconds of arc

050919	024	1.4+	2.8-	820918	801	0.6-	2.4+	821017	688	0.1+	2.4-
050928	024	1.1-	0.8-	820920	801	0.9-	1.5+	821020	801	3.8-	1.6+
421105	062	0.6+	2.0+	820922	688	0.7+	1.9-	821110	801	0.9-	1.1-
421105	062	0.1-	0.9+	820922	688	0.9+	1.8-	821115	688	0.8-	0.1-
720907	095	0.6+	0.1-	821009	688	0.9+	0.9-	821115	688	0.4+	1.5-
820913	801	2.1-	0.0	821009	688	0.9+	0.5+	821215	801	1.9-	0.4+
820915	801	1.9+	2.5+	821012	801	4.6-	0.0	840210	801	0.6+	0.9-
820917	801	0.0	0.6+	821017	688	0.7+	0.4-	840308	801	1.1-	1.7-

(3077)* 1982 SK = 1940 BA = 1942 VK = 1957 EG = 1972 RV = 1979 VF2

Discovered 1982 Sept. 22 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	173.67801		(1950.0)	P	Q
n	0.29390963	Peri.	116.83514	+0.58918034	-0.80767750
a	2.2404066	Node	297.04739	+0.73187064	+0.54545323
e	0.0558006	Incl.	1.47219	+0.34239143	+0.22391476
P	3.35	B(1,0)	14.0		

Residuals in seconds of arc

400130	053	(36.1+	7.3+)X	821017	688	0.4+	0.4-	840302	675	0.4+	0.4+
421105	062	1.9+	1.5+	821017	688	0.9+	0.7-	840304	675	1.0-	0.9+
421105	062	0.4+	1.9+	821115	688	1.3+	0.7-	840304	675	0.6-	0.3+
570304	760	2.8-	0.9+	821115	688	0.4+	0.8-	840305	054	0.5-	0.5+
570304	760	3.7-	1.7+	840206	688	0.2+	0.8-	840306	688	0.9-	1.5-
720907	095	0.5+	0.8-	840208	688	0.7-	1.1-	840306	688	0.5+	1.5-
791114	095	0.5-	1.9+	840208	688	1.2-	2.0-	840308	054	0.8-	0.9+
820922	688	0.8+	2.1-	840208	801	1.0+	1.4+	840329	688	0.2+	2.0-
820922	688	0.4+	2.4-	840301	801	2.1+	1.1+	840331	688	1.1+	2.7-
821009	688	1.4-	2.7-	840301	688	1.8+	2.7-	840331	688	0.9-	2.4-
821009	688	0.3-	2.0-	840301	688	0.4+	1.3-				

(3078)* 1984 FG = 1964 TS1 = 1970 SE1 = 1973 GS = 1976 YX6 = 1978 ET4 = 1982 YQ1

Discovered 1984 Mar. 31 by E. Bowell at the Anderson Mesa Station of Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 62.75062		(1950.0)	P	Q
n 0.17552654	Peri.	129.38443	-0.95107033	-0.30154235
a 3.1591786	Node	33.22373	+0.23191919	-0.84076202
e 0.0876563	Incl.	7.06187	+0.20415367	-0.44965702
P 5.62	B(1,0)	12.5		

Residuals in seconds of arc

641009	330	0.1-	0.8-	821223	095	2.2+	6.0+	840403	688	3.7-	0.7+
700930	095	0.4+	3.1-	821224	095	1.4+	1.7-	840403	688	0.2+	0.0
730401	095	2.3+	2.3-	840330	675	4.3+	0.9+	840504	688	0.0	0.5-
730404	095	1.2+	3.2+	840331	688	1.1-	2.1-	840504	688	1.0-	0.4-
761220	095	0.2-	1.8-	840331	688	0.8-	1.9-				
780306	095	3.0-	1.5-	840331	675	1.5-	1.3+				

(3079)* 2578 P-L = 1931 BC

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 82.57434		(1950.0)	P	Q
n 0.22434140	Peri.	299.78572	-0.54130852	-0.84081652
a 2.6824384	Node	182.99422	+0.79302622	-0.50912533
e 0.2199376	Incl.	3.90788	+0.27945392	-0.18389938
P 4.39	B(1,0)	14.5		

Residuals in seconds of arc

310113	690	0.4-	0.4-	601017	675	0.0	0.1+	840301	688	0.0	1.1-
310116	690	2.4+	1.3+	601022	675	0.5-	0.4-	840301	688	0.8+	0.4-
310117	690	1.3+	0.8+	601025	675	1.2+	0.9+	840306	688	0.4-	0.5+
600924	675	0.4+	0.3-	601026	675	0.6-	0.1-	840306	688	1.5+	2.0+
600926	675	0.6-	0.7-	840206	688	0.1+	4.4-	840308	801	0.2-	1.5+
600928	675	0.7-	0.1-	840206	688	0.4-	1.5-	840403	688	0.7-	0.3-
600929	675	0.7+	0.9+	840208	801	2.0+	1.7+	840403	688	0.6+	0.5+

1937 UE = 1976 SV1 = 1982 UC2

The identification 1937 UE = 1982 UC2 is by F. Bowman and W. Landgraf, who found it independently. The identification 1937 UE = 1976 SV1 is by E. Bowell and W. Landgraf, who also found it independently.

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

M 115.02172		(1950.0)	P	Q
n 0.17636114	Peri.	98.31748	+0.51625513	-0.85641797
a 3.1492102	Node	320.59962	+0.78235320	+0.47414331
e 0.1816610	Incl.	0.48524	+0.34843092	+0.20429481
P 5.59	B(1,0)	13.0		

Residuals in seconds of arc

371026	024	0.6+	2.8-	760924	095	1.6-	0.5+	821021	046	0.9-	1.8-
371027	024	1.4+	0.3-	760928	095	1.9+	1.0+	821021	046	0.1+	1.6-
371028	024	2.7-	1.1-	821016	046	0.5+	0.1+	821021	046	0.8-	1.4-
371103	024	0.4+	0.2-	821016	046	0.2+	1.2-	821022	095	2.6-	0.0
371107	024	3.2+	0.9+	821020	046	0.7-	1.9-	821114	095	3.5+	2.9+

1980 DG = 1972 JB1 = 1982 TP2

The key identification 1980 DG = 1982 TP2 is by F. Bowman and W. Landgraf, who found it independently.

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

M	296.37778		(1950.0)		P		Q				
n	0.22781270	Peri.	344.94801		-0.21744091		+0.95596720				
a	2.6551249	Node	272.19380		-0.87387171		-0.28061662				
e	0.1292428	Incl.	11.37554		-0.43481912		+0.08591286				
P	4.33	B(1,0)	13.5								

Residuals in seconds of arc

720511	805	0.6-	1.0-	800220	046	0.9+	0.0	800223	046	2.2-	0.0
720511	805	0.3-	0.3-	800220	046	1.1+	0.1+	821015	095	1.5-	1.9-
720511	805	0.6+	0.5-	800221	046	0.9+	0.7-	821021	095	1.1+	4.0+
800219	046	0.4+	0.0	800221	046	2.3-	0.5+	821111	095	0.5+	1.0-
800219	046	0.5-	1.7+	800223	046	1.5+	1.3-				

1982 UJ2 = 1973 AB4 = 1980 DU2

The key identification 1982 UJ2 = 1973 AB4 is by W. Landgraf.

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

M	151.08288		(1950.0)		P		Q				
n	0.28656139	Peri.	92.79235		-0.49263506		-0.86963827				
a	2.2785495	Node	26.79755		+0.76726474		-0.45153117				
e	0.1749047	Incl.	4.10188		+0.41062820		-0.19962183				
P	3.44	B(1,0)	14.5								

Residuals in seconds of arc

730102	095	2.1-	1.4-	821020	095	0.3+	1.2-	821025	095	0.6-	0.1-
730104	095	1.2+	1.1-	821021	046	1.0-	0.1+	821109	095	1.9-	0.6+
800220	095	0.4+	0.2+	821021	046	1.9-	0.7-	821114	095	0.7-	0.3+
821017	046	0.4-	0.4-	821022	046	1.2+	0.9+				
821017	046	0.4+	3.6-	821022	046	1.5+	0.5-				

1984 AZ = A909 BM = 1952 DZ1 = 1965 YF

The identifications 1984 AZ = 1952 DZ1 = 1965 YF are by W. Landgraf.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	50.21328		(1950.0)		P		Q				
n	0.27554596	Peri.	59.99895		-0.88315148		-0.45836568				
a	2.3388733	Node	92.55839		+0.38859218		-0.83395691				
e	0.1539909	Incl.	5.72886		+0.26275382		-0.30727312				
P	3.58	B(1,0)	14.5								

Residuals in seconds of arc

090127	024	1.4+	4.8+	840105	688	0.2+	1.3-	840126	688	1.5+	2.5-
520224	711	0.0	0.5+ Y	840105	688	1.5-	2.1-	840126	688	0.4+	3.4-
651220	330	0.3-	6.4+	840108	688	1.7-	1.1-	840308	801	3.1+	1.7+
651224	330	(8.3-	69.3+)	840108	688	2.3-	1.5-				

1984 GF = 1938 CE = 1952 QU = 1978 OF

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

M	14.41007		(1950.0)		P		Q				
n	0.30223407	Peri.	107.74344		-0.28361545		+0.95738344				
a	2.1990814	Node	145.62989		-0.91233869		-0.25186785				
e	0.1045389	Incl.	5.54832		-0.29529713		-0.14134898				
P	3.26	B(1,0)	14.5								

Residuals in seconds of arc

380206	062	0.6+	2.1+	840405	046	1.9+	0.3-	840425	046	0.6+	0.0
380206	062	1.0-	1.5-	840405	046	1.7-	2.6+	840425	046	0.9-	1.1-
380207	062	0.4+	1.0-	840419	046	0.6+	0.0	840427	046	0.8-	0.1+
520819	760(92.0-	16.4+)X		840419	046	0.8+	0.2-	840427	046	2.7-	0.3+
780730	414	0.2+	0.7-	840424	046	1.3+	0.6-				
780730	414	0.1-	0.2-	840424	046	0.7-	0.0				

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

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

Periodic Comet Russell 4 (1984d)
T 1984 Jan. 6.00884 ET

		(1950.0)	P	Q
q 2.1253021				
n 0.15411710	Peri.	91.28238	-0.95147871	-0.28980617
a 3.4453671	Node	71.87883	+0.22077261	-0.87709344
e 0.3831420	Incl.	6.24859	+0.21435419	-0.38303978
P 6.40				

From 36 observations 1984 Mar. 2-May 7.

Comet Shoemaker (1984f)
T 1985 Sept. 4.05681 ET

		(1950.0)	P	Q
q 2.6762627				
	Peri.	235.90709	-0.64654756	+0.35315726
	Node	49.08994	+0.12835204	+0.92411663
e 1.0	Incl.	116.52193	-0.75199867	-0.14590546

From 19 observations 1984 May 27-June 30.

(3080)* 1935 TE = 1983 AT

Discovered 1935 Oct. 3 by P. Shajn at Simeis. The identification is by E. Bowell (MPC 7661).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 242.65301				
n 0.23392788	Peri.	306.37045	+0.97770485	+0.11180471
a 2.6086435	Node	47.94778	+0.00024537	+0.84585619
e 0.1964499	Incl.	13.84964	-0.20998373	+0.52156208
P 4.21	B(1,0)	13.0		

Residuals in seconds of arc

351003 094	1.5-	2.5+	830109 688	0.3+	0.6+	830211 688	0.3-	0.6-
351003 078	1.7+	3.2-	830109 688	0.6-	0.3+	840308 801	1.1-	2.3+
351004 094	3.1-	1.3+	830112 046	1.0-	1.7+	840309 688	1.0-	0.4+
351018 078	1.3-	0.5+	830112 046	1.8+	1.9+	840309 688	0.1-	3.2-
351023 094	2.0+	1.9+	830116 688	0.0	0.4+	840327 801	0.3+	0.9+
351028 078	1.7+	1.9-	830116 688	0.5-	0.7+	840429 801	2.5+	1.3+

(3081)* 1971 UP = 1952 RJ = 1975 XG3 = 1982 RO

Discovered 1971 Oct. 26 by L. Kohoutek at Bergedorf. The key identification 1971 UP = 1982 RO is by E. Bowell (MPC 7366).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M 224.39083				
n 0.26345611	Peri.	278.17849	+0.78384369	+0.61768130
a 2.4098899	Node	43.70500	-0.52718890	+0.71617921
e 0.1826937	Incl.	5.29054	-0.32811725	+0.32489560
P 3.74	B(1,0)	14.5		

Residuals in seconds of arc

520914 074	0.5-	0.7+	711110 029	0.5-	0.1+	820922 688	0.9-	1.8-
711026 029	0.1+	1.1+	711119 029	0.3+	0.7+	821116 801	6.3-	1.1+
711026 029	0.4-	1.4+	751202 095	0.3+	5.1-	840202 801	0.1+	0.3-
711027 095	1.2+	0.1+	820915 688	1.8+	0.6-	840302 801	0.0	0.0
711030 029	1.5-	1.8+	820915 688	4.1+	0.8-	840402 801	0.1+	0.4-
711110 029	0.6-	0.6+	820922 688	0.7+	1.3-			

(3082)* 1972 KE = 1972 LJ = 1936 XB = 1983 BB

Discovered 1972 May 17 by T. M. Smirnova at the Crimean Astrophysical Observatory. The double designation 1972 KE = 1972 LJ is by C. M. Bardwell (MPC 5440). The identification 1972 KE = 1983 BB is by E. Bowell (MPC 7661).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	275.20832		(1950.0)	P	Q
n	0.23826496	Peri.	230.75074	+0.96710782	+0.19785213
a	2.5768903	Node	117.30117	-0.13981715	+0.93850626
e	0.0777942	Incl.	10.36426	-0.21249382	+0.28294971
P	4.14	B(1,0)	13.5		

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

361212	008	(0.18-	0.06-)	720610	095	0.8-	0.4-	830215	688	2.2+	0.9+
361217	008	0.3-	0.6+	830109	688	3.7-	0.5+	830215	688	0.6-	0.0
361218	008	0.4-	0.6-	830109	688	4.2+	1.0+	840401	801	0.2+	0.1+
720517	095	0.6+	2.1-	830116	688	1.8-	1.7-	840430	801	0.7-	0.9+
720606	095	0.0	1.3-	830116	688	0.3-	0.6+	840526	801	0.5+	0.8+

(3083)* 1974 MH = 1974 KD = 1977 FA3 = 1978 SE7

Discovered 1974 June 17 at the El Leoncito Station of the Felix Aguilar Observatory. The double designation 1974 MH = 1974 KD is by T. Urata (NOC 1051).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	21.81478		(1950.0)	P	Q
n	0.28541367	Peri.	263.27275	-0.34878478	+0.93681736
a	2.2846493	Node	346.22184	-0.80906075	-0.31544747
e	0.1526388	Incl.	6.47988	-0.47304320	-0.15121552
P	3.45	B(1,0)	15.5		

Residuals in seconds of arc

740526	808	0.5-	0.9+	740717	808	0.6-	0.2-	781008	095	2.0-	3.8+
740617	808	0.8+	0.8-	740719	808	0.8-	0.8-	821218	801	0.3-	0.5-
740617	808	0.0	0.3-	740719	808	0.5-	0.4-	840331	688	0.2+	0.1-
740622	808	0.6+	0.1+	740720	808	0.4+	0.2+	840331	688	0.6-	1.0+
740622	808	0.1-	0.2+	740720	808	0.3+	0.7+	840404	801	1.2+	1.7+
740716	808	0.7+	0.1-	770326	095	0.3+	0.5+	840506	801	0.7+	0.2+
740716	808	0.0	0.0	780926	095	0.4-	1.6-				
740717	808	0.3-	0.1+	781002	095	0.5+	1.9+				

(3084)* 1977 QB1 = 1981 VJ

Discovered 1977 Aug. 19 by N. S. Chernykh at the Crimean Astrophysical Observatory. The identification is by E. Bowell (MPC 6523).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	329.09063		(1950.0)	P	Q
n	0.25888440	Peri.	144.10510	+0.86402206	+0.50340315
a	2.4381783	Node	185.68339	-0.47709827	+0.81417195
e	0.2258121	Incl.	4.14156	-0.16075795	+0.28932559
P	3.81	B(1,0)	14.5		

Residuals in seconds of arc

770819	095	0.0	1.3+	811102	688	1.3+	2.1-	811202	688	0.2-	1.5-
770820	095	0.8+	0.9-	811105	688	1.9+	0.8+	830216	801	0.6+	2.3+
770822	095	0.7+	0.1+	811105	688	0.4+	0.7+	840501	801	0.6-	2.1-
770824	095	0.7-	0.2-	811120	688	0.2-	1.6-	840527	801	0.3-	2.1-
770912	095	1.1-	2.2+	811120	688	1.4+	0.0				
770919	095	0.4-	0.0	811202	688	3.7-	2.2-				

(3085)* 1980 DA = 1949 XF

Discovered 1980 Feb. 18 at the Harvard College Observatory’s Agassiz Station. The identification was found independently by L. D. Schmadel (MPC 7233).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	168.21528	(1950.0)	P		Q
n	0.26710689	Peri.	158.42727	+0.35697562	-0.93172440
a	2.3878808	Node	270.60782	+0.84692599	+0.35298210
e	0.1011911	Incl.	3.82863	+0.39406190	+0.08540072
P	3.69	B(1,0)	14.0		

Residuals in seconds of arc

491214	760	2.2-	0.7+	800418	801	0.2-	0.2-	821107	046	0.8-	1.5-
491214	760	4.1-	2.2+	800419	801	0.2-	0.5-	821107	046	0.1+	0.4-
491225	760	4.8+	0.8-	800420	801	0.9-	0.8+	821108	095	4.1-	1.2-
491225	760	1.8+	0.7-	820819	801	1.3-	0.4+	821111	046	0.8-	1.3-
800124	095	0.0	0.1-	821013	688	1.4+	1.2-	821111	046	0.0	0.4+
800218	801	0.3+	0.1+	821013	688	1.3+	1.9-	821112	095	2.6+	0.9+
800222	801	0.2-	0.1-	821014	095	1.8+	0.2+	840302	801	1.1-	0.9+
800226	801	3.5-	0.8-	821016	801	0.7+	3.4+	840403	801	0.8+	0.6+
800310	801	0.8+	0.3-	821020	095	0.8+	1.6+	840429	801	0.8+	0.6-
800314	808	1.3+	0.7+	821022	095	0.6-	1.8+	840507	801	0.5+	1.3+
800314	808	0.1+	1.4-	821022	095	0.7+	0.5-				
800417	801	2.1+	0.5+	821024	095	1.9-	0.9-				

(3086)* 1980 XE = 1980 YD

Discovered 1980 Dec. 4 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	43.89079	(1950.0)	P		Q
n	0.36588617	Peri.	281.93264	-0.69465478	+0.66210870
a	1.9360001	Node	300.27651	-0.46495882	-0.71154053
e	0.0266812	Incl.	19.00188	-0.54887888	-0.23520659
P	2.69	B(1,0)	15.0		

Residuals in seconds of arc

801204	688	0.8+	1.5-	810130	046	0.8+	0.4-	820913	688	0.4-	1.6-
801204	688	1.8+	0.9-	810131	046	1.3-	0.1+	820921	688	4.3+	0.2-
801212	688	0.3+	4.6-	810131	046	0.8+	1.0+	820921	688	2.0-	0.6-
801212	688	0.6+	2.1-	810201	046	0.5-	0.4-	821011	801	1.4-	0.3+
801230	688	1.4+	0.1+	810201	046	2.4+	1.3+	821116	801	0.2-	1.1+
801230	688	1.9-	1.1-	810209	046	1.7-	1.6+	840129	474	0.5+	0.9-
810129	046	0.4+	0.9-	810209	046	1.2-	2.6+	840129	474	0.4+	0.6+
810129	046	0.0	0.4+	810211	046	1.3+	3.8+	840227	474	0.7+	1.1+
810130	046	0.4+	0.9+	810211	046	1.1-	1.1+	840227	474	1.6+	1.5+
810130	046	2.2-	0.8-	810227	046	0.3-	0.3-	840309	688	0.7-	2.6-
810130	688	1.9-	1.1-	810227	046	0.5-	1.2+	840309	688	3.7-	2.9-
810130	688	0.7+	1.2-	810228	688	0.4-	0.1+				
810130	046	0.9+	0.1+	810228	688	0.4+	0.7-				

(3087)* 1981 QJ1

Discovered 1981 Aug. 30 by A. C. Gilmore and P. M. Kilmartin at the Mount John University Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	121.61027	(1950.0)	P		Q
n	0.18303129	Peri.	80.67771	+0.49185874	-0.86168695
a	3.0722213	Node	338.43194	+0.60403580	+0.44092532
e	0.1195373	Incl.	19.84307	+0.62706915	+0.25115822
P	5.38	B(1,0)	14.0		

Residuals in seconds of arc

810830	474	4.1+	0.6+	810923	474	0.2-	1.7-	820830	675	0.2+	0.2+
810830	474	3.8+	0.7-	811017	474	0.6-	0.5+	830113	801	0.4+	1.2-
810831	474	2.2+	1.1+	811017	474	0.9+	0.5+	840128	474	0.7-	0.5-
810831	474	0.8+	0.2-	811018	474	0.6-	0.1+	840128	474	0.5+	0.0
810901	474	0.2+	0.7-	811019	474	1.5-	0.1-	840202	801	1.3+	0.8-
810901	474	1.2+	0.8+	811019	474	1.2-	1.1+	840227	474	0.4+	1.2+
810906	474	4.0-	0.4+	811028	474	3.2-	0.4+	840227	474	0.2-	1.1+
810906	474	1.7-	0.5-	811028	474	3.1-	1.4+	840303	801	0.6-	0.1-
810923	474	0.1-	1.8-	820829	675	0.1+	0.3+				

(3088)* 1981 UX9 = 1978 EN7

Discovered 1981 Oct. 24 at the Purple Mountain Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	125.11440	(1950.0)	P	Q
n	0.18768857	Peri. 312.51528	-0.55572073	-0.83091845
a	3.0211862	Node 171.12094	+0.80524611	-0.54615460
e	0.0477716	Incl. 10.21316	+0.20676841	-0.10625288
P	5.25	B(1,0) 13.0		

Residuals in seconds of arc

780305	095	0.1-	0.6-	830112	688	1.4-	0.5+	840327	801	0.2-	0.0
811024	330	0.0	0.2+	830112	688	1.4-	0.5+	840430	801	1.4+	0.0
811029	330	0.1-	0.6-	830122	688	1.2+	0.1-	840528	801	1.1-	1.0+
811117	330	0.0	1.0+	830122	688	1.7+	0.3-				

