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The next MPCs will be published on or about Apr. 15. No MPCs will be issued in March.

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CORRECTED OBSERVATION.

The following observation corrects that previously published.

Object		Date	UT	R. A. (1950)	Decl.	Reference	Mag.	Obs.
1981 ED	*	1981 03 07	.03750	11 40 52.60	+00 33 44.3	MPC 5950	16	511

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IDENTIFICATION CHANGES.

Continuation to MPC 8437.

Object		Date	UT	R. A. (1950)	Decl.	Old desig.	Mag.	N	Obs.
1938 FR	*	1938 03 19	.83442	09 39 23.30	+14 11 50.0	1938 EA		1	012
1981 GS1	*	1981 04 03	.16176	11 32 17.89	+03 52 49.7	1981 GM1			801

Note 1: This redesignation refers to the observation designated 1938 EA on RI 1800. The observation on the same plate erroneously assigned to 1938 EA on RI 1748 has already been redesignated 1938 FO (MPC 1246).

IDENTIFICATIONS.

The following list of identifications with numbered minor planets continues that on MPC 8217. The identifications are all by L. D. Schmadel.

A910 CK = (2892) 1936 QG = (2882) 1948 UF = (2909)
1948 WG = (2909) 1953 SF = (2882) 1978 SB4 = (2884)

* * * * *

DOUBLE DESIGNATIONS.

Continuation to MPC 7055.

	Note		Note		Note
1948 SD = 1948 TK2	1	1975 GK1 = 1975 GP1	2	1983 HK = 1983 HU	3
1983 VN = 1983 VP3	3				

Note 1: double designation by B. G. Marsden. 2: by C. M. Bardwell. 3: by F. N. Bowman.

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OBSERVATIONS OF COMETS.

Observations are published here for the following observatory codes:

017 Hoher List Observatory. Observers M. Geffert and M. Hoffmann. Measured and reduced by Geffert, P. Muller and H. Weiland.
022 Pino Torinese. Observer G. De Sanctis.
046 Klet. Observer Z. Vavrova.
323 Perth Observatory, Bickley. Observers M. P. Candy and J. Johnston.
372 Geisei. Observer T. Seki. In part from Orient. Astron. Assoc. Comet Bull. No. 256.
381 Tokyo Observatory's Kiso Station. Observers H. Kosai and K. Hurukawa (assisted by J. Watanabe).
474 Mt. John University Observatory. Observer A. C. Gilmore. Measured by P. M. Kilmartin (assisted by R. McIntosh and W. M. Kissling).
493 Calar Alto. Observer L. Kohoutek.
494 Stakenbridge. Observer B. Manning.
568 Canada-France-Hawaii Observatory, Mauna Kea. Observer R. Racine.
675 Palomar. The observations of comet 1983p are by C. and E. Shoemaker (0.46-m Schmidt); that of comet 1983q is by J. Gibson (1.2-m Schmidt).
688 Lowell Observatory, Anderson Mesa Station. Observers B. Skiff and E. Bowell. Measured by Bowell.
707 Chamberlin Observatory, field station. 0.40-m f/5.5 reflector. Observers E. Everhart and S. Siegel.
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. The positions of comet 1982i were measured by R. M. West from CCD images by H. Pedersen and himself with the 1.5-m Danish reflector. The other observations are by G. de Sanctis with the 0.4-m astrograph.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
		Periodic Comet Smirnova-Chernykh					
/1975 VII	1984	01 09.41382	11 57 50.36	+08 34 30.0	17.0N	1	801
		Periodic Comet Encke					
/1980 XI	1984	01 27.42569	23 32 56.15	+05 38 22.0	17	T	372

Periodic Comet Churyumov-Gerasimenko

/1982	VIII	1982	10	28.00854	05	38	29.82	+22	52	28.1	022
/1982	VIII	1982	11	09.94571	06	13	30.61	+27	09	49.7	022
/1982	VIII	1982	11	09.97133	06	13	34.38	+27	10	20.9	022
/1982	VIII	1983	01	09.89758	07	09	14.39	+40	05	26.1	022
/1982	VIII	1983	01	09.93220	07	09	13.99	+40	05	25.9	022
/1982	VIII	1983	01	10.89034	07	09	07.16	+40	04	58.6	022
/1982	VIII	1983	01	10.91735	07	09	06.80	+40	04	57.8	022
/1982	VIII	1983	01	11.88657	07	08	59.91	+40	04	03.8	022
/1982	VIII	1983	01	11.92628	07	08	59.45	+40	04	02.9	022
/1982	VIII	1983	01	13.92353	07	08	47.32	+40	00	56.4	022
/1982	VIII	1983	01	13.94777	07	08	46.99	+40	00	55.5	022
/1982	VIII	1983	01	16.91829	07	08	37.01	+39	53	23.8	022
/1982	VIII	1983	01	16.94946	07	08	36.75	+39	53	19.6	022
/1982	VIII	1983	01	17.90984	07	08	35.96	+39	50	10.1	022
/1982	VIII	1983	01	17.93407	07	08	35.82	+39	50	05.7	022
/1982	VIII	1983	01	18.87112	07	08	36.56	+39	46	43.9	022
/1982	VIII	1983	01	18.90090	07	08	36.50	+39	46	36.3	022
/1982	VIII	1983	01	20.96191	07	08	41.46	+39	38	11.3	022
/1982	VIII	1983	01	20.98476	07	08	41.43	+39	38	05.5	022
/1982	VIII	1983	02	01.83824	07	11	32.94	+38	28	19.6	022
/1982	VIII	1983	02	01.86387	07	11	33.48	+38	28	09.2	022
/1982	VIII	1983	02	02.84763	07	11	58.68	+38	21	07.3	022
/1982	VIII	1983	02	02.87809	07	11	59.31	+38	20	54.0	022
/1982	VIII	1983	02	02.88502	07	11	59.58	+38	20	52.9	022
/1982	VIII	1983	02	02.91896	07	12	00.38	+38	20	38.0	022
/1982	VIII	1983	02	03.86499	07	12	26.46	+38	13	40.5	022
/1982	VIII	1983	02	03.89060	07	12	27.06	+38	13	29.4	022
/1982	VIII	1983	02	03.89961	07	12	27.39	+38	13	27.1	022

Periodic Comet Halley

/1982i		1983	12	31.4558	06	29	25.33	+10	12	29.5	23.2N 568
/1982i		1984	01	27.11715	06	13	04.91	+10	40	30.5	23 N 809
/1982i		1984	01	27.14955	06	13	03.81	+10	40	33.1	809
/1982i		1984	01	28.07907	06	12	32.46	+10	41	50.6	809
/1982i		1984	01	28.09678	06	12	31.87	+10	41	52.5	809
/1982i		1984	01	28.11324	06	12	31.30	+10	41	53.1	809
/1982i		1984	01	28.13350	06	12	30.59	+10	41	54.7	809
/1982i		1984	01	28.15162	06	12	30.03	+10	41	56.1	809
/1982i		1984	01	28.16587	06	12	29.51	+10	41	57.1	809
/1982i		1984	01	28.18010	06	12	29.04	+10	41	58.3	809
/1982i		1984	01	28.19435	06	12	28.54	+10	41	59.8	809
/1982i		1984	01	29.08359	06	11	58.88	+10	43	14.7	809
/1982i		1984	01	29.10002	06	11	58.35	+10	43	16.1	809
/1982i		1984	01	29.11428	06	11	57.86	+10	43	17.4	809
/1982i		1984	01	29.13122	06	11	57.27	+10	43	19.1	809
/1982i		1984	01	29.19529	06	11	55.12	+10	43	24.4	809
/1982i		1984	01	30.04962	06	11	27.00	+10	44	37.6	809
/1982i		1984	01	30.07811	06	11	26.01	+10	44	40.2	809
/1982i		1984	01	30.09542	06	11	25.45	+10	44	41.6	809
/1982i		1984	01	30.10966	06	11	24.96	+10	44	42.7	809
/1982i		1984	01	30.12390	06	11	24.48	+10	44	44.0	809
/1982i		1984	01	30.13815	06	11	24.00	+10	44	45.2	809
/1982i		1984	01	30.15499	06	11	23.46	+10	44	46.6	809
/1982i		1984	01	30.16874	06	11	22.94	+10	44	47.6	809
/1982i		1984	01	30.18299	06	11	22.46	+10	44	48.9	809
/1982i		1984	01	30.19375	06	11	22.11	+10	44	49.8	809

Periodic Comet Tempel 1

/1982j	1983	04	05.08171	12	56	48.73	+15	48	24.6	809
/1982j	1983	04	05.08863	12	56	48.32	+15	48	25.4	809
/1982j	1983	04	05.99138	12	55	60.00	+15	49	54.4	022
/1982j	1983	04	06.00938	12	55	59.00	+15	49	56.5	022
/1982j	1983	04	06.21610	12	55	47.93	+15	50	32.9	809
/1982j	1983	04	06.22302	12	55	47.54	+15	50	33.6	809
/1982j	1983	04	07.09010	12	55	01.47	+15	51	49.6	809
/1982j	1983	04	07.09703	12	55	01.10	+15	51	50.5	809
/1982j	1983	04	08.20926	12	54	00.38	+15	53	03.0	809
/1982j	1983	04	08.21688	12	53	59.92	+15	53	03.5	809
/1982j	1983	04	09.11788	12	53	11.13	+15	53	39.2	809
/1982j	1983	04	09.12481	12	53	10.82	+15	53	39.3	809
/1982j	1983	04	09.13450	12	53	10.24	+15	53	39.7	809
/1982j	1983	04	10.09645	12	52	17.71	+15	53	55.0	809
/1982j	1983	04	10.10130	12	52	17.42	+15	53	55.1	809
/1982j	1983	04	11.08300	12	51	23.59	+15	53	45.8	809
/1982j	1983	04	11.08784	12	51	23.29	+15	53	45.5	809
/1982j	1983	04	13.87431	12	48	50.43	+15	50	43.2	022
/1982j	1983	04	13.91102	12	48	48.23	+15	50	39.3	022
/1982j	1983	04	15.14275	12	47	41.46	+15	48	29.7	809
/1982j	1983	04	15.14691	12	47	41.22	+15	48	29.5	809
/1982j	1983	04	18.09955	12	45	04.60	+15	39	43.4	809
/1982j	1983	04	18.10439	12	45	04.28	+15	39	42.1	809
/1982j	1983	04	19.10581	12	44	12.55	+15	35	44.9	809
/1982j	1983	04	19.12451	12	44	11.52	+15	35	40.6	809
/1982j	1983	04	20.10274	12	43	22.01	+15	31	19.9	809
/1982j	1983	04	20.10794	12	43	21.74	+15	31	18.0	809
/1982j	1983	04	21.01966	12	42	36.39	+15	26	46.4	809
/1982j	1983	04	21.02451	12	42	36.17	+15	26	44.7	809
/1982j	1983	04	22.02317	12	41	47.98	+15	21	23.0	809
/1982j	1983	04	22.02870	12	41	47.75	+15	21	21.8	809
/1982j	1983	05	01.87918	12	35	09.64	+14	01	28.4	022
/1982j	1983	05	01.90550	12	35	08.78	+14	01	12.0	022
/1982j	1983	05	03.88064	12	34	11.06	+13	39	35.8	022
/1982j	1983	05	03.89865	12	34	10.47	+13	39	22.8	022
/1982j	1983	05	04.89557	12	33	44.39	+13	27	47.1	022
/1982j	1983	05	08.89677	12	32	22.94	+12	36	46.8	022
/1982j	1983	05	08.91824	12	32	22.54	+12	36	30.6	022
/1982j	1983	05	09.92208	12	32	08.00	+12	22	37.4	022
/1982j	1983	05	09.93594	12	32	07.89	+12	22	24.9	022

Periodic Comet Kopff

/1982k	1983	04	05.17797	15	43	39.44	-11	19	28.2	809
/1982k	1983	04	05.18490	15	43	39.59	-11	19	27.7	809
/1982k	1983	04	06.23895	15	44	05.65	-11	17	03.7	809
/1982k	1983	04	06.24449	15	44	05.82	-11	17	03.2	809
/1982k	1983	04	08.25358	15	44	50.76	-11	12	12.2	809
/1982k	1983	04	08.26119	15	44	51.01	-11	12	11.4	809
/1982k	1983	04	09.28825	15	45	11.25	-11	09	34.8	809
/1982k	1983	04	09.29517	15	45	11.37	-11	09	34.2	809
/1982k	1983	04	10.26751	15	45	29.08	-11	07	01.7	809
/1982k	1983	04	10.27304	15	45	29.19	-11	07	00.8	809
/1982k	1983	04	11.29941	15	45	46.00	-11	04	14.9	809
/1982k	1983	04	11.30436	15	45	46.06	-11	04	14.4	809
/1982k	1983	04	18.30523	15	46	52.74	-10	43	37.5	809
/1982k	1983	04	18.31008	15	46	52.70	-10	43	36.8	809

/1982k	1983	04	19.29350	15	46	55.31	-10	40	30.9			809
/1982k	1983	04	19.29834	15	46	55.29	-10	40	30.1			809
/1982k	1983	04	20.13564	15	46	56.63	-10	37	49.3			809
/1982k	1983	04	20.14256	15	46	56.61	-10	37	48.6			809
/1982k	1983	04	20.41508	15	46	55.83	-10	36	55.7			809
/1982k	1983	04	21.14572	15	46	56.01	-10	34	34.8			809
/1982k	1983	04	21.15270	15	46	56.01	-10	34	33.7			809
/1982k	1983	04	22.13571	15	46	53.75	-10	31	22.4			809
/1982k	1983	04	22.14367	15	46	53.73	-10	31	20.3			809
/1982k	1983	05	01.95190	15	45	02.81	-09	59	16.8			022
/1982k	1983	05	01.96852	15	45	02.42	-09	59	13.8			022
/1982k	1983	05	03.95336	15	44	21.52	-09	52	56.8			022
/1982k	1983	05	03.98175	15	44	20.72	-09	52	51.4			022
/1982k	1983	05	08.96083	15	42	13.63	-09	37	56.2			022
/1982k	1983	05	08.98437	15	42	12.92	-09	37	52.4			022
/1982k	1983	05	30.94340	15	29	28.43	-09	10	55.9			017
/1982k	1983	05	30.96285	15	29	27.81	-09	10	59.3			017
/1982k	1983	06	05.90341	15	26	25.61	-09	20	45.6			022
/1982k	1983	06	05.92351	15	26	25.03	-09	20	47.8			022
/1982k	1983	06	13.94946	15	23	38.13	-09	48	30.2			022
/1982k	1983	06	13.95984	15	23	37.89	-09	48	32.6			022
/1982k	1983	06	15.92771	15	23	15.47	-09	57	56.0			022
/1982k	1983	06	15.95125	15	23	15.29	-09	58	03.2			022
			Periodic Comet IRAS									
/1983j	1983	11	24.75498	22	35	26.07	+42	45	45.8			046
/1983j	1983	11	24.76916	22	35	26.37	+42	45	44.7			046
			Periodic Comet Crommelin									
/1983n	1984	01	01.98703	21	36	41.57	+06	10	34.6	18.5	N	801
/1983n	1984	01	03.08750	21	39	51.47	+06	07	59.1			707
/1983n	1984	01	04.41562	21	43	44.7	+06	05	04	17.5	T	372
/1983n	1984	01	20.74063	22	38	41.6	+05	22	59			017
/1983n	1984	01	22.76882	22	46	30.53	+05	15	18.4	13	T 2	494
/1983n	1984	01	22.78757	22	46	34.95	+05	15	14.3		2	494
/1983n	1984	01	23.09271	22	47	46.84	+05	14	04.6		3	707
/1983n	1984	01	24.41080	22	53	00.64	+05	08	28.4			381
/1983n	1984	01	27.44167	23	05	25.0	+04	53	39	13	T	372
			Comet IRAS (1983o)									
/1983o	1984	01	02.60414	14	48	10.84	-24	53	36.4			474
/1983o	1984	01	02.62521	14	48	11.45	-24	53	21.0	16	N	474
			Comet Shoemaker (1983p)									
/1983p	1983	11	06.16458	22	13	39.00	-04	15	26.4			675
/1983p	1983	11	07.20416	22	12	47.92	-04	34	55.1			675
			Periodic Comet Arend									
/1983q	1983	12	14.46878	10	14	39.96	+33	36	25.4			675
			Periodic Comet Wild 2									
/1983s	1984	01	02.15347	03	59	43.29	+16	16	06.0			688
/1983s	1984	01	04.07304	03	58	24.07	+16	15	14.0			801
/1983s	1984	01	04.08264	03	58	24.02	+16	15	14.5	14.5	T	688
/1983s	1984	01	04.16042	03	58	20.81	+16	15	11.9			688
/1983s	1984	01	30.84306	03	51	33.2	+16	43	11	15	T	493
/1983s	1984	01	30.90208	03	51	33.7	+16	43	20			493

Periodic Comet Taylor

/1983u	1984	01	02.24722	06	59	12.19	+18	19	56.7			707
/1983u	1984	01	03.25455	06	58	26.80	+18	39	16.6			801
/1983u	1984	01	04.55174	06	57	28.7	+19	04	19	16	T	372
/1983u	1984	01	05.25069	06	56	57.09	+19	17	50.3	15.5	T	688
/1983u	1984	01	05.28125	06	56	55.60	+19	18	24.6			688
/1983u	1984	01	05.61736	06	56	40.2	+19	24	59	16	T	372
/1983u	1984	01	08.17778	06	54	44.32	+20	14	38.8	15.5	T	688
/1983u	1984	01	08.22361	06	54	42.01	+20	15	30.5			688
/1983u	1984	01	08.23889	06	54	41.34	+20	15	48.8	15.5	T	688
/1983u	1984	01	08.28472	06	54	39.14	+20	16	48.5			688
/1983u	1984	01	26.15000	06	43	12.69	+25	48	42.6		4	688
/1983u	1984	01	26.21042	06	43	11.16	+25	49	38.8		4	688
/1983u	1984	01	29.22848	06	41	58.54	+26	39	48.8			707

Periodic Comet Hartley-IRAS

/1983v	1984	01	01.96111	20	47	02.10	+11	39	52.2			801
/1983v	1984	01	07.95230	20	46	36.66	+14	08	21.6			801
/1983v	1984	01	09.94993	20	46	32.46	+14	57	49.6			801

Periodic Comet Clark

/1983w	1984	02	01.49861	15	36	38.14	-13	46	03.4			707

Comet Bradfield (1984a)

/1984a	1984	01	11.82361	16	11	54.66	-49	14	54.5			323
/1984a	1984	01	13.81944	16	22	16.92	-50	23	51.0			323
/1984a	1984	01	14.5940	16	26	27.22	-50	49	41.9	11	T 5	474
/1984a	1984	01	14.6273	16	26	37.16	-50	50	56.6		5	474
/1984a	1984	01	15.62396	16	31	59.83	-51	23	23.1	13	T	474
/1984a	1984	01	15.63438	16	32	03.37	-51	23	42.4			474

Note 1: trace of tail in p.a. 300 . 2: coma diameter 0′.5. 3: poor configuration of reference stars. 4: position uncertain. 5: trailed images on dark plate with 0.13-m astrograph; magnitude only a guess.

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OBSERVATIONS MADE AT CAUSSOLS BY A. MAURY AND C. POLLAS. REDUCED BY H. AND R. CHEMIN.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 TF2 *	1983	10 05.06843	00 02 08.09	-01 12 19.3	18	010
1983 TF2	1983	10 07.96194	23 54 23.62	-01 22 31.6		010
1983 TF2	1983	10 07.97932	23 54 20.73	-01 22 33.2		010
1983 TF2	1983	10 08.96880	23 51 40.60	-01 25 47.0		010

OBSERVATIONS MADE AT HOHER LIST BY H. DURBECK AND M. GEFFERT. MEASURED AND REDUCED BY GEFFERT, A. BARTELDREES, P. MULLER, A. PETERS AND H. WEILAND (WITH ASSISTANCE FROM L. D. SCHMADEL AND M. HOFFMANN).

Object	Date	UT	R. A. (1950)	Decl.	Obs.
268	1978	04 06.82116	06 11 26.38	+23 02 38.9	017
268	1978	04 06.84132	06 11 27.72	+23 02 39.0	017
268	1978	04 07.84861	06 12 33.53	+23 02 56.0	017
268	1978	04 07.86597	06 12 34.60	+23 02 56.0	017
376	1978	04 09.83681	06 44 14.43	+22 55 03.6	017
376	1978	04 09.84722	06 44 15.86	+22 54 56.1	017
449	1978	04 06.82116	06 18 39.96	+25 13 11.3	017
449	1978	04 06.84132	06 18 42.17	+25 13 11.5	017
449	1978	04 08.85417	06 22 13.62	+25 12 08.5	017

449	1978	04	08.86458	06	22	14.70	+25	12	08.6		017
449	1978	04	09.83681	06	23	58.16	+25	11	29.9		017
554	1978	04	06.82116	06	25	50.45	+22	54	16.7		017
554	1978	04	06.84132	06	25	52.58	+22	54	15.2		017
554	1978	04	07.84861	06	27	34.62	+22	52	16.8		017
554	1978	04	07.86597	06	27	36.10	+22	52	14.2		017
554	1978	04	08.85417	06	29	17.17	+22	50	14.8		017
554	1978	04	08.86458	06	29	18.24	+22	50	13.3		017
554	1978	04	09.83681	06	30	57.92	+22	48	11.8		017
554	1978	04	09.84722	06	30	59.00	+22	48	10.5		017

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

Object	Date	UT	R. A. (1950)			Decl.			Mag.	N Obs.
92	1984	01 05.84653	06	40	11.29	+22	55	02.5		046
92	1984	01 05.86146	06	40	10.40	+22	55	06.7		046
138	1984	01 26.91337	09	05	13.24	+21	37	05.4		046
138	1984	01 26.92743	09	05	12.38	+21	37	09.2		046
138	1984	01 27.91997	09	04	12.49	+21	41	50.9		046
138	1984	01 27.93414	09	04	11.59	+21	41	55.5		046
138	1984	01 29.90139	09	02	11.53	+21	51	05.8		046
138	1984	01 29.91551	09	02	10.65	+21	51	10.0		046
212	1984	01 26.84132	08	12	25.27	+21	14	34.9		046
212	1984	01 26.85567	08	12	24.54	+21	14	36.9		046
212	1984	01 27.84381	08	11	31.31	+21	15	56.5		046
212	1984	01 27.85799	08	11	30.52	+21	15	57.8		046
212	1984	01 29.82934	08	09	45.38	+21	18	30.7		046
212	1984	01 29.84358	08	09	44.61	+21	18	32.3		046
257	1984	01 29.97355	09	48	48.61	+18	47	22.7		046
257	1984	01 29.98814	09	48	47.89	+18	47	25.4		046
257	1984	02 04.92078	09	44	00.20	+19	12	02.6		046
257	1984	02 04.93507	09	43	59.50	+19	12	06.9		046
283	1983	12 28.89502	06	08	26.45	+29	32	23.2		046
283	1983	12 28.90920	06	08	25.63	+29	32	21.1		046
342	1984	01 11.93293	07	10	29.23	+11	31	00.6		046
342	1984	01 11.94779	07	10	28.33	+11	30	54.3		046
395	1984	01 11.99796	08	10	16.69	+16	55	59.9		046
395	1984	01 12.00936	08	10	15.97	+16	56	01.7		046
484	1984	01 29.97355	09	44	26.20	+17	24	00.4		046
484	1984	01 29.98814	09	44	25.45	+17	24	07.2		046
484	1984	02 04.92078	09	39	33.75	+18	14	59.6		046
484	1984	02 04.93507	09	39	33.05	+18	15	07.6		046
544	1983	12 25.72737	23	05	45.86	+02	38	52.1	14	046
544	1983	12 25.74149	23	05	46.94	+02	38	56.0		046
625	1984	01 11.99796	08	02	06.20	+17	02	40.2		046
625	1984	01 12.00936	08	02	05.55	+17	02	44.8		046
629	1983	12 28.85689	05	27	02.05	+23	17	30.3		046
629	1983	12 28.87101	05	27	01.27	+23	17	32.4		046
629	1984	01 01.80341	05	23	35.73	+23	29	24.8		046
629	1984	01 01.81765	05	23	34.95	+23	29	28.5		046
644	1984	01 26.84132	08	01	34.12	+20	50	59.8		046
644	1984	01 26.85567	08	01	33.27	+20	51	02.9		046
644	1984	01 27.84381	08	00	34.97	+20	54	13.9		046
644	1984	01 27.85799	08	00	34.09	+20	54	16.0		046
644	1984	01 29.82934	07	58	38.84	+21	00	24.6		046
644	1984	01 29.84358	07	58	38.09	+21	00	28.5		046
797	1984	01 05.75677	03	56	03.81	+18	26	47.7		046
797	1984	01 05.77234	03	56	03.44	+18	26	46.2		046
861	1984	01 26.91337	09	07	26.22	+19	49	45.0		046
861	1984	01 26.92743	09	07	25.64	+19	49	49.8		046

930	1984	02	01.87199	09	21	41.33	+26	59	16.4	046
930	1984	02	01.88623	09	21	40.49	+26	59	17.1	046
930	1984	02	04.88374	09	18	03.82	+27	01	58.8	046
930	1984	02	04.89792	09	18	02.95	+27	01	59.1	046
940	1983	12	28.85689	05	23	52.29	+25	40	14.4	046
940	1983	12	28.87101	05	23	51.57	+25	40	14.5	046
940	1984	01	01.80341	05	20	46.20	+25	41	23.6	046
940	1984	01	01.81765	05	20	45.58	+25	41	25.5	046
942	1984	01	26.94821	09	25	43.95	+29	14	15.4	046
942	1984	01	26.96238	09	25	43.22	+29	14	19.0	046
942	1984	01	27.99861	09	24	50.45	+29	20	21.1	046
942	1984	01	28.01285	09	24	49.67	+29	20	25.2	046
942	1984	01	29.93779	09	23	10.66	+29	31	17.0	046
942	1984	01	29.95220	09	23	09.84	+29	31	21.8	046
942	1984	02	01.87199	09	20	36.39	+29	46	59.8	046
942	1984	02	01.88623	09	20	35.56	+29	47	04.6	046
969	1983	12	25.84068	05	11	17.66	+24	34	38.5	046
969	1983	12	25.85515	05	11	16.78	+24	34	34.1	046
984	1983	12	25.72737	23	02	27.17	+02	06	37.9	14 046
984	1983	12	25.74149	23	02	28.47	+02	06	44.8	046
1000	1984	01	27.91997	09	05	47.97	+24	02	57.3	046
1000	1984	01	27.93414	09	05	47.09	+24	02	57.8	046
1000	1984	01	29.90139	09	03	49.59	+24	02	44.8	046
1000	1984	01	29.91551	09	03	48.83	+24	02	44.8	046
1100	1983	12	25.84068	05	16	20.32	+24	03	28.1	046
1100	1983	12	25.85515	05	16	19.50	+24	03	25.9	046
1130	1984	01	11.99796	08	06	32.62	+16	44	54.3	046
1130	1984	01	12.00936	08	06	31.94	+16	44	55.1	046
1162	1983	12	28.85689	05	27	23.81	+24	59	18.7	046
1162	1983	12	28.87101	05	27	23.04	+24	59	17.8	046
1162	1984	01	01.80341	05	24	44.82	+24	57	21.1	046
1162	1984	01	01.81765	05	24	44.10	+24	57	21.0	046
1336	1983	12	25.80278	04	52	30.71	+21	10	12.9	046
1336	1983	12	25.81690	04	52	29.91	+21	10	12.9	046
1336	1983	12	28.81979	04	50	04.82	+21	09	34.2	046
1336	1983	12	28.83391	04	50	04.08	+21	09	34.6	046
1336	1984	01	01.78530	04	47	07.76	+21	09	00.2	046
1348	1984	01	27.91997	09	00	56.07	+24	37	55.3	046
1348	1984	01	27.93414	09	00	55.22	+24	38	01.3	046
1348	1984	01	29.90139	08	59	07.82	+24	50	26.1	046
1348	1984	01	29.91551	08	59	06.90	+24	50	30.7	046
1449	1983	12	28.92899	06	58	47.22	+20	52	50.6	046
1449	1983	12	28.94311	06	58	46.35	+20	52	53.5	046
1449	1984	01	05.84653	06	49	29.43	+21	26	32.7	046
1449	1984	01	05.86146	06	49	28.36	+21	26	36.6	046
1450	1983	12	28.85689	05	20	22.48	+25	08	51.9	046
1450	1983	12	28.87101	05	20	21.53	+25	08	53.5	046
1450	1984	01	01.80341	05	16	51.36	+25	15	36.6	046
1450	1984	01	01.81765	05	16	50.58	+25	15	39.0	046
1527	1984	01	27.91997	09	06	42.23	+24	24	43.3	046
1527	1984	01	27.93414	09	06	41.42	+24	24	48.0	046
1527	1984	01	29.90139	09	04	25.43	+24	33	16.1	046
1527	1984	01	29.91551	09	04	24.45	+24	33	19.4	046
1683	1984	01	26.91337	09	10	09.75	+21	20	23.2	046
1683	1984	01	26.92743	09	10	08.82	+21	20	23.2	046
1683	1984	01	27.91997	09	09	10.37	+21	21	57.5	046
1683	1984	01	27.93414	09	09	09.89	+21	21	58.8	046
1683	1984	01	29.90139	09	07	13.11	+21	24	57.8	046
1683	1984	01	29.91551	09	07	12.29	+21	24	57.4	046

1785	1984	01	05.79931	03	59	37.48	+23	00	53.9		046
1785	1984	01	05.82083	03	59	37.04	+23	00	48.2		046
1793	1983	12	25.80278	04	51	47.44	+20	57	45.0		046
1793	1983	12	25.81690	04	51	46.47	+20	57	42.8		046
1793	1983	12	28.81979	04	48	48.34	+20	51	44.8		046
1793	1983	12	28.83391	04	48	47.40	+20	51	42.1		046
1793	1984	01	01.77101	04	45	14.78	+20	44	24.4		046
1793	1984	01	01.78530	04	45	14.18	+20	44	23.4		046
1797	1983	12	28.89502	06	04	32.89	+28	30	22.4		046
1797	1983	12	28.90920	06	04	32.11	+28	30	20.8		046
1856	1983	12	28.96528	07	09	36.53	+14	26	39.3		046
1856	1983	12	28.97946	07	09	35.62	+14	26	39.4		046
2112	1984	01	11.99796	08	02	37.55	+15	28	05.7		046
2112	1984	01	12.00936	08	02	36.93	+15	28	06.5		046
2118	1984	02	01.80168	08	00	27.85	+26	01	49.3		046
2118	1984	02	01.81603	08	00	26.96	+26	01	48.3		046
2129	1983	12	28.89502	06	02	56.16	+29	34	46.5		046
2129	1983	12	28.90920	06	02	54.95	+29	34	48.6		046
2371	1983	12	25.84068	05	23	58.74	+21	39	09.8		046
2371	1983	12	25.85515	05	23	57.71	+21	39	08.7		046
2372	1983	12	25.84068	05	12	16.44	+21	57	17.5		046
2372	1983	12	25.85515	05	12	15.70	+21	57	17.4		046
2383	1984	01	26.91337	09	01	30.06	+23	15	31.8		046
2383	1984	01	26.92743	09	01	28.97	+23	15	35.9		046
2383	1984	01	27.91997	09	00	21.06	+23	19	44.3		046
2383	1984	01	27.93414	09	00	20.04	+23	19	47.5		046
2383	1984	01	29.90139	08	58	04.90	+23	27	44.7		046
2383	1984	01	29.91551	08	58	03.95	+23	27	48.7		046
2402	1984	02	01.83686	08	20	51.34	+24	31	31.3		046
2402	1984	02	01.85104	08	20	50.36	+24	31	31.1		046
2443	1984	01	26.84132	08	06	18.54	+21	04	31.8		046
2443	1984	01	26.85567	08	06	17.84	+21	04	37.2		046
2443	1984	01	27.84381	08	05	26.93	+21	10	43.6		046
2443	1984	01	27.85799	08	05	26.17	+21	10	49.2		046
2443	1984	01	29.82934	08	03	45.07	+21	22	49.8		046
2443	1984	01	29.84358	08	03	44.37	+21	22	55.4		046
2524	1984	02	04.85532	08	35	41.31	+18	27	03.8		046
2524	1984	02	04.86250	08	35	40.56	+18	27	07.5		046
2556	1983	12	28.92899	06	53	03.85	+20	31	08.6		046
2556	1983	12	28.94311	06	53	02.84	+20	31	10.9		046
2757	1983	12	28.85689	05	27	48.47	+24	18	58.7		046
2757	1983	12	28.87101	05	27	47.69	+24	18	57.4		046
2757	1984	01	01.80341	05	24	38.83	+24	16	02.5		046
2757	1984	01	01.81765	05	24	38.28	+24	16	03.9		046
2763	1984	02	04.85532	08	32	20.05	+18	47	44.1		046
2763	1984	02	04.86250	08	32	19.12	+18	47	46.5		046
2781	1983	12	28.92899	06	52	07.26	+20	17	11.2		046
2781	1983	12	28.94311	06	52	06.48	+20	17	11.8		046
2781	1984	01	05.84653	06	44	57.97	+20	30	37.0		046
2781	1984	01	05.86146	06	44	57.12	+20	30	40.7		046
2801	1984	01	26.94821	09	27	27.64	+29	23	11.2		046
2801	1984	01	26.96238	09	27	26.91	+29	23	15.9		046
2801	1984	01	27.99861	09	26	29.16	+29	27	57.4	1	046
2801	1984	01	28.01285	09	26	28.00	+29	28	04.0		046
2811	1984	01	26.87668	08	30	29.46	+19	42	46.2		046
2811	1984	01	26.89080	08	30	28.84	+19	42	48.0		046
2811	1984	01	27.88218	08	29	33.71	+19	45	43.6		046
2811	1984	01	27.89641	08	29	32.93	+19	45	46.3		046
2811	1984	01	29.86580	08	27	43.47	+19	51	26.0		046

2811		1984	01	29.87986	08	27	42.77	+19	51	27.8		046
1982	UB1	1984	01	26.84132	08	07	24.48	+22	04	03.8		046
1982	UB1	1984	01	26.85567	08	07	23.74	+22	04	12.1		046
1982	UB1	1984	01	27.84381	08	06	33.69	+22	07	08.4		046
1982	UB1	1984	01	27.85799	08	06	32.98	+22	07	11.1		046
1982	UB1	1984	01	29.82934	08	04	54.15	+22	13	02.4		046
1982	UB1	1984	01	29.84358	08	04	53.42	+22	13	05.7		046
1983	XF	1984	01	05.79931	03	59	55.81	+22	50	13.1	16.8	046
1983	XF	1984	01	05.82083	03	59	55.48	+22	50	20.5		046
1983	XX	1983	12	25.80278	04	51	13.39	+22	07	28.6		046
1983	XX	1983	12	25.81690	04	51	12.86	+22	07	20.9		046
1983	XX	1983	12	28.81979	04	48	53.10	+21	36	03.9		046
1983	XX	1983	12	28.83391	04	48	52.46	+21	35	57.0		046
1983	XX	1984	01	01.77101	04	46	15.53	+20	56	47.4		046
1983	XX	1984	01	01.78530	04	46	14.99	+20	56	40.7		046
1983	YB *	1983	12	25.76736	04	48	18.36	+25	47	43.6		046
1983	YB	1983	12	25.78154	04	48	17.49	+25	47	47.2		046
1983	YC *	1983	12	25.80278	04	49	24.20	+19	44	30.1	17.0	046
1983	YC	1983	12	25.81690	04	49	23.45	+19	44	32.5		046
1983	YC	1983	12	28.81979	04	47	18.32	+19	41	02.2		046
1983	YC	1983	12	28.83391	04	47	17.80	+19	41	04.7		046
1983	YC	1984	01	01.77101	04	44	56.91	+19	37	34.6		046
1983	YC	1984	01	01.78530	04	44	56.41	+19	37	37.5		046
1983	YD *	1983	12	25.84068	05	22	27.53	+24	25	30.2	16.8	046
1983	YD	1983	12	25.85515	05	22	26.67	+24	25	33.2		046
1983	YD	1983	12	28.85689	05	19	26.11	+24	28	05.7		046
1983	YD	1983	12	28.87101	05	19	25.26	+24	28	07.2		046
1983	YD	1984	01	01.80341	05	15	45.33	+24	30	59.1		046
1983	YD	1984	01	01.81765	05	15	44.49	+24	31	01.9		046
1983	YE *	1983	12	28.78310	04	51	20.32	+25	47	25.6	17.0	046
1983	YE	1983	12	28.79722	04	51	19.29	+25	47	23.4		046
1983	YF *	1983	12	28.81979	04	46	33.73	+19	40	46.3	16.8	046
1983	YF	1983	12	28.83391	04	46	33.07	+19	40	47.5		046
1983	YG *	1983	12	28.85689	05	19	30.46	+24	46	15.0	16.8	046
1983	YG	1983	12	28.87101	05	19	29.77	+24	46	14.1		046
1983	YH *	1983	12	28.92899	06	51	48.23	+21	44	50.2	16.4	046
1983	YH	1983	12	28.94311	06	51	47.35	+21	44	53.9		046
1983	YH	1984	01	01.83779	06	48	09.16	+22	03	55.5		046
1983	YH	1984	01	01.85208	06	48	08.36	+22	04	01.6		046
1983	YH	1984	01	05.84653	06	44	23.51	+22	23	17.1		046
1983	YH	1984	01	05.86146	06	44	22.38	+22	23	22.5		046
1983	YJ *	1983	12	28.96528	07	17	37.35	+12	41	37.1	16.4	046
1983	YJ	1983	12	28.97946	07	17	36.26	+12	41	36.1		046
1983	YJ	1984	01	11.93293	07	02	43.15	+13	03	30.1		046
1983	YJ	1984	01	11.94779	07	02	42.26	+13	03	30.9		046
1984	AG *	1984	01	05.75677	03	52	27.43	+20	39	49.6	17.0	046
1984	AG	1984	01	05.77234	03	52	26.88	+20	39	47.8		046
1984	AH *	1984	01	05.75677	04	01	52.79	+21	21	27.4	17.0	046
1984	AH	1984	01	05.77234	04	01	52.21	+21	21	29.3		046
1984	AL1 *	1984	01	11.93293	07	01	05.54	+13	30	48.2	17.0	046
1984	AL1	1984	01	11.94779	07	01	04.69	+13	30	51.5		046
1984	BH *	1984	01	26.84132	08	02	47.49	+22	16	43.6	16.8	046
1984	BH	1984	01	26.85567	08	02	46.43	+22	16	39.6		046
1984	BH	1984	01	27.84381	08	01	46.38	+22	12	07.7		046
1984	BH	1984	01	27.85799	08	01	45.52	+22	12	01.8		046
1984	BH	1984	01	29.82934	07	59	47.35	+22	02	43.2		046
1984	BH	1984	01	29.84358	07	59	46.59	+22	02	39.9		046
1984	BJ *	1984	01	26.84132	08	07	53.57	+21	26	24.0		046
1984	BJ	1984	01	26.85567	08	07	52.72	+21	26	27.3		046

1984	BJ		1984	01	27.84381	08	06	57.30	+21	26	30.6		046
1984	BJ		1984	01	27.85799	08	06	56.47	+21	26	30.2		046
1984	BJ		1984	01	29.82934	08	05	06.64	+21	26	36.8		046
1984	BJ		1984	01	29.84358	08	05	05.78	+21	26	36.6		046
1984	BK	*	1984	01	26.84132	08	08	13.12	+20	24	38.1	16.7	046
1984	BK		1984	01	26.85567	08	08	12.45	+20	24	42.3		046
1984	BK		1984	01	27.84381	08	07	07.03	+20	25	56.5		046
1984	BK		1984	01	27.85799	08	07	06.08	+20	25	58.3		046
1984	BK		1984	01	29.82934	08	04	57.11	+20	28	17.5		046
1984	BK		1984	01	29.84358	08	04	56.37	+20	28	18.2		046
1984	BL	*	1984	01	26.87668	08	27	01.97	+21	57	16.3	16.0	2 046
1984	BL		1984	01	26.89080	08	27	01.29	+21	57	19.1		2 046
1984	BL		1984	01	27.88218	08	26	08.59	+22	00	49.2		046
1984	BL		1984	01	27.89641	08	26	07.73	+22	00	52.3		046
1984	BL		1984	01	29.86580	08	24	25.00	+22	07	41.5		046
1984	BL		1984	01	29.87986	08	24	24.22	+22	07	44.7		046
1984	BL		1984	02	01.83686	08	21	52.02	+22	17	32.1		046
1984	BL		1984	02	01.85104	08	21	51.30	+22	17	34.5		046
1984	BM	*	1984	01	26.87668	08	34	49.58	+21	36	50.8	17.5	046
1984	BM		1984	01	26.89080	08	34	48.82	+21	36	56.4		046
1984	BM		1984	01	27.88218	08	33	41.69	+21	42	01.8		046
1984	BM		1984	01	27.89641	08	33	40.70	+21	42	08.8		046
1984	BM		1984	01	29.86580	08	31	28.56	+21	51	59.6		046
1984	BM		1984	01	29.87986	08	31	27.48	+21	52	02.3		046
1984	BN	*	1984	01	26.94821	09	18	00.61	+28	12	44.5	17.0	046
1984	BN		1984	01	26.96238	09	17	59.65	+28	12	50.2		046
1984	BO	*	1984	01	26.94821	09	20	00.91	+28	16	28.1	17.0	046
1984	BO		1984	01	26.96238	09	19	59.98	+28	16	31.3		046
1984	BO		1984	01	29.93779	09	16	29.12	+28	20	42.9		046
1984	BO		1984	01	29.95220	09	16	28.04	+28	20	44.1		046
1984	BO		1984	02	01.87199	09	12	56.30	+28	23	36.4		3 046
1984	BO		1984	02	01.88623	09	12	55.67	+28	23	37.6		3 046
1984	BO		1984	02	04.88374	09	09	16.07	+28	25	14.7		046
1984	BO		1984	02	04.89792	09	09	14.99	+28	25	15.2		046
1984	BP	*	1984	01	26.94821	09	24	07.26	+29	57	54.9	17.2	046
1984	BP		1984	01	26.96238	09	24	06.60	+29	58	01.5		046
1984	BQ	*	1984	01	26.94821	09	26	57.81	+28	59	13.9	16.8	046
1984	BQ		1984	01	26.96238	09	26	56.77	+28	59	20.1		046
1984	BQ		1984	01	27.99861	09	25	53.93	+29	06	15.7		046
1984	BQ		1984	01	28.01285	09	25	52.97	+29	06	22.7		046
1984	BQ		1984	01	29.93779	09	23	53.62	+29	18	50.4		046
1984	BQ		1984	01	29.95220	09	23	52.86	+29	18	55.2		046
1984	BQ		1984	02	01.87199	09	20	45.61	+29	36	43.3		046
1984	BQ		1984	02	01.88623	09	20	44.77	+29	36	49.7		046
1984	BQ		1984	02	04.88374	09	17	27.61	+29	53	34.3		2 046
1984	BQ		1984	02	04.89792	09	17	26.70	+29	53	37.3		2 046
1984	BR	*	1984	01	26.94821	09	27	31.47	+28	34	18.7	17.0	046
1984	BR		1984	01	26.96238	09	27	30.21	+28	34	20.4		046
1984	BR		1984	01	27.99861	09	26	17.50	+28	33	14.3		1 046
1984	BR		1984	01	28.01285	09	26	16.72	+28	33	15.7		1 046
1984	BS	*	1984	01	27.88218	08	24	52.56	+22	32	27.8	17.0	046
1984	BS		1984	01	27.89641	08	24	51.73	+22	32	33.5		046
1984	BS		1984	01	29.86580	08	22	42.15	+22	47	45.0		046
1984	BS		1984	01	29.87986	08	22	41.24	+22	47	50.7		046
1984	BS		1984	02	01.83686	08	19	30.24	+23	09	42.9		046
1984	BS		1984	02	01.85104	08	19	29.26	+23	09	50.8		046
1984	BT	*	1984	01	27.99861	09	16	40.00	+27	36	33.6	16.7	046
1984	BT		1984	01	28.01285	09	16	39.46	+27	36	38.9		046
1984	BT		1984	01	29.93779	09	15	04.84	+27	47	39.0		046

1984	BT		1984	02	01.87199	09	12	37.80	+28	03	38.5	046
1984	BT		1984	02	01.88623	09	12	37.33	+28	03	42.5	046
1984	BT		1984	02	04.88374	09	10	05.00	+28	19	08.2	046
1984	BT		1984	02	04.89792	09	10	04.34	+28	19	12.5	046
1984	BU	*	1984	01	29.97355	09	49	02.84	+19	42	35.5	16.8 046
1984	BU		1984	01	29.98814	09	49	02.28	+19	42	39.3	046
1984	BU		1984	02	04.92078	09	43	14.64	+20	14	21.6	046
1984	BU		1984	02	04.93507	09	43	13.88	+20	14	25.1	046
1984	BV	*	1984	01	29.97355	09	49	36.79	+17	40	20.0	17.2 046
1984	BV		1984	01	29.98814	09	49	36.24	+17	40	24.8	046
1984	BW	*	1984	01	29.97355	09	49	56.62	+18	00	03.5	16.6 046
1984	BW		1984	01	29.98814	09	49	55.86	+18	00	15.9	046
1984	BW		1984	02	04.92078	09	44	59.93	+19	19	28.8	046
1984	BW		1984	02	04.93507	09	44	59.06	+19	19	43.3	046
1984	BX	*	1984	01	26.84132	08	09	21.57	+23	52	17.5	17.4 046
1984	BX		1984	01	26.85567	08	09	20.49	+23	52	21.7	046
1984	BX		1984	01	27.84381	08	08	35.02	+24	03	51.7	2 046
1984	BX		1984	01	27.85799	08	08	34.18	+24	03	58.4	046
1984	CA	*	1984	02	01.80168	08	00	54.18	+26	01	52.6	17.0 046
1984	CA		1984	02	01.81603	08	00	53.20	+26	01	59.3	046
1984	CB	*	1984	02	01.83686	08	12	04.58	+22	54	18.2	16.0 046
1984	CB		1984	02	01.85104	08	12	03.77	+22	54	21.5	046
1984	CC	*	1984	02	01.87199	09	20	40.14	+27	32	19.7	046
1984	CC		1984	02	01.88623	09	20	39.26	+27	32	23.3	046
1984	CC		1984	02	04.88374	09	17	38.82	+27	47	00.8	046
1984	CC		1984	02	04.89792	09	17	37.82	+27	47	05.9	046
1984	CD	*	1984	02	04.92078	09	47	44.09	+18	18	08.2	17.0 046
1984	CD		1984	02	04.93507	09	47	43.42	+18	18	12.8	046

Note 1: very faint. 2: near edge of plate. 3: uncertain.

OBSERVATIONS MADE AT KVISTABERG BY C.-I. LAGERKVIST AND FROM. MEASURED BY G. HAMMARBACK, P. MAGNUSSEN AND O. MORELL.

Object		Date	UT	R. A. (1950)			Decl.			Obs.
187		1979	09 21.97535	02	03	47.56	+13	02	25.8	049
234		1981	02 09.85292	09	20	13.30	+13	20	07.6	049
234		1981	02 09.86539	09	20	12.55	+13	20	14.8	049
234		1981	02 09.92910	09	20	08.89	+13	20	47.0	049
234		1981	02 09.93949	09	20	08.35	+13	20	56.4	049
295		1981	02 09.85292	09	08	47.36	+13	26	04.1	049
295		1981	02 09.86539	09	08	46.65	+13	26	06.8	049
295		1981	02 09.92910	09	08	43.16	+13	26	21.2	049
295		1981	02 09.93949	09	08	42.61	+13	26	22.0	049
544		1979	09 19.85797	00	03	41.18	+13	58	57.7	049
569		1979	09 20.08582	01	41	47.21	+12	40	47.8	049
701		1979	09 19.07608	00	44	56.00	+13	56	23.8	049
701		1979	09 22.00833	00	42	56.07	+13	43	32.2	049
734		1979	09 20.03734	01	39	20.63	+12	30	26.2	049
828		1979	09 21.97535	02	10	34.16	+13	47	32.1	049
968		1979	09 19.97016	01	00	07.76	+11	52	36.1	049
1370		1979	09 19.97016	01	02	21.29	+15	28	39.5	049
1669		1979	09 21.97535	02	00	22.32	+12	21	59.4	049
1672		1981	02 09.85292	09	11	23.34	+15	04	11.5	049
1672		1981	02 09.86539	09	11	22.75	+15	04	15.2	049
1672		1981	02 09.92910	09	11	19.53	+15	04	29.4	049
1672		1981	02 09.93949	09	11	19.01	+15	04	31.8	049
1979	SG2	1979	09 19.92584	00	27	02.46	+15	08	31.9	049
1979	SU2	1979	09 22.00833	00	38	48.26	+12	51	15.8	049
1979	SH12*	1979	09 19.92584	00	32	12.05	+12	38	02.1	049
1979	SJ12*	1979	09 20.00409	01	10	54.46	+13	21	32.2	049

1979	SK12*	1979	09	20.00409	01	25	42.04	+12	00	29.8	049
1979	SK12	1979	09	20.03734	01	25	40.86	+12	00	41.3	049
1979	SL12*	1979	09	20.08582	01	47	52.43	+15	48	53.6	049
1979	SM12*	1979	09	21.90929	23	42	28.47	+12	25	36.6	049
1981	CE1 *	1981	02	09.85292	09	11	13.34	+13	29	23.8	049
1981	CE1	1981	02	09.86539	09	11	12.71	+13	29	28.6	049
1981	CE1	1981	02	09.92910	09	11	08.88	+13	29	53.6	049
1981	CE1	1981	02	09.93949	09	11	08.34	+13	29	55.6	049
1982	KM	1979	09	20.08582	01	43	47.33	+15	31	11.8	049

OBSERVATIONS MADE AT BRORFELDE BY K. AUGUSTESEN, P. JENSEN AND H. J. FOGH OLSEN.

Object	Date	UT	R. A. (1950)			Decl.			Obs.
156	1983	11 13.96053	01	40	54.36	+16	55	51.4	054
223	1983	10 09.99167	02	24	11.60	+13	25	15.5	054
223	1983	10 11.95194	02	22	52.72	+13	19	38.2	054
446	1983	11 13.98096	02	57	41.25	+18	56	45.2	054
615	1983	11 13.98096	02	43	26.08	+18	14	20.5	054
1293	1983	11 13.98096	02	49	21.77	+17	57	26.4	054
1994	1983	11 13.96053	01	43	25.32	+18	46	06.3	054
2057	1983	11 13.98096	02	59	50.14	+18	28	36.2	054
2697	1983	11 13.98096	02	42	59.59	+19	42	33.0	054
1982 BH	1983	10 11.95194	02	29	45.57	+13	49	01.0	054
1982 BH	1983	10 31.82986	01	54	25.62	+16	38	53.6	054
1982 BH	1983	11 13.96053	01	32	16.47	+18	04	30.7	054

OBSERVATIONS MADE AT GEISEI BY T. SEKI. IN PART FROM NIHONDAIRA OBS. CIRC. NO. 1462.

Object	Date	UT	R. A. (1950)			Decl.			Mag.	Obs.
1938 WA	1983	12 05.51597	04	08	53.31	+19	46	10.2	16.5	372
1938 WA	1983	12 05.52986	04	08	52.59	+19	46	09.0		372
1938 WA	1983	12 07.63854	04	07	05.28	+19	41	23.8	17	372
1938 WA	1983	12 07.65035	04	07	04.60	+19	41	21.5		372
1953 VN2	1983	11 30.54097	04	12	48.7	+19	40	22		372
1953 VN2	1983	11 30.55000	04	12	48.1	+19	40	27		372
1953 VN2	1983	12 05.51597	04	07	17.52	+19	47	10.0		372
1953 VN2	1983	12 05.52986	04	07	16.52	+19	47	12.3		372
1953 VN2	1983	12 07.64445	04	05	00.76	+19	50	08.6	17	372
1953 VN2	1983	12 09.63715	04	02	57.60	+19	52	57.4	17	372
1953 VN2	1983	12 12.69236	03	59	57.38	+19	57	22.7	17	372
1953 VN2	1983	12 12.70903	03	59	56.67	+19	57	25.5		372
1983 WA	1983	11 28.64444	04	15	59.23	+20	24	58.3	17	372
1983 WA	1983	11 28.65486	04	15	58.30	+20	24	54.0		372
1983 WA	1983	11 30.54097	04	14	09.95	+20	12	10.6	17	372
1983 WA	1983	11 30.55000	04	14	09.63	+20	12	08.7		372
1983 WA	1983	12 02.62326	04	12	10.16	+19	58	00.5	17	372
1983 WA	1983	12 02.63159	04	12	09.45	+19	57	58.9		372
1983 WA	1983	12 05.51597	04	09	26.15	+19	38	24.5	17	372
1983 WA	1983	12 05.52986	04	09	25.12	+19	38	20.1		372
1983 WA	1983	12 07.64445	04	07	27.40	+19	24	00.1	17	372
1983 WA	1983	12 09.63093	04	05	39.62	+19	10	48.4	17.5	372
1983 WA	1983	12 09.64340	04	05	39.14	+19	10	42.3		372
1983 WB	1983	12 07.64445	04	08	55.65	+19	36	15.8	15.5	372
1983 WB	1983	12 09.63715	04	07	06.67	+19	37	41.2	15.5	372
1983 WB	1983	12 12.66215	04	04	26.40	+19	39	56.5	15	372
1983 WB	1983	12 12.68056	04	04	25.42	+19	40	00.4		372
1984 AF *	1984	01 11.63437	07	28	53.71	+23	40	12.5	16	372
1984 AF	1984	01 11.64549	07	28	53.10	+23	40	17.8		372
1984 BD *	1984	01 27.48403	07	11	46.48	+26	04	33.2	16.5	372

1984 BD	1984 01 27.49236	07 11 45.90	+26 04 33.3				372
1984 BD	1984 01 29.51910	07 10 02.19	+26 04 30.1		16.5		372
1984 BD	1984 01 29.53160	07 10 01.28	+26 04 31.2				372

OBSERVATIONS MADE WITH THE 1.05-M SCHMIDT TELESCOPE AT THE TOKYO OBSERVATORY'S KISO STATION BY H. KOSAI AND K. HURUKAWA (ASSISTED BY J. WATANABE).