(3089)* 1981 XK2 = 1934 NF = 1944 MD = 1964 LA = 1974 ML = 1976 YU2

Discovered 1981 Dec. 3 at the Purple Mountain Observatory. The key identification 1981 XK2 = 1976 YU2 is by S. Nakano and K. Hurukawa (JAM 1262).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	20.98458	(1950.0)	P	Q
n	0.19669258	Peri. 183.29273	+0.02129705	+0.95745285
a	2.9282674	Node 88.06695	-0.91052236	+0.13746568
e	0.1886158	Incl. 16.73626	-0.41291096	-0.25374636
P	5.01	B(1,0) 12.0		

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

340706	078(52.8+	4.2-)X		740623	095	0.0	2.2+	811222	330	0.1-	1.7+
340710	078(34.5+	24.4+)X		761216	095	1.1+	2.5-	840401	801	0.2+	0.9+
340731	078(33.4-	17.1+)X		761218	095	0.0	2.0-	840506	801	1.3+	0.4-
440625	078(0.01+	0.04-)X		761220	095	0.5+	1.6-	840507	801	0.5+	0.1+
440714	078(96.8+	53.4-)X		811203	330	1.4-	2.1+	840521	657	1.5-	0.5-
640611	760	0.3+	2.2-	811219	330	0.8+	2.4+	840526	801	0.2-	0.7-
640611	760	0.2-	0.7+	811221	330	0.9-	0.1-				

(3090)* 1982 AN = 1969 VP2

Discovered 1982 Jan. 4 by J. Gibson at Palomar. The identification is by L. D. Schmadel (MPC 7840).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	288.44380	(1950.0)	P	Q
n	0.17472239	Peri. 182.21489	+0.99206767	+0.12272749
a	3.1688645	Node 170.60394	-0.11261332	+0.96383587
e	0.0931616	Incl. 9.58974	-0.05585679	+0.23655521
P	5.64	B(1,0) 13.5		

Residuals in seconds of arc

691115	095	0.5+	2.9-	820202	675	0.3-	0.3+	840503	801	0.2-	1.6-
811223	675	0.9+	0.1-	820203	675	0.4-	0.7+	840525	801	0.2+	0.0
820104	675	0.9+	0.2-	830220	675	0.4+	1.2-				
820202	675	1.0-	0.7+	830221	675	0.9-	0.4-				

(3091)* 6081 P-L = 1970 GE2 = 1977 EC8

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels. The key identification 6081 P-L = 1977 EC8 is by K. Hurukawa (MPC 7776).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	356.09798			
n	0.27375391	Peri. 9.12043	-0.53943637	+0.84161974
a	2.3490693	Node 228.23924	-0.77470151	-0.50824092
e	0.1668199	Incl. 2.01018	-0.32991812	-0.18266740
P	3.60	B(1,0) 15.0		

Residuals in seconds of arc

600924	675	0.6-	0.3-	601026	675	0.6+	0.2+	770314	381	0.1-	0.4-
600925	675	0.3+	0.4+	700412	805	0.5-	0.4+	770315	381	1.1-	0.8-
600926	675	0.0	0.5-	700412	805	0.2+	0.2+	770410	381	2.8+	1.2-
600928	675	0.5-	0.3-	700412	805	0.2+	0.2+	770410	381	0.4-	0.4+
601017	675	0.3+	1.2+	770312	381	0.1+	0.5+	840302	801	0.0	0.6+
601022	675	0.4+	0.2-	770312	381	0.8-	0.1+	840404	801	0.0	0.4+
601024	675	0.3-	0.5-	770314	381	0.8-	0.3-	840506	801	0.5+	0.3+

(3092)* 6550 P-L = 1980 TH10 = 1983 CC1

Discovered 1960 Sept. 24 by C. J. van Houten and I. van Houten-Groeneveld on Palomar Schmidt plates taken by T. Gehrels. The key identification 6550 P-L = 1983 CC1 is by E. Bowell (MPC 7777).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

		(1950.0)	P	Q
M	210.37567			
n	0.14785911	Peri. 4.59400	+0.97268533	-0.23028603
a	3.5419084	Node 8.88326	+0.20648697	+0.80094485
e	0.1071469	Incl. 10.89301	+0.10604893	+0.55268045
P	6.67	B(1,0) 12.5		

Residuals in seconds of arc

600924	675	0.9+	0.4-	601024	675	0.9+	1.1-	830219	688	1.9-	0.4-
600926	675	0.7+	0.4+	601026	675	0.7+	0.6-	840327	801	1.9+	0.6+
600927	675	1.0+	0.1+	801015	095	0.8-	1.5+	840421	675	1.8-	0.5-
600928	675	1.3+	0.2+	830215	688	0.6+	0.1-	840506	801	0.7-	0.9-
601017	675	0.3+	1.0-	830215	688	0.5-	0.2-				
601022	675	1.0-	0.5-	830219	688	1.9+	2.2-				

1928 SL = 1972 HO1 = 1983 RV

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

		(1950.0)	P	Q
M	34.45139			
n	0.12550842	Peri. 125.30219	+0.93237318	-0.36080340
a	3.9508300	Node 255.85653	+0.32370363	+0.86086085
e	0.2616379	Incl. 1.32287	+0.16092299	+0.35880286
P	7.85	B(1,0) 11.5		

Residuals in seconds of arc

280922	024	1.7-	4.2+	830904	688	2.3+	4.5+	830907	046	1.9-	3.5-
281007	024	1.4+	3.5-	830904	688	2.8+	4.1+	830908	046	0.0	3.0-
281015	024	(10.7-	13.7-)	830905	046	0.2-	1.8+	830908	046	0.6-	3.4-
720419	805	1.4+	0.4-	830906	046	0.8-	1.2+				
720419	805	1.4-	0.3+	830907	046	1.3-	2.3-				

1952 SG = 1952 SS = 1969 TF1 = 1979 OG15 = 1982 KJ1

The identification 1982 KJ1 = 1979 OG15 is by T. Furuta (JAM 1597). The double designation 1952 SG = 1952 SS is by O. Kippes (MPC 936).

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

M	181.54497		(1950.0)	P	Q
n	0.29086410	Peri.	211.03810	+0.89221172	+0.44652638
a	2.2560229	Node	122.29214	-0.39618863	+0.84575399
e	0.1820321	Incl.	4.58809	-0.21677826	+0.29208623
P	3.39	B(1,0)	15.5		

Residuals in seconds of arc

520916	760	0.4+	0.0	691008	095	0.3+	0.4+	820517	675	0.9-	1.1-
520916	760	3.7+	0.6+	790721	095	0.6-	1.0+	820518	675	1.7+	2.2-
520920	760	0.7-	2.3+	790730	095	1.0+	4.7-	820524	675	2.0+	3.0+
520920	760	0.3-	1.4+	820515	675	0.8+	2.1-	820527	675	1.7-	7.7+
520925	760	6.2-	1.8-	820516	675	1.4+	1.5-				
520925	760	1.7+	0.8+	820516	675	2.3-	0.9-				

1971 QP = 1978 PP = 1982 TN2

The identifications were found independently by W. Landgraf. The identification 1971 QP = 1982 TN2 was also found by F. Bowman and O. Kippes. The identification 1971 QP = 1978 PP was also found by L. D. Schmadel. The identification 1971 QP = 1975 WZ (NOC 1043) is invalid.

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

M	249.82122		(1950.0)	P	Q
n	0.27777052	Peri.	91.43793	+0.91094507	+0.41096925
a	2.3263737	Node	244.29746	-0.39252134	+0.83677713
e	0.2036295	Incl.	2.27855	-0.12690972	+0.36181254
P	3.55	B(1,0)	15.0		

Residuals in seconds of arc

710818	095	0.4-	0.7-	780808	095	0.2-	0.7+	821025	095	1.5+	0.7+
710824	095	1.1+	0.3+	821014	095	0.1-	0.6-	821109	095	0.3+	0.3+
710830	095	0.5-	0.2-	821020	095	1.3-	0.1-	821114	095	0.6-	0.0

1975 TZ2 = 1951 YC2 = 1983 RZ = 1983 SH

The key identification 1975 TZ2 = 1983 RZ was found by F. Bowman.

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

M	91.51910		(1950.0)	P	Q
n	0.24254754	Peri.	202.01770	+0.99610420	-0.07925959
a	2.5464726	Node	162.39614	+0.08698253	+0.95521389
e	0.2016241	Incl.	7.34356	-0.01450738	+0.28510409
P	4.06	B(1,0)	14.5		

Residuals in seconds of arc

511228	711	0.1-	1.9+ Y	751105	095	1.4-	1.2+	830908	046	1.4-	1.6-
751003	095	1.3+	0.2-	751106	095	0.1+	2.9-	830908	046	1.2-	0.2-
751013	095	0.1-	0.3-	830904	688	0.5+	0.2+	830929	046	0.3-	1.1+
751101	095	0.9+	1.6-	830904	688	1.2+	0.0	830929	046	0.5+	3.7+

1978 UF = 1957 UN = 1969 PO = 1982 RN1

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

M	214.81717		(1950.0)	P	Q
n	0.23400078	Peri.	115.79134	+0.63926785	+0.76712880
a	2.6081068	Node	194.33766	-0.75988031	+0.61952470
e	0.1713892	Incl.	12.44962	-0.11797678	+0.16644085
P	4.21	B(1,0)	14.5		

Residuals in seconds of arc

571030	024	0.6-	1.4+	820824	561	1.0+	0.8+	820914	046	0.7-	0.9+
690813	095	0.0	2.0+	820825	561	1.5+	0.9+	820915	046	3.5-	2.3-
780928	095(22.2-	2.6-)X		820825	561	1.6+	0.0	820915	046	2.0-	1.2-
781004	095	0.2+	5.0+	820825	561	1.0+	0.6+	820916	046	0.0	1.2-
781028	688	0.8+	2.6- Y	820826	561	0.7+	0.2+	820916	046	0.4-	0.3-
820824	561	1.7+	0.3-	820914	046	0.5-	2.2-				

1979 FU2 = 1976 YN6 = 1982 YH1

The key identification 1979 FU2 = 1982 YH1 is by F. Bowman, T. Furuta (JAM 1622) and O. Kippes, who found it independently. The identification 1979 FU2 = 1976 YN6 was independently found by S. Nakano (JAM 1626).

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

M	308.38137	(1950.0)		P	Q
n	0.17873322	Peri.	219.94000	-0.05134193	+0.98154379
a	3.1212847	Node	47.97142	-0.84116146	+0.05693174
e	0.0803646	Incl.	14.35916	-0.53834134	-0.18256658
P	5.51	B(1,0)	12.5		

Residuals in seconds of arc

761220	095	3.2+	6.1-	821223	095	4.9+	4.6+	830109	095	0.7-	1.1+
790329	095	2.1-	1.3-	821223	095	3.6-	0.2-	830114	095	1.3-	0.7+
790425	095	0.6+	0.1+	821224	095	1.1+	1.2-				
790430	095	0.4-	1.5-	830106	095	1.1-	0.5-				

1981 ET38 = 1983 TJ1

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

M	86.50052	(1950.0)		P	Q
n	0.21292553	Peri.	178.04140	+0.97538565	-0.21646737
a	2.7774852	Node	194.66615	+0.19997706	+0.94864770
e	0.1582120	Incl.	9.55064	+0.09290862	+0.23067166
P	4.63	B(1,0)	14.0		

Residuals in seconds of arc

810301	413	0.1-	0.3-	810405	413	2.2-	1.2+	831012	688	0.6+	1.3-
810301	413	0.2+	0.1+	810405	413	3.4+	1.8-	831012	688	0.1-	0.1+
810306	413	1.1-	1.9+	810410	413	2.0-	1.0+	831015	046	3.5+	2.4+
810306	413	1.2+	0.2-	810410	413	0.2+	2.3-	831015	046	1.5+	0.3-
810308	413	0.3+	0.3+	830910	688	0.2-	1.0-	831104	688	0.8-	0.5+
810308	413	0.9+	0.4-	830910	688	1.3-	1.7-	831104	688	1.1-	2.0-
810312	413	0.9-	0.2-	831009	046	0.4+	0.7+				
810312	413	0.2-	0.5-	831009	046	2.6-	0.9+				

1981 PB

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

M	22.72900	(1950.0)		P	Q
n	0.31658906	Peri.	302.91685	+0.50877522	+0.86089247
a	2.1320938	Node	357.65726	-0.75890524	+0.44660031
e	0.2787078	Incl.	4.84823	-0.40646107	+0.24374643
P	3.11	B(1,0)	16.5		

Residuals in seconds of arc

810805	688	0.6-	1.0-	810830	688	2.0+	0.9-	840526	474	2.4+	1.6+
810805	688	0.5-	0.5+	811117	675	0.7+	0.6+	840526	474	1.4+	1.5+
810826	688	1.5-	0.4+	811117	675	0.1+	0.2+	840530	474	1.9-	1.8-
810826	688	1.3-	1.1+	811218	675	0.3-	0.3-	840530	474	1.7-	1.3-
810830	688	1.9+	0.2-	811218	675	0.8-	0.4-				

1981 RF

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

M	294.68728	(1950.0)		P	Q
n	0.25985129	Peri.	238.85045	+0.99655891	+0.06384710
a	2.4321312	Node	117.44211	-0.03968498	+0.92738676
e	0.1893482	Incl.	3.41450	-0.07276980	+0.36861544
P	3.79	B(1,0)	15.0		

Residuals in seconds of arc

810830	688	1.5-	1.9-		810926	688	0.1-	0.3+		840421	675	0.2+	0.8-
810830	688	1.2+	0.2-		810926	688	1.5-	0.4-		840503	801	2.1+	1.1+
810903	688	1.2-	1.0-		811005	688	0.3+	0.4+		840507	675	0.1+	0.9+
810903	688	0.8-	1.0-		811005	688	2.7+	1.0+		840508	675	0.7-	0.7+
810925	688	0.5+	2.2+		820115	675	0.4-	1.0+		840509	675	1.0-	0.4+
810925	688	0.6+	0.8+		820116	675	0.9-	1.4+					

1984 KB

Epoch 1984 May 20.0 ET = JDE 2445840.5

M	13.92876		(1950.0)	P	Q
n	0.29662524	Peri.	334.90378	-0.82365363	-0.56693689
a	2.2267117	Node	170.52534	+0.53296911	-0.78189937
e	0.7630246	Incl.	4.63936	+0.19374889	-0.25926035
P	3.32	B(1,0)	16.5		

From 22 observations 1984 May 27-June 27.

1984 KD

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	34.31731		(1950.0)	P	Q
n	0.30081227	Peri.	203.55803	+0.25430209	+0.93849420
a	2.2060009	Node	81.83712	-0.84552224	+0.33299096
e	0.5429050	Incl.	13.64878	-0.46949183	-0.09135458
P	3.28	B(1,0)	18.0		

From 28 observations 1984 May 27-June 20, mean residual 1".0.

4031 P-L = 1982 TE1

The identification is by O. Kippes.

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

M	174.10136		(1950.0)	P	Q
n	0.27032305	Peri.	86.35913	+0.37802711	-0.92536120
a	2.3689080	Node	341.35170	+0.81030685	+0.34551181
e	0.1844345	Incl.	5.08158	+0.44777038	+0.15597509
P	3.65	B(1,0)	16.0		

Residuals in seconds of arc

600924	675	0.6+	0.5-		601022	675	1.3-	0.4+		821021	095	1.7+	2.3-
600925	675	0.0	0.1-		601024	675	0.5-	1.5+		821022	095	1.8-	0.1+
600926	675	0.4-	0.3+		601026	675	0.3-	0.8+		821109	095	0.9-	0.2+
600928	675	0.1-	0.3-		821014	095	0.5+	0.0		821112	095	0.3+	0.4-
601017	675	1.5+	1.6-		821020	095	0.4+	1.3+					

4063 P-L = 1981 EH44

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

M	67.91928		(1950.0)	P	Q
n	0.25937795	Peri.	108.45892	+0.23343342	-0.97160025
a	2.4350892	Node	327.96255	+0.86225151	+0.22525506
e	0.1739124	Incl.	4.18938	+0.44947878	+0.07247830
P	3.80	B(1,0)	17.0		

Residuals in seconds of arc

600924	675	1.1-	0.7-		601022	675	0.0	0.7+		810308	413	1.3-	0.0
600925	675	0.5+	0.8-		601024	675	0.6+	0.3-		810312	413	0.5-	0.2+
600926	675	0.7+	0.6-		601026	675	0.2-	0.7-		810409	413	0.1+	0.1+
600928	675	1.0-	0.9-		810306	413	2.2+	0.1-		810409	413	1.4+	0.0
601017	675	0.7+	2.1+		810308	413	2.5-	0.1+					

6299 P-L = 1981 EG38
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	326.09235	(1950.0)	P	Q
n	0.21198586	Peri. 283.19244	-0.46761206	-0.88188537
a	2.7856870	Node 195.13110	+0.87365932	-0.45076182
e	0.1568112	Incl. 13.32103	+0.13438133	-0.13817369
P	4.65	B(1,0) 15.5		

Residuals in seconds of arc

600924	675	1.3-	0.1-	810301	413	0.4+	1.8-	810406	413	1.6-	2.4+
600925	675	0.9+	1.6+	810306	413	1.5-	2.7+	810406	413	1.2+	1.2-
600926	675	0.1-	0.4+	810308	413	0.3-	1.1+	810408	413	0.2-	1.5+
600928	675	0.0	0.2+	810308	413	0.7+	1.1-	810408	413	2.2+	1.5-
601017	675	0.2-	0.1+	810312	413	0.8-	1.1+	810409	413	0.6-	0.5+
810301	413	0.2-	0.3-	810312	413	0.7+	1.4-	810409	413	0.1+	0.7-

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ORBITAL ELEMENTS BY D. W. E. GREEN, SMITHSONIAN ASTROPHYSICAL OBSERVATORY.

Periodic Comet Bradfield (1984a)
T 1983 Dec. 27.79938 ET

q	1.3575229	(1950.0)	P	Q
n	0.00647054	Peri. 219.16737	-0.79972125	+0.59806137
a	28.5217288	Node 356.16058	-0.11248270	-0.23534368
e	0.9524039	Incl. 51.79371	-0.58974025	-0.76611745
P	152.32			

From 30 observations 1984 Jan. 9-May 30.

1978 QX = 1984 HH
The identification is by D. W. E. Green.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	21.80657	(1950.0)	P	Q
n	0.30112561	Peri. 300.09305	-0.26771342	+0.96344592
a	2.2044747	Node 314.37505	-0.87902653	-0.24851024
e	0.1400579	Incl. 0.80755	-0.39451473	-0.10007309
P	3.27	B(1,0) 15.0		

Residuals in seconds of arc

780728	414	0.6+	0.3-	780822	414	1.7+	0.7+	840425	046	0.6+	0.1+
780728	414	0.1+	0.6+	780831	095	1.7-	0.5-	840425	046	1.6-	0.1-
780802	414	0.1+	0.4-	780905	095	0.5+	0.2+	840427	046	1.0-	1.1+
780802	414	0.4-	0.1-	840419	046	1.2+	0.1+	840427	046	0.6-	1.0-
780822	414	0.7-	0.3-	840419	046	1.2+	0.3-				

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ORBITAL ELEMENTS BY S. NAKANO, TOKYO.

The following orbital elements are from JAM 1626 and 1627. The identifications are by S. Nakano unless otherwise stated.

1969 TB2 = 1982 GH
The identification is by T. Furuta (JAM 1507). The identification 1969 TB2 = 1974 SR4 (NOC 1067) is invalid.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	94.25661	(1950.0)	P	Q
n	0.19983770	Peri. 282.07968	+0.55474505	+0.83190500
a	2.8974679	Node 21.63102	-0.74795615	+0.50592132
e	0.0629084	Incl. 2.15421	-0.36444412	+0.22798616
P	4.93	B(1,0) 13.7		

Residuals in seconds of arc

691008 095	0.6+	1.1-	691111 095	0.8-	0.4-	820415 046	1.4-	1.4+
691016 095	1.0+	0.7-	691113 095	5.1+	0.9-	820423 046	0.3+	2.5-
691104 095	5.0-	1.2+	820415 046	0.3+	2.0+	820423 046	0.1-	2.8-

1980 FA = 1956 EG = 1982 RV1

The key identification 1980 FA = 1982 RV1 is by T. Furuta (JAM 1622).

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

M	135.37823		(1950.0)	P	Q
n	0.20624605	Peri.	215.24750	+0.91782804	-0.39690249
a	2.8371339	Node	168.12973	+0.37230951	+0.85385222
e	0.0902037	Incl.	2.15991	+0.13775819	+0.33675628
P	4.78	B(1,0)	12.5		

Residuals in seconds of arc

560309 024	0.4-	1.0-	800317 809	1.2+	0.6-	820915 046	3.3+	0.5-
800316 809	0.9+	0.3+	800317 809	0.4+	0.2-	820915 046	4.2+	0.6-
800316 809	1.1+	0.6-	800317 809	0.9+	0.5-	820916 046	3.8-	1.6+
800316 809	0.5+	0.3-	800317 046	0.2+	1.3-	820916 046	3.3-	0.4+
800316 809	0.2+	0.6-	800317 046	3.0-	1.0-	820917 046	1.7-	0.9+
800316 046	0.7+	0.4-	800323 809	0.5-	1.6+	820917 046	2.3-	0.6-
800316 046	4.3-	1.2+	820915 046	0.1-	3.1-			
800317 809	0.8+	0.0	820915 046	4.8+	1.2-			

1983 NJ = 1975 BA = 1982 HQ

The key identification 1983 NJ = 1982 HQ is by T. Furuta (JAM 1623).

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

M	116.23216		(1950.0)	P	Q
n	0.18173055	Peri.	117.98638	-0.00308507	+0.99101044
a	3.0868696	Node	150.88833	-0.98657902	+0.01881912
e	0.0661221	Incl.	15.95685	-0.16325534	-0.13245435
P	5.42	B(1,0)	12.7		

Residuals in seconds of arc

750117 095	0.5+	3.8-	820425 688	0.3-	0.9-	830713 688	2.6-	0.1-
820418 688	0.2-	0.5-	830710 688	0.1+	2.1-	830813 688	0.8+	0.0
820418 688	0.4-	0.4+	830710 688	0.7+	1.0+	830813 688	0.6+	1.2-
820425 688	0.4+	0.6-	830713 688	0.6+	0.7-			

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NEW NAMES OF MINOR PLANETS.

(2141) Simferopol = 1970 QC1

Discovered 1970 Aug. 30 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named for the central city of the Crimean district of the Ukrainian SSR on the occasion of its two-hundredth anniversary.

(2227) Otto Struve = 1955 RX

Discovered 1955 Sept. 13 at the Goethe Link Observatory, Indiana University.

Named in memory of Otto Struve (1897-1963), last of a remarkable astronomical lineage. His great-grandfather, Wilhelm Struve, founded the Pulkovo Observatory in 1839; his grandfather (Otto), uncle (Hermann) and father (Ludwig) were also distinguished astronomers. Following a period of great privation and misery after World War I, he was invited by Edwin B. Frost to come to the Yerkes Observatory in 1921. He started working in spectroscopy and remained a spectroscopist to the end of his days. He succeeded Frost as Yerkes director in 1932 and was the major force responsible for the establishment of the McDonald Observatory in 1933. Managing

editor of the Astrophysical Journal from 1932 to 1947, he raised it to the preeminent position it now occupies. He became head of the astronomy department at the University of California in Berkeley in 1950, and he served as director of the National Radio Astronomy Observatory from 1960 to 1962. He served as president of the IAU during 1952-1955. (768) Struveana is named for three of his ancestors; following in their footsteps, Otto Struve received the Royal Astronomical Society's gold medal in 1944. Name proposed by F. K. Edmondson.