Object	Date	UT	R. A. (1950)	Decl.		Obs.
1983 XF	1984 01 23.43634	04 07 15.39	+24 30 08.9			381
1983 XF	1984 01 23.51775	04 07 19.63	+24 30 41.1			381

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1018	1981 03 02.57859	11 57 04.63	+01 34 09.8		16.0V	413
1018	1981 03 02.62373	11 57 02.41	+01 34 19.0			413
1018	1981 03 03.56736	11 56 15.43	+01 37 45.9			413
1018	1981 03 03.61076	11 56 13.28	+01 37 55.6			413
1018	1981 03 07.60751	11 52 47.53	+01 52 59.5			413
1018	1981 03 07.64918	11 52 45.35	+01 53 08.6			413
1018	1981 03 11.60352	11 49 13.60	+02 08 40.6			413
1018	1981 03 16.69028	11 44 34.41	+02 29 02.7			413
1018	1981 03 29.52805	11 32 59.06	+03 18 28.4			413
1018	1981 03 29.56451	11 32 57.18	+03 18 36.3			413
1018	1981 04 07.51456	11 25 42.52	+03 47 26.6			413
1018	1981 04 07.54928	11 25 41.00	+03 47 32.1			413
1018	1981 04 08.50490	11 24 58.68	+03 50 12.8			413
1018	1981 04 08.53962	11 24 57.20	+03 50 18.1			413
1018	1981 04 11.56596	11 22 49.18	+03 58 07.5			413
1018	1981 04 11.60069	11 22 47.85	+03 58 12.3			413
1981 DR3 *	1981 02 28.59996	12 06 49.92	-12 52 56.5		19.5V	413
1981 DR3	1981 03 07.55280	12 01 13.93	-12 36 01.5			413
1981 DR3	1981 03 07.59447	12 01 12.04	-12 35 54.7			413
1981 DR3	1981 03 08.60836	12 00 20.13	-12 32 43.0			413
1981 DR3	1981 03 10.53941	11 58 39.73	-12 26 07.8			413
1981 DR3	1981 03 10.58108	11 58 37.58	-12 25 59.5			413
1981 DR3	1981 04 09.60259	11 33 09.85	-09 49 04.0			413
1981 DR3	1981 04 09.63731	11 33 08.28	-09 48 51.9			413
1981 DS3 *	1981 02 28.59996	12 11 01.04	-14 47 31.1		19.0V	413
1981 DS3	1981 03 06.54930	12 06 52.16	-14 42 38.9			413
1981 DS3	1981 03 06.59096	12 06 50.06	-14 42 36.0			413
1981 DS3	1981 03 08.56669	12 05 21.71	-14 39 33.4			413
1981 DS3	1981 03 12.63230	12 02 12.43	-14 31 14.6			413
1981 DS3	1981 03 12.67049	12 02 10.77	-14 31 09.7			413
1981 EP10	1981 04 07.45232	11 27 03.36	-05 20 05.3			413
1981 EP10	1981 04 09.60259	11 25 28.29	-05 10 30.5			413
1981 EP10	1981 04 09.63731	11 25 26.90	-05 10 21.4			413
1981 EE18	1981 04 08.50490	11 18 26.64	+04 12 59.2			413
1981 EE18	1981 04 08.53962	11 18 25.64	+04 13 01.5			413
1981 EE18	1981 04 11.56596	11 16 53.64	+04 18 16.2			413
1981 EA21	1981 04 08.53962	11 28 04.03	+02 28 04.4			413
1981 EA21	1981 04 11.56596	11 26 21.79	+02 38 55.3			413
1981 EN21	1981 04 08.50490	11 30 58.84	+02 49 01.2			413
1981 EN21	1981 04 08.53962	11 30 57.66	+02 49 10.1			413
1981 EN21	1981 04 11.56596	11 29 16.67	+03 01 59.6			413
1981 EN21	1981 04 11.60069	11 29 15.61	+03 02 07.0			413
1981 ES21	1981 04 07.51456	11 23 39.12	+01 24 20.3			413

1981	ES21	1981	04	08.50490	11	22	55.09	+01	24	14.8	413
1981	ES21	1981	04	08.53962	11	22	53.70	+01	24	13.2	413
1981	ES21	1981	04	11.56596	11	20	48.08	+01	23	24.8	413
1981	ES21	1981	04	11.60069	11	20	46.80	+01	23	23.6	413
1981	EC22	1981	04	08.50490	11	27	48.23	+04	00	25.5	413
1981	EC22	1981	04	11.56596	11	25	58.06	+04	14	58.4	413
1981	EC22	1981	04	11.60069	11	25	57.05	+04	15	05.6	413
1981	EO23	1981	04	08.50490	11	22	14.62	+02	25	35.8	413
1981	EO23	1981	04	08.53962	11	22	12.66	+02	25	47.8	413
1981	EO23	1981	04	11.56596	11	20	22.36	+02	39	27.3	413
1981	EB24	1981	03	02.57859	11	55	19.53	+03	04	16.5	413
1981	EB24	1981	03	02.62373	11	55	17.40	+03	04	26.7	413
1981	EB24	1981	03	03.61076	11	54	31.35	+03	08	10.5	413
1981	ED24	1981	03	02.57859	11	56	04.15	+01	56	26.8	413
1981	ED24	1981	03	02.62373	11	56	02.47	+01	56	45.2	413
1981	ED24	1981	03	03.56736	11	55	26.29	+02	03	42.1	413
1981	EH24	1981	03	02.57859	12	03	55.97	+01	38	01.6	413
1981	EH24	1981	03	03.56736	12	03	13.99	+01	42	16.4	413
1981	EH24	1981	03	03.61076	12	03	12.07	+01	42	29.1	413
1981	EW32*	1981	03	01.53473	11	42	08.74	-05	13	22.7	19.5V 413
1981	EW32	1981	03	01.57987	11	42	06.82	-05	13	08.2	413
1981	EW32	1981	03	11.54742	11	33	54.54	-04	01	51.1	413
1981	EW32	1981	03	11.58909	11	33	52.39	-04	01	33.8	413
1981	EW32	1981	03	15.64523	11	30	28.00	-03	30	21.2	413
1981	EW32	1981	03	15.68342	11	30	26.23	-03	30	06.1	413
1981	EX32*	1981	03	01.53473	11	45	42.22	-07	08	23.0	19.5V 413
1981	EX32	1981	03	01.57987	11	45	40.29	-07	08	12.2	413
1981	EX32	1981	03	07.66569	11	40	54.70	-06	35	35.1	413
1981	EX32	1981	03	11.54742	11	37	41.46	-06	11	44.7	413
1981	EX32	1981	03	11.58909	11	37	39.40	-06	11	32.3	413
1981	EX32	1981	03	15.64523	11	34	12.22	-05	44	34.0	413
1981	EX32	1981	03	15.68342	11	34	10.40	-05	44	18.8	413
1981	EY32*	1981	03	01.53473	11	45	46.61	-06	49	03.4	20.0V 413
1981	EY32	1981	03	07.66569	11	41	53.74	-05	43	10.9	413
1981	EY32	1981	03	11.58909	11	39	16.04	-04	57	55.9	413
1981	EY32	1981	03	15.64523	11	36	30.58	-04	09	34.2	413
1981	EZ32*	1981	03	01.53473	11	46	40.81	-03	50	58.3	19.0V 413
1981	EZ32	1981	03	01.57987	11	46	39.13	-03	50	41.9	413
1981	EZ32	1981	03	07.66569	11	42	33.57	-03	08	14.5	413
1981	EZ32	1981	03	11.54742	11	39	49.18	-02	39	14.0	413
1981	EZ32	1981	03	11.58909	11	39	47.88	-02	39	01.6	413
1981	EZ32	1981	03	15.64523	11	36	52.68	-02	07	34.6	413
1981	EZ32	1981	03	29.52805	11	27	20.72	-00	18	16.2	413
1981	EZ32	1981	03	29.56451	11	27	19.06	-00	17	55.7	413
1981	EA33*	1981	03	01.53473	11	46	44.43	-04	00	53.7	20.0V 413
1981	EA33	1981	03	07.70735	11	40	43.03	-04	03	59.7	413
1981	EA33	1981	03	11.58909	11	36	45.91	-04	03	42.4	413
1981	EA33	1981	03	15.64523	11	32	35.86	-04	01	52.4	413
1981	EA33	1981	03	15.68342	11	32	33.67	-04	01	52.0	413
1981	EB33*	1981	03	01.53473	11	47	49.88	-07	05	23.9	18.5V 413
1981	EB33	1981	03	07.66569	11	42	19.37	-06	57	51.8	413
1981	EB33	1981	03	07.70735	11	42	17.25	-06	57	48.6	413
1981	EB33	1981	03	11.54742	11	38	39.40	-06	50	39.0	413
1981	EB33	1981	03	11.58909	11	38	37.02	-06	50	35.4	413
1981	EB33	1981	03	15.64523	11	34	41.79	-06	41	17.9	413
1981	EB33	1981	03	15.68342	11	34	39.62	-06	41	11.5	413
1981	EC33*	1981	03	01.57987	11	48	15.04	-05	50	40.0	20.0V 413
1981	EC33	1981	03	07.70735	11	42	25.52	-05	28	43.6	413
1981	EC33	1981	03	11.54742	11	38	36.91	-05	11	59.7	413

1981	EC33	1981	03	11.58909	11	38	34.52	-05	11	50.2	413
1981	EC33	1981	03	15.68342	11	34	28.40	-04	52	04.5	413
1981	ED33*	1981	03	01.53473	11	48	19.24	-06	29	14.1	20.0V 413
1981	ED33	1981	03	01.57987	11	48	16.56	-06	29	07.6	413
1981	ED33	1981	03	07.66569	11	42	38.02	-06	08	51.8	413
1981	ED33	1981	03	07.70735	11	42	35.94	-06	08	44.0	413
1981	ED33	1981	03	11.54742	11	38	52.15	-05	53	16.9	413
1981	ED33	1981	03	15.64523	11	34	50.04	-05	35	03.6	413
1981	EE33*	1981	03	01.53473	11	48	52.31	-05	07	27.3	19.5V 413
1981	EE33	1981	03	07.66569	11	42	45.63	-05	11	16.2	413
1981	EE33	1981	03	11.54742	11	38	43.12	-05	11	12.3	413
1981	EE33	1981	03	11.58909	11	38	40.85	-05	11	11.6	413
1981	EE33	1981	03	15.64523	11	34	24.01	-05	09	21.1	413
1981	EF33*	1981	03	01.53473	11	49	11.65	-07	00	46.0	20.0V 413
1981	EF33	1981	03	07.66569	11	44	46.30	-06	20	44.9	413
1981	EF33	1981	03	11.54742	11	41	42.83	-05	51	11.4	413
1981	EF33	1981	03	11.58909	11	41	40.35	-05	50	46.0	413
1981	EF33	1981	03	15.64523	11	38	20.10	-05	16	49.8	413
1981	EG33*	1981	03	01.57987	11	49	19.45	-05	55	55.0	20.0V 413
1981	EG33	1981	03	07.66569	11	44	49.89	-05	02	49.6	413
1981	EG33	1981	03	11.58909	11	41	42.56	-04	24	43.0	413
1981	EG33	1981	03	15.68342	11	38	22.10	-03	42	38.4	413
1981	EH33*	1981	03	01.53473	11	50	45.96	-03	45	33.5	19.0V 413
1981	EH33	1981	03	01.57987	11	50	44.39	-03	45	19.4	413
1981	EH33	1981	03	07.70735	11	46	47.74	-03	06	20.4	413
1981	EH33	1981	03	11.54742	11	44	10.98	-02	40	03.2	413
1981	EH33	1981	03	15.64523	11	41	19.75	-02	10	54.2	413
1981	EH33	1981	03	15.68342	11	41	18.35	-02	10	39.5	413
1981	EJ33*	1981	03	01.53473	11	50	54.77	-04	34	02.5	20.0V 413
1981	EJ33	1981	03	01.57987	11	50	52.57	-04	33	56.7	413
1981	EJ33	1981	03	07.66569	11	45	22.53	-04	17	24.7	413
1981	EJ33	1981	03	07.70735	11	45	20.56	-04	17	19.8	413
1981	EJ33	1981	03	11.58909	11	41	35.11	-04	04	02.1	413
1981	EJ33	1981	03	15.68342	11	37	30.86	-03	48	10.5	413
1981	EK33*	1981	03	01.53473	11	50	54.98	-06	22	56.5	20.0V 413
1981	EK33	1981	03	01.57987	11	50	53.01	-06	22	50.6	413
1981	EK33	1981	03	07.66569	11	46	09.50	-06	03	36.3	413
1981	EK33	1981	03	07.70735	11	46	07.44	-06	03	26.8	413
1981	EK33	1981	03	11.54742	11	42	57.97	-05	48	51.4	413
1981	EK33	1981	03	11.58909	11	42	56.02	-05	48	42.7	413
1981	EK33	1981	03	15.64523	11	39	31.21	-05	31	37.0	413
1981	EL33*	1981	03	01.53473	11	51	11.52	-07	26	16.0	20.0V 413
1981	EL33	1981	03	01.57987	11	51	09.14	-07	26	08.5	413
1981	EL33	1981	03	07.66569	11	45	30.66	-07	03	14.8	413
1981	EL33	1981	03	07.70735	11	45	28.39	-07	03	04.9	413
1981	EL33	1981	03	11.58909	11	41	39.61	-06	45	35.2	413
1981	EL33	1981	03	15.64523	11	37	33.67	-06	25	14.7	413
1981	EL33	1981	03	15.68342	11	37	31.56	-06	25	02.6	413
1981	EM33*	1981	03	01.53473	11	51	22.98	-06	21	09.2	20.0V 413
1981	EM33	1981	03	07.66569	11	46	05.81	-06	11	16.0	413
1981	EM33	1981	03	11.54742	11	42	36.14	-06	02	56.8	413
1981	EM33	1981	03	15.64523	11	38	50.98	-05	52	43.1	413
1981	EN33*	1981	03	01.57987	11	51	25.22	-03	33	31.6	19.5V 413
1981	EN33	1981	03	07.66569	11	45	47.56	-03	18	41.9	413
1981	EN33	1981	03	07.70735	11	45	45.29	-03	18	35.1	413
1981	EN33	1981	03	11.54742	11	41	57.51	-03	06	16.7	413
1981	EN33	1981	03	15.64523	11	37	49.03	-02	51	18.4	413
1981	EN33	1981	03	15.68342	11	37	46.91	-02	51	11.3	413
1981	EO33*	1981	03	01.53473	11	51	27.54	-07	55	41.6	18.5V 413

1981	EO33	1981	03	01.57987	11	51	26.21	-07	55	19.8	413
1981	EO33	1981	03	07.66569	11	47	53.18	-06	49	33.1	413
1981	EO33	1981	03	07.70735	11	47	51.60	-06	49	05.7	413
1981	EO33	1981	03	11.54742	11	45	25.09	-06	03	29.9	413
1981	EO33	1981	03	11.58909	11	45	23.45	-06	03	00.1	413
1981	EO33	1981	03	15.64523	11	42	42.61	-05	12	10.0	413
1981	EO33	1981	03	15.68342	11	42	41.10	-05	11	40.6	413
1981	EP33*	1981	03	01.53473	11	52	22.78	-06	02	04.8	19.5V 413
1981	EP33	1981	03	07.66569	11	47	40.09	-05	19	13.3	413
1981	EP33	1981	03	07.70735	11	47	38.06	-05	18	54.1	413
1981	EP33	1981	03	11.54742	11	44	26.40	-04	48	23.0	413
1981	EP33	1981	03	15.64523	11	40	54.22	-04	13	17.4	413
1981	EQ33*	1981	03	01.53473	11	52	50.07	-06	59	43.7	20.0V 413
1981	EQ33	1981	03	07.66569	11	47	28.48	-06	40	23.7	413
1981	EQ33	1981	03	11.54742	11	43	50.46	-06	25	00.6	413
1981	EQ33	1981	03	11.58909	11	43	47.87	-06	24	52.9	413
1981	EQ33	1981	03	15.68342	11	39	50.98	-06	06	27.7	413
1981	ER33*	1981	03	01.53473	11	53	12.69	-04	56	41.6	19.0V 413
1981	ER33	1981	03	01.57987	11	53	10.89	-04	56	25.9	413
1981	ER33	1981	03	07.70735	11	48	34.66	-04	14	31.1	413
1981	ER33	1981	03	11.54742	11	45	25.68	-03	44	36.3	413
1981	ER33	1981	03	11.58909	11	45	23.35	-03	44	16.5	413
1981	ER33	1981	03	15.64523	11	41	55.17	-03	10	17.9	413
1981	ER33	1981	03	15.68342	11	41	53.28	-03	09	59.3	413
1981	ES33*	1981	03	01.57987	11	53	32.00	-05	14	47.4	20.0V 413
1981	ES33	1981	03	07.66569	11	48	23.58	-04	56	21.0	413
1981	ES33	1981	03	11.54742	11	44	56.06	-04	42	27.3	413
1981	ES33	1981	03	15.64523	11	41	11.48	-04	26	20.6	413
1981	ET33*	1981	03	01.57987	11	57	29.73	-03	47	25.1	20.0V 413
1981	ET33	1981	03	11.58909	11	50	26.02	-03	10	21.6	413
1981	ET33	1981	03	15.64523	11	47	22.12	-02	53	07.3	413
1981	EU33*	1981	03	01.53473	11	57	54.79	-08	01	48.0	19.5V 413
1981	EU33	1981	03	01.57987	11	57	52.81	-08	01	37.1	413
1981	EU33	1981	03	07.66569	11	52	52.77	-07	30	41.1	413
1981	EU33	1981	03	07.70735	11	52	50.46	-07	30	25.9	413
1981	EU33	1981	03	11.54742	11	49	28.41	-07	07	45.9	413
1981	EU33	1981	03	15.68342	11	45	43.06	-06	41	00.3	413
1981	EV33*	1981	03	01.53473	11	58	30.64	-04	49	35.3	20.0V 413
1981	EV33	1981	03	01.57987	11	58	29.13	-04	49	05.1	413
1981	EV33	1981	03	07.70735	11	54	30.25	-03	30	17.9	413
1981	EV33	1981	03	11.54742	11	51	49.14	-02	38	06.6	413
1981	EV33	1981	03	16.69028	11	48	05.02	-01	25	59.0	413
1981	EV33	1981	03	16.73195	11	48	03.11	-01	25	24.3	413
1981	EV33	1981	03	29.52805	11	38	58.72	+01	34	58.6	413
1981	EV33	1981	04	08.53962	11	33	04.19	+03	44	53.5	413
1981	EV33	1981	04	11.56596	11	31	37.04	+04	20	47.2	413
1981	EW33*	1981	03	01.53473	11	58	50.91	-04	02	54.2	20.0V 413
1981	EW33	1981	03	11.54742	11	51	10.10	-03	15	52.6	413
1981	EW33	1981	03	11.58909	11	51	08.07	-03	15	41.6	413
1981	EW33	1981	03	15.64523	11	47	49.30	-02	54	16.0	413
1981	EW33	1981	03	15.68342	11	47	47.07	-02	54	01.3	413
1981	EX33*	1981	03	01.53473	11	58	51.38	-07	36	35.1	20.0V 413
1981	EX33	1981	03	07.66569	11	54	25.83	-07	21	28.2	413
1981	EX33	1981	03	15.64523	11	48	14.19	-06	55	37.8	413
1981	EX33	1981	03	15.68342	11	48	12.48	-06	55	29.9	413
1981	EY33*	1981	03	01.53473	11	59	07.39	-03	54	44.0	20.0V 413
1981	EY33	1981	03	01.57987	11	59	05.82	-03	54	33.8	413
1981	EY33	1981	03	07.70735	11	54	40.53	-03	23	02.2	413
1981	EY33	1981	03	15.64523	11	48	29.40	-02	36	54.9	413

1981	EY33	1981	03	15.68342	11	48	27.57	-02	36	38.6	413
1981	EZ33*	1981	03	01.53473	11	59	57.73	-06	04	32.6	19.5V 413
1981	EZ33	1981	03	07.70735	11	55	47.56	-05	41	21.3	413
1981	EZ33	1981	03	11.58909	11	53	01.86	-05	24	55.7	413
1981	EZ33	1981	03	15.68342	11	50	02.71	-05	06	19.9	413
1981	EA34*	1981	03	01.57987	12	00	00.63	-08	12	50.5	19.0V 413
1981	EA34	1981	03	07.66569	11	55	40.98	-07	35	27.6	413
1981	EA34	1981	03	07.70735	11	55	39.11	-07	35	10.5	413
1981	EA34	1981	03	11.54742	11	52	44.10	-07	08	39.7	413
1981	EA34	1981	03	11.58909	11	52	42.14	-07	08	21.7	413
1981	EA34	1981	03	15.64523	11	49	31.76	-06	38	22.1	413
1981	EA34	1981	03	15.68342	11	49	30.06	-06	38	05.0	413
1981	EB34*	1981	03	01.53473	12	00	18.47	-03	27	56.0	20.0V 413
1981	EB34	1981	03	01.57987	12	00	16.38	-03	27	38.0	413
1981	EB34	1981	03	07.66569	11	55	19.77	-02	44	31.2	413
1981	EB34	1981	03	07.70735	11	55	17.70	-02	44	13.8	413
1981	EB34	1981	03	11.58909	11	51	50.43	-02	13	35.1	413
1981	EB34	1981	03	15.64523	11	48	03.88	-01	39	36.1	413
1981	EC34*	1981	03	01.53473	12	00	18.64	-05	09	05.0	20.0V 413
1981	EC34	1981	03	01.57987	12	00	16.67	-05	08	57.2	413
1981	EC34	1981	03	07.66569	11	55	35.94	-04	51	14.8	413
1981	EC34	1981	03	11.58909	11	52	25.15	-04	37	58.3	413
1981	EC34	1981	03	15.64523	11	49	02.10	-04	23	01.6	413
1981	EC34	1981	03	15.68342	11	49	00.10	-04	22	54.0	413
1981	ED34*	1981	03	01.53473	12	00	21.75	-02	45	05.4	20.0V 413
1981	ED34	1981	03	01.57987	12	00	19.58	-02	44	53.3	413
1981	ED34	1981	03	11.58909	11	51	29.72	-01	55	32.8	413
1981	ED34	1981	03	11.60352	11	51	28.80	-01	55	27.5	413
1981	ED34	1981	03	11.64518	11	51	26.43	-01	55	15.5	413
1981	ED34	1981	03	15.68342	11	47	40.37	-01	33	11.7	413
1981	EE34*	1981	03	01.57987	12	01	43.56	-02	43	40.1	20.0V 413
1981	EE34	1981	03	02.57859	12	00	59.97	-02	40	50.0	413
1981	EE34	1981	03	07.60751	11	57	02.63	-02	23	51.9	413
1981	EE34	1981	03	07.64918	11	57	00.62	-02	23	43.6	413
1981	EE34	1981	03	07.66569	11	56	59.57	-02	23	39.5	413
1981	EE34	1981	03	07.70735	11	56	57.80	-02	23	31.4	413
1981	EE34	1981	03	11.54742	11	53	39.87	-02	08	09.4	413
1981	EE34	1981	03	11.58909	11	53	37.84	-02	08	01.4	413
1981	EE34	1981	03	15.64523	11	49	59.39	-01	50	10.3	413
1981	EE34	1981	03	15.68342	11	49	57.23	-01	49	58.6	413
1981	EF34*	1981	03	01.53473	12	04	57.69	-05	47	59.0	19.0V 413
1981	EF34	1981	03	01.57987	12	04	55.74	-05	47	52.4	413
1981	EF34	1981	03	07.66569	12	00	19.71	-05	27	41.0	413
1981	EF34	1981	03	07.70735	12	00	17.67	-05	27	30.8	413
1981	EF34	1981	03	11.54742	11	57	06.84	-05	11	39.8	413
1981	EF34	1981	03	11.58909	11	57	04.93	-05	11	28.9	413
1981	EF34	1981	03	15.64523	11	53	34.48	-04	52	34.9	413
1981	EF34	1981	03	15.68342	11	53	32.32	-04	52	23.0	413
1981	EG34*	1981	03	01.59302	12	16	48.05	-05	26	53.2	20.0V 413
1981	EG34	1981	03	01.63816	12	16	46.25	-05	26	37.3	413
1981	EG34	1981	03	02.63403	12	16	06.09	-05	20	06.9	413
1981	EG34	1981	03	02.67917	12	16	04.24	-05	19	50.7	413
1981	EG34	1981	03	06.60816	12	13	15.56	-04	52	32.7	413
1981	EG34	1981	03	06.64983	12	13	13.82	-04	52	16.7	413
1981	EG34	1981	03	06.66426	12	13	12.99	-04	52	07.0	413
1981	EG34	1981	03	06.70593	12	13	11.21	-04	51	49.1	413
1981	EG34	1981	03	08.68165	12	11	40.50	-04	37	09.4	413
1981	EG34	1981	03	08.72332	12	11	38.68	-04	36	51.6	413
1981	EG34	1981	03	11.66134	12	09	18.44	-04	14	06.0	413

1981	EG34	1981	03	15.69509	12	05	57.61	-03	41	15.4	413
1981	EG34	1981	03	15.73328	12	05	55.67	-03	40	57.2	413
1981	EH34*	1981	03	02.57859	11	40	40.95	+02	07	32.2	17.5V 413
1981	EH34	1981	03	02.62373	11	40	38.86	+02	07	41.6	413
1981	EH34	1981	03	03.56736	11	39	55.96	+02	11	47.7	413
1981	EH34	1981	03	03.61076	11	39	54.00	+02	11	57.6	413
1981	EH34	1981	03	07.60751	11	36	46.87	+02	29	45.0	413
1981	EH34	1981	03	11.60352	11	33	34.61	+02	48	02.0	413
1981	EH34	1981	03	11.64518	11	33	32.68	+02	48	11.6	413
1981	EH34	1981	03	16.73195	11	29	26.16	+03	11	33.6	413
1981	EH34	1981	03	29.52805	11	19	39.86	+04	06	42.6	413
1981	EH34	1981	03	29.56451	11	19	38.40	+04	06	50.4	413
1981	EH34	1981	04	07.51456	11	13	58.65	+04	38	01.2	413
1981	EH34	1981	04	07.54928	11	13	57.72	+04	38	06.8	413
1981	EH34	1981	04	08.50490	11	13	26.20	+04	40	57.1	413
1981	EH34	1981	04	08.53962	11	13	25.15	+04	41	02.6	413
1981	EH34	1981	04	11.56596	11	11	52.83	+04	49	16.6	413
1981	EH34	1981	04	11.60069	11	11	51.88	+04	49	20.1	413
1981	EJ34*	1981	03	02.62373	11	41	39.15	+02	55	47.2	19.0V 413
1981	EJ34	1981	03	03.61076	11	40	49.98	+02	59	00.4	413
1981	EJ34	1981	03	11.60352	11	33	44.59	+03	27	03.8	413
1981	EJ34	1981	03	11.64518	11	33	42.35	+03	27	12.6	413
1981	EK34*	1981	03	02.57859	11	42	43.08	+01	51	54.8	18.0V 413
1981	EK34	1981	03	02.62373	11	42	40.72	+01	52	06.7	413
1981	EK34	1981	03	03.61076	11	41	50.56	+01	57	08.0	413
1981	EK34	1981	03	07.60751	11	38	17.71	+02	18	24.1	413
1981	EK34	1981	03	07.64918	11	38	15.57	+02	18	36.2	413
1981	EK34	1981	03	11.60352	11	34	34.76	+02	40	42.2	413
1981	EK34	1981	03	11.64518	11	34	32.41	+02	40	54.7	413
1981	EK34	1981	03	16.73195	11	29	41.34	+03	09	55.8	413
1981	EL34*	1981	03	02.57859	11	43	24.67	+00	15	30.3	19.5V 413
1981	EL34	1981	03	02.62373	11	43	22.94	+00	15	42.0	413
1981	EL34	1981	03	03.56736	11	42	45.00	+00	19	45.2	413
1981	EL34	1981	03	03.61076	11	42	43.20	+00	19	55.8	413
1981	EL34	1981	03	11.60352	11	37	11.32	+00	55	45.7	413
1981	EL34	1981	03	11.64518	11	37	09.45	+00	55	56.8	413
1981	EL34	1981	03	29.52805	11	24	44.50	+02	18	29.7	413
1981	EL34	1981	03	29.56451	11	24	43.07	+02	18	38.9	413
1981	EL34	1981	04	11.56596	11	17	12.31	+03	10	26.3	413
1981	EL34	1981	04	11.60069	11	17	11.45	+03	10	31.5	413
1981	EM34*	1981	03	02.56588	11	43	57.57	-10	15	43.1	20.0V 413
1981	EM34	1981	03	07.59447	11	39	33.51	-09	58	54.2	413
1981	EM34	1981	03	10.53941	11	36	51.06	-09	46	17.0	413
1981	EM34	1981	03	12.52945	11	34	59.55	-09	36	41.6	413
1981	EM34	1981	03	12.56765	11	34	57.09	-09	36	33.0	413
1981	EN34*	1981	03	02.56588	11	44	16.23	-09	14	05.6	20.0V 413
1981	EN34	1981	03	07.55280	11	39	58.49	-08	52	44.1	413
1981	EN34	1981	03	10.53941	11	37	15.94	-08	37	25.6	413
1981	EN34	1981	03	12.56765	11	35	23.42	-08	26	04.9	413
1981	EO34*	1981	03	02.62373	11	44	28.01	+00	33	15.2	19.0V 413
1981	EO34	1981	03	03.56736	11	43	46.31	+00	40	02.0	413
1981	EO34	1981	03	03.61076	11	43	44.44	+00	40	19.3	413
1981	EO34	1981	03	07.60751	11	40	42.72	+01	09	38.0	413
1981	EO34	1981	03	07.64918	11	40	40.63	+01	09	57.4	413
1981	EO34	1981	03	11.60352	11	37	35.80	+01	39	41.7	413
1981	EO34	1981	03	16.69028	11	33	35.37	+02	18	19.1	413
1981	EO34	1981	03	29.52805	11	23	52.69	+03	53	02.4	413
1981	EO34	1981	04	07.51456	11	18	03.69	+04	51	54.3	413
1981	EO34	1981	04	08.50490	11	17	29.46	+04	57	52.7	413

1981	EO34	1981	04	11.56596	11	15	50.40	+05	15	24.1	413
1981	EO34	1981	04	11.60069	11	15	49.41	+05	15	34.3	413
1981	EP34*	1981	03	02.56588	11	46	54.39	-10	27	32.4	20.0V 413
1981	EP34	1981	03	07.55280	11	43	11.88	-09	57	23.5	413
1981	EP34	1981	03	07.59447	11	43	10.13	-09	57	09.5	413
1981	EP34	1981	03	10.53941	11	40	52.92	-09	36	57.0	413
1981	EP34	1981	03	10.58108	11	40	51.10	-09	36	41.3	413
1981	EP34	1981	03	12.52945	11	39	18.91	-09	22	27.5	413
1981	EQ34*	1981	03	02.57859	11	47	14.96	+01	53	43.7	19.5V 413
1981	EQ34	1981	03	07.64918	11	43	21.14	+02	29	58.5	413
1981	EQ34	1981	03	11.60352	11	40	09.03	+02	59	22.7	413
1981	EQ34	1981	03	16.69028	11	35	54.59	+03	37	50.1	413
1981	EQ34	1981	03	16.73195	11	35	52.84	+03	38	06.1	413
1981	ER34*	1981	03	02.52074	11	47	28.92	-10	50	57.0	19.0V 413
1981	ER34	1981	03	02.56588	11	47	27.13	-10	50	49.0	413
1981	ER34	1981	03	07.55280	11	44	03.60	-10	32	18.9	413
1981	ER34	1981	03	07.59447	11	44	01.99	-10	32	10.8	413
1981	ER34	1981	03	10.53941	11	41	56.39	-10	19	25.6	413
1981	ER34	1981	03	10.58108	11	41	54.69	-10	19	14.9	413
1981	ER34	1981	03	12.52945	11	40	30.45	-10	10	10.1	413
1981	ER34	1981	03	12.56765	11	40	28.61	-10	09	59.3	413
1981	ES34*	1981	03	02.52074	11	47	30.58	-10	24	51.1	19.5V 413
1981	ES34	1981	03	02.56588	11	47	29.02	-10	24	41.1	413
1981	ES34	1981	03	07.55280	11	44	16.69	-09	59	32.6	413
1981	ES34	1981	03	07.59447	11	44	14.96	-09	59	19.4	413
1981	ES34	1981	03	10.53941	11	42	10.30	-09	41	01.6	413
1981	ES34	1981	03	10.58108	11	42	08.47	-09	40	46.0	413
1981	ES34	1981	03	12.56765	11	40	41.16	-09	27	05.9	413
1981	ET34*	1981	03	02.56588	11	47	40.78	-09	37	10.5	20.5V 413
1981	ET34	1981	03	07.59447	11	43	57.89	-09	09	46.8	413
1981	ET34	1981	03	10.53941	11	41	42.46	-08	52	11.2	413
1981	ET34	1981	03	10.58108	11	41	40.54	-08	51	55.5	413
1981	ET34	1981	03	12.56765	11	40	08.14	-08	39	30.9	413
1981	EU34*	1981	03	02.62373	11	47	48.35	+03	24	49.0	19.0V 413
1981	EU34	1981	03	03.56736	11	47	03.16	+03	30	33.6	413
1981	EU34	1981	03	03.61076	11	47	01.06	+03	30	48.8	413
1981	EU34	1981	03	07.60751	11	43	40.26	+03	55	47.4	413
1981	EV34*	1981	03	02.57859	11	48	12.29	+02	17	38.6	20.0V 413
1981	EV34	1981	03	03.56736	11	47	26.42	+02	23	17.4	413
1981	EV34	1981	03	03.61076	11	47	24.38	+02	23	33.8	413
1981	EV34	1981	03	07.64918	11	44	11.29	+02	47	21.6	413
1981	EV34	1981	03	11.60352	11	40	55.07	+03	11	13.8	413
1981	EW34*	1981	03	02.57859	11	49	35.94	+01	38	32.3	19.0V 413
1981	EW34	1981	03	03.61076	11	48	37.32	+01	40	16.4	413
1981	EW34	1981	03	07.60751	11	44	40.98	+01	47	43.4	413
1981	EW34	1981	03	07.64918	11	44	38.64	+01	47	46.4	413
1981	EW34	1981	03	11.64518	11	40	33.13	+01	55	59.5	413
1981	EW34	1981	03	16.69028	11	35	19.39	+02	06	48.4	413
1981	EX34*	1981	03	02.57859	11	49	56.12	+03	17	38.8	19.0V 413
1981	EX34	1981	03	02.62373	11	49	54.14	+03	18	00.7	413
1981	EX34	1981	03	03.56736	11	49	15.31	+03	25	12.1	413
1981	EX34	1981	03	03.61076	11	49	13.55	+03	25	32.2	413
1981	EX34	1981	03	07.60751	11	46	22.11	+03	56	39.3	413
1981	EY34*	1981	03	02.52074	11	50	11.06	-14	32	25.1	19.5V 413
1981	EY34	1981	03	07.59447	11	46	24.69	-13	56	37.4	413
1981	EY34	1981	03	10.53941	11	44	07.23	-13	33	07.0	413
1981	EY34	1981	03	12.56765	11	42	31.42	-13	16	00.6	413
1981	EZ34*	1981	03	02.57859	11	50	56.72	-01	11	28.8	19.0V 413
1981	EZ34	1981	03	02.62373	11	50	54.87	-01	11	13.2	413

1981	EZ34	1981	03	03.56736	11	50	16.09	-01	05	10.2	413
1981	EZ34	1981	03	07.60751	11	47	22.83	-00	38	12.7	413
1981	EZ34	1981	03	07.64918	11	47	21.07	-00	37	56.9	413
1981	EZ34	1981	03	11.60352	11	44	22.76	-00	10	08.3	413
1981	EZ34	1981	03	16.69028	11	40	25.71	+00	27	00.1	413
1981	EZ34	1981	03	29.52805	11	30	36.94	+02	01	42.9	413
1981	EZ34	1981	03	29.56451	11	30	35.58	+02	01	56.2	413
1981	EZ34	1981	04	08.50490	11	24	02.38	+03	09	07.1	413
1981	EZ34	1981	04	08.53962	11	24	01.21	+03	09	20.6	413
1981	EZ34	1981	04	11.56596	11	22	20.40	+03	27	40.2	413
1981	EA35*	1981	03	02.57859	11	51	00.74	+01	25	41.9	19.0V 413
1981	EA35	1981	03	02.62373	11	50	58.69	+01	25	46.7	413
1981	EA35	1981	03	03.56736	11	50	14.17	+01	27	43.4	413
1981	EA35	1981	03	07.64918	11	46	57.49	+01	36	29.7	413
1981	EA35	1981	03	16.69028	11	39	27.86	+01	57	10.2	413
1981	EA35	1981	03	16.73195	11	39	26.10	+01	57	14.0	413
1981	EA35	1981	03	29.52805	11	29	07.84	+02	25	07.5	413
1981	EA35	1981	03	29.56451	11	29	06.10	+02	25	11.7	413
1981	EA35	1981	04	08.50490	11	22	05.18	+02	42	07.4	413
1981	EA35	1981	04	08.53962	11	22	04.01	+02	42	09.1	413
1981	EA35	1981	04	11.56596	11	20	11.33	+02	46	03.7	413
1981	EA35	1981	04	11.60069	11	20	10.33	+02	46	04.7	413
1981	EB35*	1981	03	02.62373	11	51	15.88	-01	18	33.3	18.5V 413
1981	EB35	1981	03	03.56736	11	50	30.80	-01	10	58.3	413
1981	EB35	1981	03	03.61076	11	50	28.87	-01	10	38.8	413
1981	EB35	1981	03	07.60751	11	47	08.62	-00	37	03.4	413
1981	EB35	1981	03	07.64918	11	47	06.58	-00	36	44.1	413
1981	EB35	1981	03	11.60352	11	43	38.69	-00	01	51.4	413
1981	EB35	1981	03	11.64518	11	43	36.26	-00	01	29.2	413
1981	EB35	1981	03	16.69028	11	39	04.96	+00	44	15.7	413
1981	EB35	1981	03	29.56451	11	28	07.43	+02	38	29.1	413
1981	EB35	1981	04	08.50490	11	21	27.20	+03	53	59.9	413
1981	EB35	1981	04	08.53962	11	21	26.05	+03	54	11.7	413
1981	EB35	1981	04	11.56596	11	19	52.35	+04	13	41.8	413
1981	EC35*	1981	03	02.62373	11	51	19.86	+03	12	41.5	19.5V 413
1981	EC35	1981	03	03.56736	11	50	34.97	+03	20	46.0	413
1981	EC35	1981	03	03.61076	11	50	32.75	+03	21	09.2	413
1981	EC35	1981	03	07.60751	11	47	13.53	+03	56	03.8	413
1981	EC35	1981	03	07.64918	11	47	11.32	+03	56	26.2	413
1981	ED35*	1981	03	02.57859	11	51	37.27	+01	26	25.8	18.5V 413
1981	ED35	1981	03	02.62373	11	51	34.76	+01	26	38.3	413
1981	ED35	1981	03	03.56736	11	50	43.55	+01	31	24.2	413
1981	ED35	1981	03	03.61076	11	50	41.26	+01	31	37.1	413
1981	ED35	1981	03	07.60751	11	46	56.92	+01	52	23.7	413
1981	ED35	1981	03	07.64918	11	46	54.63	+01	52	35.4	413
1981	ED35	1981	03	11.60352	11	43	05.40	+02	13	51.7	413
1981	ED35	1981	03	11.64518	11	43	02.98	+02	14	04.3	413
1981	ED35	1981	03	16.69028	11	38	08.39	+02	41	14.4	413
1981	ED35	1981	03	16.73195	11	38	06.14	+02	41	25.4	413
1981	ED35	1981	03	29.52805	11	26	34.44	+03	44	06.7	413
1981	ED35	1981	03	29.56451	11	26	32.69	+03	44	15.6	413
1981	ED35	1981	04	07.51456	11	20	12.22	+04	17	12.4	413
1981	ED35	1981	04	07.54928	11	20	10.89	+04	17	19.6	413
1981	ED35	1981	04	08.50490	11	19	37.09	+04	20	08.3	413
1981	ED35	1981	04	08.53962	11	19	36.07	+04	20	12.7	413
1981	EE35*	1981	03	02.62373	11	52	34.03	+02	15	47.3	19.5V 413
1981	EE35	1981	03	03.56736	11	51	51.06	+02	22	42.1	413
1981	EE35	1981	03	03.61076	11	51	49.19	+02	23	00.4	413
1981	EE35	1981	03	07.60751	11	48	39.85	+02	52	56.5	413

1981	EE35	1981	03	07.64918	11	48	37.99	+02	53	13.7	413
1981	EE35	1981	03	11.64518	11	45	20.82	+03	23	52.4	413
1981	EE35	1981	03	29.52805	11	30	29.66	+05	37	52.5	413
1981	EE35	1981	03	29.56451	11	30	27.92	+05	38	07.8	413
1981	EF35*	1981	03	02.57859	11	53	11.30	+01	27	37.8	19.0V 413
1981	EF35	1981	03	03.61076	11	52	23.44	+01	34	32.7	413
1981	EF35	1981	03	07.64918	11	49	08.33	+02	02	20.9	413
1981	EF35	1981	03	11.60352	11	45	48.73	+02	30	25.1	413
1981	EF35	1981	03	11.64518	11	45	46.46	+02	30	43.1	413
1981	EG35*	1981	03	02.62373	11	53	48.49	+02	49	26.3	17.0V 413
1981	EG35	1981	03	03.56736	11	53	14.15	+03	01	00.9	413
1981	EG35	1981	03	03.61076	11	53	12.52	+03	01	31.9	413
1981	EG35	1981	03	07.60751	11	50	36.64	+03	51	38.5	413
1981	EG35	1981	03	07.64918	11	50	34.87	+03	52	08.5	413
1981	EH35*	1981	03	02.57859	11	55	33.05	-02	17	36.0	20.0V 413
1981	EH35	1981	03	02.62373	11	55	30.66	-02	17	26.1	413
1981	EH35	1981	03	07.60751	11	50	36.42	-01	55	23.5	413
1981	EH35	1981	03	11.64518	11	46	28.01	-01	35	45.2	413
1981	EH35	1981	03	16.69028	11	41	13.77	-01	09	46.5	413
1981	EH35	1981	03	16.73195	11	41	11.56	-01	09	36.6	413
1981	EJ35*	1981	03	02.57859	11	56	16.42	+00	58	56.4	20.0V 413
1981	EJ35	1981	03	07.60751	11	52	29.28	+01	43	03.8	413
1981	EJ35	1981	03	07.64918	11	52	27.30	+01	43	26.3	413
1981	EJ35	1981	03	11.64518	11	49	13.76	+02	19	45.2	413
1981	EJ35	1981	03	16.69028	11	45	02.03	+03	05	58.5	413
1981	EJ35	1981	03	16.73195	11	45	00.19	+03	06	17.5	413
1981	EK35*	1981	03	02.62373	11	56	59.98	-00	52	20.8	19.5V 413
1981	EK35	1981	03	07.60751	11	53	30.62	-00	30	36.3	413
1981	EK35	1981	03	11.64518	11	50	32.38	-00	11	52.8	413
1981	EK35	1981	03	29.52805	11	37	11.35	+01	14	07.5	413
1981	EK35	1981	03	29.56451	11	37	09.83	+01	14	17.7	413
1981	EL35*	1981	03	02.56588	11	57	00.80	-13	44	54.1	19.5V 413
1981	EL35	1981	03	07.55280	11	53	46.97	-13	26	51.6	413
1981	EL35	1981	03	07.59447	11	53	45.37	-13	26	42.8	413
1981	EL35	1981	03	12.56765	11	50	17.99	-13	04	09.9	413
1981	EM35*	1981	03	02.57859	11	58	54.89	+02	02	14.5	19.0V 413
1981	EM35	1981	03	02.62373	11	58	52.76	+02	02	21.0	413
1981	EM35	1981	03	03.61076	11	57	58.89	+02	05	10.8	413
1981	EM35	1981	03	07.60751	11	54	09.08	+02	17	30.4	413
1981	EM35	1981	03	07.64918	11	54	06.62	+02	17	38.2	413
1981	EM35	1981	03	11.60352	11	50	03.75	+02	30	44.2	413
1981	EM35	1981	03	11.64518	11	50	01.15	+02	30	52.3	413
1981	EM35	1981	03	16.69028	11	44	36.92	+02	48	14.9	413
1981	EM35	1981	03	16.73195	11	44	34.31	+02	48	23.2	413
1981	EM35	1981	03	29.52805	11	30	54.07	+03	29	25.6	413
1981	EM35	1981	03	29.56451	11	30	51.81	+03	29	31.6	413
1981	EM35	1981	04	07.51456	11	22	32.60	+03	49	48.5	413
1981	EM35	1981	04	07.54928	11	22	31.15	+03	49	50.7	413
1981	EM35	1981	04	08.50490	11	21	44.01	+03	51	25.5	413
1981	EM35	1981	04	08.53962	11	21	42.38	+03	51	27.5	413
1981	EM35	1981	04	11.56596	11	19	23.68	+03	55	27.1	413
1981	EM35	1981	04	11.60069	11	19	22.30	+03	55	27.9	413
1981	EN35*	1981	03	02.52074	11	59	05.39	-10	05	33.4	20.0V 413
1981	EN35	1981	03	02.56588	11	59	04.24	-10	05	10.1	413
1981	EN35	1981	03	10.53941	11	54	48.46	-08	41	17.2	413
1981	EN35	1981	03	12.52945	11	53	35.19	-08	17	06.9	413
1981	EN35	1981	03	12.56765	11	53	33.77	-08	16	38.4	413
1981	EO35*	1981	03	02.56588	11	59	41.31	-08	53	51.2	20.0V 413
1981	EO35	1981	03	07.59447	11	55	15.86	-08	33	21.0	413

1981	EO35	1981	03	10.53941	11	52	30.66	-08	19	09.1	413
1981	EO35	1981	03	10.58108	11	52	28.45	-08	18	58.1	413
1981	EO35	1981	03	12.52945	11	50	36.58	-08	08	48.7	413
1981	EO35	1981	03	12.56765	11	50	34.32	-08	08	34.3	413
1981	EP35*	1981	03	02.62373	11	59	48.24	+02	04	47.9	20.0V 413
1981	EP35	1981	03	03.61076	11	59	03.24	+02	12	35.4	413
1981	EP35	1981	03	07.60751	11	55	52.76	+02	45	01.0	413
1981	EP35	1981	03	29.52805	11	36	49.94	+05	45	43.6	413
1981	EQ35*	1981	03	02.57859	11	59	50.76	+01	12	37.5	20.5V 413
1981	EQ35	1981	03	07.60751	11	56	20.78	+01	39	37.7	413
1981	EQ35	1981	03	07.64918	11	56	19.17	+01	39	49.2	413
1981	EQ35	1981	03	11.64518	11	53	16.74	+02	02	44.6	413
1981	EQ35	1981	03	29.52805	11	38	59.61	+03	46	22.9	413
1981	ER35*	1981	03	02.52074	12	00	16.51	-11	26	35.4	20.0V 413
1981	ER35	1981	03	02.56588	12	00	14.90	-11	26	29.9	413
1981	ER35	1981	03	10.53941	11	54	23.22	-11	05	45.6	413
1981	ER35	1981	03	10.58108	11	54	21.10	-11	05	39.0	413
1981	ER35	1981	03	12.52945	11	52	51.16	-10	59	14.4	413
1981	ER35	1981	04	09.60259	11	32	07.30	-08	52	03.5	413
1981	ES35*	1981	03	02.57859	12	00	50.54	+02	12	58.1	17.5V 413
1981	ES35	1981	03	02.62373	12	00	48.70	+02	13	02.5	413
1981	ES35	1981	03	03.61076	12	00	04.97	+02	14	58.1	413
1981	ES35	1981	03	07.60751	11	57	01.10	+02	23	07.3	413
1981	ES35	1981	03	07.64918	11	56	59.21	+02	23	12.2	413
1981	ES35	1981	03	11.60352	11	53	49.36	+02	31	43.7	413
1981	ES35	1981	03	11.64518	11	53	47.44	+02	31	48.9	413
1981	ES35	1981	03	16.69028	11	49	38.40	+02	42	55.0	413
1981	ES35	1981	03	16.73195	11	49	36.33	+02	43	01.3	413
1981	ES35	1981	03	29.52805	11	39	13.53	+03	08	49.2	413
1981	ES35	1981	03	29.56451	11	39	11.90	+03	08	53.5	413
1981	ES35	1981	04	07.51456	11	32	43.86	+03	21	43.3	413
1981	ES35	1981	04	07.54928	11	32	42.75	+03	21	46.4	413
1981	ES35	1981	04	08.50490	11	32	05.08	+03	22	46.3	413
1981	ES35	1981	04	11.56596	11	30	10.79	+03	25	23.2	413
1981	ES35	1981	04	11.60069	11	30	09.60	+03	25	25.6	413
1981	ET35*	1981	03	02.52074	12	01	47.30	-12	16	21.8	20.0V 413
1981	ET35	1981	03	02.56588	12	01	46.00	-12	16	13.7	413
1981	ET35	1981	03	07.59447	11	58	32.09	-11	54	58.8	413
1981	ET35	1981	03	10.58108	11	56	29.32	-11	40	13.1	413
1981	EU35*	1981	03	02.57859	12	03	52.07	+01	04	27.9	18.0V 413
1981	EU35	1981	03	02.62373	12	03	50.07	+01	04	42.5	413
1981	EU35	1981	03	03.61076	12	03	04.10	+01	11	05.0	413
1981	EU35	1981	03	07.60751	11	59	50.24	+01	37	28.3	413
1981	EU35	1981	03	11.64518	11	56	24.19	+02	05	03.7	413
1981	EU35	1981	03	16.69028	11	51	57.42	+02	40	16.0	413
1981	EU35	1981	03	16.73195	11	51	54.96	+02	40	35.4	413
1981	EU35	1981	03	29.52805	11	40	37.45	+04	07	44.1	413
1981	EU35	1981	03	29.56451	11	40	35.67	+04	07	57.7	413
1981	EU35	1981	04	08.50490	11	32	44.53	+05	06	59.2	413
1981	EU35	1981	04	08.53962	11	32	42.96	+05	07	10.8	413
1981	EU35	1981	04	11.56596	11	30	37.36	+05	22	43.7	413
1981	EU35	1981	04	11.60069	11	30	36.13	+05	22	53.1	413
1981	EV35*	1981	03	02.57859	12	04	31.95	-00	08	42.4	20.0V 413
1981	EV35	1981	03	07.60751	12	00	24.78	-00	02	14.0	413
1981	EV35	1981	03	07.64918	12	00	22.99	-00	02	11.3	413
1981	EV35	1981	03	11.60352	11	56	57.61	+00	03	43.8	413
1981	EV35	1981	03	29.52805	11	40	51.06	+00	33	44.1	413
1981	EW35*	1981	03	02.56588	12	04	36.26	-10	06	56.6	20.5V 413
1981	EW35	1981	03	07.55280	12	01	30.10	-09	44	27.6	413

1981	EW35	1981	03	07.59447	12	01	28.62	-09	44	17.2	413
1981	EW35	1981	03	10.53941	11	59	32.41	-09	29	28.1	413
1981	EX35*	1981	03	02.52074	12	05	46.35	-12	13	16.6	20.0V 413
1981	EX35	1981	03	02.56588	12	05	44.64	-12	13	09.1	413
1981	EX35	1981	03	06.59096	12	02	43.53	-11	58	36.4	413
1981	EX35	1981	03	07.55280	12	01	57.55	-11	54	31.5	413
1981	EX35	1981	03	07.59447	12	01	55.51	-11	54	20.0	413
1981	EX35	1981	03	08.56669	12	01	07.90	-11	49	54.1	413
1981	EX35	1981	03	08.60836	12	01	05.91	-11	49	43.3	413
1981	EX35	1981	03	10.53941	11	59	28.54	-11	40	13.8	413
1981	EX35	1981	03	10.58108	11	59	26.92	-11	40	02.4	413
1981	EX35	1981	03	12.56765	11	57	43.01	-11	29	13.9	413
1981	EX35	1981	03	12.67049	11	57	38.07	-11	28	40.0	413
1981	EX35	1981	04	09.60259	11	33	37.88	-07	48	32.3	413
1981	EX35	1981	04	09.63731	11	33	36.89	-07	48	20.6	413
1981	EY35*	1981	03	02.63403	12	07	36.42	+00	27	44.7	17.0V 413
1981	EY35	1981	03	02.67917	12	07	34.29	+00	27	50.9	413
1981	EY35	1981	03	06.60816	12	04	19.21	+00	39	20.1	413
1981	EY35	1981	03	06.64983	12	04	17.05	+00	39	28.2	413
1981	EY35	1981	03	11.66134	11	59	40.14	+00	56	17.2	413
1981	EY35	1981	03	11.70301	11	59	37.73	+00	56	25.1	413
1981	EY35	1981	03	15.69509	11	55	41.32	+01	10	59.7	413
1981	EY35	1981	03	15.73328	11	55	39.19	+01	11	07.0	413
1981	EY35	1981	03	16.73195	11	54	38.47	+01	14	50.6	413
1981	EY35	1981	03	29.52805	11	41	40.83	+02	01	28.9	413
1981	EY35	1981	03	29.56451	11	41	38.69	+02	01	36.4	413
1981	EY35	1981	04	07.51456	11	33	40.37	+02	27	05.4	413
1981	EY35	1981	04	07.54928	11	33	38.65	+02	27	09.9	413
1981	EY35	1981	04	08.50490	11	32	53.94	+02	29	17.5	413
1981	EY35	1981	04	08.53962	11	32	52.39	+02	29	21.2	413
1981	EY35	1981	04	11.60069	11	30	39.03	+02	35	09.2	413
1981	EZ35*	1981	03	03.56736	11	53	16.07	+01	32	11.7	19.5V 413
1981	EZ35	1981	03	03.61076	11	53	14.18	+01	32	23.4	413
1981	EZ35	1981	03	11.60352	11	47	36.86	+02	09	38.9	413
1981	EZ35	1981	03	16.73195	11	43	49.35	+02	34	26.2	413
1981	EZ35	1981	03	29.52805	11	34	38.47	+03	33	21.5	413
1981	EZ35	1981	03	29.56451	11	34	37.09	+03	33	29.5	413
1981	EA36*	1981	03	03.61076	11	54	25.65	-02	28	04.4	20.0V 413
1981	EA36	1981	03	07.66569	11	50	59.15	-02	11	18.1	413
1981	EA36	1981	03	07.70735	11	50	56.83	-02	11	06.0	413
1981	EA36	1981	03	11.54742	11	47	34.32	-01	53	57.9	413
1981	EA36	1981	03	11.64518	11	47	28.85	-01	53	30.8	413
1981	EA36	1981	03	15.64523	11	43	52.95	-01	34	39.3	413
1981	EA36	1981	03	15.68342	11	43	51.04	-01	34	29.4	413
1981	EA36	1981	03	16.69028	11	42	56.07	-01	29	37.5	413
1981	EB36*	1981	03	03.56736	11	56	01.95	+01	17	48.7	19.0V 413
1981	EB36	1981	03	03.61076	11	55	59.71	+01	17	59.7	413
1981	EB36	1981	03	07.60751	11	52	27.74	+01	35	55.8	413
1981	EB36	1981	03	07.64918	11	52	25.54	+01	36	06.3	413
1981	EB36	1981	03	11.60352	11	48	45.79	+01	54	44.3	413
1981	EB36	1981	03	11.64518	11	48	43.46	+01	54	55.4	413
1981	EB36	1981	03	16.69028	11	43	57.08	+02	19	05.6	413
1981	EB36	1981	03	16.73195	11	43	54.73	+02	19	17.2	413
1981	EB36	1981	03	29.56451	11	32	25.34	+03	15	56.6	413
1981	EB36	1981	04	07.51456	11	25	59.60	+03	45	25.7	413
1981	EB36	1981	04	07.54928	11	25	58.29	+03	45	31.3	413
1981	EB36	1981	04	08.50490	11	25	24.00	+03	47	59.8	413
1981	EB36	1981	04	08.53962	11	25	22.85	+03	48	05.3	413
1981	EB36	1981	04	11.56596	11	23	43.45	+03	54	55.5	413

1981	EB36	1981	04	11.60069	11	23	42.48	+03	54	59.4	413
1981	EC36*	1981	03	03.56736	12	03	45.05	-00	00	22.4	18.5V 413
1981	EC36	1981	03	06.60816	12	01	39.23	+00	15	07.8	413
1981	EC36	1981	03	07.60751	12	00	56.75	+00	20	19.0	413
1981	EC36	1981	03	07.64918	12	00	54.95	+00	20	32.2	413
1981	EC36	1981	03	11.60352	11	58	01.94	+00	41	39.2	413
1981	EC36	1981	03	11.64518	11	58	00.31	+00	41	51.1	413
1981	EC36	1981	03	11.66134	11	57	59.40	+00	41	57.2	413
1981	EC36	1981	03	11.70301	11	57	57.63	+00	42	10.0	413
1981	EC36	1981	03	15.73328	11	54	56.13	+01	04	11.0	413
1981	EC36	1981	03	16.69028	11	54	12.43	+01	09	26.5	413
1981	EC36	1981	03	16.73195	11	54	10.48	+01	09	40.7	413
1981	EC36	1981	04	05.55430	11	39	47.36	+02	53	12.6	413
1981	EC36	1981	04	05.58312	11	39	46.51	+02	53	18.2	413
1981	ED36*	1981	03	06.66426	12	03	05.08	-05	14	35.4	19.5V 413
1981	ED36	1981	03	07.70735	12	02	06.96	-05	11	47.2	413
1981	ED36	1981	03	08.68165	12	01	12.10	-05	09	04.8	413
1981	ED36	1981	03	08.72332	12	01	09.67	-05	08	58.7	413
1981	ED36	1981	03	11.54742	11	58	26.91	-05	00	20.5	413
1981	ED36	1981	03	11.58909	11	58	24.91	-05	00	14.2	413
1981	ED36	1981	03	12.58070	11	57	25.90	-04	56	56.5	413
1981	ED36	1981	03	12.61890	11	57	23.97	-04	56	50.9	413
1981	ED36	1981	03	15.64523	11	54	21.76	-04	46	15.7	413
1981	ED36	1981	03	15.68342	11	54	19.79	-04	46	07.0	413
1981	EE36*	1981	03	06.54930	12	25	43.12	-11	27	57.2	19.5V 413
1981	EE36	1981	03	06.59096	12	25	41.45	-11	27	56.8	413
1981	EE36	1981	03	08.60836	12	24	14.51	-11	25	44.2	413
1981	EE36	1981	03	12.63230	12	21	12.68	-11	19	48.2	413
1981	EE36	1981	03	12.67049	12	21	10.91	-11	19	44.1	413
1981	EF36*	1981	03	07.55280	11	36	38.26	-10	23	59.0	20.0V 413
1981	EF36	1981	03	07.59447	11	36	36.60	-10	23	50.2	413
1981	EF36	1981	03	10.53941	11	34	19.94	-10	09	19.8	413
1981	EF36	1981	03	12.52945	11	32	46.52	-09	58	40.9	413
1981	EG36*	1981	03	07.60751	11	36	43.58	+02	25	49.7	17.5V 413
1981	EG36	1981	03	11.60352	11	33	56.11	+02	49	21.5	413
1981	EG36	1981	03	11.64518	11	33	54.40	+02	49	34.5	413
1981	EG36	1981	03	16.69028	11	30	20.89	+03	19	27.9	413
1981	EG36	1981	03	16.73195	11	30	19.55	+03	19	38.5	413
1981	EG36	1981	03	29.52805	11	21	44.97	+04	31	54.4	413
1981	EG36	1981	03	29.56451	11	21	43.63	+04	32	04.9	413
1981	EG36	1981	04	07.54928	11	16	38.97	+05	15	47.0	413
1981	EG36	1981	04	08.53962	11	16	09.40	+05	20	06.0	413
1981	EG36	1981	04	11.56596	11	14	45.08	+05	32	37.4	413
1981	EG36	1981	04	11.60069	11	14	44.22	+05	32	44.1	413
1981	EH36*	1981	03	07.55280	11	40	07.22	-09	55	46.3	20.5V 413
1981	EH36	1981	03	10.53941	11	37	44.69	-09	50	52.6	413
1981	EH36	1981	03	12.52945	11	36	08.60	-09	47	03.3	413
1981	EJ36*	1981	03	07.60751	11	44	23.39	+02	20	47.1	20.0V 413
1981	EJ36	1981	03	11.60352	11	40	40.54	+02	42	12.9	413
1981	EJ36	1981	03	29.56451	11	24	23.02	+04	14	22.5	413
1981	EJ36	1981	04	11.56596	11	15	04.11	+05	04	20.2	413
1981	EK36*	1981	03	07.55280	11	45	30.92	-09	17	49.8	20.5V 413
1981	EK36	1981	03	07.59447	11	45	29.61	-09	17	30.8	413
1981	EK36	1981	03	10.53941	11	43	39.46	-08	49	36.7	413
1981	EK36	1981	03	10.58108	11	43	37.79	-08	49	14.2	413
1981	EK36	1981	03	12.56765	11	42	21.59	-08	29	31.6	413
1981	EL36*	1981	03	07.66569	11	45	50.08	-02	49	09.5	20.0V 413
1981	EL36	1981	03	11.54742	11	42	17.78	-02	29	44.3	413
1981	EL36	1981	03	15.64523	11	38	26.18	-02	07	40.2	413