(2237) Melnikov = 1938 TB

Discovered 1938 Oct. 2 by G. Neujmin at Simeis.

Named in memory of Oleg Aleksandrovich Melnikov (1912-1982), on the staff of the Pulkovo Observatory since 1933 and a professor at Leningrad University since 1947. His scientific research was centered on the study of the sun, stellar astronomy and interstellar matter by spectroscopic methods. He was also concerned with astronomical instruments and served as president of IAU Commission 9.

(2259) Sofievka = 1971 OG

Discovered 1971 July 19 by B. Burnasheva at the Crimean Astrophysical Observatory.

Named for a dendrological park in Uman', in the Cherkasskaya district of the Ukrainian SSR. The park is a monument to the landscaping and architecture of the 18th and 19th centuries.

(2327) Gershberg = 1969 TQ4

Discovered 1969 Oct. 13 by B. Burnasheva at the Crimean Astrophysical Observatory.

Named in honor of the Soviet astronomer Roald Evgenevich Gershberg, who has made significant contributions to the study of processes occurring in gaseous nebulae and of the nature of stellar outbursts.

(2470) Agematsu = 1976 UW15

Discovered 1976 Oct. 22 by H. Kosai and K. Hurukawa at the Tokyo Observatory's Kiso Station.

Named for one of three towns to which the Kiso Station administratively belongs.

(2574) Ladoga = 1968 UP

Discovered 1968 Oct. 22 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named for the largest lake in Europe, situated near Leningrad.

(2575) Bulgaria = 1970 PL

Discovered 1970 Aug. 4 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named for the People's Republic of Bulgaria.

(2616) Lesya = 1970 QV

Discovered 1970 Aug. 28 by T. M. Smirnova at the Crimean Astrophysical Observatory.

Named for Lesya Ukrainka, the pen name of Larisa Petrovna Kosach (1871-1913), an outstanding Ukrainian poetess, playwright and literary critic.

(2756) Dzhangar = 1974 SG1

Discovered 1974 Sept. 19 by L. I. Chernykh at the Crimean Astrophysical Observatory.

Named for the Kalmyk epics, which reflect the hopes, dreams, and struggles of the Kalmyk people.

(2760) Kacha = 1980 TU6
Discovered 1980 Oct. 8 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.
Named for the flying school in Kacha, a settlement in the Crimea, where some Soviet cosmonauts receive training. In 1980 the school celebrated its 70th anniversary.

(2768) Gorky = 1972 RX3
Discovered 1972 Sept. 6 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.
Named for Maxim Gorky, pen name of Aleksei Makhsimovich Peshkov (1868-1936), outstanding Russian writer and the founder of Soviet literature.

(2833) Radishchev = 1978 PC4
Discovered 1978 Aug. 9 by L. I. Chernykh and N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of Aleksandr Nikolaevich Radishchev (1749-1802), Russian writer, philosopher and revolutionary.

(2837) Griboedov = 1971 TJ2
Discovered 1971 Oct. 13 by L. I. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of Aleksandr Sergeevich Griboedov (1795-1829), Russian dramatic author and diplomat. His "Gore ot Uma", or "The Mischief of Being Clever", is one of the great comedies of European literature.

(2877) Likhachev = 1969 TR2
Discovered 1969 Oct. 8 by L. I. Chernykh at the Crimean Astrophysical Observatory.
Named in honor of Dmitrij Sergeevich Likhachev, prominent Soviet literary scholar and outstanding expert on the history of Slavic culture.

(2890) Vilyujsk = 1978 SY7
Discovered 1978 Sept. 26 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.
Named for the central town of the Vilyujsk district of the Yakut Autonomous SSR on the occasion of its 350th anniversary.

(2892) Filipenko = 1983 AX2
Discovered 1983 Jan. 13 by L. G. Karachkina at the Crimean Astrophysical Observatory.
Named in honor of Aleksandr Grigorevich Filipenko, chief of surgery at the Crimean regional hospital in Bakhchisaraj. The discoverer owes him for saving the life of a person dear to her.

(2894) Kakhovka = 1978 SH5
Discovered 1978 Sept. 27 by L. I. Chernykh at the Crimean Astrophysical Observatory.
Named for a town of the Chersonian district of the Ukrainian SSR.

(2907) Nekrasov = 1975 TT2
Discovered 1975 Oct. 3 by L. I. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of Nikolaj Alekseevich Nekrasov (1821-1878), a poet and revolutionary who expressed in his works the sorrows and sufferings of the common people.

(2924) Mitake-mura = 1977 DJ2
Discovered 1977 Feb. 18 by H. Kosai and K. Hurukawa at the Tokyo Observatory's Kiso Station.
Named for another of the three towns to which the Kiso Station administratively belongs. Although in Roman characters the name is very similar to that of Mitaka, the town in which the Tokyo Observatory's headquarters are located, the names are very different when written in Japanese characters. The endings "take" and "taka" mean mountain and hawk, respectively.

(2931) Mayakovsky = 1969 UC
Discovered 1969 Oct. 16 by L. I. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of the Soviet poet Vladimir Vladimirovich Mayakovskij (1893-1930).

(2949) Kaverznev = 1970 PR
Discovered 1970 Aug. 9 at the Crimean Astrophysical Observatory.
Named in memory of Aleksandr Aleksandrovich Kaverznev (1932-1983), Soviet journalist, documentary-film maker and political commentator.

(2960) Ohtaki = 1977 DK3
Discovered 1977 Feb. 18 by H. Kosai and K. Hurukawa at the Tokyo Observatory's Kiso Station.
Named for the third of the towns to which the Kiso Station administratively belongs. In fact, the Observatory is located at the top of the mountain where the boundaries of the three towns converge.

(2979) Murmansk = 1978 TB7
Discovered 1978 Oct. 2 by L. V. Zhuravleva at the Crimean Astrophysical Observatory.
Named for the famous Arctic seaport.

(3043) San Diego = 1982 SA
Discovered 1982 Sept. 20 by E. Helin at Palomar.
Named as a celestial tribute to the city of San Diego in appreciation of the city's responsiveness and cooperation in the campaign to restore dark skies for astronomers probing the universe.

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EPHEMERIDES.

Comet Shoemaker (1984f) Elements MPC 8902

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1984	06 29	15 59.30	+11 34.8	4.292	4.997	129.2	9.1	14.2
1984	07 09	15 49.28	+10 23.4					
1984	07 19	15 40.61	+09 01.8	4.385	4.849	111.4	11.3	14.1
1984	07 29	15 33.49	+07 32.9					
1984	08 08	15 27.99	+05 59.2	4.547	4.701	92.5	12.4	14.0
1984	08 18	15 24.07	+04 22.9					
1984	08 28	15 21.66	+02 45.7	4.730	4.555	73.9	12.3	14.0
1984	09 07	15 20.64	+01 08.8					
1984	09 17	15 20.86	-00 26.9	4.892	4.409	56.0	10.9	13.9
1984	09 27	15 22.18	-02 00.8					
1984	10 07	15 24.46	-03 32.8	4.998	4.264	38.7	8.4	13.8

1984 KB a,e,i = 2.23, 0.76, 5 Elements MPC 8909

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	16 25.77	-09 03.0	0.568	1.525	147.0	21.3	16.7
1984	07 09	16 25.12	-11 13.6					
1984	07 19	16 28.17	-12 55.0	0.907	1.749	130.8	26.1	18.1
1984	07 29	16 33.83	-14 18.2					
1984	08 08	16 41.46	-15 28.5	1.290	1.955	115.6	27.9	19.2
1984	08 18	16 50.61	-16 28.7					
1984	08 28	17 00.95	-17 20.2	1.703	2.145	101.4	27.5	19.9
1984	09 07	17 12.26	-18 03.9					
1984	09 17	17 24.34	-18 40.2	2.132	2.321	87.7	25.6	20.6

Periodic Comet Bradfield (1984a) Elements MPC 8910

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1984	06 29	00 40.06	-44 44.2	2.337	2.772	104.5	20.8	16.3
1984	07 09	00 34.88	-45 41.4					
1984	07 19	00 25.95	-46 43.3	2.335	2.972	119.7	17.3	16.6
1984	07 29	00 13.32	-47 40.6					
1984	08 08	23 57.46	-48 22.8	2.389	3.171	133.3	13.5	16.9
1984	08 18	23 39.41	-48 40.5					
1984	08 28	23 20.63	-48 27.7	2.534	3.369	139.7	11.2	17.3
1984	09 07	23 02.71	-47 43.3					
1984	09 17	22 46.99	-46 30.8	2.785	3.564	134.6	11.6	17.7
1984	09 27	22 34.26	-44 57.0					
1984	10 07	22 24.81	-43 09.1	3.135	3.756	121.6	13.1	18.2
1984	10 17	22 18.51	-41 13.4					
1984	10 27	22 15.04	-39 14.9	3.560	3.946	105.7	14.0	18.7

1984 KD a,e,i = 2.21, 0.54, 14 Elements MPC 8909

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	04 34.73	-56 31.2	0.070	1.011	83.4	92.6	14.4
1984	07 09	03 45.00	-46 33.8					
1984	07 19	03 31.57	-42 24.8	0.184	1.024	87.2	82.5	16.3
1984	07 29	03 24.34	-40 13.7					
1984	08 08	03 16.87	-39 00.6	0.282	1.094	99.0	66.3	17.0
1984	08 18	03 06.55	-38 18.1					
1984	08 28	02 51.81	-37 46.2	0.362	1.206	114.4	49.7	17.3
1984	09 07	02 32.35	-37 00.3					
1984	09 17	02 09.67	-35 38.2	0.444	1.342	131.6	34.1	17.7
1984	09 27	01 46.36	-33 27.7					
1984	10 07	01 25.49	-30 30.2	0.563	1.489	143.2	23.7	18.2
1984	10 17	01 09.19	-27 01.2					
1984	10 27	00 58.15	-23 19.1	0.744	1.638	140.6	22.6	19.0
1984	11 06	00 52.16	-19 37.9					
1984	11 16	00 50.49	-16 06.1	0.992	1.786	128.7	25.6	19.8
1984	11 26	00 52.29	-12 47.2					
1984	12 06	00 56.88	-09 41.6	1.296	1.929	114.8	27.6	20.6

1981 PB a,e,i = 2.13, 0.28, 5 Elements MPC 8908

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	17 38.29	-36 39.4	0.578	1.577	162.5	11.2	16.6
1984	07 09	17 31.77	-36 10.1					
1984	07 19	17 29.40	-35 19.4	0.603	1.552	145.7	21.7	16.9
1984	07 29	17 32.12	-34 16.2					
1984	08 08	17 40.04	-33 07.5	0.678	1.539	129.9	30.4	17.3
1984	08 18	17 52.55	-31 56.4					
1984	08 28	18 08.80	-30 43.1	0.789	1.540	117.3	35.7	17.7
1984	09 07	18 28.00	-29 26.0					
1984	09 17	18 49.32	-28 03.1	0.928	1.555	107.0	38.2	18.2

1984 09 27	19 12.09	-26 32.7					
1984 10 07	19 35.77	-24 53.5	1.094	1.583	98.2	38.7	18.6
1984 10 17	19 59.90	-23 05.1					
1984 10 27	20 24.14	-21 07.7	1.282	1.622	90.0	37.8	19.0

(3068) 1982 YJ1 a,e,i = 2.23, 0.10, 6 Elements MPC 8894

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 06 29	18 34.06	-34 15.6	1.331	2.337	169.0	4.8	17.1
1984 07 09	18 21.93	-34 21.8					
1984 07 19	18 11.44	-34 11.4	1.400	2.356	154.2	10.8	17.4
1984 07 29	18 03.79	-33 48.3					
1984 08 08	17 59.63	-33 17.6	1.556	2.374	133.9	17.9	17.8
1984 08 18	17 59.09	-32 43.6					
1984 08 28	18 01.93	-32 08.9	1.773	2.391	115.7	22.4	18.3
1984 09 07	18 07.81	-31 34.6					
1984 09 17	18 16.28	-31 00.5	2.024	2.406	99.6	24.3	18.6
1984 09 27	18 26.93	-30 25.8					
1984 10 07	18 39.39	-29 49.3	2.288	2.419	85.2	24.3	18.9

1981 CK a,e,i = 3.05, 0.11, 0 Elements MPC 8895

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 07 19	01 24.11	+09 04.5	3.111	3.327	93.2	17.8	19.0
1984 07 29	01 28.67	+09 32.8					
1984 08 08	01 31.62	+09 51.5	2.824	3.315	110.3	16.7	18.7
1984 08 18	01 32.78	+09 59.8					
1984 08 28	01 32.00	+09 57.0	2.567	3.302	129.4	13.7	18.5
1984 09 07	01 29.24	+09 42.5					
1984 09 17	01 24.62	+09 16.9	2.375	3.288	150.8	8.6	18.2
1984 09 27	01 18.43	+08 41.5					
1984 10 07	01 11.19	+07 58.9	2.278	3.274	174.0	1.8	17.7
1984 10 17	01 03.57	+07 13.1					
1984 10 27	00 56.32	+06 28.7	2.298	3.258	162.2	5.4	18.0
1984 11 06	00 50.15	+05 50.1					
1984 11 16	00 45.58	+05 21.1	2.428	3.242	139.2	11.5	18.2
1984 11 26	00 42.95	+05 03.9					
1984 12 06	00 42.38	+04 59.8	2.641	3.225	118.1	15.6	18.5
1984 12 16	00 43.86	+05 08.5					
1984 12 26	00 47.26	+05 29.3	2.901	3.207	99.1	17.6	18.7

1983 NJ a,e,i = 3.09, 0.07, 16 Elements MPC 8911

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 08 08	02 30.62	+01 10.5	2.815	3.141	99.2	18.6	17.9
1984 08 18	02 35.61	+00 31.0					
1984 08 28	02 38.76	-00 20.9	2.574	3.153	116.2	16.7	17.6
1984 09 07	02 39.91	-01 24.0					
1984 09 17	02 38.95	-02 36.2	2.377	3.165	134.6	13.1	17.4
1984 09 27	02 35.92	-03 54.0					
1984 10 07	02 31.02	-05 12.4	2.256	3.176	152.5	8.3	17.2
1984 10 17	02 24.69	-06 25.5					
1984 10 27	02 17.52	-07 27.3	2.237	3.187	159.7	6.2	17.1
1984 11 06	02 10.28	-08 12.5					
1984 11 16	02 03.70	-08 38.0	2.328	3.198	146.4	9.9	17.3
1984 11 26	01 58.41	-08 43.0					
1984 12 06	01 54.86	-08 28.4	2.513	3.208	127.4	14.1	17.6
1984 12 16	01 53.26	-07 56.6					
1984 12 26	01 53.66	-07 10.6	2.763	3.218	108.8	16.8	17.8
1985 01 05	01 56.00	-06 13.3					
1985 01 15	02 00.13	-05 07.7	3.045	3.227	91.7	17.7	18.1

1969 TB2 a,e,i = 2.90, 0.06, 2 Elements MPC 8910

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	08 28	03 22.96	+19 04.4	2.514	2.884	101.1	20.1	18.5
1984	09 07	03 27.20	+19 27.0					
1984	09 17	03 29.19	+19 41.8	2.274	2.897	119.0	17.7	18.2
1984	09 27	03 28.73	+19 48.5					
1984	10 07	03 25.73	+19 46.3	2.078	2.910	139.3	12.9	17.9
1984	10 17	03 20.34	+19 35.2					
1984	10 27	03 12.98	+19 15.3	1.960	2.922	162.2	6.0	17.6
1984	11 06	03 04.36	+18 48.3					
1984	11 16	02 55.45	+18 17.0	1.950	2.935	173.3	2.3	17.4
1984	11 26	02 47.20	+17 45.5					
1984	12 06	02 40.50	+17 17.9	2.055	2.947	149.5	9.8	17.8
1984	12 16	02 35.92	+16 58.0					
1984	12 26	02 33.74	+16 47.9	2.256	2.959	127.5	15.3	18.2
1985	01 05	02 34.03	+16 48.6					
1985	01 15	02 36.66	+16 59.8	2.518	2.970	107.8	18.4	18.5
1985	01 25	02 41.43	+17 20.3					
1985	02 04	02 48.10	+17 48.8	2.808	2.981	90.3	19.3	18.8

1981 EE43 a,e,i = 2.88, 0.23, 11 Elements MPC 8890

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	08 28	03 41.47	+25 48.7	2.002	2.325	-1.39	-7.5	17.9
1984	09 07	03 51.76	+27 22.2					
1984	09 17	04 00.08	+28 54.4	1.752	2.296	-1.68	-7.7	17.6
1984	09 27	04 05.93	+30 25.0					
1984	10 07	04 08.79	+31 53.1	1.532	2.273	-2.04	-8.3	17.2
1984	10 17	04 08.25	+33 16.3					
1984	10 27	04 04.06	+34 30.2	1.365	2.253	-2.41	-9.8	16.8
1984	11 06	03 56.47	+35 28.8					
1984	11 16	03 46.37	+36 06.2	1.278	2.239	-2.60	-12.2	16.5
1984	11 26	03 35.26	+36 18.8					
1984	12 06	03 25.00	+36 08.5	1.289	2.230	-2.47	-14.0	16.5
1984	12 16	03 17.21	+35 41.8					
1984	12 26	03 12.96	+35 07.2	1.392	2.226	-2.14	-13.6	16.8
1985	01 05	03 12.66	+34 33.1					
1985	01 15	03 16.22	+34 04.6	1.565	2.228	-1.84	-11.6	17.2
1985	01 25	03 23.27	+33 44.1					
1985	02 04	03 33.39	+33 31.8	1.780	2.235	-1.62	-9.1	17.6

1978 RY a,e,i = 3.03, 0.02, 9 Elements MPC 7152

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 35.98	+28 38.3	2.632	3.009	102.2	19.1	18.9
1984	09 27	04 39.78	+29 22.5					
1984	10 07	04 41.15	+30 04.1	2.383	3.012	120.2	16.7	18.7
1984	10 17	04 39.87	+30 41.8					
1984	10 27	04 35.85	+31 13.7	2.182	3.016	140.5	12.1	18.4
1984	11 06	04 29.28	+31 37.3					
1984	11 16	04 20.67	+31 49.9	2.066	3.020	161.6	5.9	18.1
1984	11 26	04 10.87	+31 49.8					
1984	12 06	04 00.98	+31 37.6	2.059	3.024	166.0	4.5	18.0
1984	12 16	03 52.11	+31 16.1					
1984	12 26	03 45.16	+30 49.4	2.165	3.028	145.6	10.6	18.3
1985	01 05	03 40.72	+30 22.3					
1985	01 15	03 39.02	+29 58.6	2.364	3.032	124.5	15.5	18.6
1985	01 25	03 40.04	+29 40.8					
1985	02 04	03 43.62	+29 29.9	2.620	3.035	105.5	18.2	18.9
1985	02 14	03 49.49	+29 25.8					
1985	02 24	03 57.37	+29 27.6	2.900	3.039	88.5	19.0	19.2

1981 EY26 a,e,i = 3.18, 0.11, 5 Elements MPC 8135

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	09 17	04 41.72	+27 52.7	3.175	3.509	-0.67	-1.2	17.6
1984	09 27	04 44.38	+28 15.1					
1984	10 07	04 44.92	+28 34.1	2.907	3.512	-0.75	-1.3	17.4
1984	10 17	04 43.20	+28 48.8					
1984	10 27	04 39.22	+28 58.1	2.690	3.514	-0.82	-1.5	17.1
1984	11 06	04 33.17	+29 00.4					
1984	11 16	04 25.49	+28 54.7	2.559	3.515	-0.87	-2.0	16.8
1984	11 26	04 16.82	+28 40.3					
1984	12 06	04 08.02	+28 18.3	2.543	3.515	-0.87	-2.4	16.7
1984	12 16	03 59.92	+27 50.9					
1984	12 26	03 53.25	+27 21.5	2.645	3.514	-0.81	-2.6	17.0
1985	01 05	03 48.54	+26 53.2					
1985	01 15	03 46.04	+26 29.0	2.847	3.512	-0.73	-2.5	17.3
1985	01 25	03 45.80	+26 10.6					
1985	02 04	03 47.77	+25 58.8	3.111	3.509	-0.66	-2.2	17.6
1985	02 14	03 51.75	+25 53.5					
1985	02 24	03 57.55	+25 54.0	3.401	3.505	-0.60	-1.9	17.8

1975 SF a,e,i = 2.66, 0.19, 14 Elements MPC 7362

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 33.40	+04 17.7	1.655	2.156	105.7	26.7	16.4
1984	09 27	04 40.49	+03 47.7					
1984	10 07	04 44.63	+03 13.8	1.477	2.171	121.3	23.1	16.1
1984	10 17	04 45.54	+02 40.3					
1984	10 27	04 43.06	+02 12.0	1.339	2.191	139.3	17.2	15.7
1984	11 06	04 37.39	+01 55.0					
1984	11 16	04 29.16	+01 55.0	1.271	2.215	156.9	10.1	15.5
1984	11 26	04 19.44	+02 16.2					
1984	12 06	04 09.63	+03 00.3	1.297	2.242	158.4	9.3	15.5
1984	12 16	04 01.11	+04 05.2					
1984	12 26	03 54.91	+05 26.8	1.420	2.273	141.4	15.7	15.9
1985	01 05	03 51.66	+07 00.0					
1985	01 15	03 51.52	+08 39.8	1.622	2.306	122.6	21.1	16.3
1985	01 25	03 54.38	+10 22.0					
1985	02 04	03 59.96	+12 03.7	1.876	2.342	105.6	23.9	16.8
1985	02 14	04 07.93	+13 42.2					
1985	02 24	04 17.96	+15 15.8	2.156	2.380	90.5	24.6	17.1

1948 KF a,e,i = 2.31, 0.28, 11 Elements MPC 8209

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 56.39	+19 43.4	2.221	2.574	98.8	22.7	18.3
1984	09 27	05 00.35	+20 08.4					
1984	10 07	05 01.53	+20 31.7	2.014	2.624	117.1	19.8	18.1
1984	10 17	04 59.69	+20 53.8					
1984	10 27	04 54.70	+21 14.2	1.845	2.672	138.4	14.3	17.8
1984	11 06	04 46.72	+21 32.1					
1984	11 16	04 36.33	+21 46.2	1.756	2.716	162.7	6.2	17.5
1984	11 26	04 24.49	+21 55.6					
1984	12 06	04 12.47	+22 00.7	1.778	2.756	171.6	3.0	17.4
1984	12 16	04 01.56	+22 03.3					
1984	12 26	03 52.77	+22 06.1	1.918	2.793	146.8	11.1	17.9
1985	01 05	03 46.73	+22 11.8					
1985	01 15	03 43.67	+22 22.3	2.152	2.827	124.4	16.7	18.3
1985	01 25	03 43.52	+22 38.5					
1985	02 04	03 46.05	+23 00.3	2.441	2.856	104.8	19.5	18.7
1985	02 14	03 50.94	+23 26.8					
1985	02 24	03 57.89	+23 57.0	2.752	2.882	87.4	20.1	19.0