1981	EL36	1981	03	15.68342	11	38	24.10	-02	07	27.8	413
1981	EM36*	1981	03	07.55280	11	46	05.24	-13	13	42.5	20.5V 413
1981	EM36	1981	03	07.59447	11	46	03.35	-13	13	40.6	413
1981	EM36	1981	03	10.53941	11	43	29.48	-13	09	20.4	413
1981	EM36	1981	03	12.52945	11	41	43.52	-13	05	13.9	413
1981	EN36*	1981	03	07.55280	11	46	10.99	-08	15	09.8	20.5V 413
1981	EN36	1981	03	07.59447	11	46	09.15	-08	14	54.9	413
1981	EN36	1981	03	12.52945	11	42	19.95	-07	40	20.1	413
1981	EN36	1981	03	12.56765	11	42	18.35	-07	40	05.0	413
1981	EN36	1981	03	15.68342	11	39	51.37	-07	16	37.0	413
1981	EO36*	1981	03	07.55280	11	47	51.34	-08	55	26.3	20.0V 413
1981	EO36	1981	03	07.59447	11	47	48.95	-08	55	24.3	413
1981	EO36	1981	03	10.53941	11	44	54.87	-08	50	47.8	413
1981	EO36	1981	03	12.52945	11	42	53.54	-08	46	50.3	413
1981	EO36	1981	03	12.56765	11	42	51.57	-08	46	46.4	413
1981	EP36*	1981	03	07.55280	11	49	34.65	-11	36	13.4	20.0V 413
1981	EP36	1981	03	07.59447	11	49	32.88	-11	36	04.8	413
1981	EP36	1981	03	10.53941	11	47	23.62	-11	23	32.2	413
1981	EP36	1981	03	10.58108	11	47	21.83	-11	23	21.6	413
1981	EP36	1981	04	09.60259	11	26	12.75	-08	29	60.0	413
1981	EP36	1981	04	09.63731	11	26	11.65	-08	29	48.3	413
1981	EQ36*	1981	03	07.55280	11	50	06.74	-11	45	52.3	20.5V 413
1981	EQ36	1981	03	10.53941	11	47	37.61	-11	40	53.8	413
1981	EQ36	1981	03	10.58108	11	47	35.68	-11	40	50.7	413
1981	EQ36	1981	03	12.52945	11	45	55.55	-11	36	35.0	413
1981	ER36*	1981	03	07.55280	11	50	50.50	-10	35	48.8	20.0V 413
1981	ER36	1981	03	07.59447	11	50	48.20	-10	35	45.1	413
1981	ER36	1981	03	10.53941	11	48	13.62	-10	29	20.8	413
1981	ER36	1981	03	10.58108	11	48	11.20	-10	29	15.2	413
1981	ER36	1981	03	12.56765	11	46	25.43	-10	24	17.2	413
1981	ES36*	1981	03	07.70735	11	52	45.13	-06	15	48.5	20.0V 413
1981	ES36	1981	03	11.54742	11	49	37.91	-06	08	33.1	413
1981	ES36	1981	03	11.58909	11	49	35.61	-06	08	25.9	413
1981	ES36	1981	03	15.68342	11	46	10.74	-05	59	15.7	413
1981	ET36*	1981	03	07.64918	11	54	33.54	-02	13	35.2	20.0V 413
1981	ET36	1981	03	11.54742	11	51	41.28	-01	59	26.8	413
1981	ET36	1981	03	11.58909	11	51	39.55	-01	59	16.3	413
1981	ET36	1981	03	11.60352	11	51	39.16	-01	59	16.2	413
1981	ET36	1981	03	11.64518	11	51	36.87	-01	59	04.0	413
1981	ET36	1981	03	15.64523	11	48	36.36	-01	43	47.3	413
1981	EU36*	1981	03	07.66569	11	54	50.18	-06	37	28.8	20.0V 413
1981	EU36	1981	03	11.58909	11	51	25.04	-06	11	26.0	413
1981	EU36	1981	03	15.64523	11	47	45.76	-05	41	53.8	413
1981	EU36	1981	03	15.68342	11	47	43.69	-05	41	36.9	413
1981	EV36*	1981	03	07.55280	11	55	26.55	-11	39	55.2	20.0V 413
1981	EV36	1981	03	10.53941	11	53	09.21	-11	32	58.8	413
1981	EV36	1981	03	12.52945	11	51	35.42	-11	27	33.4	413
1981	EW36*	1981	03	07.66569	11	55	52.70	-07	48	23.3	20.5V 413
1981	EW36	1981	03	11.54742	11	52	48.07	-07	33	53.4	413
1981	EW36	1981	03	11.58909	11	52	46.00	-07	33	42.7	413
1981	EW36	1981	03	15.64523	11	49	27.01	-07	16	42.4	413
1981	EX36*	1981	03	07.55280	11	56	29.31	-12	32	23.1	20.5V 413
1981	EX36	1981	03	07.59447	11	56	27.25	-12	32	26.0	413
1981	EX36	1981	03	10.53941	11	53	28.58	-12	33	46.9	413
1981	EX36	1981	03	12.56765	11	51	22.65	-12	33	45.4	413
1981	EY36*	1981	03	07.66569	11	56	49.46	-02	50	00.6	20.0V 413
1981	EY36	1981	03	07.70735	11	56	47.76	-02	49	54.1	413
1981	EY36	1981	03	11.54742	11	53	48.94	-02	40	19.0	413
1981	EY36	1981	03	11.58909	11	53	47.13	-02	40	13.5	413

1981	EY36	1981	03	15.64523	11	50	32.51	-02	29	10.0	413
1981	EZ36*	1981	03	07.55280	12	00	16.22	-09	38	31.8	20.0V 413
1981	EZ36	1981	03	07.59447	12	00	14.52	-09	38	28.5	413
1981	EZ36	1981	03	10.58108	11	57	58.04	-09	32	36.1	413
1981	EZ36	1981	03	12.52945	11	56	26.10	-09	28	04.8	413
1981	EA37*	1981	03	07.70735	12	01	44.44	-03	06	07.2	19.5V 413
1981	EA37	1981	03	11.54742	11	58	05.42	-03	00	50.4	413
1981	EA37	1981	03	11.66134	11	57	58.39	-03	00	39.6	413
1981	EA37	1981	03	15.64523	11	54	01.94	-02	53	40.5	413
1981	EA37	1981	03	15.68342	11	53	59.90	-02	53	36.9	413
1981	EB37*	1981	03	11.60352	11	37	49.37	+03	45	32.9	18.0V 413
1981	EB37	1981	03	11.64518	11	37	46.97	+03	45	38.6	413
1981	EB37	1981	03	16.69028	11	33	03.73	+04	00	10.1	413
1981	EB37	1981	03	29.56451	11	21	33.62	+04	32	35.2	413
1981	EB37	1981	04	07.51456	11	14	49.25	+04	47	27.9	413
1981	EB37	1981	04	07.54928	11	14	47.90	+04	47	29.2	413
1981	EB37	1981	04	08.50490	11	14	09.86	+04	48	35.3	413
1981	EB37	1981	04	11.56596	11	12	17.23	+04	51	20.5	413
1981	EB37	1981	04	11.60069	11	12	16.16	+04	51	20.6	413
1981	EC37*	1981	03	11.60352	11	55	03.26	+04	16	43.1	18.0V 413
1981	EC37	1981	03	11.64518	11	55	01.08	+04	16	44.0	413
1981	EC37	1981	03	16.69028	11	50	20.41	+04	19	05.7	413
1981	EC37	1981	03	29.52805	11	38	25.23	+04	21	09.9	413
1981	EC37	1981	03	29.56451	11	38	23.29	+04	21	09.7	413
1981	EC37	1981	04	07.51456	11	30	48.94	+04	16	33.1	413
1981	EC37	1981	04	08.53962	11	30	01.21	+04	15	36.8	413
1981	EC37	1981	04	11.56596	11	27	46.12	+04	12	16.4	413
1981	EC37	1981	04	11.60069	11	27	44.72	+04	12	14.5	413
1981	ED37*	1981	03	11.60352	11	56	35.00	+04	16	22.1	19.5V 413
1981	ED37	1981	03	11.64518	11	56	32.37	+04	16	36.4	413
1981	ED37	1981	03	16.69028	11	51	34.16	+04	43	40.3	413
1981	ED37	1981	03	16.73195	11	51	31.74	+04	43	54.4	413
1981	ED37	1981	03	29.52805	11	38	50.16	+05	47	51.2	413
1981	ED37	1981	03	29.56451	11	38	48.27	+05	47	59.8	413
1981	ED37	1981	04	08.50490	11	29	58.04	+06	26	40.4	413
1981	ED37	1981	04	08.53962	11	29	56.37	+06	26	47.8	413
1981	ED37	1981	04	11.56596	11	27	35.53	+06	35	49.2	413
1981	ED37	1981	04	11.60069	11	27	34.15	+06	35	52.9	413
1981	EE37*	1981	03	11.60352	11	58	40.17	+03	18	41.6	18.0V 413
1981	EE37	1981	03	16.69028	11	53	36.21	+03	44	37.2	413
1981	EE37	1981	03	16.73195	11	53	33.63	+03	44	50.0	413
1981	EE37	1981	03	29.52805	11	40	46.35	+04	46	10.7	413
1981	EE37	1981	03	29.56451	11	40	44.34	+04	46	20.7	413
1981	EE37	1981	04	07.51456	11	32	41.29	+05	20	40.1	413
1981	EE37	1981	04	07.54928	11	32	39.54	+05	20	47.1	413
1981	EE37	1981	04	08.50490	11	31	52.75	+05	23	52.1	413
1981	EE37	1981	04	08.53962	11	31	51.35	+05	23	57.3	413
1981	EE37	1981	04	11.60069	11	29	28.98	+05	32	51.9	413
1981	EF37*	1981	03	11.60352	11	58	57.48	+02	47	22.2	16.5V 413
1981	EF37	1981	03	16.69028	11	53	35.43	+02	53	14.6	413
1981	EF37	1981	03	16.73195	11	53	32.74	+02	53	18.5	413
1981	EF37	1981	03	29.52805	11	39	56.10	+03	05	16.1	413
1981	EF37	1981	03	29.56451	11	39	53.93	+03	05	18.2	413
1981	EF37	1981	04	07.51456	11	31	14.86	+03	07	41.3	413
1981	EF37	1981	04	07.54928	11	31	13.11	+03	07	41.3	413
1981	EF37	1981	04	08.50490	11	30	22.41	+03	07	30.4	413
1981	EF37	1981	04	08.53962	11	30	20.73	+03	07	30.3	413
1981	EF37	1981	04	11.56596	11	27	47.69	+03	06	21.0	413
1981	EF37	1981	04	11.60069	11	27	46.09	+03	06	20.3	413

1981 FC1 *	1981 03 16.73195	11 31 53.18	+04 18 47.5		16.0V	413
1981 FC1	1981 03 29.56451	11 21 25.23	+04 35 58.9			413
1981 FC1	1981 04 07.54928	11 15 27.96	+04 40 25.5			413
1981 FC1	1981 04 08.50490	11 14 55.54	+04 40 25.2			413
1981 FC1	1981 04 08.53962	11 14 54.47	+04 40 24.9			413
1981 FC1	1981 04 11.56596	11 13 19.68	+04 39 44.9			413
1981 FC1	1981 04 11.60069	11 13 18.77	+04 39 43.2			413
1981 GM1	1981 03 11.60352	11 56 13.86	+04 00 52.4		15.5V	413
1981 GM1	1981 03 11.64518	11 56 11.31	+04 00 51.3			413
1981 GM1	1981 03 16.69028	11 50 39.50	+03 57 46.5			413
1981 GM1	1981 03 16.73195	11 50 36.77	+03 57 45.4			413
1981 GM1	1981 03 29.52805	11 36 45.93	+03 44 51.9			413
1981 GM1	1981 03 29.56451	11 36 43.71	+03 44 49.0			413
1981 GM1	1981 04 07.51456	11 28 19.35	+03 28 21.7			413
1981 GM1	1981 04 07.54928	11 28 17.59	+03 28 17.2			413
1981 GM1	1981 04 08.53962	11 27 28.37	+03 25 58.8			413
1981 GM1	1981 04 11.56596	11 25 06.97	+03 18 18.8			413
1981 GM1	1981 04 11.60069	11 25 05.44	+03 18 13.3			413

OBSERVATIONS MADE WITH THE 0.6-M F/14 REFLECTOR AT MT. JOHN UNIVERSITY OBSERVATORY BY A. C. GILMORE. MEASURED BY P. M. KILMARTIN (ASSISTED BY R. McINTOSH AND W. M. KISSLING).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1982 MH	1983 12 05.50624	04 43 24.36	+24 02 35.2		17	474
1982 MH	1983 12 05.55311	04 43 20.91	+24 02 35.5			474
1983 XD1 *	1983 12 05.50624	04 41 47.11	+24 12 22.1		18	474
1983 XD1	1983 12 05.55311	04 41 43.40	+24 12 18.8			474

OBSERVATIONS MADE WITH THE 0.6-M CNRS-LIEGE SCHMIDT TELESCOPE AT HAUTE PROVENCE BY F. DOSSIN, A. SURDEJ AND C. ARPIGNY (WITH ASSISTANCE FROM P. MAGAIN, G. SAUSE AND A. LAUGIER).

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1018	1981 03 07.03750	11 53 17.26	+01 50 41.4		17	511
1824	1981 03 07.03750	11 52 51.81	+01 56 34.0		17	511
2919	1981 03 07.03750	11 45 35.71	+01 58 18.4		17	511
1981 EV32*	1981 03 07.03750	11 52 48.82	+01 51 00.7		17.5	511
1982 YA	1983 01 15.85694	05 48 17.97	-11 09 46.8		18.5	511
1982 YA	1983 01 15.89306	05 48 17.91	-11 10 44.9			511
1982 YA	1983 01 16.90417	05 48 19.84	-11 38 17.8			511
1982 YA	1983 01 17.91875	05 48 24.41	-12 03 48.4			511
1982 YA	1983 01 17.94931	05 48 24.40	-12 04 30.4			511
1982 YA	1983 01 18.85208	05 48 31.25	-12 25 37.7			511

OBSERVATIONS MADE AT THE OSSERVATORIO S. VITTORE, BOLOGNA, BY C. VACCHI AND G. SASSI; SCANNED BY VACCHI; MEASURED BY VACCHI, V. GORETTI AND E. COLOMBINI; REDUCED AND COMMUNICATED BY COLOMBINI.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1266	1983 02 04.91736	09 29 27.97	+16 19 55.6		15.0	552
1266	1983 02 04.95139	09 29 26.17	+16 19 55.3			552
1477	1983 01 12.91736	09 03 55.94	+24 36 33.5		16.0	552
1477	1983 01 12.93403	09 03 54.88	+24 36 30.3			552
1500	1983 01 11.93264	08 31 50.91	+33 01 22.8		16.5	552
1500	1983 01 11.95139	08 31 49.39	+33 01 27.3			552
1683	1982 11 14.92014	03 15 29.33	+38 04 43.9		16.5	552
1683	1982 11 14.93889	03 15 28.02	+38 04 41.0			552
2964	1983 10 28.90035	01 24 27.69	+33 35 25.2		15.7	552
2964	1983 10 28.92187	01 24 26.45	+33 35 22.2			552
1979 SD7	1984 01 05.87986	04 38 59.17	+28 41 01.2		16.6	552
1979 SD7	1984 01 05.90833	04 38 58.18	+28 40 56.3			552

1981	DQ2		1984	01	06.86597	06	40	06.18	+15 49 41.2	17.0	552
1981	DQ2		1984	01	06.88611	06	40	04.98	+15 49 40.7		552
1981	EF23		1984	01	06.89931	07	12	05.07	+17 59 07.2	16.7	552
1981	EF23		1984	01	06.92292	07	12	03.50	+17 59 11.0		552
1983	WB		1984	01	01.91250	03	50	43.88	+20 02 26.1	17.3	552
1983	WB		1984	01	01.93889	03	50	43.19	+20 02 28.9		552
1983	WG		1984	01	01.91250	03	51	53.61	+20 10 09.3	17.1	552
1983	WG		1984	01	01.93889	03	51	52.88	+20 10 16.9		552

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

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
2811		1984	01 25.94167	08 31 21.44	+19 40 00.1	16.5	567
2811		1984	01 25.96111	08 31 20.25	+19 40 03.7		567
2811		1984	01 25.98055	08 31 19.03	+19 40 07.4		567
1981	EG19	1984	01 25.87639	07 07 06.10	+17 54 03.1	16.8	567
1981	EG19	1984	01 25.89583	07 07 05.07	+17 54 05.3		567
1981	EG19	1984	01 25.91527	07 07 03.91	+17 54 07.2		567
1982	XC	1984	02 10.06875	11 21 35.23	+16 46 09.5	16.5	567
1982	XC	1984	02 10.08472	11 21 34.58	+16 46 16.7		567
1982	XC	1984	02 10.10069	11 21 33.93	+16 46 23.9		567
1984	BA *	1984	01 25.87639	07 07 28.51	+17 33 30.8	15.8	567
1984	BA	1984	01 25.89583	07 07 27.17	+17 33 31.9		567
1984	BA	1984	01 25.91527	07 07 25.76	+17 33 33.1		567
1984	BA	1984	02 01.92639	07 00 43.36	+17 37 38.8	15.8	567
1984	BA	1984	02 01.94236	07 00 42.51	+17 37 39.1		567
1984	BA	1984	02 10.02708	06 54 39.65	+17 42 29.6	15.8	567
1984	BA	1984	02 10.04444	06 54 38.71	+17 42 31.9		567
1984	BB *	1984	01 25.87639	07 07 47.97	+18 04 04.9	16.7	567
1984	BB	1984	01 25.89583	07 07 47.19	+18 04 09.9		567
1984	BB	1984	01 25.91527	07 07 46.06	+18 04 15.7		567
1984	BB	1984	02 01.96181	07 02 34.21	+18 44 42.5	16.9	567
1984	BB	1984	02 01.97777	07 02 33.42	+18 44 48.0		567

OBSERVATIONS MADE WITH THE 1.2-M SCHMIDT TELESCOPE AT PALOMAR BY E. HELIN
AND R. S. DUNBAR. MEASURED BY HELIN, DUNBAR AND S. SWANSON.

Object		Date	UT	R. A. (1950)	Decl.	Daily mot.	Mag.	Obs.
1979	BA	1984	01 28.45694	11 03 27.07	+06 53 38.2			675
1979	BA	1984	01 28.47778	11 03 26.45	+06 54 39.0			675
1979	BA	1984	01 29.49028	11 02 57.27	+07 48 28.5			675
1979	BA	1984	01 29.50417	11 02 56.78	+07 49 13.1			675
1979	BA	1984	01 30.34444	11 02 30.30	+08 34 36.8			675
1979	BA	1984	01 30.36528	11 02 29.72	+08 35 36.7			675
1984	AB	1984	01 30.16875	05 33 41.65	+32 01 19.8			675
1984	AB	1984	01 30.18958	05 33 41.06	+32 01 32.5			675
1984	AC *	1984	01 07.30764	07 25 02.71	+27 21 50.2		17.1	675
1984	AC	1984	01 07.34931	07 24 57.99	+27 20 46.2			675
1984	AD *	1984	01 07.30764	07 42 24.02	+30 12 03.8		16.8	675
1984	AD	1984	01 07.34931	07 42 19.75	+30 11 31.7			675
1984	BC *	1984	01 30.43056	09 59 45.64	+18 24 02.4	0.4+ 33+	17.5	675
1984	BF *	1984	01 28.36528	09 01 26.69	+18 49 16.2		17.0	675
1984	BF	1984	01 28.39306	09 01 23.79	+18 48 58.6			675
1984	BF	1984	01 28.40694	09 01 22.43	+18 48 55.3			675
1984	BF	1984	01 29.37083	08 59 36.64	+18 39 21.1			675
1984	BF	1984	01 29.37778	08 59 34.56	+18 39 10.5			675
1984	BF	1984	01 30.31250	08 57 52.91	+18 29 59.1			675
1984	BF	1984	01 30.34028	08 57 50.09	+18 29 44.0			675
1984	BG *	1984	01 28.45694	10 59 44.08	+07 43 21.8		17.5	675

1984 BG		1984 01 28.47778	10 59 43.89	+07 43 53.7					675
1984 BG		1984 01 29.49028	10 59 34.40	+08 13 37.1					675
1984 BG		1984 01 29.50417	10 59 34.24	+08 13 55.7					675
1984 BG		1984 01 30.34444	10 59 25.01	+08 39 09.0					675
1984 BG		1984 01 30.36528	10 59 24.79	+08 39 34.5					675

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

Object		Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
1984 AB		1984 01 25.29567	05 36 56.29	+31 03 48.8			1	675
1984 AJ	*	1984 01 10.39722	09 23 04.19	+24 33 25.2		15	2	675
1984 AJ		1984 01 10.41111	09 22 57.04	+24 34 01.9			2	675

Note 1: measurer J. Gibson. 2: measurer S. Swanson.

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

Object		Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1976 DD		1983 12 14.51877	08 56 38.72	+49 52 05.5			675
1976 DD		1983 12 15.54169	08 55 59.08	+49 54 03.3			675
1976 DD		1984 01 24.32918	07 51 09.23	+47 05 32.8			675
1982 FT		1984 01 24.29934	04 14 24.33	+53 11 01.1			675
1982 HS		1983 11 28.35696	03 33 48.46	+31 47 51.8			675
1982 HS		1983 11 29.40211	03 32 23.05	+31 48 52.7			675
1982 QR		1983 11 28.42293	06 11 14.23	+38 57 14.6			675
1982 QR		1983 11 29.44169	06 10 20.93	+38 54 44.1			675
1982 UM		1983 11 28.38266	05 54 45.34	+27 09 47.4			675
1982 UM		1983 11 29.42364	05 54 03.51	+27 10 47.5			675
1983 QD		1983 11 27.18267	23 40 06.66	+14 27 02.2			675
1983 RD		1983 11 28.32918	04 44 34.33	-14 07 31.6			675
1983 SA		1984 01 24.18128	00 25 26.64	+30 57 15.3			675
1983 VA		1984 01 23.55489	15 38 14.86	+15 21 31.4			675
1983 VW1		1984 01 24.26878	03 31 45.78	+11 16 10.4			675
1984 BE	*	1984 01 24.16670	00 48 52.21	+11 55 06.0		17.5	675
1984 CE	*	1984 02 10.33683	10 01 46.03	+25 32 49.5		17.5	675
1984 CE		1984 02 11.38267	10 00 45.20	+25 42 34.7			675
1984 CF	*	1984 02 10.33683	10 05 11.99	+25 22 03.9		16.5	675
1984 CF		1984 02 11.38267	10 04 18.73	+25 30 26.5			675
2630 P-L		1983 11 29.50211	05 35 27.00	+27 20 54.1			675
2630 P-L		1983 12 14.49794	05 19 22.58	+27 37 13.1			675

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

Object	Date	UT	R. A. (1950)	Decl.	Obs.
1983 SA	1983 11 07.18125	22 43 30.20	+23 16 40.2		675
1983 SA	1983 11 07.19930	22 43 30.94	+23 16 47.4		675
1983 TB	1983 11 06.15347	21 48 22.75	+33 38 01.7		675
1983 TB	1983 11 07.19513	21 51 53.22	+32 52 48.1		675
1983 VW1	1983 11 07.40486	03 46 54.84	+29 37 08.4		675
1983 VW1	1983 11 08.44027	03 46 03.15	+29 20 00.0		675
1983 VB2	1983 11 07.33750	02 38 09.05	+12 01 02.5		675
1983 VB2	1983 11 07.37152	02 38 05.72	+12 01 20.7		675
1983 VC2	1983 11 07.33750	02 40 10.54	+11 58 40.9		675
1983 VC2	1983 11 07.37152	02 40 08.89	+11 58 26.1		675

OBSERVATIONS MADE AT THE LOWELL OBSERVATORY'S ANDERSON MESA STATION BY E. BOWELL, S. J. BUS, B. A. SKIFF AND J. WAGNER. MEASURED BY BOWELL AND WAGNER.

Object	Date	UT	R. A. (1950)	Decl.	Mag.	N	Obs.
42	1983 12 06.27917	06 23 26.89	+24 04 45.8				688
42	1983 12 06.32083	06 23 24.33	+24 04 55.9				688

42	1984	01	05.14306	05	50	19.13	+25	33	03.4	688
42	1984	01	05.18889	05	50	16.20	+25	33	09.6	688
42	1984	01	10.22708	05	45	16.94	+25	43	12.7	688
42	1984	01	10.23785	05	45	16.29	+25	43	13.6	688
91	1984	01	02.17639	04	23	12.84	+24	52	49.8	688
91	1984	01	04.10903	04	22	12.12	+24	49	21.1	688
91	1984	01	04.18403	04	22	09.68	+24	49	13.9	688
92	1984	01	05.23472	06	40	43.07	+22	53	06.1	688
92	1984	01	05.28125	06	40	40.55	+22	53	15.0	688
92	1984	01	08.17778	06	38	09.50	+23	02	33.1	688
92	1984	01	08.22361	06	38	07.02	+23	02	41.7	688
93	1984	01	08.35625	09	33	50.90	+24	59	14.2	688
93	1984	01	08.42431	09	33	48.21	+24	59	29.8	688
116	1984	01	08.37917	10	38	18.84	+14	01	30.4	688
116	1984	01	08.44653	10	38	18.91	+14	01	39.2	688
199	1983	12	06.27917	05	59	57.94	+22	06	38.1	688
199	1983	12	06.32083	05	59	56.08	+22	06	43.3	688
210	1984	01	08.35625	09	19	17.73	+24	05	39.3	688
210	1984	01	08.42431	09	19	14.87	+24	05	58.4	688
283	1984	01	10.22708	05	57	00.96	+29	01	17.9	688
283	1984	01	10.23785	05	57	00.46	+29	01	15.8	688
323	1984	01	05.32708	07	56	12.99	+31	29	32.8	688
323	1984	01	05.35764	07	56	10.61	+31	30	07.2	688
332	1984	01	08.37917	10	16	43.64	+14	39	40.0	688
332	1984	01	08.44653	10	16	42.25	+14	39	50.0	688
335	1984	01	08.37917	10	22	28.24	+09	00	53.8	688
335	1984	01	08.44653	10	22	27.22	+09	01	03.4	688
340	1983	10	09.13819	00	03	32.61	-02	37	05.3	688
340	1983	10	09.16875	00	03	31.14	-02	37	10.5	688
405	1983	10	12.16875	00	14	21.39	+18	09	43.3	688
405	1983	10	12.21597	00	14	19.09	+18	09	22.4	688
417	1984	01	05.17361	06	14	10.42	+13	24	18.0	688
417	1984	01	05.21944	06	14	07.83	+13	24	19.5	688
422	1984	01	05.32708	07	54	37.51	+29	05	57.1	688
422	1984	01	05.35764	07	54	35.18	+29	06	03.6	688
422	1984	01	08.26944	07	50	57.06	+29	15	19.4	688
422	1984	01	08.31528	07	50	53.47	+29	15	27.0	688
461	1983	12	06.27917	06	08	35.85	+21	16	52.3	688
461	1983	12	06.32083	06	08	33.88	+21	16	52.7	688
468	1983	12	06.27917	06	12	40.25	+23	59	43.0	688
468	1983	12	06.32083	06	12	38.11	+23	59	43.6	688
555	1984	01	08.37917	10	34	48.45	+09	36	46.1	688
555	1984	01	08.44653	10	34	48.22	+09	36	51.4	688
566	1984	01	08.33403	09	09	55.88	+21	20	49.1	688
566	1984	01	08.35625	09	09	55.17	+21	20	55.0	688
566	1984	01	08.40139	09	09	53.30	+21	21	07.4	688
570	1983	12	09.29167	07	41	05.43	+19	24	24.0	688
570	1983	12	09.35139	07	41	03.73	+19	24	27.1	688
570	1984	01	05.26597	07	22	55.12	+19	52	34.7	688
570	1984	01	05.31181	07	22	52.80	+19	52	38.1	688
570	1984	01	08.25417	07	20	29.33	+19	56	41.2	688
570	1984	01	08.30000	07	20	27.01	+19	56	46.1	688
586	1983	10	09.13819	23	49	08.33	+00	39	26.6	688
586	1983	10	09.16875	23	49	07.19	+00	39	18.5	688
623	1984	01	05.32708	07	47	58.69	+29	30	51.1	688
623	1984	01	05.35764	07	47	56.30	+29	30	43.8	688
623	1984	01	08.26944	07	44	13.88	+29	18	18.6	688
623	1984	01	08.31528	07	44	10.23	+29	18	07.1	688
632	1983	12	06.27917	06	21	21.37	+26	32	23.8	688

632	1983	12	06.32083	06	21	19.12	+26	32	27.7		688
632	1984	01	05.14306	05	51	39.24	+26	38	26.4	16.8	688
632	1984	01	05.18889	05	51	36.51	+26	38	25.6		688
665	1984	01	26.15000	06	48	32.71	+27	09	15.9		688
665	1984	01	26.21042	06	48	29.75	+27	09	06.8		688
665	1984	02	04.14028	06	42	08.17	+26	45	42.1		688
665	1984	02	04.21319	06	42	05.39	+26	45	30.4		688
682	1983	10	09.13819	23	54	54.85	+01	21	56.4		688
682	1983	10	09.16875	23	54	53.62	+01	21	38.1		688
774	1983	12	09.29167	07	53	12.00	+16	33	41.9		688
774	1983	12	09.35139	07	53	10.21	+16	33	41.2		688
774	1984	01	05.26597	07	35	01.99	+16	39	30.0		688
774	1984	01	05.31181	07	34	59.53	+16	39	32.3		688
797	1984	01	02.15347	03	57	31.88	+18	34	22.0		688
797	1984	01	04.08264	03	56	42.08	+18	30	07.7		688
797	1984	01	04.16042	03	56	40.17	+18	29	57.3		688
873	1984	01	05.23472	06	53	29.91	+17	05	06.3		688
873	1984	01	05.28125	06	53	27.10	+17	05	14.6		688
873	1984	01	08.17778	06	50	37.00	+17	12	04.5		688
873	1984	01	08.22361	06	50	34.21	+17	12	11.0		688
910	1984	01	08.35625	09	20	29.39	+28	41	14.4		688
910	1984	01	08.42431	09	20	26.73	+28	41	38.5		688
936	1984	01	08.33403	09	00	55.03	+19	56	04.2		688
936	1984	01	08.40139	09	00	52.35	+19	56	18.6		688
938	1983	12	06.27917	06	17	14.11	+21	25	48.0		688
938	1983	12	06.32083	06	17	12.09	+21	25	49.4		688
970	1984	01	08.37917	10	30	54.39	+08	22	37.7		688
970	1984	01	08.44653	10	30	53.04	+08	22	35.1		688
1000	1984	01	08.35625	09	22	51.38	+23	56	17.0		688
1000	1984	01	08.42431	09	22	48.38	+23	56	19.7		688
1022	1984	01	08.42431	09	22	52.91	+23	44	36.0		688
1082	1983	12	06.27917	06	06	48.77	+21	08	02.5		688
1082	1983	12	06.32083	06	06	46.55	+21	08	03.2		688
1122	1984	01	02.15347	04	07	40.98	+23	27	45.8		688
1122	1984	01	02.17639	04	07	40.56	+23	27	46.5		688
1122	1984	01	04.08264	04	07	13.82	+23	30	18.7		688
1122	1984	01	04.10903	04	07	13.52	+23	30	19.8		688
1122	1984	01	04.16042	04	07	12.43	+23	30	26.8		688
1122	1984	01	04.18403	04	07	12.41	+23	30	26.3		688
1153	1984	01	02.15347	03	56	34.32	+22	31	50.0		688
1153	1984	01	02.17639	03	56	33.85	+22	31	44.6		688
1153	1984	01	04.08264	03	55	45.86	+22	25	34.6		688
1153	1984	01	04.10903	03	55	45.24	+22	25	29.4		688
1153	1984	01	04.16042	03	55	43.70	+22	25	19.0		688
1153	1984	01	04.18403	03	55	43.33	+22	25	16.8		688
1204	1984	01	08.33403	09	06	04.06	+19	10	11.7		688
1204	1984	01	08.40139	09	06	00.42	+19	10	27.4		688
1224	1983	10	12.16875	23	58	46.90	+16	27	30.4		688
1224	1983	10	12.21597	23	58	44.87	+16	27	03.3		688
1247	1984	01	02.15347	03	53	29.21	+17	55	40.4		688
1247	1984	01	04.08264	03	52	44.05	+17	54	22.7		688
1247	1984	01	04.16042	03	52	42.41	+17	54	16.9		688
1326	1984	01	08.35625	09	14	19.55	+25	49	17.4		688
1326	1984	01	08.42431	09	14	16.54	+25	49	57.9		688
1348	1984	01	08.35625	09	15	48.28	+22	26	33.9		688
1348	1984	01	08.42431	09	15	45.88	+22	27	00.7		688
1350	1984	01	05.25069	07	01	29.45	+20	04	45.7		688
1350	1984	01	05.29653	07	01	26.80	+20	04	51.9		688
1350	1984	01	08.23889	06	58	39.36	+20	11	29.6		688

1350		1984	01	26.15000	06	43	18.02	+20	49	56.8		688
1350		1984	01	26.21042	06	43	15.39	+20	50	04.0		688
1350		1984	02	04.14028	06	37	43.42	+21	06	49.7		688
1350		1984	02	04.21319	06	37	40.99	+21	06	57.4		688
1354		1984	01	08.35625	09	29	59.23	+22	52	36.1	16.8	688
1354		1984	01	08.42431	09	29	56.79	+22	52	51.1		688
1358		1984	01	05.32708	07	44	53.26	+24	35	40.0		688
1358		1984	01	05.35764	07	44	51.27	+24	35	46.9		688
1358		1984	01	08.26944	07	41	47.15	+24	43	44.6		688
1358		1984	01	08.31528	07	41	44.30	+24	43	53.3		688
1365		1983	12	09.29167	07	53	42.71	+17	44	48.7		688
1365		1983	12	09.35139	07	53	41.03	+17	44	43.1		688
1365		1984	01	05.26597	07	30	53.77	+17	25	38.7		688
1365		1984	01	05.31181	07	30	50.53	+17	25	38.4		688
1365		1984	01	08.25417	07	27	28.24	+17	26	03.9		688
1365		1984	01	08.30000	07	27	24.89	+17	26	05.3		688
1388		1984	01	05.14306	05	28	37.57	+32	28	05.9	3	688
1388		1984	01	05.18889	05	28	35.45	+32	28	05.9		688
1409		1983	10	09.13819	00	06	19.92	-01	11	24.8		688
1409		1983	10	09.16875	00	06	18.67	-01	11	37.8		688
1440		1984	01	08.37917	10	39	06.64	+11	41	54.0		688
1440		1984	01	08.44653	10	39	05.83	+11	42	02.5		688
1449		1984	01	05.23472	06	50	13.16	+21	23	59.2		688
1449		1984	01	05.28125	06	50	09.86	+21	24	11.6		688
1449		1984	01	08.17778	06	46	43.55	+21	36	27.0		688
1449		1984	01	08.22361	06	46	40.29	+21	36	38.6		688
1449		1984	01	26.15000	06	27	33.74	+22	46	10.4		688
1449		1984	01	26.21042	06	27	30.62	+22	46	24.0		688
1457		1983	12	09.29167	07	41	18.66	+23	39	11.6		688
1457		1983	12	09.35139	07	41	16.57	+23	39	12.2		688
1457		1984	01	05.25069	07	18	46.71	+23	48	27.4		688
1457		1984	01	05.26597	07	18	45.72	+23	48	27.7		688
1457		1984	01	05.29653	07	18	43.79	+23	48	28.0		688
1457		1984	01	05.31181	07	18	42.74	+23	48	28.1		688
1457		1984	01	08.23889	07	15	40.34	+23	48	45.8		688
1457		1984	01	08.25417	07	15	39.36	+23	48	46.3		688
1457		1984	01	08.28472	07	15	37.38	+23	48	46.6		688
1457		1984	01	08.30000	07	15	36.38	+23	48	47.0		688
1527		1984	01	08.35625	09	26	04.60	+22	51	30.7	16.8	688
1527		1984	01	08.42431	09	26	01.52	+22	51	50.0		688
1545		1984	01	05.32708	07	47	10.36	+25	46	09.9		688
1545		1984	01	05.35764	07	47	08.65	+25	46	17.3		688
1545		1984	01	08.26944	07	44	30.77	+25	57	22.7		688
1545		1984	01	08.31528	07	44	28.09	+25	57	33.9		688
1553		1984	01	02.15347	03	47	38.79	+17	02	59.6		688
1616		1984	01	08.35625	09	17	44.50	+28	24	43.5		688
1616		1984	01	08.42431	09	17	41.96	+28	25	05.9		688
1621		1984	01	05.23472	06	49	11.69	+16	53	53.1		688
1621		1984	01	05.28125	06	49	08.51	+16	53	59.3		688
1621		1984	01	08.17778	06	45	57.53	+17	00	19.8		688
1621		1984	01	08.22361	06	45	54.50	+17	00	26.9		688
1624		1983	12	09.29167	07	33	38.20	+20	08	43.5		688
1624		1983	12	09.35139	07	33	36.61	+20	08	47.6		688
1624		1984	01	05.25069	07	14	35.52	+20	56	24.6		688
1624		1984	01	05.26597	07	14	34.72	+20	56	26.1		688
1624		1984	01	05.29653	07	14	33.04	+20	56	30.2		688
1624		1984	01	05.31181	07	14	32.25	+20	56	32.4		688
1624		1984	01	08.23889	07	11	57.44	+21	02	45.1		688
1624		1984	01	08.25417	07	11	56.72	+21	02	46.4	15.8	688

1624	1984	01	08.28472	07	11	54.90	+21	02	51.6			688
1624	1984	01	08.30000	07	11	54.13	+21	02	52.4			688
1627	1984	01	05.23472	06	54	11.70	+16	01	49.3			688
1627	1984	01	08.17778	06	50	11.87	+16	15	05.9		1	688
1627	1984	01	08.22361	06	50	07.84	+16	15	19.8		1	688
1667	1984	01	08.33403	09	05	08.30	+21	49	44.7			688
1667	1984	01	08.40139	09	05	04.75	+21	50	10.4			688
1683	1984	01	08.42431	09	26	03.20	+20	49	15.6		1	688
1729	1983	10	09.13819	00	04	20.66	+00	20	38.4			688
1729	1983	10	09.16875	00	04	19.06	+00	20	30.0			688
1737	1984	01	08.37917	10	30	51.47	+10	56	27.0			688
1737	1984	01	08.44653	10	30	50.42	+10	56	22.7			688
1741	1983	12	09.29167	07	38	06.60	+24	31	43.1			688
1741	1983	12	09.35139	07	38	04.64	+24	31	51.4			688
1741	1984	01	05.25069	07	16	41.63	+25	45	12.0			688
1741	1984	01	05.29653	07	16	38.94	+25	45	17.7			688
1741	1984	01	08.23889	07	13	46.39	+25	52	15.5			688
1741	1984	01	08.28472	07	13	43.45	+25	52	19.9			688
1748	1984	01	05.17361	06	11	48.77	+21	15	59.2			688
1762	1984	01	05.17361	06	25	48.69	+20	12	39.1			688
1762	1984	01	05.21944	06	25	46.04	+20	12	43.4			688
1785	1984	01	02.15347	04	01	12.03	+23	14	50.3			688
1785	1984	01	02.17639	04	01	11.46	+23	14	43.9			688
1785	1984	01	04.08264	04	00	18.54	+23	07	17.2			688
1785	1984	01	04.10903	04	00	17.84	+23	07	11.7			688
1785	1984	01	04.16042	04	00	16.13	+23	07	00.5			688
1785	1984	01	04.18403	04	00	15.72	+23	06	54.8			688
1797	1984	01	05.14306	05	55	58.98	+28	31	49.3			688
1797	1984	01	05.18889	05	55	55.96	+28	31	49.6			688
1831	1984	01	05.14306	05	50	31.66	+26	49	12.0	17.0	1	688
1855	1984	01	05.17361	06	36	38.91	+17	36	46.7			688
1855	1984	01	05.21944	06	36	35.61	+17	36	50.2			688
1855	1984	01	05.23472	06	36	34.32	+17	36	50.8			688
1855	1984	01	05.28125	06	36	31.13	+17	36	54.0			688
1855	1984	01	08.17778	06	33	15.49	+17	40	35.1			688
1855	1984	01	08.22361	06	33	12.37	+17	40	40.2			688
1895	1984	01	28.20208	07	58	01.39	+23	31	58.5	16.8		688
1895	1984	01	28.23056	07	57	59.90	+23	32	01.9			688
1905	1984	01	02.15347	03	52	28.85	+17	04	34.5			688
1905	1984	01	04.08264	03	51	34.79	+17	02	40.5			688
1905	1984	01	04.16042	03	51	32.83	+17	02	33.6			688
1906	1983	10	09.13819	23	42	35.22	+00	36	20.2			688
1906	1983	10	09.16875	23	42	33.65	+00	36	18.5			688
1908	1984	01	28.20208	07	50	25.95	+28	04	19.3			688
1908	1984	01	28.23056	07	50	24.21	+28	04	22.9			688
1913	1984	01	08.37917	10	15	21.95	+12	20	18.4			688
1913	1984	01	08.44653	10	15	20.73	+12	20	24.7			688
1954	1984	01	08.17778	06	35	23.63	+22	09	33.3			688
1954	1984	01	08.22361	06	35	20.66	+22	09	24.5			688
1972	1984	01	05.32708	07	40	28.99	+28	29	35.5			688
1972	1984	01	05.35764	07	40	26.96	+28	29	45.2			688
1972	1984	01	08.26944	07	37	18.74	+28	41	48.7			688
1972	1984	01	08.31528	07	37	15.48	+28	42	00.8			688
1976	1983	12	09.29167	07	27	44.88	+22	20	57.5			688
1976	1983	12	09.35139	07	27	42.41	+22	21	05.9			688
1976	1984	01	05.25069	07	02	55.69	+23	36	10.7			688
1976	1984	01	05.29653	07	02	52.51	+23	36	18.1			688
1976	1984	01	08.23889	06	59	33.32	+23	44	15.4	17.2		688
1976	1984	01	08.28472	06	59	29.83	+23	44	23.5			688

1976	1984	01	26.15000	06	41	02.36	+24	22	27.4		17.5	1 688
1976	1984	02	04.14028	06	34	24.35	+24	34	14.7			688
1985	1984	01	05.32708	07	51	03.82	+28	04	56.5			688
1985	1984	01	05.35764	07	51	01.93	+28	04	52.3			688
1985	1984	01	08.26944	07	48	00.86	+27	57	45.1			688
1985	1984	01	08.31528	07	47	57.93	+27	57	38.8			688
2003	1984	01	08.37917	10	22	45.55	+12	50	39.7			688
2003	1984	01	08.44653	10	22	44.83	+12	50	46.8			688
2004	1984	01	10.22708	06	09	20.33	+28	08	56.9			688
2004	1984	01	10.23785	06	09	19.68	+28	08	59.6			688
2032	1984	01	08.37917	10	15	31.35	+12	46	44.8			688
2032	1984	01	08.44653	10	15	29.83	+12	46	52.8			688
2036	1983	10	09.13819	23	48	51.25	+01	37	36.4			688
2036	1983	10	09.16875	23	48	49.59	+01	37	12.7			688
2118	1984	01	28.20208	08	05	12.69	+26	09	41.7		15.0	688
2118	1984	01	28.23056	08	05	10.82	+26	09	41.0			688
2137	1984	01	05.32708	07	48	08.79	+30	04	20.9			688
2137	1984	01	05.35764	07	48	06.93	+30	04	20.3			688
2137	1984	01	08.26944	07	45	16.47	+30	03	12.6			688
2137	1984	01	08.31528	07	45	13.71	+30	03	10.9			688
2144	1984	01	02.15347	04	08	43.24	+17	16	37.3			688
2144	1984	01	04.08264	04	07	53.62	+17	17	11.4			688
2144	1984	01	04.16042	04	07	51.79	+17	17	14.7			688
2149	1984	01	05.14306	05	47	15.68	+29	23	53.2			688
2163	1983	12	09.29167	07	47	50.32	+20	31	31.4			688
2163	1983	12	09.35139	07	47	48.55	+20	31	38.2			688
2163	1984	01	05.26597	07	28	23.03	+21	35	11.1			688
2163	1984	01	05.31181	07	28	20.51	+21	35	16.8			688
2163	1984	01	08.25417	07	25	42.05	+21	42	58.2		1	688
2163	1984	01	08.30000	07	25	39.25	+21	43	06.5		3	688
2169	1983	12	09.29167	07	51	10.60	+22	08	40.4			688
2169	1984	01	05.26597	07	31	24.78	+23	14	57.9			688
2169	1984	01	05.31181	07	31	22.12	+23	15	02.9			688
2169	1984	01	08.25417	07	28	30.77	+23	22	40.6			688
2169	1984	01	08.30000	07	28	27.95	+23	22	48.1			688
2180	1984	01	05.17361	06	16	38.51	+14	08	19.6			688
2180	1984	01	05.21944	06	16	36.19	+14	08	18.0			688
2230	1984	01	02.15347	03	55	30.13	+16	38	55.0			688
2230	1984	01	04.08264	03	54	50.36	+16	39	18.4			688
2230	1984	01	04.16042	03	54	48.95	+16	39	16.7			688
2300	1984	01	08.37917	10	34	36.28	+12	08	37.3		17.0	688
2300	1984	01	08.44653	10	34	35.54	+12	08	45.8			688
2362	1984	01	05.32708	07	40	09.72	+28	24	27.4			688
2362	1984	01	05.35764	07	40	07.57	+28	24	32.9		3	688
2377	1983	10	09.13819	23	43	27.99	-00	08	40.3			688
2383	1984	01	08.42431	09	18	27.73	+21	54	34.6		1	688
2402	1984	01	08.33403	08	49	39.60	+23	49	56.7			688
2402	1984	01	08.40139	08	49	35.28	+23	50	05.2			688
2406	1984	01	08.33403	09	12	53.10	+19	48	32.0			688
2406	1984	01	08.40139	09	12	49.48	+19	48	48.0			688
2410	1983	12	09.29167	07	36	16.29	+19	40	03.6			688
2410	1983	12	09.35139	07	36	14.47	+19	40	08.9			688
2410	1984	01	05.25069	07	12	14.73	+20	51	35.7		1	688
2410	1984	01	05.26597	07	12	13.83	+20	51	37.6			688
2410	1984	01	05.29653	07	12	11.62	+20	51	43.4			688
2410	1984	01	05.31181	07	12	10.49	+20	51	47.5			688
2410	1984	01	08.23889	07	08	46.09	+21	01	17.3			688
2410	1984	01	08.25417	07	08	45.11	+21	01	19.6			688
2410	1984	01	08.28472	07	08	42.70	+21	01	27.2			688

2410	1984	01	08.30000	07	08	41.72	+21	01	28.8			688
2410	1984	01	26.15000	06	49	20.97	+21	55	03.8			688
2410	1984	01	26.21042	06	49	17.40	+21	55	14.2			688
2410	1984	02	04.14028	06	42	20.36	+22	16	43.7			688
2410	1984	02	04.21319	06	42	17.50	+22	16	53.3			688
2412	1984	01	05.25069	07	01	35.33	+26	15	02.6			688
2412	1984	01	08.23889	06	58	28.08	+26	14	02.6			688
2412	1984	01	08.28472	06	58	25.37	+26	14	00.8			688
2412	1984	01	26.21042	06	41	16.34	+25	56	59.6			688
2412	1984	02	04.14028	06	34	47.28	+25	42	41.0			688
2412	1984	02	04.21319	06	34	44.56	+25	42	32.7			688
2446	1984	01	08.33403	08	58	28.06	+22	22	22.8			688
2446	1984	01	08.40139	08	58	24.28	+22	22	41.4			688
2494	1983	12	09.29167	07	44	14.33	+21	26	47.9			688
2494	1983	12	09.35139	07	44	12.36	+21	26	41.5			688
2494	1984	01	05.26597	07	23	35.22	+20	45	18.6			688
2494	1984	01	05.31181	07	23	32.56	+20	45	13.4			688
2494	1984	01	08.25417	07	20	48.58	+20	40	58.1			688
2494	1984	01	08.30000	07	20	45.95	+20	40	54.8			688
2524	1984	01	08.33403	08	56	50.46	+17	06	06.4			688
2524	1984	01	08.40139	08	56	47.74	+17	06	17.6			688
2526	1984	01	08.37917	10	15	02.23	+15	11	27.6			688
2526	1984	01	08.44653	10	15	00.99	+15	11	34.5			688
2547	1984	01	08.26944	07	42	29.69	+30	17	27.3			688
2547	1984	01	08.31528	07	42	25.53	+30	17	26.4			688
2556	1984	01	05.23472	06	44	27.94	+20	53	14.5			688
2556	1984	01	05.28125	06	44	24.55	+20	53	22.8			688
2556	1984	01	08.17778	06	41	01.27	+21	02	07.4			688
2556	1984	01	08.22361	06	40	57.99	+21	02	15.7			688
2670	1983	10	12.16875	23	48	49.06	+14	07	35.6	16.2		688
2670	1983	10	12.21597	23	48	47.08	+14	07	20.1			688
2739	1984	01	04.08264	03	47	16.75	+20	21	26.6	17.5		688
2739	1984	01	04.16042	03	47	14.89	+20	21	15.6			688
2756	1984	01	28.20208	07	56	02.54	+27	57	21.6		2	688
2756	1984	01	28.23056	07	56	00.92	+27	57	26.3			688
2763	1984	01	08.33403	09	00	19.51	+17	29	14.3			688
2763	1984	01	08.40139	09	00	15.85	+17	29	26.2			688
2764	1984	01	04.08264	04	06	53.75	+22	13	24.0	17.2		688
2764	1984	01	04.16042	04	06	50.98	+22	13	12.9			688
2764	1984	01	04.18403	04	06	50.50	+22	13	09.9			688
2779	1983	12	09.35139	07	27	33.36	+23	42	55.8			688
2779	1984	01	05.25069	07	01	16.97	+25	32	22.3			688
2779	1984	01	05.29653	07	01	13.89	+25	32	31.3		1	688
2779	1984	01	08.23889	06	57	39.44	+25	43	17.2			688
2779	1984	01	08.28472	06	57	35.78	+25	43	30.1			688
2779	1984	01	26.21042	06	37	56.72	+26	31	41.8			688
2779	1984	02	04.21319	06	31	13.09	+26	44	21.6		1	688
2781	1984	01	05.23472	06	45	30.94	+20	29	35.3			688
2781	1984	01	05.28125	06	45	28.01	+20	29	40.8		1	688
2781	1984	01	08.17778	06	42	53.43	+20	34	37.6			688
2781	1984	01	08.22361	06	42	50.88	+20	34	42.8			688
2781	1984	01	26.15000	06	29	12.76	+21	03	58.9			688
2781	1984	01	26.21042	06	29	10.59	+21	04	03.5			688
2781	1984	02	04.14028	06	24	50.82	+21	17	00.0			688
2781	1984	02	04.21319	06	24	49.10	+21	17	05.7			688
2785	1983	10	09.13819	23	55	26.64	+00	42	45.2			688
2785	1983	10	09.16875	23	55	25.37	+00	42	36.8			688
2811	1984	01	08.33403	08	46	30.34	+18	48	03.5			688
2811	1984	01	08.40139	08	46	27.24	+18	48	14.1			688

2823		1984	01	05.21944	06	27	05.56	+19	55	40.9			688
2847		1984	01	02.15347	03	55	06.08	+19	43	56.7			688
2847		1984	01	04.08264	03	54	11.63	+19	39	43.7			688
2847		1984	01	04.16042	03	54	09.50	+19	39	32.2			688
2891		1984	01	08.33403	08	56	20.11	+19	29	09.1			688
2891		1984	01	08.40139	08	56	17.44	+19	29	26.0			688
2952		1984	01	05.32708	07	52	57.05	+24	18	44.5			688
2952		1984	01	05.35764	07	52	54.78	+24	18	48.9			688
2952		1984	01	08.26944	07	49	32.87	+24	22	51.0			688
2952		1984	01	08.31528	07	49	29.32	+24	22	55.1			688
2970		1984	01	08.35625	09	32	27.51	+27	04	29.0			688
2970		1984	01	08.42431	09	32	24.33	+27	04	37.8			688
2989		1984	01	02.15347	04	12	38.91	+21	31	58.7	17.5		688
2989		1984	01	02.17639	04	12	38.22	+21	31	57.6			688
2989		1984	01	04.08264	04	11	35.88	+21	32	05.9	17.0		688
2989		1984	01	04.10903	04	11	35.12	+21	32	07.0	17.0		688
2989		1984	01	04.16042	04	11	33.20	+21	32	08.4		1	688
2989		1984	01	04.18403	04	11	32.68	+21	32	07.8			688
1932	CN	1984	01	02.15347	03	48	35.77	+19	32	10.4	17.2		688
1932	CN	1984	01	04.08264	03	47	54.56	+19	37	56.8	17.0		688
1932	CN	1984	01	04.16042	03	47	52.87	+19	38	08.4			688
1938	WA	1984	01	02.15347	03	51	00.77	+18	59	20.6	17.0	3	688
1938	WA	1984	01	04.08264	03	50	23.10	+18	57	55.1	17.0		688
1938	WA	1984	01	04.16042	03	50	21.66	+18	57	49.6			688
1953	VN2	1984	01	02.15347	03	46	47.66	+20	35	46.6	17.0		688
1955	RZ	1984	01	05.14306	05	35	58.67	+28	56	27.8	16.8		688
1955	RZ	1984	01	05.18889	05	35	56.16	+28	56	17.1			688
1964	TH1	1983	12	06.27917	06	06	18.03	+20	45	38.5	17.0		688
1964	TH1	1983	12	06.32083	06	06	15.71	+20	45	36.3			688
1977	RE7	1984	01	02.15347	04	01	26.07	+17	54	06.3	17.0		688
1977	RE7	1984	01	04.08264	04	00	40.88	+17	53	34.5	16.8		688
1977	RE7	1984	01	04.16042	04	00	39.25	+17	53	33.4			688
1979	SF11	1984	01	02.17639	04	07	23.21	+25	50	26.6			688
1979	SF11	1984	01	04.10903	04	06	43.92	+25	46	19.0	17.2		688
1979	SF11	1984	01	04.18403	04	06	42.47	+25	46	10.9			688
1979	TM	1984	01	04.08264	04	08	34.30	+19	38	27.3	17.5		688
1979	TM	1984	01	04.16042	04	08	31.58	+19	38	27.2		3	688
1979	UC	1983	12	06.27917	06	12	42.52	+27	17	42.7	17.0		688
1979	UC	1983	12	06.32083	06	12	39.35	+27	17	54.3			688
1979	UC	1984	01	05.14306	05	38	11.67	+28	43	19.8	16.8		688
1979	UC	1984	01	05.18889	05	38	08.53	+28	43	23.5			688
1981	CY	1984	01	02.15347	03	52	41.27	+20	59	31.0	16.8		688
1981	CY	1984	01	04.08264	03	51	57.52	+21	04	53.6	16.8		688
1981	CY	1984	01	04.16042	03	51	55.60	+21	05	06.2			688
1981	DQ2	1984	01	05.23472	06	41	52.75	+15	52	50.0	17.2		688
1981	DQ2	1984	01	08.17778	06	38	42.39	+15	47	22.6	16.8		688
1981	DQ2	1984	01	08.22361	06	38	39.23	+15	47	20.1			688
1981	EG	1983	12	06.27917	06	09	23.76	+25	24	37.1	17.5	1	688
1981	EG	1984	01	05.14306	05	34	20.93	+27	04	01.6	17.2	1	688
1981	EG	1984	01	05.18889	05	34	18.24	+27	04	09.2		1	688
1981	EV	1983	12	09.29167	07	32	04.56	+16	55	47.1	17.2		688
1981	EV	1984	01	05.25069	07	07	49.36	+18	38	28.6	17.5	1	688
1981	EV	1984	01	05.29653	07	07	46.33	+18	38	38.6			688
1981	EM4	1983	10	12.16875	23	51	27.78	+13	33	37.5	17.0		688
1981	EM4	1983	10	12.21597	23	51	25.28	+13	33	27.7			688
1981	EG19	1984	01	05.26597	07	29	00.06	+17	03	10.6	17.0		688
1981	EG19	1984	01	05.31181	07	28	56.92	+17	03	16.6			688
1981	EG19	1984	01	08.25417	07	25	39.62	+17	09	55.4	17.0		688
1981	EG19	1984	01	08.30000	07	25	36.49	+17	10	03.5			688