1982 KD1 a,e,i = 3.01, 0.10, 11 Elements MPC 7374

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 50.78	+20 20.8	2.660	3.003	100.0	19.2	18.0
1984	09 27	04 54.68	+20 45.8					
1984	10 07	04 56.28	+21 09.3	2.418	3.022	118.3	16.9	17.7
1984	10 17	04 55.39	+21 31.4					
1984	10 27	04 51.92	+21 52.1	2.220	3.041	139.0	12.4	17.4
1984	11 06	04 46.01	+22 10.6					
1984	11 16	04 38.07	+22 26.2	2.103	3.059	162.2	5.7	17.1
1984	11 26	04 28.80	+22 38.1					
1984	12 06	04 19.16	+22 46.7	2.097	3.078	173.2	2.2	16.9
1984	12 16	04 10.16	+22 52.9					
1984	12 26	04 02.67	+22 58.5	2.210	3.096	149.2	9.4	17.4
1985	01 05	03 57.34	+23 05.8					
1985	01 15	03 54.48	+23 16.4	2.420	3.113	127.0	14.6	17.7
1985	01 25	03 54.16	+23 31.3					
1985	02 04	03 56.29	+23 50.7	2.693	3.130	107.2	17.5	18.0
1985	02 14	04 00.64	+24 14.1					
1985	02 24	04 06.99	+24 40.8	2.993	3.147	89.6	18.3	18.3

1982 FQ2 a,e,i = 2.31, 0.15, 6 Elements MPC 7780

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 44.38	+14 50.6	1.990	2.410	102.1	24.1	20.0
1984	09 27	04 51.29	+14 28.5					
1984	10 07	04 55.71	+13 59.1	1.730	2.378	118.8	21.6	19.6
1984	10 17	04 57.29	+13 23.6					
1984	10 27	04 55.72	+12 43.9	1.510	2.346	138.2	16.4	19.1
1984	11 06	04 50.93	+12 02.3					
1984	11 16	04 43.24	+11 22.5	1.360	2.312	159.5	8.6	18.7
1984	11 26	04 33.38	+10 48.3					
1984	12 06	04 22.61	+10 24.5	1.309	2.279	166.5	5.8	18.5
1984	12 16	04 12.41	+10 14.6					
1984	12 26	04 04.10	+10 20.7	1.362	2.244	145.7	14.3	18.8
1985	01 05	03 58.67	+10 42.9					
1985	01 15	03 56.59	+11 19.5	1.498	2.210	124.6	21.5	19.1
1985	01 25	03 57.92	+12 07.8					
1985	02 04	04 02.50	+13 04.4	1.682	2.177	106.4	25.7	19.4
1985	02 14	04 10.01	+14 06.2					
1985	02 24	04 20.10	+15 10.1	1.886	2.144	91.0	27.5	19.7

1982 DP1 a,e,i = 2.28, 0.14, 6 Elements MPC 6939

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	09 17	04 36.91	+22 00.9	1.629	2.098	-1.70	-6.5	18.3
1984	09 27	04 46.50	+22 48.1					
1984	10 07	04 53.45	+23 33.5	1.397	2.071	-2.08	-6.9	17.9
1984	10 17	04 57.24	+24 18.2					
1984	10 27	04 57.33	+25 02.2	1.201	2.046	-2.54	-7.9	17.4
1984	11 06	04 53.42	+25 44.3					
1984	11 16	04 45.69	+26 21.6	1.067	2.024	-2.94	-9.9	16.9
1984	11 26	04 34.99	+26 50.2					
1984	12 06	04 22.95	+27 07.5	1.023	2.004	-3.01	-12.2	16.6
1984	12 16	04 11.64	+27 14.1					
1984	12 26	04 02.91	+27 14.0	1.077	1.988	-2.69	-12.9	17.0
1985	01 05	03 58.03	+27 13.0					
1985	01 15	03 57.45	+27 15.5	1.210	1.976	-2.26	-11.5	17.4
1985	01 25	04 01.09	+27 23.7					
1985	02 04	04 08.58	+27 37.9	1.391	1.968	-1.93	-9.2	17.8
1985	02 14	04 19.38	+27 56.2					
1985	02 24	04 33.00	+28 16.2	1.597	1.964	-1.71	-6.9	18.2

(2921) 6525 P-L a,e,i = 3.24, 0.16, 1 Elements MPC 8142

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 52.13	+20 53.9	2.740	3.072	99.6	18.8	19.6
1984	09 27	04 56.26	+20 55.3					
1984	10 07	04 58.15	+20 53.0	2.508	3.103	117.8	16.5	19.3
1984	10 17	04 57.65	+20 47.2					
1984	10 27	04 54.72	+20 38.0	2.320	3.135	138.5	12.1	19.1
1984	11 06	04 49.52	+20 25.7					
1984	11 16	04 42.48	+20 10.6	2.213	3.166	161.4	5.7	18.8
1984	11 26	04 34.24	+19 53.5					
1984	12 06	04 25.67	+19 35.8	2.216	3.198	173.9	1.9	18.6
1984	12 16	04 17.67	+19 19.5					
1984	12 26	04 11.00	+19 06.6	2.337	3.229	150.4	8.7	19.1
1985	01 05	04 06.25	+18 59.0					
1985	01 15	04 03.70	+18 57.7	2.558	3.260	128.3	13.7	19.4
1985	01 25	04 03.43	+19 02.9					
1985	02 04	04 05.38	+19 14.2	2.843	3.291	108.4	16.5	19.7
1985	02 14	04 09.36	+19 30.5					
1985	02 24	04 15.16	+19 50.6	3.160	3.321	90.6	17.3	20.0

1980 OA a,e,i = 2.27, 0.08, 2 Elements MPC 5516

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	09 17	04 48.98	+21 50.1	1.744	2.162	-1.46	-3.8	17.5
1984	09 27	04 57.39	+22 11.2					
1984	10 07	05 02.91	+22 27.8	1.539	2.178	-1.70	-3.8	17.2
1984	10 17	05 05.12	+22 40.9					
1984	10 27	05 03.66	+22 50.4	1.368	2.196	-2.00	-4.4	16.8
1984	11 06	04 58.47	+22 55.8					
1984	11 16	04 49.97	+22 56.1	1.260	2.214	-2.24	-5.6	16.4
1984	11 26	04 39.11	+22 50.2					
1984	12 06	04 27.43	+22 39.0	1.249	2.232	-2.25	-6.8	16.1
1984	12 16	04 16.63	+22 25.0					
1984	12 26	04 08.15	+22 12.4	1.343	2.250	-2.02	-7.1	16.7
1985	01 05	04 02.91	+22 05.1					
1985	01 15	04 01.25	+22 05.2	1.523	2.269	-1.71	-6.3	17.2
1985	01 25	04 03.06	+22 13.5					
1985	02 04	04 08.05	+22 29.0	1.759	2.287	-1.44	-5.1	17.6
1985	02 14	04 15.80	+22 50.0					
1985	02 24	04 25.91	+23 14.4	2.020	2.305	-1.25	-3.8	17.9

(2894) Kakhovka a,e,i = 3.11, 0.15, 3 Elements MPC 8055

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 50.29	+20 53.8	2.534	2.884	100.1	20.1	18.3
1984	09 27	04 55.99	+21 03.7					
1984	10 07	04 59.50	+21 10.1	2.255	2.858	117.5	18.1	18.0
1984	10 17	05 00.58	+21 13.5					
1984	10 27	04 59.03	+21 14.1	2.020	2.833	137.4	13.7	17.6
1984	11 06	04 54.85	+21 11.9					
1984	11 16	04 48.34	+21 06.8	1.859	2.808	160.0	6.9	17.2
1984	11 26	04 40.10	+20 59.0					
1984	12 06	04 31.07	+20 49.4	1.802	2.785	175.6	1.6	16.8
1984	12 16	04 22.34	+20 39.7					
1984	12 26	04 14.95	+20 32.1	1.859	2.764	151.6	9.7	17.3
1985	01 05	04 09.72	+20 29.1					
1985	01 15	04 07.11	+20 32.1	2.012	2.744	129.4	16.1	17.6
1985	01 25	04 07.28	+20 41.9					
1985	02 04	04 10.18	+20 58.1	2.228	2.726	109.9	19.9	17.9
1985	02 14	04 15.60	+21 19.5					
1985	02 24	04 23.28	+21 44.8	2.474	2.709	92.8	21.4	18.1

1981 DP2 a,e,i = 3.03, 0.07, 9 Elements MPC 7358

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	09 17	04 54.15	+32 23.4	2.517	2.833	-1.08	-0.1	18.2
1984	09 27	05 00.66	+32 55.9					
1984	10 07	05 04.74	+33 24.9	2.261	2.828	-1.23	+0.3	18.0
1984	10 17	05 06.09	+33 49.3					
1984	10 27	05 04.47	+34 07.4	2.044	2.825	-1.40	+0.2	17.6
1984	11 06	04 59.90	+34 16.5					
1984	11 16	04 52.70	+34 13.6	1.896	2.822	-1.54	-0.4	17.3
1984	11 26	04 43.59	+33 56.2					
1984	12 06	04 33.68	+33 23.7	1.848	2.821	-1.56	-1.5	17.1
1984	12 16	04 24.23	+32 38.4					
1984	12 26	04 16.36	+31 45.1	1.913	2.820	-1.45	-2.2	17.4
1985	01 05	04 10.92	+30 49.6					
1985	01 15	04 08.33	+29 57.2	2.077	2.821	-1.28	-2.1	17.7
1985	01 25	04 08.66	+29 11.4					
1985	02 04	04 11.77	+28 34.0	2.309	2.822	-1.12	-1.7	18.0
1985	02 14	04 17.39	+28 04.9					
1985	02 24	04 25.19	+27 43.2	2.575	2.825	-0.99	-1.0	18.3

1980 PJ a,e,i = 2.31, 0.20, 3 Elements MPC 6112

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 59.80	+26 08.3	1.813	2.181	97.3	27.2	19.1
1984	09 27	05 07.97	+26 40.1					
1984	10 07	05 13.08	+27 08.2	1.629	2.229	113.8	24.2	18.9
1984	10 17	05 14.74	+27 33.0					
1984	10 27	05 12.62	+27 53.3	1.474	2.276	133.6	18.4	18.6
1984	11 06	05 06.70	+28 07.2					
1984	11 16	04 57.45	+28 11.6	1.382	2.322	156.5	9.8	18.3
1984	11 26	04 45.87	+28 04.0					
1984	12 06	04 33.54	+27 44.2	1.386	2.368	173.7	2.6	18.0
1984	12 16	04 22.13	+27 15.5					
1984	12 26	04 13.01	+26 42.9	1.500	2.412	151.8	11.1	18.5
1985	01 05	04 07.08	+26 12.3					
1985	01 15	04 04.61	+25 47.9	1.707	2.454	129.7	18.0	19.0
1985	01 25	04 05.49	+25 31.6					
1985	02 04	04 09.41	+25 23.6	1.973	2.495	110.4	21.7	19.5
1985	02 14	04 15.94	+25 22.8					
1985	02 24	04 24.71	+25 27.4	2.269	2.533	93.7	22.9	19.8

1938 DH2 a,e,i = 2.26, 0.15, 8 Elements MPC 6949

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 48.29	+13 43.4	1.827	2.251	101.3	26.0	18.7
1984	09 27	04 56.67	+13 36.8					
1984	10 07	05 02.61	+13 25.2	1.573	2.216	117.2	23.7	18.3
1984	10 17	05 05.66	+13 10.5					
1984	10 27	05 05.41	+12 54.9	1.354	2.180	135.9	18.5	17.8
1984	11 06	05 01.65	+12 41.2					
1984	11 16	04 54.51	+12 32.5	1.198	2.145	157.3	10.2	17.3
1984	11 26	04 44.63	+12 31.6					
1984	12 06	04 33.30	+12 41.4	1.134	2.111	169.6	4.8	17.0
1984	12 16	04 22.17	+13 03.5					
1984	12 26	04 12.87	+13 38.3	1.171	2.077	149.1	14.1	17.3
1985	01 05	04 06.66	+14 25.3					
1985	01 15	04 04.17	+15 22.6	1.292	2.046	127.6	22.4	17.6
1985	01 25	04 05.53	+16 27.7					
1985	02 04	04 10.57	+17 37.8	1.463	2.016	109.3	27.5	18.0
1985	02 14	04 18.91	+18 50.1					
1985	02 24	04 30.16	+20 01.7	1.656	1.990	94.1	29.7	18.3

1982 BG1 a,e,i = 2.24, 0.11, 5 Elements MPC 7016

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 42.62	+28 42.1	1.674	2.107	100.7	27.9	18.4
1984	09 27	04 53.29	+29 17.6					
1984	10 07	05 01.28	+29 47.0	1.443	2.085	116.0	25.5	18.0
1984	10 17	05 06.05	+30 10.0					
1984	10 27	05 07.05	+30 25.5	1.244	2.064	134.3	20.2	17.5
1984	11 06	05 03.96	+30 30.8					
1984	11 16	04 56.94	+30 22.3	1.103	2.045	155.8	11.4	17.0
1984	11 26	04 46.78	+29 56.4					
1984	12 06	04 35.09	+29 12.5	1.048	2.029	172.6	3.6	16.6
1984	12 16	04 23.92	+28 14.5					
1984	12 26	04 15.10	+27 10.3	1.092	2.015	152.2	13.1	17.0
1985	01 05	04 09.94	+26 09.3					
1985	01 15	04 08.90	+25 18.0	1.220	2.004	130.6	21.9	17.4
1985	01 25	04 11.90	+24 39.4					
1985	02 04	04 18.58	+24 13.3	1.401	1.996	112.3	27.2	17.9
1985	02 14	04 28.42	+23 57.5					
1985	02 24	04 40.92	+23 48.8	1.609	1.991	97.1	29.6	18.2

(2959) Scholl a,e,i = 3.94, 0.28, 5 Elements MPC 8381

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	04 50.65	+16 53.7	2.494	2.853	100.4	20.3	17.2
1984	09 27	04 56.70	+16 52.0					
1984	10 07	05 00.56	+16 46.5	2.257	2.860	117.6	18.0	17.0
1984	10 17	05 02.03	+16 38.4					
1984	10 27	05 01.00	+16 28.7	2.062	2.871	137.1	13.6	16.7
1984	11 06	04 57.55	+16 18.7					
1984	11 16	04 52.02	+16 09.5	1.942	2.886	158.8	7.1	16.4
1984	11 26	04 45.00	+16 02.5					
1984	12 06	04 37.35	+15 59.1	1.925	2.905	173.0	2.4	16.2
1984	12 16	04 30.02	+16 00.5					
1984	12 26	04 23.88	+16 07.9	2.020	2.927	152.4	8.9	16.6
1985	01 05	04 19.62	+16 21.8					
1985	01 15	04 17.62	+16 42.2	2.213	2.953	131.0	14.6	16.9
1985	01 25	04 18.00	+17 08.4					
1985	02 04	04 20.75	+17 39.3	2.473	2.982	111.7	17.9	17.3
1985	02 14	04 25.67	+18 13.4					
1985	02 24	04 32.54	+18 49.3	2.770	3.014	94.5	19.1	17.5

(2979) Murmansk a,e,i = 3.13, 0.14, 11 Elements MPC 8397

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 07.91	+10 15.2	2.676	2.967	96.8	19.7	17.5
1984	09 27	05 13.00	+09 42.5					
1984	10 07	05 15.96	+09 05.7	2.448	2.995	113.9	17.8	17.2
1984	10 17	05 16.61	+08 26.8					
1984	10 27	05 14.86	+07 47.9	2.257	3.023	132.9	13.9	17.0
1984	11 06	05 10.79	+07 12.0					
1984	11 16	05 04.71	+06 41.9	2.138	3.051	152.7	8.5	16.8
1984	11 26	04 57.14	+06 20.6					
1984	12 06	04 48.86	+06 10.8	2.121	3.079	163.8	5.1	16.7
1984	12 16	04 40.73	+06 13.9					
1984	12 26	04 33.58	+06 29.9	2.217	3.107	149.9	9.1	16.9
1985	01 05	04 28.07	+06 57.9					
1985	01 15	04 24.62	+07 35.8	2.412	3.135	129.9	13.9	17.2
1985	01 25	04 23.39	+08 21.4					
1985	02 04	04 24.41	+09 12.4	2.677	3.163	110.7	16.9	17.5
1985	02 14	04 27.52	+10 06.2					
1985	02 24	04 32.54	+11 01.2	2.977	3.190	93.3	18.0	17.8

1983 RL2 a,e,i = 2.74, 0.14, 5 Elements MPC 8382

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 14.23	+27 07.4	2.706	2.952	94.0	19.9	19.0
1984	09 27	05 19.86	+27 32.4					
1984	10 07	05 23.21	+27 55.9	2.458	2.973	111.5	18.2	18.7
1984	10 17	05 24.01	+28 17.9					
1984	10 27	05 22.05	+28 37.6	2.241	2.993	131.4	14.4	18.5
1984	11 06	05 17.31	+28 53.5					
1984	11 16	05 10.05	+29 03.5	2.093	3.011	153.6	8.4	18.2
1984	11 26	05 00.84	+29 05.6					
1984	12 06	04 50.60	+28 58.7	2.048	3.029	173.4	2.1	17.9
1984	12 16	04 40.44	+28 43.4					
1984	12 26	04 31.43	+28 22.1	2.121	3.044	155.8	7.6	18.2
1985	01 05	04 24.44	+27 58.5					
1985	01 15	04 19.97	+27 36.1	2.299	3.059	133.3	13.5	18.5
1985	01 25	04 18.21	+27 17.5					
1985	02 04	04 19.12	+27 04.3	2.551	3.071	112.8	17.2	18.9
1985	02 14	04 22.50	+26 56.7					
1985	02 24	04 28.07	+26 54.3	2.840	3.082	94.7	18.7	19.1

1981 JM a,e,i = 3.11, 0.12, 2 Elements MPC 7016

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 09.46	+20 26.7	2.888	3.149	95.6	18.5	18.2
1984	09 27	05 14.91	+20 26.7					
1984	10 07	05 18.38	+20 23.8	2.595	3.126	113.2	17.1	17.9
1984	10 17	05 19.63	+20 18.5					
1984	10 27	05 18.50	+20 11.1	2.339	3.103	132.9	13.6	17.6
1984	11 06	05 14.93	+20 02.2					
1984	11 16	05 09.14	+19 51.7	2.154	3.079	155.1	7.8	17.3
1984	11 26	05 01.55	+19 40.2					
1984	12 06	04 52.90	+19 28.2	2.071	3.055	176.9	1.0	16.8
1984	12 16	04 44.12	+19 17.1					
1984	12 26	04 36.15	+19 08.4	2.106	3.032	156.1	7.5	17.2
1985	01 05	04 29.83	+19 03.9					
1985	01 15	04 25.70	+19 04.8	2.246	3.009	133.4	13.7	17.5
1985	01 25	04 24.05	+19 11.7					
1985	02 04	04 24.94	+19 24.5	2.459	2.985	113.0	17.7	17.7
1985	02 14	04 28.25	+19 42.4					
1985	02 24	04 33.78	+20 04.0	2.708	2.963	95.0	19.4	18.0

(2958) 1981 DG a,e,i = 2.87, 0.02, 1 Elements MPC 8286

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 17.18	+24 01.5	2.677	2.918	93.6	20.1	17.9
1984	09 27	05 23.72	+24 09.3					
1984	10 07	05 28.12	+24 14.6	2.411	2.918	110.7	18.7	17.7
1984	10 17	05 30.11	+24 17.6					
1984	10 27	05 29.46	+24 18.6	2.176	2.918	130.2	15.1	17.4
1984	11 06	05 26.11	+24 17.0					
1984	11 16	05 20.21	+24 12.1	2.005	2.917	152.4	9.0	17.0
1984	11 26	05 12.21	+24 03.2					
1984	12 06	05 02.94	+23 50.1	1.933	2.917	176.4	1.2	16.5
1984	12 16	04 53.42	+23 33.5					
1984	12 26	04 44.72	+23 15.3	1.977	2.916	158.8	7.0	17.0
1985	01 05	04 37.79	+22 58.2					
1985	01 15	04 33.23	+22 44.5	2.128	2.915	135.8	13.6	17.3
1985	01 25	04 31.32	+22 35.9					
1985	02 04	04 32.10	+22 33.1	2.355	2.914	115.1	17.8	17.6
1985	02 14	04 35.41	+22 35.6					
1985	02 24	04 41.01	+22 42.6	2.621	2.912	97.0	19.7	17.9

(2931) Mayakovsky a,e,i = 2.87, 0.06, 2 Elements MPC 8211

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 21.56	+24 34.0	2.703	2.925	92.5	20.1	18.0
1984	09 27	05 28.12	+24 48.1					
1984	10 07	05 32.52	+25 00.4	2.445	2.936	109.6	18.7	17.7
1984	10 17	05 34.52	+25 11.5					
1984	10 27	05 33.86	+25 21.2	2.216	2.946	129.1	15.2	17.4
1984	11 06	05 30.48	+25 29.1					
1984	11 16	05 24.54	+25 33.9	2.050	2.955	151.2	9.3	17.1
1984	11 26	05 16.46	+25 34.4					
1984	12 06	05 07.06	+25 29.8	1.982	2.965	174.8	1.7	16.7
1984	12 16	04 57.35	+25 20.2					
1984	12 26	04 48.42	+25 07.0	2.032	2.974	159.7	6.6	17.0
1985	01 05	04 41.21	+24 52.9					
1985	01 15	04 36.33	+24 40.4	2.189	2.982	136.7	13.1	17.4
1985	01 25	04 34.09	+24 31.5					
1985	02 04	04 34.53	+24 27.2	2.425	2.990	115.9	17.2	17.7
1985	02 14	04 37.48	+24 27.7					
1985	02 24	04 42.72	+24 32.2	2.701	2.998	97.6	19.1	18.0

(3016) 1981 EK a,e,i = 2.83, 0.04, 3 Elements MPC 8670

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 17.79	+20 04.9	2.471	2.727	93.7	21.6	18.1
1984	09 27	05 25.31	+20 04.7					
1984	10 07	05 30.68	+20 01.5	2.210	2.723	110.3	20.1	17.9
1984	10 17	05 33.63	+19 56.1					
1984	10 27	05 33.89	+19 49.5	1.978	2.719	129.3	16.4	17.5
1984	11 06	05 31.32	+19 42.3					
1984	11 16	05 26.06	+19 34.8	1.808	2.716	151.1	10.1	17.2
1984	11 26	05 18.49	+19 27.5					
1984	12 06	05 09.42	+19 20.7	1.731	2.713	174.3	2.1	16.7
1984	12 16	04 59.92	+19 15.1					
1984	12 26	04 51.14	+19 12.1	1.768	2.712	159.6	7.3	17.1
1985	01 05	04 44.11	+19 13.2					
1985	01 15	04 39.52	+19 19.5	1.910	2.710	136.7	14.4	17.4
1985	01 25	04 37.70	+19 31.3					
1985	02 04	04 38.72	+19 48.5	2.126	2.710	116.3	19.0	17.7
1985	02 14	04 42.39	+20 09.9					
1985	02 24	04 48.49	+20 34.1	2.382	2.710	98.4	21.2	18.0

1977 NQ a,e,i = 3.21, 0.14, 1 Elements MPC 8210

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 25.57	+23 42.7	2.815	3.016	91.7	19.5	18.1
1984	09 27	05 31.99	+23 51.0					
1984	10 07	05 36.31	+23 57.3	2.569	3.043	108.8	18.1	17.9
1984	10 17	05 38.31	+24 02.3					
1984	10 27	05 37.79	+24 06.0	2.352	3.069	128.3	14.7	17.6
1984	11 06	05 34.72	+24 08.3					
1984	11 16	05 29.27	+24 08.4	2.199	3.097	150.3	9.1	17.4
1984	11 26	05 21.86	+24 05.6					
1984	12 06	05 13.22	+23 59.5	2.142	3.124	174.2	1.8	17.0
1984	12 16	05 04.28	+23 50.3					
1984	12 26	04 55.97	+23 39.3	2.204	3.151	161.4	5.7	17.3
1985	01 05	04 49.16	+23 28.4					
1985	01 15	04 44.43	+23 19.4	2.376	3.179	138.4	11.9	17.7
1985	01 25	04 42.06	+23 13.8					
1985	02 04	04 42.14	+23 12.4	2.629	3.206	117.5	15.8	18.0
1985	02 14	04 44.53	+23 15.1					
1985	02 24	04 49.04	+23 21.2	2.928	3.233	98.9	17.6	18.3

1978 PT2 a,e,i = 2.91, 0.06, 1 Elements MPC 8210

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 26.31	+23 43.8	2.695	2.901	91.5	20.3	18.4
1984	09 27	05 33.28	+23 48.7					
1984	10 07	05 38.13	+23 51.3	2.438	2.913	108.4	19.0	18.2
1984	10 17	05 40.60	+23 52.2					
1984	10 27	05 40.46	+23 51.6	2.209	2.924	127.7	15.6	17.9
1984	11 06	05 37.61	+23 49.3					
1984	11 16	05 32.19	+23 44.8	2.040	2.936	149.7	9.8	17.6
1984	11 26	05 24.59	+23 37.4					
1984	12 06	05 15.56	+23 26.7	1.966	2.948	173.7	2.1	17.2
1984	12 16	05 06.09	+23 13.1					
1984	12 26	04 57.23	+22 57.9	2.009	2.959	161.7	6.0	17.5
1985	01 05	04 49.94	+22 43.4					
1985	01 15	04 44.87	+22 31.7	2.162	2.970	138.4	12.7	17.8
1985	01 25	04 42.37	+22 24.3					
1985	02 04	04 42.50	+22 21.9	2.394	2.981	117.5	17.1	18.2
1985	02 14	04 45.14	+22 24.3					
1985	02 24	04 50.06	+22 30.6	2.671	2.991	99.0	19.1	18.5

(2954) 1982 BT1 a,e,i = 2.29, 0.19, 4 Elements MPC 8283

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 29.16	+19 05.0	2.447	2.664	91.1	22.2	19.6
1984	09 27	05 36.85	+18 53.4					
1984	10 07	05 42.46	+18 38.1	2.163	2.642	107.5	21.1	19.3
1984	10 17	05 45.65	+18 20.1					
1984	10 27	05 46.07	+18 00.4	1.902	2.617	126.4	17.8	18.9
1984	11 06	05 43.49	+17 39.9					
1984	11 16	05 37.89	+17 19.8	1.697	2.590	148.1	11.6	18.5
1984	11 26	05 29.54	+17 00.8					
1984	12 06	05 19.17	+16 44.0	1.583	2.560	170.8	3.5	18.0
1984	12 16	05 07.90	+16 30.9					
1984	12 26	04 57.06	+16 23.0	1.581	2.528	160.0	7.7	18.2
1985	01 05	04 47.94	+16 22.0					
1985	01 15	04 41.44	+16 28.9	1.686	2.493	136.5	15.8	18.5
1985	01 25	04 38.04	+16 43.9					
1985	02 04	04 37.89	+17 06.2	1.864	2.456	115.6	21.2	18.8
1985	02 14	04 40.83	+17 34.3					
1985	02 24	04 46.58	+18 06.2	2.077	2.417	97.7	23.9	19.1

1981 EX6 a,e,i = 3.21, 0.16, 17 Elements MPC 8676

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 32.09	+41 01.7	2.809	2.972	89.4	19.8	19.1
1984	09 27	05 40.59	+42 02.9					
1984	10 07	05 46.71	+43 04.6	2.583	3.002	105.0	18.8	18.9
1984	10 17	05 50.10	+44 06.2					
1984	10 27	05 50.37	+45 06.0	2.382	3.031	122.3	16.1	18.7
1984	11 06	05 47.29	+46 00.4					
1984	11 16	05 40.93	+46 44.5	2.235	3.062	140.3	11.9	18.5
1984	11 26	05 31.70	+47 12.7					
1984	12 06	05 20.55	+47 19.8	2.175	3.092	154.3	7.9	18.3
1984	12 16	05 08.81	+47 03.4					
1984	12 26	04 57.92	+46 25.0	2.220	3.123	152.0	8.5	18.4
1985	01 05	04 49.12	+45 29.5					
1985	01 15	04 43.18	+44 23.7	2.370	3.154	136.2	12.5	18.7
1985	01 25	04 40.40	+43 14.2					
1985	02 04	04 40.74	+42 06.2	2.601	3.184	118.0	15.9	19.0
1985	02 14	04 43.92	+41 03.0					
1985	02 24	04 49.58	+40 05.9	2.882	3.215	100.6	17.6	19.2

1982 DA a,e,i = 2.15, 0.33, 28 Elements MPC 6952

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	09 17	04 36.38	-15 25.9	1.276	1.821	-2.41	-9.8	18.6
1984	09 27	04 51.74	-18 40.2					
1984	10 07	05 05.14	-22 10.3	1.103	1.741	-3.03	-13.3	18.2
1984	10 17	05 16.07	-25 47.9					
1984	10 27	05 23.91	-29 21.8	0.968	1.665	-3.86	-15.5	17.8
1984	11 06	05 28.11	-32 37.6					
1984	11 16	05 28.38	-35 18.8	0.866	1.596	-4.79	-13.5	17.5
1984	11 26	05 24.74	-37 07.4					
1984	12 06	05 17.98	-37 44.9	0.789	1.536	-5.38	-6.7	17.2
1984	12 16	05 09.68	-36 56.6					
1984	12 26	05 01.83	-34 33.2	0.734	1.488	-5.18	+0.1	17.0
1985	01 05	04 56.52	-30 34.0					
1985	01 15	04 55.16	-25 09.0	0.707	1.456	-4.45	-0.1	16.9
1985	01 25	04 58.41	-18 36.3					
1985	02 04	05 06.39	-11 22.5	0.723	1.441	-3.73	-7.7	17.0
1985	02 14	05 18.77	-03 58.1					
1985	02 24	05 35.10	+03 08.5	0.798	1.445	-3.24	-16.1	17.2

(2919) Dali a,e,i = 3.13, 0.15, 1 Elements MPC 8141

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 35.31	+21 51.9	3.389	3.527	89.5	16.6	18.3
1984	09 27	05 40.21	+21 50.5					
1984	10 07	05 43.28	+21 47.5	3.111	3.540	107.3	15.6	18.1
1984	10 17	05 44.34	+21 43.6					
1984	10 27	05 43.27	+21 38.8	2.862	3.551	127.1	12.9	17.8
1984	11 06	05 40.02	+21 33.4					
1984	11 16	05 34.75	+21 27.2	2.676	3.562	149.2	8.2	17.6
1984	11 26	05 27.78	+21 19.9					
1984	12 06	05 19.67	+21 11.7	2.591	3.571	172.7	2.0	17.2
1984	12 16	05 11.15	+21 02.9					
1984	12 26	05 02.99	+20 54.2	2.627	3.578	162.7	4.7	17.4
1985	01 05	04 55.95	+20 46.9					
1985	01 15	04 50.56	+20 42.1	2.780	3.585	139.5	10.3	17.7
1985	01 25	04 47.17	+20 40.9					
1985	02 04	04 45.93	+20 43.5	3.019	3.590	118.1	14.0	18.0
1985	02 14	04 46.81	+20 49.9					
1985	02 24	04 49.68	+20 59.6	3.307	3.593	98.8	15.8	18.2

1981 EH26 a,e,i = 3.08, 0.28, 2 Elements MPC 8288

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 20.06	+20 25.4	2.033	2.317	93.2	25.7	18.0
1984	09 27	05 30.22	+20 26.3					
1984	10 07	05 37.93	+20 23.3	1.834	2.352	108.6	23.7	17.7
1984	10 17	05 42.86	+20 17.9					
1984	10 27	05 44.69	+20 11.5	1.660	2.391	126.8	19.4	17.4
1984	11 06	05 43.29	+20 05.2					
1984	11 16	05 38.77	+19 59.5	1.538	2.434	148.2	12.4	17.2
1984	11 26	05 31.60	+19 54.8					
1984	12 06	05 22.70	+19 51.0	1.502	2.481	171.7	3.3	16.8
1984	12 16	05 13.29	+19 48.6					
1984	12 26	05 04.64	+19 48.6	1.574	2.530	162.8	6.6	17.1
1985	01 05	04 57.87	+19 52.0					
1985	01 15	04 53.67	+19 59.7	1.749	2.582	140.1	14.2	17.6
1985	01 25	04 52.32	+20 12.0					
1985	02 04	04 53.84	+20 28.5	2.002	2.635	119.9	18.9	18.0
1985	02 14	04 57.98	+20 47.9					
1985	02 24	05 04.45	+21 08.9	2.301	2.690	102.2	21.1	18.4

(2930) 6554 P-L a,e,i = 2.78, 0.02, 4 Elements MPC 8209

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 30.05	+27 09.7	2.528	2.728	90.5	21.6	18.7
1984	09 27	05 38.63	+27 32.5					
1984	10 07	05 45.11	+27 54.2	2.265	2.725	106.7	20.6	18.4
1984	10 17	05 49.14	+28 15.6					
1984	10 27	05 50.40	+28 36.6	2.025	2.722	125.2	17.4	18.1
1984	11 06	05 48.65	+28 56.5					
1984	11 16	05 43.89	+29 13.7	1.840	2.720	146.4	11.6	17.8
1984	11 26	05 36.39	+29 25.5					
1984	12 06	05 26.89	+29 29.4	1.744	2.718	168.9	4.0	17.4
1984	12 16	05 16.51	+29 24.0					
1984	12 26	05 06.51	+29 09.7	1.760	2.716	163.2	6.0	17.5
1985	01 05	04 58.14	+28 49.3					
1985	01 15	04 52.28	+28 26.5	1.883	2.715	140.4	13.3	17.9
1985	01 25	04 49.37	+28 04.8					
1985	02 04	04 49.55	+27 46.7	2.087	2.714	119.6	18.4	18.2
1985	02 14	04 52.63	+27 33.0					
1985	02 24	04 58.34	+27 23.5	2.338	2.713	101.4	21.0	18.5

(2937) Gibbs a,e,i = 2.32, 0.30, 22 Elements MPC 8275

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 41.77	+36 27.5	1.732	1.966	87.6	30.7	17.4
1984	09 27	05 54.29	+35 57.4					
1984	10 07	06 03.29	+35 18.8	1.572	2.037	102.5	28.6	17.2
1984	10 17	06 08.36	+34 31.8					
1984	10 27	06 09.10	+33 35.7	1.419	2.108	120.8	23.9	16.9
1984	11 06	06 05.29	+32 28.3					
1984	11 16	05 57.16	+31 06.7	1.305	2.180	143.2	15.8	16.6
1984	11 26	05 45.47	+29 29.1					
1984	12 06	05 31.70	+27 36.5	1.275	2.250	169.0	4.8	16.4
1984	12 16	05 17.75	+25 35.0					
1984	12 26	05 05.38	+23 33.8	1.359	2.319	163.6	6.9	16.6
1985	01 05	04 55.93	+21 42.9					
1985	01 15	04 49.99	+20 08.8	1.554	2.387	139.2	15.6	17.2
1985	01 25	04 47.61	+18 53.8					
1985	02 04	04 48.51	+17 57.2	1.826	2.451	118.2	20.7	17.7
1985	02 14	04 52.26	+17 16.1					
1985	02 24	04 58.40	+16 46.9	2.140	2.513	100.3	22.8	18.2

1978 RF6 a,e,i = 3.11, 0.18, 8 Elements MPC 8149

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 32.30	+15 21.0	2.513	2.715	90.5	21.7	18.7
1984	09 27	05 40.15	+14 50.5					
1984	10 07	05 45.86	+14 15.8	2.286	2.745	106.7	20.4	18.5
1984	10 17	05 49.21	+13 38.2					
1984	10 27	05 49.98	+12 59.5	2.085	2.778	125.1	17.0	18.2
1984	11 06	05 48.09	+12 21.8					
1984	11 16	05 43.68	+11 47.5	1.939	2.811	145.6	11.5	17.9
1984	11 26	05 37.09	+11 18.8					
1984	12 06	05 29.03	+10 58.1	1.882	2.845	165.0	5.1	17.7
1984	12 16	05 20.39	+10 47.2					
1984	12 26	05 12.16	+10 47.0	1.936	2.880	160.0	6.7	17.9
1985	01 05	05 05.27	+10 57.5					
1985	01 15	05 00.35	+11 17.6	2.098	2.916	139.4	12.7	18.2
1985	01 25	04 57.78	+11 45.5					
1985	02 04	04 57.67	+12 19.3	2.341	2.952	119.4	16.9	18.6
1985	02 14	04 59.93	+12 56.7					
1985	02 24	05 04.37	+13 35.8	2.632	2.989	101.3	18.9	18.9

1983 NR a,e,i = 2.56, 0.13, 15 Elements MPC 8285

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 41.57	+38 42.0	2.527	2.681	87.6	22.0	18.7
1984	09 27	05 51.14	+39 20.3					
1984	10 07	05 58.23	+39 58.3	2.296	2.705	103.2	21.1	18.4
1984	10 17	06 02.46	+40 35.8					
1984	10 27	06 03.38	+41 11.8	2.081	2.728	120.9	18.2	18.2
1984	11 06	06 00.71	+41 43.3					
1984	11 16	05 54.41	+42 05.8	1.914	2.750	140.4	13.2	17.9
1984	11 26	05 44.83	+42 13.6					
1984	12 06	05 32.91	+42 01.1	1.830	2.770	158.3	7.5	17.7
1984	12 16	05 20.08	+41 25.7					
1984	12 26	05 07.94	+40 29.0	1.855	2.789	157.6	7.7	17.7
1985	01 05	04 57.93	+39 16.7					
1985	01 15	04 50.94	+37 56.9	1.988	2.807	139.1	13.3	18.0
1985	01 25	04 47.33	+36 36.6					
1985	02 04	04 47.06	+35 21.4	2.206	2.823	119.4	17.7	18.4
1985	02 14	04 49.83	+34 14.0					
1985	02 24	04 55.26	+33 15.1	2.473	2.837	101.2	20.0	18.7

1980 BQ a,e,i = 3.12, 0.11, 7 Elements MPC 7600

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 31.49	+22 46.4	2.701	2.888	90.4	20.4	17.9
1984	09 27	05 39.44	+23 07.2					
1984	10 07	05 45.46	+23 27.7	2.420	2.873	106.8	19.5	17.7
1984	10 17	05 49.29	+23 48.9					
1984	10 27	05 50.61	+24 11.6	2.165	2.858	125.4	16.5	17.3
1984	11 06	05 49.22	+24 35.7					
1984	11 16	05 45.11	+25 00.6	1.966	2.844	146.7	11.0	17.0
1984	11 26	05 38.50	+25 24.9					
1984	12 06	05 29.99	+25 46.5	1.856	2.832	170.0	3.5	16.6
1984	12 16	05 20.52	+26 03.9					
1984	12 26	05 11.22	+26 16.4	1.860	2.821	164.8	5.2	16.7
1985	01 05	05 03.21	+26 24.8					
1985	01 15	04 57.38	+26 30.8	1.974	2.811	141.5	12.6	17.0
1985	01 25	04 54.23	+26 36.6					
1985	02 04	04 53.98	+26 43.6	2.170	2.803	120.5	17.6	17.3
1985	02 14	04 56.55	+26 52.5					
1985	02 24	05 01.73	+27 03.1	2.415	2.796	102.1	20.2	17.6

2563 P-L a,e,i = 3.20, 0.15, 2 Elements MPC 6207

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 42.68	+21 38.5	3.559	3.661	87.8	15.9	19.4
1984	09 27	05 47.63	+21 36.2					
1984	10 07	05 50.86	+21 32.8	3.270	3.666	105.5	15.2	19.2
1984	10 17	05 52.19	+21 28.7					
1984	10 27	05 51.47	+21 24.3	3.006	3.670	125.2	12.8	19.0
1984	11 06	05 48.65	+21 19.7					
1984	11 16	05 43.85	+21 14.9	2.803	3.673	147.0	8.4	18.8
1984	11 26	05 37.32	+21 09.6					
1984	12 06	05 29.56	+21 03.8	2.699	3.674	170.4	2.6	18.4
1984	12 16	05 21.25	+20 57.6					
1984	12 26	05 13.10	+20 51.5	2.715	3.674	165.0	4.0	18.5
1985	01 05	05 05.88	+20 46.4					
1985	01 15	05 00.14	+20 43.4	2.849	3.672	141.7	9.6	18.8
1985	01 25	04 56.29	+20 43.1					
1985	02 04	04 54.51	+20 46.3	3.075	3.669	120.1	13.4	19.1
1985	02 14	04 54.82	+20 52.7					
1985	02 24	04 57.14	+21 02.0	3.353	3.665	100.5	15.4	19.3

1979 MS6 a,e,i = 2.43, 0.08, 6 Elements MPC 5785

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	09 17	05 27.22	+23 49.2	2.193	2.433	-1.19	+0.7	18.7
1984	09 27	05 37.32	+23 40.4					
1984	10 07	05 45.27	+23 26.2	1.930	2.416	-1.37	+1.2	18.4
1984	10 17	05 50.69	+23 07.6					
1984	10 27	05 53.17	+22 45.1	1.689	2.399	-1.60	+1.6	18.0
1984	11 06	05 52.42	+22 19.2					
1984	11 16	05 48.34	+21 50.2	1.497	2.382	-1.84	+1.4	17.6
1984	11 26	05 41.15	+21 17.9					
1984	12 06	05 31.58	+20 43.0	1.389	2.366	-1.99	+0.7	17.1
1984	12 16	05 20.85	+20 07.0					
1984	12 26	05 10.41	+19 32.4	1.388	2.349	-1.94	-0.0	17.2
1985	01 05	05 01.70	+19 02.7					
1985	01 15	04 55.74	+18 40.7	1.491	2.334	-1.73	-0.3	17.6
1985	01 25	04 53.06	+18 27.9					
1985	02 04	04 53.77	+18 24.1	1.668	2.319	-1.48	-0.1	17.9
1985	02 14	04 57.67	+18 27.9					
1985	02 24	05 04.45	+18 37.1	1.887	2.305	-1.29	+0.3	18.3

(3011) 1978 WM14 a,e,i = 3.21, 0.19, 6 Elements MPC 8668

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 25.27	+19 34.5	2.365	2.601	92.0	22.7	17.5
1984	09 27	05 34.53	+19 13.1					
1984	10 07	05 41.68	+18 46.3	2.120	2.604	107.7	21.4	17.2
1984	10 17	05 46.43	+18 15.3					
1984	10 27	05 48.51	+17 41.3	1.901	2.610	125.8	18.0	16.9
1984	11 06	05 47.77	+17 06.0					
1984	11 16	05 44.27	+16 30.9	1.737	2.619	146.5	12.0	16.6
1984	11 26	05 38.32	+15 57.6					
1984	12 06	05 30.62	+15 28.4	1.660	2.632	167.9	4.5	16.3
1984	12 16	05 22.15	+15 05.0					
1984	12 26	05 14.03	+14 49.3	1.692	2.647	162.8	6.3	16.4
1985	01 05	05 07.30	+14 42.6					
1985	01 15	05 02.74	+14 44.9	1.828	2.666	141.0	13.4	16.7
1985	01 25	05 00.74	+14 55.6					
1985	02 04	05 01.46	+15 13.3	2.045	2.687	120.8	18.4	17.1
1985	02 14	05 04.75	+15 35.8					
1985	02 24	05 10.42	+16 01.3	2.309	2.710	103.1	20.8	17.5

1981 EL1 a,e,i = 2.69, 0.24, 13 Elements MPC 8018

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 24.56	+37 14.1	2.372	2.593	91.0	22.8	19.0
1984	09 27	05 35.74	+38 20.8					
1984	10 07	05 44.99	+39 29.6	2.080	2.540	105.8	22.2	18.6
1984	10 17	05 51.83	+40 40.8					
1984	10 27	05 55.67	+41 54.1	1.812	2.488	122.1	19.8	18.2
1984	11 06	05 55.95	+43 07.3					
1984	11 16	05 52.26	+44 15.7	1.595	2.435	139.8	15.2	17.8
1984	11 26	05 44.50	+45 12.1					
1984	12 06	05 33.27	+45 47.3	1.454	2.384	154.9	10.1	17.4
1984	12 16	05 19.99	+45 53.4					
1984	12 26	05 06.70	+45 27.5	1.411	2.333	153.7	10.8	17.3
1985	01 05	04 55.55	+44 33.2					
1985	01 15	04 48.10	+43 19.7	1.462	2.285	137.3	17.0	17.5
1985	01 25	04 45.08	+41 57.2					
1985	02 04	04 46.57	+40 34.1	1.587	2.239	119.1	22.6	17.8
1985	02 14	04 52.17	+39 15.4					
1985	02 24	05 01.33	+38 02.8	1.753	2.196	102.8	26.1	18.0