1981	EF23		1983	12	09.35139	07	36	51.02	+17	21	41.8	16.8	688
1981	EF23		1984	01	05.26597	07	13	53.59	+17	55	12.3	16.5	688
1981	EF23		1984	01	05.31181	07	13	50.23	+17	55	18.4		688
1981	EF23		1984	01	08.25417	07	10	35.34	+18	02	27.0	16.5	688
1981	EF23		1984	01	08.30000	07	10	32.30	+18	02	33.1		688
1982	KM		1984	01	04.08264	03	57	32.91	+17	16	43.0	17.5	688
1982	KM		1984	01	04.16042	03	57	31.06	+17	16	32.9		688
1983	TD2	*	1983	10	09.13819	23	43	17.78	-02	07	50.5	16.5 5	688
1983	TD2		1983	10	09.16875	23	43	16.76	-02	08	04.9		688
1983	TE2	*	1983	10	09.13819	00	04	52.00	+00	30	25.1	16.8 4	688
1983	TE2		1983	10	09.16875	00	04	51.13	+00	30	17.5		688
1983	WB		1984	01	02.15347	03	50	37.57	+20	02	47.3	16.0	688
1983	WB		1984	01	04.08264	03	49	49.12	+20	05	50.8	16.0	688
1983	WB		1984	01	04.16042	03	49	47.20	+20	05	56.0		688
1983	WC		1984	01	02.15347	03	56	00.19	+17	59	36.4		688
1983	WC		1984	01	04.08264	03	55	34.50	+18	00	54.2	17.2	688
1983	WC		1984	01	04.16042	03	55	33.59	+18	00	57.3		688
1983	WG		1984	01	02.15347	03	51	47.94	+20	11	20.5	16.5	688
1983	WG		1984	01	04.08264	03	51	04.78	+20	20	52.6	16.8	688
1983	WG		1984	01	04.16042	03	51	02.99	+20	21	12.6		688
1983	WH		1984	01	02.15347	03	53	46.79	+18	26	03.3	17.2	688
1983	WH		1984	01	04.08264	03	53	17.35	+18	20	20.3	16.8	688
1983	WH		1984	01	04.16042	03	53	16.33	+18	20	05.8		688
1983	WJ		1984	01	04.08264	03	57	56.97	+18	42	50.4	17.5	688
1983	WJ		1984	01	04.16042	03	57	55.31	+18	42	52.4		688
1983	WK		1984	01	02.15347	03	57	33.81	+22	29	17.2	17.0	688
1983	WK		1984	01	02.17639	03	57	33.40	+22	29	28.7		688
1983	WK		1984	01	04.08264	03	57	07.46	+22	44	21.2	17.0	688
1983	WK		1984	01	04.10903	03	57	07.30	+22	44	36.2	17.2	688
1983	WK		1984	01	04.16042	03	57	06.26	+22	44	58.9		688
1983	WK		1984	01	04.18403	03	57	05.73	+22	45	04.1	3	688
1983	WL		1984	01	02.15347	03	52	24.60	+23	32	50.9	16.8	688
1983	WL		1984	01	04.08264	03	51	36.40	+23	39	49.0	17.0	688
1983	WL		1984	01	04.16042	03	51	34.12	+23	40	03.5		688
1983	WM		1984	01	02.15347	04	01	57.14	+19	39	51.3	17.5	688
1983	WM		1984	01	04.08264	04	01	19.95	+19	32	21.5	17.2	688
1983	WM		1984	01	04.16042	04	01	18.52	+19	32	05.2	2	688
1983	WP		1984	01	02.15347	04	02	59.17	+19	12	18.4	17.2	688
1983	WP		1984	01	04.08264	04	01	53.43	+19	21	31.3	17.2	688
1983	WP		1984	01	04.16042	04	01	50.74	+19	21	55.8		688
1983	WQ		1984	01	04.10903	04	00	16.89	+25	55	45.9	17.0	688
1983	WQ		1984	01	04.18403	04	00	14.76	+25	55	50.4		688
1983	WR		1984	01	02.17639	04	05	55.29	+27	03	45.8		688
1983	WR		1984	01	04.10903	04	04	57.43	+27	05	02.2	17.0	688
1983	WR		1984	01	04.18403	04	04	55.14	+27	05	06.4		688
1983	WU		1984	01	04.10903	04	08	50.33	+28	20	06.7	17.5	688
1983	WU		1984	01	04.18403	04	08	48.76	+28	20	25.9		688
1983	WV		1984	01	02.17639	04	15	24.84	+21	32	39.4	3	688
1983	WV		1984	01	04.10903	04	14	36.15	+21	32	40.3	16.8	688
1983	WV		1984	01	04.18403	04	14	34.27	+21	32	41.6		688
1983	XC		1984	01	02.15347	03	49	11.27	+18	42	21.6		688
1983	XC		1984	01	04.08264	03	48	52.13	+18	52	29.6	17.5	688
1983	XC		1984	01	04.16042	03	48	51.41	+18	52	52.2		688
1983	XD		1984	01	02.15347	03	56	48.58	+20	27	50.8	17.5	688
1983	XD		1984	01	04.08264	03	56	10.04	+20	22	54.6	17.0	688
1983	XD		1984	01	04.16042	03	56	08.41	+20	22	39.5		688
1983	XF		1984	01	02.17639	04	00	35.32	+22	33	24.7		688
1983	XG		1984	01	02.15347	04	11	31.64	+16	03	08.3		688
1983	XG		1984	01	04.08264	04	10	46.05	+16	01	40.2	17.5	688

1983	XG		1984	01	04.16042	04	10	44.46	+16	01	40.0		688
1983	YH		1984	01	05.23472	06	44	57.72	+22	20	26.0	16.0	688
1983	YH		1984	01	05.28125	06	44	54.99	+22	20	38.7		688
1983	YH		1984	01	08.17778	06	42	13.52	+22	34	25.5	16.0	688
1983	YH		1984	01	08.22361	06	42	10.87	+22	34	38.7		688
1983	YH		1984	01	26.15000	06	27	38.64	+23	51	52.9	16.8	688
1983	YH		1984	01	26.21042	06	27	36.27	+23	52	06.7		688
1983	YH		1984	02	04.14028	06	22	42.84	+24	24	08.6	16.8	688
1984	AD		1984	01	05.32708	07	45	52.62	+30	35	58.5	17.0 3	688
1984	AD		1984	01	05.35764	07	45	49.05	+30	35	33.1	3	688
1984	AD		1984	01	08.26944	07	40	43.57	+30	00	12.6	16.8 3	688
1984	AD		1984	01	08.31528	07	40	39.04	+29	59	42.8	3	688
1984	AK	*	1984	01	05.17361	06	21	38.97	+14	53	19.9	17.0 5	688
1984	AK		1984	01	05.21944	06	21	36.01	+14	53	12.2		688
1984	AL	*	1984	01	05.26597	07	28	20.74	+16	15	03.0	16.8 4	688
1984	AL		1984	01	05.31181	07	28	16.95	+16	14	48.8		688
1984	AM		1984	01	05.23472	06	48	23.97	+20	57	14.9	16.8	688
1984	AM		1984	01	05.28125	06	48	21.09	+20	57	24.1		688
1984	AM	*	1984	01	08.17778	06	45	30.39	+21	07	52.9	16.8 4	688
1984	AM		1984	01	08.22361	06	45	27.62	+21	08	01.7		688
1984	AN		1984	01	05.23472	06	55	55.99	+21	14	26.1	17.0	688
1984	AN		1984	01	05.25069	06	55	54.85	+21	14	33.9	17.0	688
1984	AN		1984	01	05.28125	06	55	53.03	+21	14	44.4		688
1984	AN		1984	01	05.29653	06	55	51.91	+21	14	49.8		688
1984	AN		1984	01	08.17778	06	52	52.08	+21	34	39.0	17.0	688
1984	AN	*	1984	01	08.23889	06	52	49.02	+21	35	02.2	17.0 7	688
1984	AN		1984	01	08.28472	06	52	45.15	+21	35	23.3		688
1984	AO		1984	01	05.23472	06	58	46.79	+21	54	03.6	17.0	688
1984	AO		1984	01	05.25069	06	58	45.79	+21	54	03.9	16.5	688
1984	AO		1984	01	05.28125	06	58	44.13	+21	54	07.5		688
1984	AO		1984	01	08.17778	06	56	06.95	+21	58	34.0	16.8	688
1984	AO		1984	01	08.22361	06	56	04.45	+21	58	39.3		688
1984	AO	*	1984	01	08.23889	06	56	03.58	+21	58	39.9	16.8 4	688
1984	AO		1984	01	08.28472	06	56	00.98	+21	58	44.1		688
1984	AO		1984	01	26.15000	06	41	21.20	+22	22	33.5	17.0	688
1984	AO		1984	01	26.21042	06	41	18.62	+22	22	37.5		688
1984	AO		1984	02	04.14028	06	36	06.14	+22	31	23.2	17.0	688
1984	AO		1984	02	04.21319	06	36	04.02	+22	31	28.7		688
1984	AP		1984	01	05.25069	07	04	18.71	+26	00	48.6	15.8	688
1984	AP		1984	01	05.29653	07	04	15.57	+26	00	36.2		688
1984	AP	*	1984	01	08.23889	07	00	55.72	+25	46	27.8	15.5 4	688
1984	AP		1984	01	08.28472	07	00	52.45	+25	46	14.9		688
1984	AP		1984	01	26.15000	06	42	58.74	+24	10	33.4	16.0	688
1984	AP		1984	01	26.21042	06	42	55.79	+24	10	11.8		688
1984	AP		1984	02	04.14028	06	36	53.06	+23	20	15.8	16.2	688
1984	AP		1984	02	04.21319	06	36	50.51	+23	19	51.9	1	688
1984	AQ		1983	12	09.29167	07	37	34.03	+17	35	20.1	17.0	688
1984	AQ		1983	12	09.35139	07	37	32.45	+17	35	32.6		688
1984	AQ		1984	01	05.29653	07	16	12.21	+19	58	38.0	16.5	688
1984	AQ		1984	01	05.31181	07	16	11.37	+19	58	42.6	16.5	688
1984	AQ	*	1984	01	08.23889	07	13	06.49	+20	17	29.7	16.5 4	688
1984	AQ		1984	01	08.28472	07	13	03.32	+20	17	47.8		688
1984	AQ		1984	02	04.14028	06	47	28.78	+23	02	11.9	17.0	688
1984	AQ		1984	02	04.21319	06	47	25.73	+23	02	35.7		688
1984	AR		1983	12	09.29167	07	30	28.17	+23	24	34.9	17.2	688
1984	AR		1983	12	09.35139	07	30	26.52	+23	24	41.5		688
1984	AR		1984	01	05.25069	07	10	28.70	+24	11	34.7	16.8	688
1984	AR		1984	01	05.26597	07	10	27.83	+24	11	34.5	16.8	688
1984	AR		1984	01	05.29653	07	10	26.10	+24	11	39.4		688

1984	AR		1984	01	08.23889	07	07	43.86	+24	16	19.3	16.8	688
1984	AR	*	1984	01	08.25417	07	07	43.06	+24	16	20.5	16.8	4 688
1984	AR		1984	01	08.28472	07	07	41.23	+24	16	23.0		688
1984	AR		1984	01	08.30000	07	07	40.40	+24	16	24.2		688
1984	AR		1984	01	26.15000	06	52	29.21	+24	35	57.8	17.2	688
1984	AR		1984	01	26.21042	06	52	26.42	+24	36	00.1		688
1984	AR		1984	02	04.14028	06	46	52.32	+24	39	36.7	17.2	688
1984	AR		1984	02	04.21319	06	46	49.97	+24	39	35.7		688
1984	AS		1984	01	05.26597	07	29	15.79	+20	22	54.7	17.0	688
1984	AS		1984	01	05.31181	07	29	12.53	+20	22	53.1		688
1984	AS	*	1984	01	08.25417	07	25	42.88	+20	22	41.4	16.8	4 688
1984	AS		1984	01	08.30000	07	25	39.64	+20	22	43.1		688
1984	AT	*	1984	01	08.25417	07	32	40.93	+19	54	37.1	16.8	4 688
1984	AT		1984	01	08.30000	07	32	37.67	+19	54	52.5		688
1984	AU		1984	01	05.32708	07	31	57.44	+25	39	47.7	17.0	688
1984	AU		1984	01	05.35764	07	31	55.43	+25	39	50.8		688
1984	AU	*	1984	01	08.26944	07	28	44.29	+25	42	59.3	16.8	5 688
1984	AU		1984	01	08.31528	07	28	41.19	+25	43	00.5		688
1984	AV	*	1984	01	08.26944	07	44	49.69	+23	57	16.7	17.2	5 688
1984	AV		1984	01	08.31528	07	44	46.24	+23	57	41.9		688
1984	AW		1984	01	05.32708	07	51	39.35	+25	44	33.6	16.8	688
1984	AW		1984	01	05.35764	07	51	37.63	+25	44	38.4		688
1984	AW	*	1984	01	08.26944	07	49	04.10	+25	52	36.3	16.8	5 688
1984	AW		1984	01	08.31528	07	49	01.35	+25	52	44.0		688
1984	AX		1984	01	05.32708	07	51	40.44	+25	13	37.8	17.2	688
1984	AX		1984	01	05.35764	07	51	39.01	+25	13	49.8		688
1984	AX	*	1984	01	08.26944	07	49	04.79	+25	29	24.6	17.2	5 688
1984	AX		1984	01	08.31528	07	49	02.31	+25	29	40.0		688
1984	AY		1984	01	05.32708	07	54	07.12	+30	09	36.2	17.2	688
1984	AY		1984	01	05.35764	07	54	05.22	+30	09	48.6		688
1984	AY	*	1984	01	08.26944	07	51	07.79	+30	29	44.1	17.2	5 688
1984	AY		1984	01	08.31528	07	51	04.74	+30	30	01.3		688
1984	AZ		1984	01	05.32708	07	56	23.24	+24	09	10.8	16.5	688
1984	AZ		1984	01	05.35764	07	56	21.30	+24	09	22.9		688
1984	AZ	*	1984	01	08.26944	07	53	32.15	+24	29	52.7	16.2	5 688
1984	AZ		1984	01	08.31528	07	53	29.23	+24	30	11.8		688
1984	AA1	*	1984	01	08.33403	08	57	00.25	+20	30	53.3	16.8	5 688
1984	AA1		1984	01	08.40139	08	56	57.19	+20	31	09.0		688
1984	AB1	*	1984	01	08.33403	08	58	30.96	+18	32	10.2	16.8	5 688
1984	AB1		1984	01	08.40139	08	58	27.30	+18	32	37.4		688
1984	AC1	*	1984	01	08.33403	09	01	24.33	+18	50	36.8	16.2	5 688
1984	AC1		1984	01	08.40139	09	01	20.99	+18	51	15.6		688
1984	AD1	*	1984	01	08.33403	09	05	09.41	+19	34	12.7	17.0	5 688
1984	AD1		1984	01	08.40139	09	05	06.50	+19	34	35.3		688
1984	AE1	*	1984	01	08.33403	09	08	08.83	+23	50	09.4	17.2	5 688
1984	AE1		1984	01	08.40139	09	08	06.03	+23	50	42.5		688
1984	AF1		1984	01	08.33403	09	12	20.73	+24	25	36.7	16.8	688
1984	AF1	*	1984	01	08.35625	09	12	19.99	+24	25	41.3	16.8	4 688
1984	AF1		1984	01	08.40139	09	12	17.97	+24	25	58.7		688
1984	AF1		1984	01	08.42431	09	12	17.20	+24	26	05.2		688
1984	AG1	*	1984	01	08.35625	09	18	27.00	+28	16	25.8	16.8	4 688
1984	AG1		1984	01	08.42431	09	18	24.12	+28	16	44.2		688
1984	AH1	*	1984	01	08.35625	09	25	16.08	+27	46	08.1	17.0	4 688
1984	AH1		1984	01	08.42431	09	25	13.97	+27	46	50.8		688
1984	AJ1	*	1984	01	08.35625	09	31	38.41	+24	02	57.0	17.2	4 688
1984	AJ1		1984	01	08.42431	09	31	36.04	+24	03	03.6		688
1984	AK1	*	1984	01	08.37917	10	20	11.68	+11	03	52.3		5 688
1984	AK1		1984	01	08.44653	10	20	12.23	+11	03	51.2		688
1984	BD		1984	01	05.32708	07	33	23.00	+25	46	00.2	16.5	688

1984 BD 1984 01 05.35764 07 33 21.12 +25 46 04.8 688
1984 BD 1984 01 08.26944 07 30 27.11 +25 50 17.4 16.8 688
1984 BD 1984 01 08.31528 07 30 24.34 +25 50 21.8 688

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

OBSERVATIONS MADE AT THE LINCOLN LABORATORY ETS, NEW MEXICO, UNDER THE DIRECTION OF L. G. TAFF.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
99	1983 12	08.22304	03 49 10.36	+28 34 02.2	704
99	1983 12	08.29052	03 49 06.40	+28 34 03.8	704
229	1983 09	05.32183	22 41 00.91	-10 59 00.1	704
229	1983 09	05.37594	22 40 58.30	-10 59 13.5	704
328	1983 12	08.20333	03 50 36.66	+44 40 41.0	704
328	1983 12	08.27307	03 50 32.00	+44 40 24.4	704
367	1983 09	05.32601	22 24 40.51	-15 05 51.0	704
367	1983 09	05.37866	22 24 37.44	-15 06 09.2	704
385	1983 11	06.20378	01 46 16.72	+27 57 20.0	704
385	1983 11	06.28344	01 46 11.96	+27 56 57.7	704
390	1983 12	08.19950	02 28 30.85	+33 05 11.0	704
390	1983 12	08.25369	02 28 28.95	+33 04 43.9	704
450	1983 12	08.19243	02 56 20.30	+27 52 12.6	704
550	1983 12	08.16187	03 02 48.77	+25 38 48.1	704
550	1983 12	08.22731	03 02 45.93	+25 38 16.5	704
579	1983 11	02.20202	01 36 12.03	-04 32 08.1	704
579	1983 11	02.34308	01 36 05.24	-04 32 11.8	704
615	1983 11	02.20974	02 54 42.20	+18 55 04.1	704
615	1983 11	02.34572	02 54 34.08	+18 54 36.0	704
616	1983 09	06.26271	22 18 41.49	-20 07 42.9	704
616	1983 09	06.33030	22 18 37.22	-20 07 36.4	704
680	1983 11	02.21497	02 15 44.15	+12 01 24.8	704
680	1983 11	02.37416	02 15 35.11	+12 01 17.2	704
782	1983 12	08.21095	02 47 26.86	+12 27 56.0	704
782	1983 12	08.28201	02 47 23.97	+12 27 54.9	704
783	1983 11	02.23230	01 26 25.02	-06 46 00.1	704
899	1983 12	08.20725	02 02 48.02	+20 06 24.6	704
899	1983 12	08.27607	02 02 47.55	+20 05 49.6	704
912	1983 12	08.19627	03 08 39.37	+31 00 23.2	704
912	1983 12	08.24923	03 08 36.25	+31 00 23.3	704
920	1983 11	02.23733	01 48 49.62	+04 30 02.2	704
990	1983 12	08.18767	03 29 31.99	+33 34 47.9	704
990	1983 12	08.24551	03 29 28.67	+33 34 28.7	704
1086	1983 09	05.30397	21 40 41.51	-10 21 44.9	704
1096	1983 11	02.24293	01 44 02.07	-02 55 37.1	704
1096	1983 11	02.38047	01 43 54.16	-02 55 28.1	704
1113	1983 09	06.31703	22 10 18.35	-07 17 00.6	704
1113	1983 09	06.36997	22 10 15.65	-07 17 06.9	704
1145	1983 09	05.33104	21 56 12.98	-15 19 28.7	704
1168	1983 09	06.27058	22 08 30.63	+11 29 24.5	704
1168	1983 09	06.33844	22 08 27.94	+11 28 41.5	704
1176	1983 11	02.24855	03 47 00.66	+27 27 48.0	704
1176	1983 11	02.25445	03 47 00.91	+27 27 47.6	704
1176	1983 11	02.26185	03 47 00.37	+27 27 47.3	704
1176	1983 11	02.40655	03 46 53.18	+27 27 15.9	704
1264	1983 11	02.26449	02 14 18.61	+24 32 01.9	704
1264	1983 11	02.38739	02 14 12.38	+24 30 46.6	704
1303	1983 12	08.21582	03 04 39.83	+08 46 21.9	704
1303	1983 12	08.28624	03 04 36.43	+08 46 23.8	704
1309	1983 11	02.26761	03 02 54.42	+12 05 04.3	704

1309		1983	11	02.39241	03	02	48.75	+12	04	12.0	704
1456		1983	09	06.27687	21	54	04.25	+01	52	39.0	704
1456		1983	09	06.34247	21	54	01.13	+01	52	30.2	704
1469		1983	11	02.27140	02	39	29.32	+04	43	41.2	704
1469		1983	11	02.39546	02	39	23.59	+04	42	45.3	704
1547		1983	09	05.31212	21	56	52.21	+01	24	40.6	704
1547		1983	09	05.38620	21	56	48.05	+01	24	27.3	704
1984		1983	09	06.31278	22	08	23.17	-07	27	43.6	704
1984		1983	09	06.36385	22	08	21.03	-07	27	57.9	704
2403		1983	09	06.28191	22	51	58.56	-02	03	25.7	704
2403		1983	09	06.34680	22	51	54.88	-02	03	39.8	704
2461		1983	09	06.29172	22	17	37.13	-13	20	08.8	704
2461		1983	09	06.35345	22	17	34.57	-13	20	24.2	704
2660		1983	09	06.29860	21	41	39.60	+03	36	51.0	704
2660		1983	09	06.35866	21	41	37.42	+03	36	13.5	704
1983	XC1 *	1983	12	08.36767	06	08	31.60	+16	06	24.5	704
1983	XC1	1983	12	08.40877	06	08	29.63	+16	06	18.6	704

OBSERVATIONS MADE AT THE CHAMBERLIN OBSERVATORY'S FIELD STATION BY E. EVERHART. MEASURED BY EVERHART AND S. SIEGEL.

Object		Date	UT	R. A. (1950)			Decl.			Obs.
1984	AB	1984	01 25.25590	05	36	57.78	+31	03	21.8	707
1984	AB	1984	01 25.28646	05	36	56.22	+31	03	45.3	707

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

Object		Date	UT	R. A. (1950)			Decl.			Mag.	N	Obs.
574		1984	01 04.11648	04	35	33.23	+33	02	18.4	16.5		801
1365		1984	01 09.25469	07	26	18.03	+17	26	17.7			801
1973	UX5	1984	01 03.23289	06	59	10.41	+22	16	31.7			801
1974	MJ	1984	01 04.11648	04	33	59.96	+33	14	25.0			801
1975	TR3	1984	01 03.25455	06	58	31.75	+18	34	23.8	18.5		801
1979	OB15	1984	01 04.00747	02	19	49.11	+16	31	38.1			801
1979	SD7	1983	11 07.41142	05	31	19.00	+28	39	35.6			801
1979	SD7	1984	01 04.14254	04	40	00.18	+28	45	33.3			801
1979	UC	1984	01 09.20177	05	34	08.28	+28	48	38.0			801
1980	DC	1984	01 04.09743	04	31	26.85	+34	43	50.2			801
1981	DE1	1984	01 09.36451	08	51	25.02	+10	22	54.0			801
1981	EV	1984	01 09.21832	07	03	15.65	+18	58	03.5			801
1981	EA8	1984	01 09.27428	08	03	44.92	+22	26	05.5			801
1981	EC9	1984	01 04.04803	02	59	04.39	+24	45	25.2			801
1981	EO17	1984	01 09.34192	08	41	09.92	+11	28	16.4			801
1981	EG19	1983	12 06.41522	07	53	40.39	+16	34	05.8	16.0		801
1981	EG19	1984	01 09.25469	07	24	31.82	+17	12	17.3			801
1981	EF23	1984	01 09.23720	07	09	29.95	+18	04	55.7			801
1981	JS	1984	01 09.44157	11	43	04.34	-03	55	40.1		1	801
1982	BH	1984	01 03.98232	01	17	45.38	+23	10	53.6			801
1982	QR	1984	01 08.21429	05	29	52.03	+35	07	35.8			801
1982	RD1	1984	01 09.38621	09	09	47.99	+20	45	23.4			801
1982	UB1	1984	01 09.31838	08	22	08.97	+21	05	43.7			801
1982	VX3	1984	01 09.29359	08	28	58.42	+17	35	16.2	18.5		801
1983	PA	1984	01 10.02251	00	35	26.07	+25	45	31.4			801
1983	QG	1984	01 08.07715	02	18	59.44	+07	33	28.1			801
1983	RD	1984	01 04.17074	04	36	58.42	-01	34	41.1			801
1983	SA	1984	01 03.95886	23	53	23.18	+28	46	13.9			801
1983	TB	1984	01 02.04323	23	40	16.89	+18	19	45.5			801
1983	VE	1983	12 04.10770	02	23	57.67	+13	25	10.7			801
1983	VL5 *	1983	11 07.41142	05	31	45.57	+28	47	31.9	15		801

1983 XF 1984 01 08.09914 03 59 52.47 +23 01 36.3 801
1984 AE * 1984 01 09.25469 07 24 53.49 +17 20 20.3 17 801
Note 1: very weak.

OBSERVATIONS MADE WITH THE 0.4-M ASTROGRAPH AT THE EUROPEAN SOUTHERN OBSERVATORY BY H. DEBEHOGNE AND G. VIEIRA. MEASURED BY G. DE SANCTIS.

Object	Date	UT	R. A. (1950)	Decl.	Obs.
296	1982 03	21.21689	11 35 16.48	+05 11 11.4	809
296	1982 03	21.22243	11 35 16.16	+05 11 13.6	809
296	1982 03	21.22796	11 35 15.83	+05 11 16.1	809
296	1982 03	23.12347	11 33 26.65	+05 23 24.7	809
296	1982 03	23.12902	11 33 26.37	+05 23 27.1	809
296	1982 03	23.13455	11 33 25.99	+05 23 29.5	809
296	1982 03	24.19693	11 32 25.39	+05 30 09.5	809
296	1982 03	24.20247	11 32 25.04	+05 30 11.7	809
296	1982 03	24.20801	11 32 24.77	+05 30 13.6	809
296	1982 03	26.30019	11 30 27.27	+05 43 03.4	809
296	1982 03	26.30573	11 30 27.04	+05 43 04.5	809
296	1982 03	26.31161	11 30 26.68	+05 43 07.3	809
296	1982 03	28.11536	11 28 48.67	+05 53 45.2	809
296	1982 03	28.12090	11 28 48.40	+05 53 47.4	809
296	1982 03	28.12644	11 28 48.08	+05 53 49.2	809
296	1982 03	29.12372	11 27 54.73	+05 59 33.3	809
296	1982 03	29.12926	11 27 54.52	+05 59 35.1	809
296	1982 03	29.13479	11 27 54.13	+05 59 37.1	809
296	1982 03	30.17084	11 26 59.75	+06 05 24.4	809
296	1982 03	30.17639	11 26 59.45	+06 05 26.8	809
296	1982 03	30.18192	11 26 59.15	+06 05 28.7	809
296	1982 04	01.17924	11 25 17.26	+06 16 17.1	809
296	1982 04	01.18512	11 25 17.00	+06 16 18.3	809
296	1982 04	01.19101	11 25 16.67	+06 16 20.3	809
337	1982 03	21.11370	09 15 45.18	+20 45 21.9	809
337	1982 03	21.11924	09 15 45.07	+20 45 19.9	809
337	1982 03	21.12478	09 15 44.97	+20 45 18.5	809
337	1982 03	22.07375	09 15 32.11	+20 40 43.0	809
337	1982 03	22.07929	09 15 32.03	+20 40 41.3	809
337	1982 03	22.08535	09 15 31.93	+20 40 39.5	809
493	1982 03	21.21689	11 33 29.19	+04 17 11.9	809
493	1982 03	21.22243	11 33 28.90	+04 17 12.3	809
493	1982 03	21.22796	11 33 28.63	+04 17 12.6	809
493	1982 03	23.12347	11 31 54.27	+04 20 36.5	809
493	1982 03	23.12902	11 31 53.99	+04 20 36.9	809
493	1982 03	23.13455	11 31 53.70	+04 20 37.6	809
493	1982 03	24.19693	11 31 01.23	+04 22 27.4	809
493	1982 03	24.20247	11 31 00.92	+04 22 28.2	809
493	1982 03	24.20801	11 31 00.64	+04 22 28.4	809
493	1982 03	26.30019	11 29 18.82	+04 25 54.7	809
493	1982 03	26.30573	11 29 18.50	+04 25 55.1	809
493	1982 03	26.31161	11 29 18.22	+04 25 56.1	809
493	1982 03	28.11536	11 27 52.49	+04 28 44.0	809
493	1982 03	28.12090	11 27 52.20	+04 28 44.3	809
493	1982 03	28.12644	11 27 51.94	+04 28 45.2	809
493	1982 03	29.12372	11 27 05.23	+04 30 12.9	809
493	1982 03	29.12926	11 27 04.97	+04 30 13.2	809
493	1982 03	29.13479	11 27 04.72	+04 30 14.0	809
493	1982 03	30.17084	11 26 16.82	+04 31 41.3	809
493	1982 03	30.17639	11 26 16.58	+04 31 41.7	809
493	1982 03	30.18192	11 26 16.31	+04 31 42.0	809
493	1982 03	31.14318	11 25 32.60	+04 32 59.4	809