(2942) 1932 BG a,e,i = 2.24, 0.15, 7 Elements MPC 8279

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 41.42	+17 25.5	2.348	2.526	88.3	23.4	18.4
1984	09 27	05 49.76	+17 18.6					
1984	10 07	05 55.93	+17 09.6	2.103	2.542	104.3	22.4	18.2
1984	10 17	05 59.59	+17 00.0					
1984	10 27	06 00.42	+16 51.2	1.875	2.555	122.9	19.1	17.8
1984	11 06	05 58.16	+16 44.9					
1984	11 16	05 52.79	+16 42.0	1.696	2.566	144.5	12.9	17.5
1984	11 26	05 44.56	+16 43.3					
1984	12 06	05 34.18	+16 49.1	1.602	2.574	167.9	4.6	17.1
1984	12 16	05 22.75	+16 59.1					
1984	12 26	05 11.58	+17 13.4	1.621	2.579	163.5	6.2	17.2
1985	01 05	05 01.98	+17 32.1					
1985	01 15	04 54.87	+17 55.3	1.750	2.582	139.9	14.2	17.6
1985	01 25	04 50.76	+18 22.9					
1985	02 04	04 49.80	+18 54.3	1.959	2.581	118.7	19.6	18.0
1985	02 14	04 51.84	+19 28.5					
1985	02 24	04 56.61	+20 04.2	2.211	2.579	100.3	22.2	18.3

(2981) Chagall a,e,i = 3.15, 0.17, 1 Elements MPC 8398

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 45.93	+22 38.1	3.528	3.619	87.0	16.1	18.9
1984	09 27	05 51.04	+22 36.9					
1984	10 07	05 54.39	+22 34.8	3.247	3.632	104.7	15.4	18.7
1984	10 17	05 55.81	+22 32.1					
1984	10 27	05 55.15	+22 29.2	2.989	3.644	124.4	13.0	18.5
1984	11 06	05 52.35	+22 26.0					
1984	11 16	05 47.52	+22 22.3	2.791	3.655	146.2	8.7	18.2
1984	11 26	05 40.92	+22 17.8					
1984	12 06	05 33.04	+22 12.0	2.690	3.664	169.8	2.7	17.9
1984	12 16	05 24.57	+22 05.0					
1984	12 26	05 16.26	+21 57.2	2.710	3.671	165.9	3.7	18.0
1985	01 05	05 08.86	+21 49.7					
1985	01 15	05 02.95	+21 43.6	2.848	3.677	142.5	9.4	18.3
1985	01 25	04 58.94	+21 39.9					
1985	02 04	04 57.01	+21 39.3	3.079	3.682	120.7	13.3	18.6
1985	02 14	04 57.19	+21 41.9					
1985	02 24	04 59.38	+21 47.5	3.364	3.685	101.1	15.3	18.8

1981 ES8 a,e,i = 3.02, 0.10, 10 Elements MPC 7445

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	09 17	05 36.99	+17 11.8	2.663	2.835	-0.86	+0.8	18.4
1984	09 27	05 44.62	+16 37.3					
1984	10 07	05 50.22	+15 57.9	2.416	2.853	-0.95	+0.9	18.1
1984	10 17	05 53.56	+15 14.8					
1984	10 27	05 54.41	+14 29.4	2.193	2.871	-1.05	+0.9	17.9
1984	11 06	05 52.69	+13 43.4					
1984	11 16	05 48.47	+12 58.9	2.025	2.890	-1.16	+0.8	17.6
1984	11 26	05 42.08	+12 18.1					
1984	12 06	05 34.13	+11 43.5	1.947	2.909	-1.23	+0.5	17.3
1984	12 16	05 25.48	+11 17.3					
1984	12 26	05 17.08	+11 01.3	1.981	2.929	-1.21	+0.3	17.4
1985	01 05	05 09.88	+10 56.1					
1985	01 15	05 04.56	+11 01.5	2.124	2.949	-1.11	+0.2	17.8
1985	01 25	05 01.52	+11 16.1					
1985	02 04	05 00.94	+11 38.1	2.351	2.969	-0.98	+0.2	18.1
1985	02 14	05 02.74	+12 05.4					
1985	02 24	05 06.76	+12 35.7	2.626	2.989	-0.87	+0.3	18.4

(2948) 1969 TD2 a,e,i = 2.86, 0.11, 12 Elements MPC 8281

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 29.88	+16 13.2	2.377	2.598	91.1	22.8	18.0
1984	09 27	05 39.01	+15 24.4					
1984	10 07	05 46.11	+14 27.6	2.116	2.586	106.6	21.7	17.7
1984	10 17	05 50.88	+13 24.1					
1984	10 27	05 53.05	+12 15.6	1.882	2.576	124.2	18.6	17.4
1984	11 06	05 52.41	+11 04.5					
1984	11 16	05 48.99	+09 53.9	1.703	2.568	143.8	13.1	17.0
1984	11 26	05 43.04	+08 47.8					
1984	12 06	05 35.19	+07 51.0	1.608	2.562	161.6	7.0	16.7
1984	12 16	05 26.40	+07 07.6					
1984	12 26	05 17.78	+06 40.9	1.619	2.557	158.0	8.3	16.8
1985	01 05	05 10.44	+06 32.2					
1985	01 15	05 05.24	+06 40.2	1.731	2.555	138.8	14.7	17.1
1985	01 25	05 02.64	+07 02.5					
1985	02 04	05 02.85	+07 35.6	1.920	2.554	119.5	19.6	17.4
1985	02 14	05 05.77	+08 15.8					
1985	02 24	05 11.21	+08 59.7	2.154	2.556	102.4	22.2	17.7

(2833) Radishchev a,e,i = 2.88, 0.07, 1 Elements MPC 7842

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	09 17	05 41.10	+24 46.8	2.763	2.908	88.1	20.2	18.2
1984	09 27	05 48.82	+24 54.0					
1984	10 07	05 54.52	+24 59.8	2.503	2.921	104.7	19.3	18.0
1984	10 17	05 57.93	+25 05.0					
1984	10 27	05 58.77	+25 09.9	2.265	2.934	123.5	16.4	17.7
1984	11 06	05 56.89	+25 14.4					
1984	11 16	05 52.32	+25 17.8	2.081	2.946	145.0	11.1	17.4
1984	11 26	05 45.33	+25 18.8					
1984	12 06	05 36.53	+25 16.1	1.985	2.958	168.7	3.7	17.1
1984	12 16	05 26.86	+25 09.2					
1984	12 26	05 17.39	+24 58.4	2.005	2.969	166.3	4.5	17.1
1985	01 05	05 09.16	+24 45.4					
1985	01 15	05 02.98	+24 32.3	2.137	2.980	142.7	11.5	17.5
1985	01 25	04 59.30	+24 21.3					
1985	02 04	04 58.32	+24 13.7	2.357	2.991	121.3	16.4	17.8
1985	02 14	04 59.94	+24 09.9					
1985	02 24	05 03.98	+24 09.5	2.628	3.001	102.4	18.8	18.1

(2867) 1969 VC a,e,i = 2.36, 0.15, 10 Elements MPC 7831

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 04.83	+26 09.6	2.103	2.513	102.3	22.9	19.1
1984	10 17	06 09.56	+26 49.1					
1984	10 27	06 11.33	+27 32.4	1.885	2.540	120.7	19.7	18.9
1984	11 06	06 09.81	+28 19.4					
1984	11 16	06 04.86	+29 08.3	1.714	2.566	141.9	13.8	18.5
1984	11 26	05 56.62	+29 55.5					
1984	12 06	05 45.77	+30 36.3	1.625	2.589	164.9	5.7	18.2
1984	12 16	05 33.48	+31 06.3					
1984	12 26	05 21.23	+31 23.4	1.647	2.611	165.3	5.5	18.3
1985	01 05	05 10.53	+31 28.6					
1985	01 15	05 02.49	+31 25.6	1.781	2.630	142.5	13.2	18.7
1985	01 25	04 57.73	+31 18.4					
1985	02 04	04 56.41	+31 10.8	1.998	2.648	121.3	18.6	19.0
1985	02 14	04 58.33	+31 04.8					
1985	02 24	05 03.16	+31 01.0	2.264	2.663	102.8	21.3	19.4
1985	03 06	05 10.54	+30 59.2					
1985	03 16	05 20.06	+30 58.5	2.545	2.676	86.5	21.8	19.7

1983 NT a,e,i = 2.24, 0.10, 6 Elements MPC 8271

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	10 07	05 53.67	+30 28.4	1.753	2.227	-1.67	+0.9	17.2
1984	10 17	06 01.65	+30 54.4					
1984	10 27	06 06.55	+31 20.2	1.516	2.204	-2.00	+1.7	16.8
1984	11 06	06 07.85	+31 45.4					
1984	11 16	06 05.19	+32 08.1	1.320	2.182	-2.40	+1.7	16.4
1984	11 26	05 58.48	+32 24.3					
1984	12 06	05 48.31	+32 28.9	1.197	2.159	-2.70	+0.1	15.9
1984	12 16	05 35.98	+32 17.2					
1984	12 26	05 23.37	+31 47.8	1.172	2.138	-2.67	-2.0	15.8
1985	01 05	05 12.54	+31 04.7					
1985	01 15	05 04.99	+30 14.7	1.246	2.117	-2.34	-2.9	16.2
1985	01 25	05 01.50	+29 24.7					
1985	02 04	05 02.22	+28 39.9	1.397	2.098	-1.96	-2.3	16.6
1985	02 14	05 06.84	+28 01.8					
1985	02 24	05 14.89	+27 30.0	1.590	2.080	-1.67	-1.1	16.9
1985	03 06	05 25.85	+27 02.7					
1985	03 16	05 39.21	+26 37.4	1.800	2.064	-1.47	+0.3	17.2

1982 BH1 a,e,i = 2.20, 0.14, 1 Elements MPC 6708

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	05 42.84	+22 52.8	1.334	1.891	107.4	30.3	17.7
1984	10 17	05 53.22	+22 46.8					
1984	10 27	06 00.29	+22 37.3	1.147	1.885	123.2	26.2	17.3
1984	11 06	06 03.50	+22 26.2					
1984	11 16	06 02.51	+22 14.7	0.998	1.883	142.7	18.5	16.8
1984	11 26	05 57.29	+22 03.2					
1984	12 06	05 48.55	+21 51.4	0.915	1.886	166.1	7.2	16.3
1984	12 16	05 37.77	+21 39.0					
1984	12 26	05 26.91	+21 26.8	0.920	1.894	168.2	6.1	16.3
1985	01 05	05 18.04	+21 17.2					
1985	01 15	05 12.59	+21 12.5	1.017	1.906	144.6	17.4	16.8
1985	01 25	05 11.19	+21 14.0					
1985	02 04	05 13.90	+21 21.5	1.183	1.923	124.6	25.0	17.4
1985	02 14	05 20.34	+21 33.1					
1985	02 24	05 29.99	+21 46.3	1.392	1.943	108.2	28.9	17.8
1985	03 06	05 42.33	+21 58.3					
1985	03 16	05 56.83	+22 06.7	1.622	1.967	94.4	30.3	18.2

1950 SJ a,e,i = 2.25, 0.22, 8 Elements MPC 8142

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 03.21	+20 32.9	1.564	2.033	102.7	28.7	18.2
1984	10 17	06 10.24	+19 42.6					
1984	10 27	06 13.76	+18 48.2	1.401	2.083	119.9	24.4	17.9
1984	11 06	06 13.45	+17 51.8					
1984	11 16	06 09.27	+16 55.5	1.276	2.134	140.6	17.1	17.6
1984	11 26	06 01.52	+16 01.6					
1984	12 06	05 51.10	+15 12.9	1.223	2.186	163.6	7.3	17.3
1984	12 16	05 39.41	+14 32.3					
1984	12 26	05 28.08	+14 02.7	1.272	2.236	165.1	6.5	17.4
1985	01 05	05 18.62	+13 45.8					
1985	01 15	05 12.04	+13 41.6	1.423	2.286	142.9	15.0	17.9
1985	01 25	05 08.78	+13 48.9					
1985	02 04	05 08.87	+14 05.3	1.653	2.335	122.4	20.9	18.4
1985	02 14	05 12.03	+14 27.6					
1985	02 24	05 17.87	+14 53.3	1.929	2.381	104.7	23.7	18.9
1985	03 06	05 26.02	+15 19.5					
1985	03 16	05 36.05	+15 44.2	2.224	2.425	89.3	24.2	19.2

1977 RA6 a,e,i = 2.23, 0.10, 4 Elements MPC 8212

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	05 55.21	+28 01.8	1.499	1.998	104.4	29.0	17.0
1984	10 17	06 05.04	+28 27.1					
1984	10 27	06 11.58	+28 52.3	1.305	2.003	120.6	25.3	16.7
1984	11 06	06 14.26	+29 18.1					
1984	11 16	06 12.72	+29 43.5	1.149	2.010	140.1	18.4	16.2
1984	11 26	06 06.85	+30 05.5					
1984	12 06	05 57.29	+30 19.1	1.058	2.021	162.8	8.3	15.8
1984	12 16	05 45.43	+30 19.7					
1984	12 26	05 33.27	+30 05.5	1.061	2.034	168.1	5.7	15.8
1985	01 05	05 22.92	+29 39.3					
1985	01 15	05 15.90	+29 06.9	1.161	2.049	145.6	15.8	16.2
1985	01 25	05 12.94	+28 34.1					
1985	02 04	05 14.16	+28 04.8	1.336	2.066	125.1	23.0	16.7
1985	02 14	05 19.15	+27 40.1					
1985	02 24	05 27.42	+27 19.3	1.557	2.086	107.9	26.9	17.2
1985	03 06	05 38.43	+27 00.9					
1985	03 16	05 51.64	+26 42.6	1.801	2.106	93.3	28.1	17.5

1981 JA a,e,i = 3.14, 0.12, 2 Elements MPC 6193

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 07.84	+21 52.2	3.081	3.425	101.6	16.6	19.0
1984	10 17	06 10.82	+21 48.2					
1984	10 27	06 11.70	+21 44.6	2.795	3.409	120.5	14.5	18.7
1984	11 06	06 10.35	+21 41.9					
1984	11 16	06 06.75	+21 40.1	2.561	3.393	141.7	10.4	18.4
1984	11 26	06 01.05	+21 38.9					
1984	12 06	05 53.65	+21 37.8	2.415	3.376	164.9	4.3	18.1
1984	12 16	05 45.18	+21 36.5					
1984	12 26	05 36.44	+21 34.7	2.384	3.358	170.4	2.8	18.0
1985	01 05	05 28.31	+21 32.9					
1985	01 15	05 21.55	+21 32.0	2.472	3.339	146.7	9.3	18.3
1985	01 25	05 16.73	+21 32.7					
1985	02 04	05 14.17	+21 35.8	2.657	3.319	124.7	14.1	18.6
1985	02 14	05 13.95	+21 41.5					
1985	02 24	05 16.02	+21 49.5	2.902	3.299	105.0	16.9	18.8
1985	03 06	05 20.22	+21 59.2					
1985	03 16	05 26.33	+22 09.7	3.169	3.277	87.3	17.6	19.0

1978 TZ6 a,e,i = 3.01, 0.06, 11 Elements MPC 8142

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 11.25	+17 48.3	2.845	3.186	100.7	18.0	17.2
1984	10 17	06 14.66	+17 51.7					
1984	10 27	06 15.90	+17 57.4	2.578	3.185	119.3	15.8	16.9
1984	11 06	06 14.79	+18 06.5					
1984	11 16	06 11.31	+18 19.7	2.359	3.183	140.4	11.4	16.6
1984	11 26	06 05.55	+18 37.1					
1984	12 06	05 57.93	+18 58.2	2.225	3.181	163.5	5.1	16.3
1984	12 16	05 49.12	+19 22.1					
1984	12 26	05 39.94	+19 47.7	2.204	3.179	170.7	2.9	16.2
1985	01 05	05 31.38	+20 14.2					
1985	01 15	05 24.24	+20 41.3	2.303	3.175	147.2	9.6	16.5
1985	01 25	05 19.14	+21 08.9					
1985	02 04	05 16.44	+21 37.0	2.499	3.171	125.2	14.7	16.8
1985	02 14	05 16.21	+22 05.4					
1985	02 24	05 18.38	+22 33.9	2.754	3.167	105.6	17.5	17.1
1985	03 06	05 22.79	+23 02.0					
1985	03 16	05 29.18	+23 28.8	3.034	3.161	88.1	18.3	17.3

6299 P-L a,e,i = 2.79, 0.16, 13 Elements MPC 8910

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	05 59.89	+10 45.9	2.047	2.474	103.1	23.2	19.6
1984	10 17	06 06.43	+09 29.7					
1984	10 27	06 10.50	+08 08.1	1.803	2.449	119.4	20.7	19.2
1984	11 06	06 11.80	+06 44.2					
1984	11 16	06 10.23	+05 21.9	1.606	2.427	137.3	16.0	18.8
1984	11 26	06 05.82	+04 06.6					
1984	12 06	05 59.02	+03 04.4	1.481	2.407	154.2	10.3	18.5
1984	12 16	05 50.63	+02 20.9					
1984	12 26	05 41.74	+02 00.3	1.454	2.390	157.0	9.3	18.4
1985	01 05	05 33.63	+02 04.1					
1985	01 15	05 27.36	+02 30.2	1.524	2.375	141.7	14.9	18.6
1985	01 25	05 23.67	+03 14.5					
1985	02 04	05 22.95	+04 11.8	1.673	2.364	123.4	20.4	19.0
1985	02 14	05 25.22	+05 16.5					
1985	02 24	05 30.32	+06 24.2	1.872	2.356	106.7	23.7	19.3
1985	03 06	05 37.98	+07 30.9					
1985	03 16	05 47.87	+08 33.7	2.096	2.351	92.0	25.0	19.5

1980 PF a,e,i = 2.26, 0.16, 8 Elements MPC 8391

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	10 07	06 17.00	+32 30.6	1.860	2.254	-1.39	+3.1	18.7
1984	10 17	06 24.44	+32 48.9					
1984	10 27	06 28.54	+33 07.5	1.664	2.291	-1.60	+4.1	18.4
1984	11 06	06 28.88	+33 25.9					
1984	11 16	06 25.22	+33 41.9	1.504	2.327	-1.87	+4.3	18.1
1984	11 26	06 17.62	+33 51.5					
1984	12 06	06 06.73	+33 49.2	1.414	2.362	-2.08	+3.2	17.8
1984	12 16	05 53.87	+33 31.0					
1984	12 26	05 40.76	+32 55.9	1.425	2.395	-2.07	+1.3	17.7
1985	01 05	05 29.21	+32 07.3					
1985	01 15	05 20.55	+31 11.8	1.546	2.427	-1.84	+0.0	18.2
1985	01 25	05 15.45	+30 15.7					
1985	02 04	05 14.04	+29 24.1	1.754	2.456	-1.54	-0.1	18.6
1985	02 14	05 16.05	+28 38.9					
1985	02 24	05 21.06	+28 00.5	2.015	2.484	-1.28	+0.3	19.0
1985	03 06	05 28.64	+27 27.8					
1985	03 16	05 38.32	+26 59.0	2.299	2.510	-1.10	+0.9	19.3

(3044) 1983 RE3 a,e,i = 2.85, 0.16, 14 Elements MPC 8784

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 16.56	+19 59.5	2.726	3.054	99.5	18.8	18.0
1984	10 17	06 19.97	+19 19.0					
1984	10 27	06 21.03	+18 36.5	2.484	3.080	118.2	16.5	17.8
1984	11 06	06 19.61	+17 53.1					
1984	11 16	06 15.71	+17 09.5	2.289	3.105	139.2	12.0	17.5
1984	11 26	06 09.54	+16 26.9					
1984	12 06	06 01.55	+15 46.5	2.178	3.129	161.6	5.7	17.3
1984	12 16	05 52.48	+15 09.8					
1984	12 26	05 43.21	+14 38.4	2.182	3.151	168.2	3.7	17.2
1985	01 05	05 34.68	+14 13.7					
1985	01 15	05 27.66	+13 56.6	2.304	3.171	146.6	9.8	17.5
1985	01 25	05 22.68	+13 47.3					
1985	02 04	05 20.03	+13 45.0	2.522	3.191	125.0	14.7	17.9
1985	02 14	05 19.73	+13 48.7					
1985	02 24	05 21.68	+13 56.8	2.799	3.209	105.5	17.3	18.2
1985	03 06	05 25.69	+14 07.6					
1985	03 16	05 31.51	+14 19.5	3.100	3.225	88.2	18.0	18.4

1928 SL a,e,i = 3.95, 0.26, 1 Elements MPC 8906

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 10.28	+23 27.8	2.835	3.182	101.1	18.0	16.7
1984	10 17	06 14.23	+23 23.7					
1984	10 27	06 15.93	+23 20.0	2.612	3.221	119.6	15.6	16.5
1984	11 06	06 15.26	+23 16.8					
1984	11 16	06 12.25	+23 14.2	2.436	3.261	140.5	11.1	16.3
1984	11 26	06 07.11	+23 11.7					
1984	12 06	06 00.30	+23 08.7	2.346	3.302	163.5	4.9	16.0
1984	12 16	05 52.49	+23 04.5					
1984	12 26	05 44.51	+22 59.2	2.368	3.345	172.5	2.2	15.9
1985	01 05	05 37.22	+22 53.1					
1985	01 15	05 31.32	+22 47.2	2.507	3.389	149.1	8.6	16.3
1985	01 25	05 27.30	+22 42.4					
1985	02 04	05 25.44	+22 39.6	2.745	3.434	127.4	13.2	16.7
1985	02 14	05 25.77	+22 38.8					
1985	02 24	05 28.20	+22 39.9	3.046	3.479	107.8	15.7	17.0
1985	03 06	05 32.56	+22 42.4					
1985	03 16	05 38.61	+22 45.5	3.378	3.525	90.2	16.4	17.3

1978 NN1 a,e,i = 2.85, 0.28, 8 Elements MPC 8148

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 21.23	+15 17.7	2.797	3.101	98.2	18.6	20.1
1984	10 17	06 24.29	+14 57.8					
1984	10 27	06 25.08	+14 39.2	2.575	3.151	116.8	16.4	19.9
1984	11 06	06 23.48	+14 23.4					
1984	11 16	06 19.51	+14 11.6	2.396	3.198	137.7	12.0	19.7
1984	11 26	06 13.35	+14 04.7					
1984	12 06	06 05.43	+14 03.5	2.300	3.243	160.0	6.0	19.5
1984	12 16	05 56.45	+14 08.1					
1984	12 26	05 47.23	+14 18.5	2.317	3.286	168.5	3.4	19.4
1985	01 05	05 38.66	+14 34.2					
1985	01 15	05 31.48	+14 54.6	2.454	3.327	147.7	9.1	19.8
1985	01 25	05 26.21	+15 18.8					
1985	02 04	05 23.16	+15 45.9	2.690	3.366	126.1	13.7	20.1
1985	02 14	05 22.37	+16 15.0					
1985	02 24	05 23.77	+16 44.9	2.989	3.402	106.3	16.2	20.4
1985	03 06	05 27.17	+17 14.6					
1985	03 16	05 32.36	+17 43.2	3.315	3.437	88.5	16.8	20.7

1981 EX4 a,e,i = 3.10, 0.13, 20 Elements MPC 8143

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 18.01	+06 31.7	2.935	3.235	98.4	17.8	19.3
1984	10 17	06 21.19	+05 15.8					
1984	10 27	06 22.30	+03 58.1	2.701	3.258	115.7	16.0	19.1
1984	11 06	06 21.24	+02 41.3					
1984	11 16	06 18.02	+01 28.6	2.515	3.280	134.0	12.5	18.9
1984	11 26	06 12.81	+00 23.8					
1984	12 06	06 05.99	-00 29.0	2.409	3.302	150.3	8.5	18.7
1984	12 16	05 58.16	-01 06.6					
1984	12 26	05 50.02	-01 26.6	2.408	3.322	154.3	7.4	18.7
1985	01 05	05 42.37	-01 28.5					
1985	01 15	05 35.90	-01 13.7	2.517	3.342	141.3	10.6	18.9
1985	01 25	05 31.11	-00 44.9					
1985	02 04	05 28.33	-00 05.5	2.717	3.361	123.3	14.2	19.1
1985	02 14	05 27.65	+00 40.8					
1985	02 24	05 29.03	+01 30.8	2.975	3.378	105.6	16.4	19.4
1985	03 06	05 32.35	+02 21.5					
1985	03 16	05 37.41	+03 10.8	3.260	3.395	89.2	17.0	19.6

(2977) 1974 SP a,e,i = 2.79, 0.17, 10 Elements MPC 8397

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 17.72	+12 25.2	2.261	2.609	98.9	22.2	17.9
1984	10 17	06 23.10	+11 40.8					
1984	10 27	06 25.96	+10 56.2	2.051	2.643	116.1	19.7	17.6
1984	11 06	06 26.09	+10 13.9					
1984	11 16	06 23.45	+09 36.8	1.881	2.678	135.6	15.0	17.4
1984	11 26	06 18.17	+09 07.5					
1984	12 06	06 10.69	+08 49.0	1.783	2.714	156.1	8.5	17.1
1984	12 16	06 01.80	+08 42.9					
1984	12 26	05 52.49	+08 50.1	1.789	2.749	164.3	5.6	17.1
1985	01 05	05 43.85	+09 10.1					
1985	01 15	05 36.82	+09 40.9	1.906	2.784	147.1	11.1	17.4
1985	01 25	05 32.01	+10 20.1					
1985	02 04	05 29.77	+11 04.7	2.115	2.818	126.8	16.3	17.8
1985	02 14	05 30.13	+11 52.1					
1985	02 24	05 32.96	+12 39.8	2.385	2.852	108.1	19.3	18.1
1985	03 06	05 38.03	+13 26.0					
1985	03 16	05 45.05	+14 08.9	2.683	2.885	91.4	20.2	18.4

1983 NU a,e,i = 2.44, 0.16, 2 Elements MPC 8794

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 24.65	+25 07.4	2.394	2.717	97.8	21.4	18.6
1984	10 17	06 29.83	+25 08.0					
1984	10 27	06 32.40	+25 10.1	2.155	2.740	115.9	19.0	18.3
1984	11 06	06 32.08	+25 14.0					
1984	11 16	06 28.73	+25 19.4	1.955	2.760	136.8	14.2	18.0
1984	11 26	06 22.42	+25 25.1					
1984	12 06	06 13.56	+25 29.0	1.831	2.779	160.4	6.8	17.7
1984	12 16	06 02.98	+25 29.2					
1984	12 26	05 51.81	+25 24.5	1.815	2.795	173.9	2.1	17.4
1985	01 05	05 41.34	+25 15.1					
1985	01 15	05 32.67	+25 02.9	1.917	2.809	149.5	10.2	17.9
1985	01 25	05 26.55	+24 50.1					
1985	02 04	05 23.36	+24 38.9	2.115	2.820	127.0	16.2	18.3
1985	02 14	05 23.12	+24 30.3					
1985	02 24	05 25.63	+24 24.5	2.373	2.830	107.3	19.5	18.6
1985	03 06	05 30.63	+24 20.9					
1985	03 16	05 37.77	+24 18.6	2.655	2.837	90.1	20.5	18.9

(3036) 1937 TO a,e,i = 3.22, 0.09, 23 Elements MPC 8781

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 38.91	+43 46.6	3.028	3.279	95.6	17.7	16.4
1984	10 17	06 45.19	+45 03.8					
1984	10 27	06 48.97	+46 26.2	2.791	3.295	112.0	16.2	16.2
1984	11 06	06 49.86	+47 52.0					
1984	11 16	06 47.54	+49 18.2	2.597	3.312	129.1	13.4	16.0
1984	11 26	06 41.81	+50 39.5					
1984	12 06	06 32.88	+51 49.1	2.476	3.327	144.4	9.9	15.8
1984	12 16	06 21.41	+52 40.1					
1984	12 26	06 08.57	+53 07.3	2.453	3.343	150.2	8.4	15.8
1985	01 05	05 55.92	+53 08.5					
1985	01 15	05 44.94	+52 46.2	2.536	3.358	141.0	10.6	15.9
1985	01 25	05 36.72	+52 05.5					
1985	02 04	05 31.87	+51 12.9	2.709	3.372	124.9	13.9	16.1
1985	02 14	05 30.47	+50 14.6					
1985	02 24	05 32.32	+49 14.7	2.946	3.386	108.0	16.1	16.4
1985	03 06	05 37.06	+48 16.1					
1985	03 16	05 44.27	+47 20.1	3.215	3.399	92.0	17.0	16.6

1978 SR6 a,e,i = 3.00, 0.11, 10 Elements MPC 8149

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 37.13	+34 00.3	2.630	2.901	95.5	20.1	18.9
1984	10 17	06 43.80	+34 33.0					
1984	10 27	06 47.99	+35 09.0	2.392	2.923	112.7	18.3	18.6
1984	11 06	06 49.38	+35 48.0					
1984	11 16	06 47.75	+36 28.4	2.190	2.945	132.0	14.4	18.4
1984	11 26	06 43.04	+37 07.0					
1984	12 06	06 35.52	+37 39.4	2.058	2.967	152.5	8.8	18.1
1984	12 16	06 25.86	+38 00.7					
1984	12 26	06 15.09	+38 07.1	2.028	2.989	165.3	4.8	18.0
1985	01 05	06 04.50	+37 57.3					
1985	01 15	05 55.33	+37 33.0	2.111	3.011	151.3	9.0	18.2
1985	01 25	05 48.48	+36 58.2					
1985	02 04	05 44.49	+36 17.6	2.295	3.033	130.9	14.2	18.5
1985	02 14	05 43.48	+35 35.1					
1985	02 24	05 45.31	+34 53.3	2.548	3.054	111.6	17.5	18.9
1985	03 06	05 49.73	+34 13.6					
1985	03 16	05 56.36	+33 36.1	2.836	3.075	94.3	18.8	19.1

(2787) Tovarishch a,e,i = 3.02, 0.06, 10 Elements MPC 7452

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 32.36	+31 35.3	2.545	2.836	96.4	20.5	17.4
1984	10 17	06 39.59	+32 15.2					
1984	10 27	06 44.48	+32 59.6	2.286	2.833	113.4	18.8	17.1
1984	11 06	06 46.67	+33 48.5					
1984	11 16	06 45.90	+34 41.0	2.066	2.830	132.6	14.9	16.8
1984	11 26	06 42.01	+35 34.2					
1984	12 06	06 35.19	+36 23.7	1.915	2.829	153.1	9.1	16.5
1984	12 16	06 26.02	+37 04.1					
1984	12 26	06 15.48	+37 30.5	1.865	2.829	165.9	4.9	16.3
1985	01 05	06 04.93	+37 40.2					
1985	01 15	05 55.70	+37 34.0	1.926	2.829	151.4	9.6	16.5
1985	01 25	05 48.83	+37 15.2					
1985	02 04	05 44.97	+36 48.2	2.085	2.830	130.9	15.3	16.8
1985	02 14	05 44.31	+36 17.3					
1985	02 24	05 46.72	+35 45.1	2.311	2.833	111.9	18.9	17.1
1985	03 06	05 51.95	+35 13.4					
1985	03 16	05 59.61	+34 42.2	2.571	2.836	95.0	20.5	17.4

4260 P-L a,e,i = 2.80, 0.13, 4 Elements MPC 7020

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 29.01	+23 49.6	2.131	2.458	96.8	23.8	19.6
1984	10 17	06 37.22	+23 32.8					
1984	10 27	06 42.86	+23 15.7	1.902	2.472	113.4	21.6	19.4
1984	11 06	06 45.60	+22 59.6					
1984	11 16	06 45.23	+22 45.4	1.707	2.488	132.9	16.9	19.0
1984	11 26	06 41.67	+22 33.1					
1984	12 06	06 35.19	+22 22.3	1.576	2.506	155.4	9.4	18.7
1984	12 16	06 26.49	+22 11.9					
1984	12 26	06 16.63	+22 01.1	1.542	2.525	178.6	0.5	18.1
1985	01 05	06 06.94	+21 49.8					
1985	01 15	05 58.69	+21 38.8	1.619	2.547	155.3	9.3	18.8
1985	01 25	05 52.82	+21 29.2					
1985	02 04	05 49.86	+21 22.1	1.794	2.569	133.0	16.3	19.2
1985	02 14	05 49.92	+21 17.5					
1985	02 24	05 52.88	+21 15.1	2.035	2.593	113.5	20.5	19.6
1985	03 06	05 58.44	+21 13.8					
1985	03 16	06 06.24	+21 12.1	2.310	2.618	96.6	22.2	19.9

(2935) 1976 UU a,e,i = 2.60, 0.13, 13 Elements MPC 8274

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 39.55	+11 17.5	2.682	2.918	93.4	20.0	18.9
1984	10 17	06 44.79	+10 50.0					
1984	10 27	06 47.90	+10 24.1	2.419	2.922	110.7	18.6	18.7
1984	11 06	06 48.66	+10 02.2					
1984	11 16	06 46.91	+09 46.4	2.188	2.925	130.1	15.0	18.4
1984	11 26	06 42.63	+09 39.0					
1984	12 06	06 36.02	+09 42.2	2.023	2.926	151.3	9.3	18.1
1984	12 16	06 27.58	+09 56.9					
1984	12 26	06 18.07	+10 23.2	1.959	2.925	167.0	4.3	17.8
1985	01 05	06 08.49	+11 00.2					
1985	01 15	05 59.84	+11 45.5	2.011	2.923	153.2	8.7	18.0
1985	01 25	05 52.95	+12 36.7					
1985	02 04	05 48.40	+13 31.1	2.168	2.919	131.7	14.6	18.3
1985	02 14	05 46.43	+14 26.4					
1985	02 24	05 47.08	+15 20.7	2.397	2.913	111.8	18.4	18.6
1985	03 06	05 50.21	+16 12.4					
1985	03 16	05 55.58	+17 00.3	2.660	2.905	94.0	20.0	18.9

(2793) 1977 QV a,e,i = 3.16, 0.04, 22 Elements MPC 7456

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 45.88	+46 56.1	2.951	3.188	94.5	18.2	17.3
1984	10 17	06 53.81	+48 01.6					
1984	10 27	06 59.20	+49 11.7	2.698	3.180	110.1	17.1	17.1
1984	11 06	07 01.60	+50 25.1					
1984	11 16	07 00.59	+51 39.0	2.482	3.171	126.5	14.5	16.8
1984	11 26	06 55.88	+52 48.4					
1984	12 06	06 47.52	+53 46.3	2.332	3.163	141.5	11.2	16.6
1984	12 16	06 36.12	+54 25.1					
1984	12 26	06 22.85	+54 38.2	2.272	3.154	148.7	9.3	16.5
1985	01 05	06 09.44	+54 22.8					
1985	01 15	05 57.60	+53 40.4	2.314	3.145	141.7	11.2	16.6
1985	01 25	05 48.65	+52 36.8					
1985	02 04	05 43.31	+51 19.3	2.448	3.137	126.6	14.6	16.8
1985	02 14	05 41.68	+49 55.0					
1985	02 24	05 43.54	+48 29.1	2.649	3.128	110.0	17.3	17.0
1985	03 06	05 48.47	+47 05.0					
1985	03 16	05 55.98	+45 44.2	2.888	3.120	94.0	18.5	17.2

1980 TX5 a,e,i = 2.28, 0.08, 5 Elements MPC 7454

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 38.13	+23 08.1	1.862	2.184	94.7	27.1	18.2
1984	10 17	06 49.22	+22 34.0					
1984	10 27	06 57.86	+21 57.2	1.619	2.168	109.9	25.5	17.8
1984	11 06	07 03.61	+21 19.3					
1984	11 16	07 06.08	+20 42.2	1.400	2.154	127.9	21.2	17.4
1984	11 26	07 04.91	+20 07.2					
1984	12 06	07 00.03	+19 35.3	1.234	2.141	149.3	13.6	16.9
1984	12 16	06 51.85	+19 06.9					
1984	12 26	06 41.30	+18 42.0	1.150	2.129	172.7	3.4	16.4
1985	01 05	06 29.95	+18 20.8					
1985	01 15	06 19.54	+18 04.1	1.169	2.120	159.7	9.3	16.7
1985	01 25	06 11.57	+17 52.5					
1985	02 04	06 07.04	+17 46.5	1.283	2.112	136.7	18.7	17.1
1985	02 14	06 06.29	+17 45.3					
1985	02 24	06 09.20	+17 47.4	1.460	2.106	117.2	24.7	17.5
1985	03 06	06 15.46	+17 50.6					
1985	03 16	06 24.58	+17 52.6	1.672	2.102	101.0	27.7	17.9

(3002) 1982 FB3 a,e,i = 2.24, 0.13, 6 Elements MPC 8533

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	06 52.05	+18 54.3	2.299	2.524	91.1	23.3	18.4
1984	10 17	07 00.23	+18 42.7					
1984	10 27	07 06.20	+18 33.7	2.032	2.517	107.5	22.1	18.1
1984	11 06	07 09.60	+18 29.5					
1984	11 16	07 10.12	+18 32.1	1.789	2.507	126.6	18.5	17.7
1984	11 26	07 07.48	+18 42.8					
1984	12 06	07 01.65	+19 02.1	1.600	2.495	148.8	11.8	17.3
1984	12 16	06 52.95	+19 29.0					
1984	12 26	06 42.15	+20 01.2	1.502	2.481	173.3	2.7	16.8
1985	01 05	06 30.50	+20 35.7					
1985	01 15	06 19.46	+21 09.6	1.517	2.465	160.1	7.8	17.0
1985	01 25	06 10.35	+21 41.3					
1985	02 04	06 04.16	+22 10.4	1.637	2.447	136.3	16.2	17.4
1985	02 14	06 01.31	+22 36.8					
1985	02 24	06 01.87	+23 00.8	1.829	2.426	115.6	21.6	17.7
1985	03 06	06 05.65	+23 22.0					
1985	03 16	06 12.27	+23 39.7	2.056	2.404	97.9	24.2	18.0

1978 WN14 a,e,i = 3.14, 0.16, 2 Elements MPC 6953

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 07	07 00.37	+21 27.5	2.529	2.709	89.4	21.6	18.2
1984	10 17	07 08.95	+21 15.9					
1984	10 27	07 15.42	+21 06.7	2.288	2.730	105.7	20.5	18.0
1984	11 06	07 19.50	+21 01.7					
1984	11 16	07 20.97	+21 02.2	2.070	2.753	124.5	17.2	17.7
1984	11 26	07 19.67	+21 08.8					
1984	12 06	07 15.64	+21 21.5	1.906	2.778	146.0	11.4	17.4
1984	12 16	07 09.20	+21 39.0					
1984	12 26	07 00.97	+21 59.2	1.831	2.804	169.8	3.6	17.1
1985	01 05	06 51.93	+22 19.5					
1985	01 15	06 43.18	+22 38.1	1.868	2.831	165.6	4.9	17.2
1985	01 25	06 35.75	+22 53.6					
1985	02 04	06 30.44	+23 05.9	2.015	2.860	142.4	12.2	17.6
1985	02 14	06 27.69	+23 15.3					
1985	02 24	06 27.62	+23 22.1	2.247	2.890	121.5	17.0	18.0
1985	03 06	06 30.15	+23 26.4					
1985	03 16	06 35.02	+23 27.8	2.528	2.920	103.2	19.4	18.3

1950 DH a,e,i = 2.70, 0.25, 9 Elements MPC 6883

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 20.94	+11 04.7	1.784	2.227	102.8	25.8	17.6
1984	11 06	07 26.71	+10 14.6					
1984	11 16	07 29.47	+09 31.3	1.613	2.275	120.0	22.1	17.3
1984	11 26	07 29.02	+08 58.4					
1984	12 06	07 25.37	+08 39.5	1.483	2.326	140.0	15.8	17.1
1984	12 16	07 18.85	+08 36.9					
1984	12 26	07 10.18	+08 51.9	1.428	2.378	160.7	7.9	16.8
1985	01 05	07 00.50	+09 23.4					
1985	01 15	06 51.11	+10 08.1	1.474	2.432	163.0	6.8	16.9
1985	01 25	06 43.20	+11 01.7					
1985	02 04	06 37.71	+11 59.4	1.626	2.487	143.3	13.7	17.3
1985	02 14	06 35.06	+12 57.0					
1985	02 24	06 35.34	+13 51.6	1.859	2.542	123.3	19.0	17.8
1985	03 06	06 38.40	+14 40.7					
1985	03 16	06 43.92	+15 23.0	2.145	2.596	105.7	21.6	18.2
1985	03 26	06 51.56	+15 57.4					
1985	04 05	07 00.98	+16 23.5	2.454	2.651	90.0	22.2	18.6

1981 EY25 a,e,i = 2.91, 0.06, 2 Elements MPC 8400

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 25.65	+19 29.9	2.633	3.018	103.1	18.7	17.9
1984	11 06	07 28.91	+19 16.4					
1984	11 16	07 29.81	+19 07.8	2.383	3.027	122.1	16.1	17.7
1984	11 26	07 28.22	+19 05.1					
1984	12 06	07 24.13	+19 08.6	2.185	3.035	143.6	11.1	17.4
1984	12 16	07 17.78	+19 17.6					
1984	12 26	07 09.68	+19 30.9	2.076	3.043	167.2	4.1	17.0
1985	01 05	07 00.61	+19 46.7					
1985	01 15	06 51.56	+20 03.2	2.082	3.050	167.5	4.0	17.0
1985	01 25	06 43.47	+20 19.2					
1985	02 04	06 37.17	+20 33.7	2.203	3.056	144.0	10.9	17.4
1985	02 14	06 33.15	+20 46.5					
1985	02 24	06 31.64	+20 57.6	2.414	3.062	122.5	15.8	17.7
1985	03 06	06 32.65	+21 06.5					
1985	03 16	06 36.01	+21 13.0	2.678	3.067	103.5	18.4	18.0
1985	03 26	06 41.48	+21 16.6					
1985	04 05	06 48.80	+21 16.7	2.962	3.072	86.7	19.0	18.2

1980 OG a,e,i = 2.25, 0.16, 5 Elements MPC 5516

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	10 27	07 25.90	+17 27.3	1.707	2.156	-1.41	+0.5	17.9
1984	11 06	07 32.15	+17 09.5					
1984	11 16	07 35.25	+16 59.7	1.521	2.194	-1.62	+0.9	17.6
1984	11 26	07 34.85	+17 00.4					
1984	12 06	07 30.83	+17 12.9	1.374	2.232	-1.88	+1.1	17.3
1984	12 16	07 23.46	+17 37.1					
1984	12 26	07 13.41	+18 10.8	1.303	2.269	-2.08	+0.7	17.0
1985	01 05	07 01.97	+18 50.1					
1985	01 15	06 50.73	+19 30.7	1.336	2.306	-2.05	-0.0	17.0
1985	01 25	06 41.17	+20 09.3					
1985	02 04	06 34.43	+20 44.0	1.475	2.341	-1.82	-0.6	17.5
1985	02 14	06 31.04	+21 14.0					
1985	02 24	06 31.07	+21 39.2	1.694	2.376	-1.54	-0.7	18.0
1985	03 06	06 34.31	+21 59.2					
1985	03 16	06 40.35	+22 13.7	1.959	2.408	-1.30	-0.3	18.4
1985	03 26	06 48.77	+22 22.3					
1985	04 05	06 59.16	+22 24.3	2.242	2.439	-1.12	+0.2	18.7

(3028) 1978 TA2 a,e,i = 3.02, 0.03, 10 Elements MPC 8680

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 23.77	+11 11.1	2.652	3.021	102.1	18.8	17.0
1984	11 06	07 27.16	+10 26.7					
1984	11 16	07 28.34	+09 46.1	2.393	3.015	120.3	16.4	16.7
1984	11 26	07 27.17	+09 11.6					
1984	12 06	07 23.66	+08 45.6	2.184	3.009	140.4	12.0	16.4
1984	12 16	07 18.02	+08 30.0					
1984	12 26	07 10.68	+08 26.3	2.059	3.004	160.3	6.3	16.1
1985	01 05	07 02.37	+08 34.9					
1985	01 15	06 53.98	+08 54.9	2.045	2.998	162.6	5.6	16.0
1985	01 25	06 46.41	+09 24.4					
1985	02 04	06 40.45	+10 00.9	2.142	2.992	143.5	11.3	16.3
1985	02 14	06 36.63	+10 41.2					
1985	02 24	06 35.21	+11 22.7	2.328	2.986	123.2	16.1	16.6
1985	03 06	06 36.24	+12 03.1					
1985	03 16	06 39.59	+12 40.3	2.569	2.981	104.7	18.8	16.9
1985	03 26	06 45.06	+13 13.0					
1985	04 05	06 52.40	+13 40.0	2.833	2.975	88.2	19.6	17.1

1982 BL1 a,e,i = 2.19, 0.05, 5 Elements MPC 8285

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 18.93	+17 22.1	1.684	2.157	104.4	26.5	17.9
1984	11 06	07 26.34	+17 03.3					
1984	11 16	07 30.85	+16 51.5	1.457	2.145	121.4	23.2	17.5
1984	11 26	07 32.04	+16 49.8					
1984	12 06	07 29.61	+17 00.5	1.270	2.134	141.9	16.6	17.0
1984	12 16	07 23.62	+17 24.6					
1984	12 26	07 14.53	+18 00.8	1.157	2.123	165.5	6.6	16.6
1985	01 05	07 03.52	+18 45.7					
1985	01 15	06 52.21	+19 34.3	1.142	2.113	167.6	5.8	16.5
1985	01 25	06 42.35	+20 22.1					
1985	02 04	06 35.39	+21 06.1	1.228	2.104	143.6	16.2	16.9
1985	02 14	06 32.12	+21 44.6					
1985	02 24	06 32.74	+22 17.0	1.389	2.096	122.7	23.4	17.4
1985	03 06	06 37.09	+22 42.7					
1985	03 16	06 44.73	+23 01.0	1.592	2.089	105.4	27.3	17.7
1985	03 26	06 55.17	+23 11.2					
1985	04 05	07 07.96	+23 12.3	1.812	2.084	90.9	28.7	18.0

2017 P-L a,e,i = 2.23, 0.22, 2 Elements MPC 7461

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 39.66	+21 05.6	2.121	2.496	100.1	23.1	20.1
1984	11 06	07 44.16	+20 46.5					
1984	11 16	07 45.80	+20 33.4	1.904	2.532	118.7	20.0	19.9
1984	11 26	07 44.30	+20 27.5					
1984	12 06	07 39.56	+20 28.9	1.729	2.565	140.3	14.2	19.6
1984	12 16	07 31.80	+20 36.6					
1984	12 26	07 21.57	+20 48.4	1.633	2.595	164.9	5.7	19.2
1985	01 05	07 09.95	+21 01.4					
1985	01 15	06 58.28	+21 13.0	1.650	2.622	169.2	4.0	19.2
1985	01 25	06 47.86	+21 21.9					
1985	02 04	06 39.79	+21 28.0	1.780	2.646	144.6	12.5	19.7
1985	02 14	06 34.66	+21 31.7					
1985	02 24	06 32.66	+21 33.5	1.998	2.667	122.7	18.2	20.1
1985	03 06	06 33.68	+21 33.5					
1985	03 16	06 37.42	+21 31.6	2.266	2.684	103.8	21.1	20.4
1985	03 26	06 43.52	+21 27.1					
1985	04 05	06 51.64	+21 19.2	2.552	2.697	87.3	21.7	20.7

(2976) 1974 HR a,e,i = 3.36, 0.13, 10 Elements MPC 8396

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 33.75	+11 34.3	2.861	3.184	99.8	17.9	17.2
1984	11 06	07 36.96	+10 48.8					
1984	11 16	07 38.06	+10 07.3	2.621	3.208	118.1	15.8	17.0
1984	11 26	07 36.96	+09 31.7					
1984	12 06	07 33.67	+09 04.1	2.430	3.232	138.3	11.7	16.7
1984	12 16	07 28.42	+08 45.8					
1984	12 26	07 21.61	+08 38.2	2.321	3.257	158.6	6.3	16.5
1985	01 05	07 13.87	+08 41.3					
1985	01 15	07 05.99	+08 54.5	2.323	3.281	164.5	4.6	16.5
1985	01 25	06 58.75	+09 16.0					
1985	02 04	06 52.85	+09 43.8	2.440	3.306	146.4	9.5	16.7
1985	02 14	06 48.78	+10 15.2					
1985	02 24	06 46.79	+10 47.9	2.652	3.330	126.0	13.9	17.1
1985	03 06	06 46.97	+11 19.9					
1985	03 16	06 49.23	+11 49.4	2.925	3.355	107.1	16.5	17.3
1985	03 26	06 53.39	+12 15.2					
1985	04 05	06 59.26	+12 36.3	3.227	3.379	90.0	17.2	17.6

(3005) 1979 QK2 a,e,i = 2.37, 0.18, 2 Elements MPC 8536

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 39.77	+18 44.9	2.427	2.774	99.7	20.7	19.6
1984	11 06	07 44.28	+18 24.8					
1984	11 16	07 46.36	+18 10.2	2.152	2.759	118.1	18.4	19.3
1984	11 26	07 45.75	+18 02.5					
1984	12 06	07 42.29	+18 02.6	1.919	2.742	139.2	13.6	18.9
1984	12 16	07 36.03	+18 10.7					
1984	12 26	07 27.33	+18 25.7	1.767	2.722	162.9	6.1	18.5
1985	01 05	07 16.98	+18 45.5					
1985	01 15	07 06.07	+19 07.5	1.724	2.699	170.7	3.4	18.3
1985	01 25	06 55.84	+19 29.4					
1985	02 04	06 47.44	+19 49.7	1.797	2.675	146.4	11.8	18.7
1985	02 14	06 41.64	+20 07.6					
1985	02 24	06 38.83	+20 22.9	1.961	2.647	124.2	18.0	19.0
1985	03 06	06 39.08	+20 35.4					
1985	03 16	06 42.21	+20 44.5	2.178	2.618	105.0	21.5	19.3
1985	03 26	06 47.94	+20 49.8					
1985	04 05	06 55.94	+20 50.4	2.413	2.586	88.4	22.7	19.5

1980 OE a,e,i = 2.17, 0.19, 1 Elements MPC 5651

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 52.23	+21 31.2	2.103	2.438	97.3	23.8	19.1
1984	11 06	07 58.16	+21 13.5					
1984	11 16	08 01.34	+21 02.6	1.877	2.466	115.2	21.3	18.8
1984	11 26	08 01.42	+21 00.1					
1984	12 06	07 58.19	+21 06.4	1.685	2.491	136.2	15.9	18.5
1984	12 16	07 51.69	+21 20.7					
1984	12 26	07 42.29	+21 40.5	1.565	2.513	160.3	7.6	18.1
1985	01 05	07 30.89	+22 02.0					
1985	01 15	07 18.80	+22 21.5	1.552	2.532	173.9	2.4	17.9
1985	01 25	07 07.46	+22 36.3					
1985	02 04	06 58.18	+22 45.5	1.653	2.548	148.8	11.6	18.4
1985	02 14	06 51.81	+22 49.5					
1985	02 24	06 48.70	+22 49.5	1.846	2.560	126.4	18.1	18.8
1985	03 06	06 48.84	+22 46.0					
1985	03 16	06 51.94	+22 39.4	2.095	2.570	107.1	21.7	19.2
1985	03 26	06 57.64	+22 29.5					
1985	04 05	07 05.57	+22 15.7	2.365	2.576	90.5	22.9	19.4

1975 VB9 a,e,i = 2.67, 0.19, 12 Elements MPC 7227

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 39.19	+35 43.7	1.780	2.216	102.3	26.0	17.9
1984	11 06	07 49.15	+36 30.9					
1984	11 16	07 55.91	+37 26.2	1.591	2.237	118.4	22.9	17.6
1984	11 26	07 58.93	+38 29.3					
1984	12 06	07 57.81	+39 36.8	1.443	2.262	136.6	17.4	17.3
1984	12 16	07 52.46	+40 42.3					
1984	12 26	07 43.30	+41 36.3	1.363	2.290	154.4	10.7	17.0
1985	01 05	07 31.54	+42 08.7					
1985	01 15	07 19.04	+42 13.1	1.378	2.321	158.4	9.0	17.0
1985	01 25	07 07.79	+41 48.6					
1985	02 04	06 59.44	+41 00.4	1.491	2.354	142.9	14.6	17.4
1985	02 14	06 54.85	+39 56.1					
1985	02 24	06 54.19	+38 42.9	1.684	2.389	124.5	20.0	17.8
1985	03 06	06 57.17	+37 25.9					
1985	03 16	07 03.27	+36 08.0	1.931	2.426	107.7	23.0	18.2
1985	03 26	07 11.93	+34 50.0					
1985	04 05	07 22.64	+33 32.0	2.204	2.464	92.7	23.9	18.5

1982 BO1 a,e,i = 2.17, 0.08, 2 Elements MPC 6817

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	10 27	07 42.09	+23 34.4	1.815	2.215	-1.45	+4.2	18.6
1984	11 06	07 50.83	+23 14.8					
1984	11 16	07 56.85	+23 00.6	1.569	2.198	-1.71	+5.5	18.2
1984	11 26	07 59.68	+22 53.7					
1984	12 06	07 58.92	+22 55.2	1.358	2.180	-2.04	+6.6	17.8
1984	12 16	07 54.39	+23 04.7					
1984	12 26	07 46.25	+23 19.8	1.213	2.162	-2.37	+6.6	17.3
1985	01 05	07 35.34	+23 36.2					
1985	01 15	07 23.11	+23 49.0	1.162	2.143	-2.48	+5.3	16.9
1985	01 25	07 11.37	+23 55.0					
1985	02 04	07 01.90	+23 53.1	1.216	2.125	-2.27	+3.8	17.4
1985	02 14	06 55.88	+23 44.6					
1985	02 24	06 53.81	+23 31.4	1.354	2.108	-1.93	+3.1	17.8
1985	03 06	06 55.68	+23 14.3					
1985	03 16	07 01.12	+22 53.7	1.540	2.090	-1.63	+3.1	18.2
1985	03 26	07 09.64	+22 28.9					
1985	04 05	07 20.74	+21 58.8	1.748	2.074	-1.41	+3.5	18.5

1979 MV6 a,e,i = 2.42, 0.06, 4 Elements MPC 8675

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 49.01	+18 03.1	2.171	2.502	97.4	23.2	19.2
1984	11 06	07 55.36	+17 27.1					
1984	11 16	07 59.18	+16 55.9	1.931	2.512	114.8	20.9	18.9
1984	11 26	08 00.16	+16 31.8					
1984	12 06	07 58.10	+16 16.2	1.726	2.521	135.1	16.0	18.6
1984	12 16	07 53.03	+16 10.1					
1984	12 26	07 45.25	+16 13.2	1.591	2.530	158.1	8.3	18.2
1985	01 05	07 35.51	+16 24.3					
1985	01 15	07 24.94	+16 40.8	1.558	2.537	173.4	2.5	17.9
1985	01 25	07 14.84	+17 00.2					
1985	02 04	07 06.44	+17 20.2	1.638	2.544	150.8	10.9	18.3
1985	02 14	07 00.60	+17 39.1					
1985	02 24	06 57.76	+17 55.9	1.811	2.550	128.8	17.6	18.7
1985	03 06	06 58.00	+18 09.4					
1985	03 16	07 01.13	+18 19.0	2.043	2.555	109.6	21.5	19.1
1985	03 26	07 06.83	+18 23.9					
1985	04 05	07 14.77	+18 23.2	2.302	2.558	93.1	23.0	19.4

(2969) 1978 RU1 a,e,i = 2.85, 0.03, 2 Elements MPC 8389

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 51.96	+18 50.6	2.633	2.924	96.9	19.7	18.9
1984	11 06	07 57.18	+18 29.8					
1984	11 16	08 00.20	+18 14.5	2.366	2.923	114.9	17.9	18.6
1984	11 26	08 00.79	+18 06.1					
1984	12 06	07 58.81	+18 05.7	2.138	2.923	135.4	13.7	18.3
1984	12 16	07 54.30	+18 13.2					
1984	12 26	07 47.53	+18 27.8	1.985	2.922	158.3	7.1	18.0
1985	01 05	07 39.09	+18 47.7					
1985	01 15	07 29.86	+19 10.1	1.939	2.921	175.9	1.4	17.6
1985	01 25	07 20.86	+19 32.7					
1985	02 04	07 13.10	+19 53.4	2.009	2.919	152.4	9.0	18.0
1985	02 14	07 07.35	+20 10.9					
1985	02 24	07 04.08	+20 24.8	2.179	2.917	130.1	15.0	18.4
1985	03 06	07 03.47	+20 34.7					
1985	03 16	07 05.43	+20 40.4	2.414	2.915	110.4	18.7	18.7
1985	03 26	07 09.77	+20 41.8					
1985	04 05	07 16.21	+20 38.3	2.681	2.912	93.1	20.1	18.9

(2986) 2525 P-L a,e,i = 3.19, 0.14, 3 Elements MPC 8400

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 58.56	+22 44.6	3.005	3.264	96.1	17.6	18.4
1984	11 06	08 02.87	+22 42.0					
1984	11 16	08 05.09	+22 45.6	2.752	3.290	114.7	15.8	18.1
1984	11 26	08 05.03	+22 56.0					
1984	12 06	08 02.62	+23 13.0	2.539	3.315	135.5	12.0	17.9
1984	12 16	07 57.95	+23 35.4					
1984	12 26	07 51.30	+24 01.0	2.405	3.340	158.4	6.2	17.6
1985	01 05	07 43.22	+24 27.1					
1985	01 15	07 34.49	+24 50.6	2.382	3.364	175.7	1.3	17.3
1985	01 25	07 25.96	+25 09.3					
1985	02 04	07 18.50	+25 21.9	2.479	3.387	152.9	7.6	17.8
1985	02 14	07 12.76	+25 28.4					
1985	02 24	07 09.14	+25 29.3	2.681	3.409	130.7	12.7	18.1
1985	03 06	07 07.83	+25 25.6					
1985	03 16	07 08.79	+25 17.9	2.952	3.431	110.6	15.7	18.4
1985	03 26	07 11.85	+25 06.7					
1985	04 05	07 16.80	+24 52.1	3.256	3.451	92.7	16.8	18.6

(2974) 1955 QK a,e,i = 2.31, 0.14, 6 Elements MPC 8396

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 58.21	+14 13.9	2.085	2.379	94.5	24.6	19.0
1984	11 06	08 05.06	+13 18.1					
1984	11 16	08 09.33	+12 27.0	1.865	2.409	111.4	22.5	18.8
1984	11 26	08 10.73	+11 43.1					
1984	12 06	08 09.05	+11 09.2	1.675	2.437	131.0	17.8	18.5
1984	12 16	08 04.28	+10 47.4					
1984	12 26	07 56.69	+10 39.4	1.547	2.464	153.1	10.4	18.1
1985	01 05	07 46.99	+10 45.3					
1985	01 15	07 36.28	+11 03.7	1.516	2.490	169.6	4.1	17.9
1985	01 25	07 25.85	+11 31.7					
1985	02 04	07 16.97	+12 05.7	1.597	2.513	152.7	10.4	18.3
1985	02 14	07 10.55	+12 42.1					
1985	02 24	07 07.07	+13 17.7	1.773	2.535	131.0	17.1	18.7
1985	03 06	07 06.66	+13 50.2					
1985	03 16	07 09.11	+14 17.8	2.013	2.555	111.8	21.2	19.0
1985	03 26	07 14.15	+14 39.2					
1985	04 05	07 21.43	+14 53.6	2.284	2.573	95.1	22.8	19.4

1979 SG9 a,e,i = 2.68, 0.16, 12 Elements MPC 7156

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 44.83	+06 42.6	1.929	2.263	96.2	25.9	17.6
1984	11 06	07 53.10	+05 16.0					
1984	11 16	07 58.89	+03 52.3	1.720	2.274	111.3	23.9	17.3
1984	11 26	08 01.90	+02 35.7					
1984	12 06	08 01.93	+01 31.0	1.541	2.290	128.7	19.6	17.0
1984	12 16	07 58.96	+00 43.3					
1984	12 26	07 53.25	+00 17.7	1.419	2.308	147.2	13.4	16.7
1985	01 05	07 45.46	+00 18.1					
1985	01 15	07 36.65	+00 45.0	1.382	2.329	159.4	8.5	16.5
1985	01 25	07 28.05	+01 36.0					
1985	02 04	07 20.92	+02 44.8	1.445	2.353	150.2	12.0	16.7
1985	02 14	07 16.14	+04 03.9					
1985	02 24	07 14.22	+05 26.0	1.599	2.379	132.1	18.0	17.1
1985	03 06	07 15.30	+06 44.9					
1985	03 16	07 19.21	+07 56.4	1.817	2.407	114.6	22.1	17.5
1985	03 26	07 25.67	+08 57.7					
1985	04 05	07 34.33	+09 47.3	2.073	2.437	98.9	23.9	17.9

4081 P-L a,e,i = 2.24, 0.14, 7 Elements MPC 5980

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 10 27	07 55.79	+12 45.0	1.872	2.191	94.8	26.9	19.6
1984 11 06	08 03.73	+11 41.1					
1984 11 16	08 08.97	+10 42.0	1.670	2.225	111.0	24.5	19.3
1984 11 26	08 11.15	+09 50.9					
1984 12 06	08 10.04	+09 11.2	1.494	2.258	130.0	19.5	19.0
1984 12 16	08 05.61	+08 46.2					
1984 12 26	07 58.11	+08 38.3	1.377	2.290	151.7	11.8	18.7
1985 01 05	07 48.31	+08 48.4					
1985 01 15	07 37.41	+09 14.9	1.351	2.322	167.9	5.1	18.5
1985 01 25	07 26.82	+09 54.3					
1985 02 04	07 17.93	+10 41.8	1.433	2.352	152.6	11.1	18.8
1985 02 14	07 11.71	+11 32.0					
1985 02 24	07 08.64	+12 21.1	1.608	2.381	131.4	18.2	19.2
1985 03 06	07 08.81	+13 05.6					
1985 03 16	07 11.98	+13 43.5	1.845	2.408	112.5	22.4	19.7
1985 03 26	07 17.81	+14 13.5					
1985 04 05	07 25.92	+14 34.7	2.113	2.434	96.2	24.1	20.0

1979 MC a,e,i = 2.43, 0.27, 12 Elements MPC 8277

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 10 27	08 06.64	+10 34.4	2.756	2.957	91.7	19.6	20.0
1984 11 06	08 11.07	+10 05.8					
1984 11 16	08 13.38	+09 44.0	2.503	2.984	109.7	18.2	19.8
1984 11 26	08 13.36	+09 30.9					
1984 12 06	08 10.88	+09 28.9	2.279	3.008	130.0	14.5	19.5
1984 12 16	08 05.96	+09 39.4					
1984 12 26	07 58.82	+10 03.0	2.123	3.028	152.3	8.7	19.2
1985 01 05	07 50.00	+10 39.1					
1985 01 15	07 40.27	+11 25.5	2.072	3.045	170.1	3.2	19.0
1985 01 25	07 30.58	+12 18.7					
1985 02 04	07 21.90	+13 15.0	2.142	3.059	154.1	8.1	19.3
1985 02 14	07 15.00	+14 10.7					
1985 02 24	07 10.37	+15 03.2	2.320	3.070	131.8	13.9	19.6
1985 03 06	07 08.26	+15 50.6					
1985 03 16	07 08.62	+16 31.9	2.569	3.077	111.5	17.5	19.9
1985 03 26	07 11.32	+17 06.3					
1985 04 05	07 16.12	+17 33.6	2.853	3.081	93.5	18.9	20.2

4008 P-L a,e,i = 2.24, 0.16, 4 Elements MPC 6106

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 10 27	07 56.35	+24 57.9	1.623	2.004	97.0	29.5	18.7
1984 11 06	08 07.07	+24 37.2					
1984 11 16	08 14.71	+24 23.2	1.438	2.037	112.8	26.6	18.4
1984 11 26	08 18.82	+24 18.2					
1984 12 06	08 19.02	+24 23.3	1.280	2.072	132.0	20.7	18.1
1984 12 16	08 15.13	+24 37.6					
1984 12 26	08 07.37	+24 57.7	1.177	2.109	154.8	11.4	17.7
1985 01 05	07 56.60	+25 18.0					
1985 01 15	07 44.36	+25 32.3	1.165	2.147	175.7	2.0	17.4
1985 01 25	07 32.48	+25 36.7					
1985 02 04	07 22.74	+25 30.2	1.257	2.185	153.8	11.5	18.0
1985 02 14	07 16.27	+25 14.6					
1985 02 24	07 13.53	+24 52.6	1.438	2.223	131.7	19.4	18.5
1985 03 06	07 14.48	+24 26.1					
1985 03 16	07 18.71	+23 56.0	1.677	2.260	113.1	23.9	18.9
1985 03 26	07 25.73	+23 22.5					
1985 04 05	07 35.05	+22 45.0	1.947	2.297	97.1	25.6	19.3

1979 HF5 a,e,i = 2.24, 0.10, 5 Elements MPC 8287

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	08 05.32	+14 40.3	2.180	2.441	92.9	24.0	18.7
1984	11 06	08 13.14	+13 55.5					
1984	11 16	08 18.71	+13 15.5	1.919	2.433	109.4	22.6	18.4
1984	11 26	08 21.67	+12 43.0					
1984	12 06	08 21.71	+12 20.8	1.683	2.422	128.5	18.6	18.0
1984	12 16	08 18.67	+12 11.2					
1984	12 26	08 12.56	+12 15.8	1.505	2.410	150.4	11.6	17.6
1985	01 05	08 03.83	+12 34.7					
1985	01 15	07 53.36	+13 06.0	1.418	2.396	171.6	3.4	17.1
1985	01 25	07 42.43	+13 46.1					
1985	02 04	07 32.48	+14 30.6	1.442	2.380	156.8	9.4	17.4
1985	02 14	07 24.72	+15 15.0					
1985	02 24	07 19.96	+15 56.3	1.565	2.363	134.1	17.5	17.7
1985	03 06	07 18.53	+16 32.0					
1985	03 16	07 20.39	+17 00.7	1.753	2.345	114.3	22.7	18.1
1985	03 26	07 25.26	+17 21.4					
1985	04 05	07 32.80	+17 33.5	1.974	2.326	97.4	25.3	18.4

1981 XA a,e,i = 2.01, 0.20, 21 Elements MPC 8393

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	07 26.18	+19 56.7	1.051	1.602	103.1	37.2	17.5
1984	11 06	07 43.07	+22 20.6					
1984	11 16	07 57.80	+25 18.3	0.889	1.600	116.8	33.5	17.0
1984	11 26	08 09.63	+28 56.1					
1984	12 06	08 17.67	+33 15.6	0.765	1.608	133.1	26.6	16.6
1984	12 16	08 20.96	+38 08.9					
1984	12 26	08 18.55	+43 14.6	0.705	1.625	148.1	18.7	16.2
1985	01 05	08 10.30	+47 58.5					
1985	01 15	07 57.57	+51 45.7	0.726	1.650	149.4	17.7	16.3
1985	01 25	07 43.45	+54 14.5					
1985	02 04	07 32.03	+55 24.2	0.822	1.683	136.9	23.6	16.7
1985	02 14	07 26.22	+55 29.7					
1985	02 24	07 26.98	+54 48.7	0.972	1.721	122.7	28.9	17.3
1985	03 06	07 33.82	+53 36.0					
1985	03 16	07 45.43	+52 01.2	1.154	1.765	110.2	31.9	17.8
1985	03 26	08 00.51	+50 09.6					
1985	04 05	08 17.95	+48 04.5	1.356	1.811	99.4	33.0	18.2

(2985) 1983 TV1 a,e,i = 2.85, 0.04, 3 Elements MPC 8399

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	10 27	08 12.25	+22 40.8	2.732	2.956	93.0	19.6	18.0
1984	11 06	08 18.54	+22 32.1					
1984	11 16	08 22.74	+22 30.2	2.462	2.959	110.6	18.2	17.7
1984	11 26	08 24.58	+22 36.3					
1984	12 06	08 23.86	+22 51.0	2.224	2.962	130.7	14.6	17.4
1984	12 16	08 20.51	+23 13.6					
1984	12 26	08 14.66	+23 42.1	2.054	2.965	153.1	8.6	17.1
1985	01 05	08 06.75	+24 13.3					
1985	01 15	07 57.52	+24 43.1	1.985	2.966	175.5	1.5	16.7
1985	01 25	07 47.98	+25 08.0					
1985	02 04	07 39.21	+25 25.2	2.034	2.968	157.4	7.3	17.1
1985	02 14	07 32.13	+25 34.0					
1985	02 24	07 27.38	+25 34.9	2.188	2.969	134.7	13.7	17.4
1985	03 06	07 25.28	+25 28.8					
1985	03 16	07 25.83	+25 17.0	2.416	2.969	114.4	17.8	17.7
1985	03 26	07 28.89	+25 00.2					
1985	04 05	07 34.19	+24 38.8	2.681	2.968	96.6	19.6	18.0