493	1982	03	31.14873	11	25	32.35	+04	32	59.9	809
493	1982	03	31.15427	11	25	32.05	+04	33	00.2	809
493	1982	04	01.17924	11	24	46.08	+04	34	17.9	809
493	1982	04	01.18512	11	24	45.78	+04	34	18.6	809
493	1982	04	01.19101	11	24	45.52	+04	34	19.0	809
671	1982	03	20.30272	13	10	25.09	-10	17	05.9	809
671	1982	03	20.30826	13	10	24.80	-10	17	06.6	809
671	1982	03	20.31380	13	10	24.58	-10	17	06.7	809
833	1982	03	20.36885	13	49	31.31	-18	18	50.2	809
833	1982	03	20.37440	13	49	31.12	-18	18	50.9	809
833	1982	03	20.37993	13	49	30.90	-18	18	51.0	809
1216	1982	03	23.04522	09	19	51.83	+22	10	22.5	809
1216	1982	03	23.05145	09	19	51.66	+22	10	22.9	809
1216	1982	03	23.05699	09	19	51.55	+22	10	23.7	809
1216	1982	03	24.04873	09	19	30.44	+22	12	41.0	809
1216	1982	03	24.05427	09	19	30.31	+22	12	42.0	809
1216	1982	03	24.05980	09	19	30.21	+22	12	42.9	809
1216	1982	03	26.03288	09	18	54.22	+22	16	38.3	809
1216	1982	03	26.04396	09	18	54.01	+22	16	39.4	809
1216	1982	03	28.01703	09	18	25.99	+22	19	48.1	809
1216	1982	03	28.02257	09	18	25.92	+22	19	48.2	809
1216	1982	03	28.02811	09	18	25.83	+22	19	48.5	809
1216	1982	03	29.02190	09	18	14.69	+22	21	06.0	809
1216	1982	03	29.02744	09	18	14.64	+22	21	05.9	809
1216	1982	03	29.03293	09	18	14.57	+22	21	06.5	809
1216	1982	03	30.02610	09	18	05.50	+22	22	11.3	809
1216	1982	03	30.03170	09	18	05.42	+22	22	12.2	809
1216	1982	03	30.03729	09	18	05.35	+22	22	11.9	809
1216	1982	03	31.03098	09	17	58.23	+22	23	06.3	809
1216	1982	03	31.03652	09	17	58.18	+22	23	06.0	809
1216	1982	04	01.06427	09	17	52.95	+22	23	48.7	809
1216	1982	04	01.06981	09	17	52.90	+22	23	49.3	809
1216	1982	04	01.07535	09	17	52.88	+22	23	49.6	809
1722	1982	03	21.21689	11	39	32.83	+03	38	36.1	809
1722	1982	03	21.22243	11	39	32.52	+03	38	38.5	809
1722	1982	03	21.22796	11	39	32.27	+03	38	40.7	809
1722	1982	03	23.12347	11	37	58.97	+03	53	26.1	809
1722	1982	03	23.12902	11	37	58.64	+03	53	28.1	809
1722	1982	03	23.13455	11	37	58.39	+03	53	30.6	809
1722	1982	03	24.19693	11	37	06.60	+04	01	39.7	809
1722	1982	03	24.20247	11	37	06.34	+04	01	42.2	809
1722	1982	03	24.20801	11	37	06.04	+04	01	44.2	809
1722	1982	03	26.30019	11	35	25.88	+04	17	30.3	809
1722	1982	03	26.30573	11	35	25.55	+04	17	32.8	809
1722	1982	03	28.11536	11	34	01.65	+04	30	50.6	809
1722	1982	03	28.12090	11	34	01.38	+04	30	52.9	809
1722	1982	03	28.12644	11	34	01.08	+04	30	55.1	809
1722	1982	03	29.12372	11	33	15.63	+04	38	04.8	809
1722	1982	03	29.12926	11	33	15.39	+04	38	07.1	809
1722	1982	03	29.13479	11	33	15.12	+04	38	10.0	809
1722	1982	03	30.17084	11	32	28.79	+04	45	29.1	809
1722	1982	03	30.17639	11	32	28.54	+04	45	31.1	809
1722	1982	03	30.18192	11	32	28.22	+04	45	33.3	809
1722	1982	04	01.17924	11	31	01.64	+04	59	14.7	809
1722	1982	04	01.18512	11	31	01.34	+04	59	17.4	809
1722	1982	04	01.19101	11	31	01.12	+04	59	19.5	809
1729	1982	03	21.21689	11	37	48.75	+03	25	59.8	809
1729	1982	03	21.22243	11	37	48.40	+03	26	01.2	809
1729	1982	03	21.22796	11	37	48.04	+03	26	02.9	809

1729		1982	03	23.12902	11	35	51.60	+03	35	45.0	809
1729		1982	03	23.13455	11	35	51.25	+03	35	46.2	809
1729		1982	03	24.19693	11	34	46.66	+03	41	05.7	809
1729		1982	03	24.20247	11	34	46.31	+03	41	07.4	809
1729		1982	03	24.20801	11	34	45.93	+03	41	08.6	809
1729		1982	03	26.30019	11	32	40.53	+03	51	22.0	809
1729		1982	03	26.30573	11	32	40.19	+03	51	24.4	809
1729		1982	03	26.31161	11	32	39.80	+03	51	25.5	809
1729		1982	03	28.11536	11	30	54.71	+03	59	56.5	809
1729		1982	03	28.12090	11	30	54.34	+03	59	57.7	809
1729		1982	03	28.12644	11	30	54.04	+03	59	59.7	809
1729		1982	03	29.12372	11	29	56.88	+04	04	32.6	809
1729		1982	03	29.12926	11	29	56.54	+04	04	34.2	809
1729		1982	03	29.13479	11	29	56.18	+04	04	35.8	809
1729		1982	03	30.17084	11	28	57.72	+04	09	13.8	809
1729		1982	03	30.17639	11	28	57.40	+04	09	14.9	809
1729		1982	03	30.18192	11	28	57.04	+04	09	16.0	809
1729		1982	03	31.14318	11	28	03.92	+04	13	26.0	809
1729		1982	03	31.14873	11	28	03.61	+04	13	27.3	809
1729		1982	03	31.15427	11	28	03.29	+04	13	29.2	809
1729		1982	04	01.17924	11	27	07.62	+04	17	47.9	809
1729		1982	04	01.18512	11	27	07.27	+04	17	49.8	809
1729		1982	04	01.19101	11	27	06.94	+04	17	51.1	809
1810		1982	03	20.37440	13	50	52.84	-17	21	57.1	809
1810		1982	03	20.37993	13	50	52.64	-17	21	56.4	809
1810		1982	03	21.31522	13	50	17.99	-17	19	14.2	809
1810		1982	03	21.32076	13	50	17.75	-17	19	13.3	809
1810		1982	03	21.32631	13	50	17.55	-17	19	12.3	809
1810		1982	03	22.26713	13	49	41.17	-17	16	17.2	809
1810		1982	03	22.27336	13	49	40.89	-17	16	16.3	809
1810		1982	03	22.27959	13	49	40.63	-17	16	14.9	809
2037		1982	03	21.21689	11	33	20.34	+04	43	03.5	809
2037		1982	03	21.22796	11	33	19.63	+04	43	06.6	809
2037		1982	03	23.12347	11	31	27.71	+04	51	44.3	809
2037		1982	03	23.12902	11	31	27.36	+04	51	46.1	809
2037		1982	03	23.13455	11	31	27.03	+04	51	46.6	809
2037		1982	03	24.19693	11	30	24.80	+04	56	31.3	809
2037		1982	03	24.20247	11	30	24.48	+04	56	32.3	809
2037		1982	03	24.20801	11	30	24.13	+04	56	34.2	809
2037		1982	03	28.11536	11	26	42.16	+05	13	07.4	809
2037		1982	03	28.12090	11	26	41.84	+05	13	09.8	809
2037		1982	03	28.12644	11	26	41.54	+05	13	09.1	809
2037		1982	03	29.12372	11	25	46.70	+05	17	09.0	809
2037		1982	03	29.12926	11	25	46.40	+05	17	11.1	809
2037		1982	03	29.13479	11	25	46.05	+05	17	12.0	809
2037		1982	04	01.17924	11	23	04.35	+05	28	42.1	809
2037		1982	04	01.18512	11	23	04.00	+05	28	43.3	809
2037		1982	04	01.19101	11	23	03.64	+05	28	44.0	809
1982	FX2	1982	03	21.21689	11	35	17.08	+04	11	45.5	809
1982	FX2	1982	03	21.22243	11	35	16.78	+04	11	47.3	809
1982	FX2	1982	03	21.22796	11	35	16.49	+04	11	49.1	809
1982	FX2	1982	03	23.12347	11	33	47.34	+04	19	56.5	809
1982	FX2	1982	03	23.12902	11	33	47.10	+04	19	58.1	809
1982	FX2	1982	03	23.13455	11	33	46.81	+04	20	00.0	809
1982	FX2	1982	03	28.11536	11	29	59.00	+04	40	29.8	809
1982	FX2	1982	03	28.12090	11	29	58.87	+04	40	24.3	809
1982	FX2	1982	03	28.12644	11	29	58.67	+04	40	24.1	809
1982	FX2	1982	03	29.12372	11	29	14.59	+04	44	19.1	809
1982	FX2	1982	03	29.12926	11	29	14.31	+04	44	19.3	809

1982 FX2	1982 03 29.13479	11 29 14.03	+04 44 21.2			809
1982 FX2	1982 04 01.17924	11 27 03.89	+04 55 39.7			809
1982 FX2	1982 04 01.18512	11 27 03.65	+04 55 40.6			809
1982 FX2	1982 04 01.19101	11 27 03.52	+04 55 42.1			809
1982 FY2	1982 03 21.21689	11 36 57.88	+04 17 29.3			809
1982 FY2	1982 03 21.22243	11 36 57.64	+04 17 30.1			809
1982 FY2	1982 03 21.22796	11 36 57.29	+04 17 32.9			809
1982 FY2	1982 03 23.12347	11 35 02.41	+04 28 13.7			809
1982 FY2	1982 03 23.12902	11 35 02.06	+04 28 15.8			809
1982 FY2	1982 03 23.13455	11 35 01.75	+04 28 16.9			809
1982 FY2	1982 03 24.19693	11 33 57.73	+04 34 09.7			809
1982 FY2	1982 03 24.20247	11 33 57.37	+04 34 11.3			809
1982 FY2	1982 03 24.20801	11 33 56.96	+04 34 13.7			809
1982 FY2	1982 03 28.11536	11 30 08.36	+04 54 53.3			809
1982 FY2	1982 03 28.12090	11 30 07.99	+04 54 55.0			809
1982 FY2	1982 03 28.12644	11 30 07.73	+04 54 56.2			809
1982 FY2	1982 03 29.12372	11 29 11.26	+04 59 57.0			809
1982 FY2	1982 03 29.12926	11 29 10.91	+04 59 58.7			809
1982 FY2	1982 03 29.13479	11 29 10.67	+05 00 00.7			809
1982 FY2	1982 03 30.17084	11 28 12.91	+05 05 05.1			809
1982 FY2	1982 03 30.17639	11 28 12.59	+05 05 07.2			809
1982 FY2	1982 03 30.18192	11 28 12.26	+05 05 08.6			809
1982 FY2	1982 04 01.17924	11 26 24.11	+05 14 31.5			809
1982 FY2	1982 04 01.18512	11 26 23.88	+05 14 32.7			809
1982 FY2	1982 04 01.19101	11 26 23.52	+05 14 34.4			809
1982 FB3	1982 03 21.11370	09 16 31.85	+22 10 18.0			809
1982 FB3	1982 03 21.11924	09 16 31.73	+22 10 18.9			809
1982 FB3	1982 03 21.12478	09 16 31.58	+22 10 18.9			809
1982 FB3	1982 03 23.04522	09 15 56.41	+22 13 28.6			809
1982 FB3	1982 03 23.05145	09 15 56.32	+22 13 29.1			809
1982 FB3	1982 03 23.05699	09 15 56.18	+22 13 29.5			809
1982 FB3	1982 03 24.04873	09 15 41.00	+22 14 49.2			809
1982 FB3	1982 03 24.05427	09 15 40.91	+22 14 49.7			809
1982 FB3	1982 03 24.05980	09 15 40.82	+22 14 50.0			809
1982 FB3	1982 03 26.03288	09 15 16.85	+22 16 51.5			809
1982 FB3	1982 03 26.03841	09 15 16.76	+22 16 51.9			809
1982 FB3	1982 03 26.04396	09 15 16.70	+22 16 51.9			809
1982 FB3	1982 03 28.01703	09 15 00.88	+22 18 07.3			809
1982 FB3	1982 03 28.02257	09 15 00.81	+22 18 07.4			809
1982 FB3	1982 03 28.02811	09 15 00.80	+22 18 07.3			809
1982 FB3	1982 03 29.02190	09 14 55.87	+22 18 27.4			809
1982 FB3	1982 03 29.02744	09 14 55.88	+22 18 27.5			809
1982 FB3	1982 03 29.03293	09 14 55.85	+22 18 28.0			809
1982 FB3	1982 03 30.02610	09 14 53.08	+22 18 36.6			809
1982 FB3	1982 03 30.03170	09 14 53.05	+22 18 36.5			809
1982 FB3	1982 03 30.03729	09 14 53.05	+22 18 36.7			809
1982 FB3	1982 03 31.03098	09 14 52.39	+22 18 33.4			809
1982 FB3	1982 03 31.03652	09 14 52.38	+22 18 33.1			809
1982 FB3	1982 03 31.04206	09 14 52.43	+22 18 31.6			809
1982 FB3	1982 04 01.06427	09 14 53.78	+22 18 18.4			809
1982 FB3	1982 04 01.06981	09 14 53.74	+22 18 18.5			809
1982 FB3	1982 04 01.07535	09 14 53.76	+22 18 18.3			809

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

Object	Date	UT	R. A. (1950)	Decl.	Mag.	Obs.
1983 UH *	1983 10 30.12947	02 02 16.20	-57 58 31.0		16	809
1983 UH	1983 10 30.21257	02 01 51.79	-58 00 53.3			809

1983 UH	1983 11 04.12274	01 37 10.62	-60 03 44.2		809
1983 UH	1983 11 04.20585	01 36 43.26	-60 05 25.8		809

OBSERVATIONS MADE AT KARUSUYAMA BY Y. BANNO. MEASURED BY T. URATA. FROM NIHONDAIRA OBS. CIRC. NO. 1462.

Object	Date UT	R. A. (1950)	Decl.	Mag.	Obs.
797	1983 12 01.63633	04 22 58.74	+20 22 30.9	15	889
797	1983 12 01.67487	04 22 56.30	+20 22 21.9		889
1938 WA	1983 12 01.62730	04 12 15.41	+19 55 05.7	17	889
1938 WA	1983 12 01.66550	04 12 13.56	+19 55 01.2		889
1953 VN2	1983 11 28.50508	04 15 07.53	+19 37 31.9	16.5	889
1953 VN2	1983 11 28.54675	04 15 04.71	+19 37 36.5		889
1953 VN2	1983 12 01.62730	04 11 35.12	+19 41 51.8	16.5	889
1953 VN2	1983 12 01.66550	04 11 32.60	+19 41 55.2		889
1979 TM	1983 12 01.64640	04 38 29.53	+20 33 01.6	16.5	889
1979 TM	1983 12 01.68425	04 38 26.75	+20 32 55.4		889
1981 CY	1983 12 01.63633	04 21 15.71	+19 54 32.6	16	889
1981 CY	1983 12 01.67487	04 21 12.85	+19 54 37.7		889
1983 WA	1983 12 01.62730	04 13 07.17	+20 04 48.0	17	889
1983 WA	1983 12 01.66550	04 13 05.07	+20 04 34.4		889
1983 WB	1983 12 01.62730	04 14 33.89	+19 32 08.5	15.5	889
1983 WB	1983 12 01.66550	04 14 31.79	+19 32 10.1		889

OBSERVATIONS MADE AT EASTFIELD BY H. B. RIDLEY. MEASURED BY R. MILES, REDUCED AND COMMUNICATED BY A. J. HOLLIS.

Object	Date UT	R. A. (1950)	Decl.	Obs.
20	1983 12 03.97778	01 02 56.38	+06 28 30.6	984
20	1983 12 04.78889	01 03 00.52	+06 28 49.6	984
68	1983 12 03.97778	01 18 02.41	+07 09 23.9	984
68	1983 12 04.78889	01 18 01.19	+07 12 38.1	984

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ORBITAL ELEMENTS OF ONE-OPPOSITION MINOR PLANETS.

The orbit computers and authors of double designations are B = C. M. Bardwell, E = E. Bowell, 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
1979 SG2	16.0	790924	0.03	65.85	298.99	5.39	0.2041	2.1717	9	3		M
1979 SU2	14.5	790924	316.30	217.40	229.59	6.29	0.3426	2.5496	9	3		M
1981 DR3	16.5	810317	133.77	107.15	286.95	8.09	0.1837	2.5650	40	8		B
1981 DS3	15.5	810317	81.66	152.92	296.88	9.87	0.0977	3.0600	12	6		B
1981 EP10	17.5	810317	301.14	296.71	310.70	5.88	0.0992	2.4027	42	0		M
1981 EZ17	14.0	810317	332.70	35.06	174.29	14.97	0.1286	2.5746	27	0	1	M
1981 EE18	16.0	810317	53.62	106.67	356.41	4.80	0.1658	3.1715	40	0		M
1981 EA21	16.0	810317	7.44	212.22	315.80	0.82	0.0417	2.8083	40	0		M
1981 EN21	15.5	810317	318.70	31.68	187.33	1.78	0.0170	2.9082	40	0		M
1981 ES21	15.0	810317	63.84	99.76	354.48	13.00	0.1603	2.6818	40	0		M
1981 EC22	18.0	810317	5.90	355.87	174.04	1.63	0.0307	2.1649	40	0		M
1981 EO23	17.5	810317	104.44	170.18	250.17	0.97	0.1032	2.2090	39	7		M
1981 EB24	16.0	810317	73.57	81.40	12.19	4.41	0.0697	2.8137	40	0		M
1981 ED24	15.0	810317	122.62	243.71	167.11	9.41	0.0229	2.9441	40	0		B
1981 EH24	16.0	810317	130.77	11.69	28.57	2.28	0.0704	2.8747	27	9		M
1981 EW32	16.0	810317	125.70	186.57	198.92	10.12	0.3165	2.5443	14	6		B
1981 EX32	16.5	810317	265.17	68.39	222.97	6.77	0.1894	2.5948	14	7		B
1981 EY32	17.5	810317	35.40	295.86	188.61	16.03	0.1915	2.9090	14	4		B
1981 EZ32	16.0	810317	68.62	269.16	191.60	9.84	0.0537	2.9717	28	8		B

1981	EA33	18.0	810317	39.59	146.59	337.20	12.27	0.1468	2.7152	14	5	B
1981	EB33	15.5	810317	245.31	340.00	328.11	11.99	0.1763	2.6360	14	7	B
1981	EC33	18.5	810317	65.49	151.67	299.05	4.71	0.1752	2.3656	14	5	B
1981	ED33	17.5	810317	155.80	68.88	306.26	6.26	0.1284	2.3607	14	6	B
1981	EE33	17.5	810317	50.16	137.52	336.27	12.93	0.1274	2.6357	14	5	B
1981	EF33	18.5	810317	318.55	23.94	209.48	6.80	0.1763	2.4305	14	5	B
1981	EG33	19.0	810317	29.23	298.08	199.03	7.06	0.1445	2.2979	14	4	B
1981	EH33	15.5	810317	267.79	80.49	191.66	9.57	0.0349	3.0839	14	6	B
1981	EJ33	18.0	810317	283.38	306.82	315.41	5.09	0.0837	2.3620	14	6	B
1981	EK33	17.0	810317	261.77	348.37	292.04	5.09	0.0477	2.7773	14	7	B
1981	EL33	17.0	810317	236.41	30.07	293.98	5.90	0.3104	2.2777	14	7	B
1981	EM33	16.5	810317	165.06	36.03	332.47	12.36	0.1488	2.7196	14	4	B
1981	EN33	18.5	810317	28.97	179.73	318.13	3.98	0.1388	2.2435	14	6	B
1981	EO33	16.5	810317	355.16	353.14	190.04	15.69	0.1555	2.7667	14	8	B
1981	EP33	18.0	810317	329.00	4.96	206.40	6.23	0.0638	2.3145	14	5	B
1981	EQ33	17.5	810317	252.22	2.81	294.46	5.20	0.1212	2.3867	14	5	B
1981	ER33	17.5	810317	335.58	1.33	204.82	5.09	0.1024	2.2949	14	7	B
1981	ES33	17.0	810317	213.32	12.76	320.06	6.62	0.1746	2.5531	14	4	B
1981	ET33	16.5	810317	266.77	352.29	295.54	3.06	0.1547	3.1050	14	3	B
1981	EU33	17.0	810317	203.12	105.60	234.02	5.65	0.1279	2.3557	14	6	B
1981	EV33	17.5	810317	68.40	281.15	180.78	21.99	0.0586	2.6350	41	9	B
1981	EW33	16.5	810317	194.00	95.31	251.47	2.72	0.1463	2.6875	14	5	B
1981	EX33	16.5	810317	200.22	33.02	308.08	6.75	0.0693	3.0100	14	4	B
1981	EY33	17.0	810317	101.80	213.17	215.89	3.66	0.0581	2.7828	14	5	B
1981	EZ33	15.5	810317	104.79	155.68	263.04	4.01	0.1421	3.1745	14	4	B
1981	EA34	16.0	810317	91.77	224.68	209.75	8.66	0.1058	2.7078	14	7	B
1981	EB34	18.5	810317	263.48	88.10	195.29	4.63	0.0906	2.1869	14	6	B
1981	EC34	16.0	810317	191.94	23.49	326.36	6.81	0.1864	2.7654	14	6	B
1981	ED34	17.0	810317	131.83	86.57	305.08	2.16	0.1831	2.4160	14	6	B
1981	EE34	19.0	810317	9.17	210.76	313.73	2.02	0.1509	2.3924	14	0	B
1981	EF34	17.5	810317	26.43	219.03	283.54	2.94	0.1518	2.5560	14	8	B
1981	EG34	17.5	810317	119.76	218.28	193.41	7.10	0.0891	2.4147	14	0	B
1981	EH34	14.5	810317	90.98	89.44	350.91	1.74	0.0156	2.9107	40	0	B
1981	EJ34	17.5	810317	339.68	204.95	356.83	3.37	0.1640	2.5479	9	4	B
1981	EK34	16.5	810317	303.04	256.21	348.91	0.69	0.1389	2.3788	14	8	B
1981	EL34	15.0	810317	207.19	95.23	238.88	1.13	0.1646	3.1747	40	0	B
1981	EM34	18.5	810317	12.07	255.33	267.19	6.18	0.0725	2.3366	10	5	B
1981	EN34	18.0	810317	286.22	4.43	253.04	5.98	0.0665	2.3471	10	4	B
1981	EO34	15.5	810317	173.50	182.39	175.81	9.91	0.2086	2.6368	40	0	B
1981	EP34	18.0	810317	43.14	250.97	225.00	8.29	0.1902	2.7325	10	6	B
1981	EQ34	16.5	810317	265.80	123.47	168.29	6.14	0.2160	2.6392	14	5	B
1981	ER34	15.5	810317	336.01	316.68	246.80	8.14	0.0388	3.1674	10	8	B
1981	ES34	18.5	810317	332.69	1.55	222.20	7.43	0.2683	2.5644	10	7	B
1981	ET34	16.5	810317	196.78	132.98	214.10	11.56	0.2905	2.6720	10	5	B
1981	EU34	17.5	810317	12.13	41.36	117.43	1.32	0.1119	2.3748	5	4	B
1981	EV34	16.5	810317	228.65	167.01	157.13	2.56	0.2726	2.6016	9	5	2 B
1981	EW34	17.5	810317	37.79	134.40	352.14	6.91	0.1280	2.4214	14	6	B
1981	EX34	16.0	810317	263.35	119.98	162.16	8.39	0.1008	2.7687	5	5	B
1981	EY34	17.0	810317	84.74	221.72	214.83	14.35	0.1440	2.6451	10	4	B
1981	EZ34	16.0	810317	276.71	94.85	183.80	6.79	0.1743	2.8107	40	0	B
1981	EA35	15.0	810317	131.25	32.96	354.16	15.52	0.2314	3.0854	40	0	B
1981	EB35	17.0	810317	80.04	266.19	183.17	5.63	0.0513	2.2699	40	0	B
1981	EC35	18.0	810317	67.22	302.66	157.31	5.33	0.0660	2.3116	5	5	B
1981	ED35	17.0	810317	63.49	86.55	0.70	1.59	0.2126	2.4400	37	0	B
1981	EE35	16.5	810317	209.40	169.15	165.12	7.35	0.1942	2.4892	27	8	B
1981	EF35	17.0	810317	75.71	286.87	164.32	3.28	0.0719	2.5054	9	5	B
1981	EG35	16.0	810317	7.96	0.11	164.30	10.60	0.1408	2.4137	5	5	B
1981	EH35	18.5	810317	75.33	110.27	325.35	3.27	0.2178	2.3195	14	6	B
1981	EJ35	19.0	810317	37.27	316.65	167.45	5.11	0.1719	2.3952	14	6	B

1981	EK35	16.0	810317	173.89	81.46	280.41	0.80	0.0677	3.0154	27	5		B
1981	EL35	16.0	810317	298.43	16.40	237.59	10.23	0.1188	3.1349	10	4		B
1981	EM35	17.5	810317	285.05	267.20	0.91	6.07	0.1540	2.2758	40	0		B
1981	EN35	20.0	810317	10.83	320.60	200.36	8.72	0.2088	2.2092	10	5	2	B
1981	EO35	17.5	810317	203.21	73.79	266.44	5.14	0.1301	2.2511	10	6		B
1981	EP35	18.0	810317	238.86	143.23	160.46	5.66	0.0725	2.3469	27	4		B
1981	EQ35	18.5	810317	334.58	71.18	141.41	1.26	0.1792	2.7150	27	5		B
1981	ER35	16.5	810317	132.41	109.36	290.23	8.06	0.1061	3.0125	38	6		B
1981	ES35	14.0	810317	38.23	132.94	1.61	10.48	0.0462	3.2143	40	0		B
1981	ET35	16.5	810317	293.51	28.62	228.40	9.72	0.0970	3.0247	8	4		B
1981	EU35	15.0	810317	203.18	180.89	160.93	4.03	0.2362	2.3901	40	0		B
1981	EV35	16.0	810317	243.65	314.07	356.04	16.40	0.1763	2.9656	27	5		B
1981	EW35	16.5	810317	228.89	106.54	217.15	10.33	0.1651	3.1125	8	4		B
1981	EX35	18.5	810317	298.60	9.04	242.06	6.69	0.0949	2.2887	38	0		B
1981	EY35	15.5	810317	316.15	232.03	1.70	3.88	0.1420	2.2822	40	0		B
1981	EZ35	16.5	810317	10.79	70.57	90.77	0.49	0.1305	3.2109	26	6		B
1981	EA36	17.0	810317	157.27	50.34	323.21	3.68	0.1487	2.5361	13	8		B
1981	EB36	17.5	810317	47.20	108.87	3.38	2.14	0.1669	2.4588	39	0		B
1981	EC36	15.0	810317	141.30	220.99	168.18	2.09	0.1078	2.9386	33	0		B
1981	ED36	17.0	810317	227.89	348.55	330.43	6.40	0.1052	2.3363	9	0		B
1981	EE36	15.5	810317	185.46	30.96	329.77	10.35	0.1062	2.9693	6	5		B
1981	EF36	17.5	810317	17.28	266.85	247.11	7.60	0.1257	2.8642	5	4		B
1981	EG36	14.0	810317	175.59	184.96	172.15	5.26	0.0414	3.1647	35	0		B
1981	EH36	16.5	810317	194.70	25.35	319.28	13.17	0.0560	3.1970	5	3		B
1981	EJ36	17.0	810317	140.08	18.52	3.05	2.10	0.2042	2.4202	35	4		B
1981	EK36	18.0	810317	331.65	20.67	196.79	16.79	0.1844	3.1234	5	5	2	B
1981	EL36	18.0	810317	272.90	356.80	283.55	2.57	0.1542	2.4224	8	4		B
1981	EM36	19.0	810317	22.50	213.03	291.36	8.46	0.2036	2.7058	5	4		B
1981	EN36	18.0	810317	51.88	246.02	218.90	7.88	0.1938	2.8047	8	5		B
1981	EO36	18.0	810317	288.08	323.12	314.81	8.76	0.2450	2.4727	5	5		B
1981	EP36	16.5	810317	186.25	105.28	248.39	8.72	0.1028	2.9671	33	6		B
1981	EQ36	18.5	810317	334.57	282.85	290.64	7.69	0.1572	2.7381	5	4		B
1981	ER36	16.5	810317	110.64	91.11	318.13	11.52	0.2010	2.8156	5	5		B
1981	ES36	16.5	810317	192.04	15.11	332.18	10.82	0.0416	3.0392	8	4		B
1981	ET36	16.5	810317	109.78	86.56	329.84	4.17	0.1085	3.1760	8	6		B
1981	EU36	19.0	810317	42.41	248.47	231.68	4.07	0.1657	2.2918	8	4		B
1981	EV36	17.0	810317	8.50	239.09	290.84	7.98	0.0768	3.0412	5	3		B
1981	EW36	17.5	810317	178.38	74.03	286.24	5.39	0.0545	2.8006	8	4		B
1981	EX36	18.0	810317	102.23	108.03	325.98	13.98	0.0376	2.5242	5	4		B
1981	EY36	16.0	810317	245.54	321.70	343.50	9.23	0.1323	3.1007	8	5		B
1981	EZ36	17.0	810317	306.29	318.76	304.20	7.26	0.2658	3.1576	5	4		B
1981	EA37	18.0	810317	31.06	154.73	343.07	7.25	0.1331	2.5121	8	5		B
1981	EB37	15.5	810317	243.52	295.18	357.88	8.21	0.0308	2.6907	31	9		B
1981	EC37	15.0	810317	299.40	250.85	2.02	18.32	0.1531	3.2173	31	9		B
1981	ED37	17.0	810317	232.74	291.46	28.46	4.09	0.2162	2.3159	31	0		B
1981	EE37	15.5	810317	207.49	317.47	19.42	4.48	0.1795	2.2782	31	0		B
1981	EF37	14.0	810317	251.64	296.15	1.39	15.17	0.1220	2.5499	31	0		B
1981	FC1	13.5	810317	23.02	142.88	357.98	8.84	0.1698	3.1417	26	7		B
1981	GM1	14.5	810317	355.88	178.70	2.25	13.96	0.1002	2.5927	31	0		M
1981	GO1	16.0	810317	1.42	162.20	11.78	2.56	0.1441	2.3858	40	0	1	M
1982	FX2	14.0	820401	257.63	263.27	19.05	2.29	0.0256	2.9578	11	0		M
1982	FY2	15.0	820401	253.00	266.14	29.17	1.71	0.0884	2.2081	14	0		M
1983	WC	14.0	831212	8.01	292.19	124.24	2.07	0.2257	3.1838	37	0		M
1983	WJ	14.0	831212	6.24	325.47	96.90	3.27	0.0913	2.8893	37	0		M
1983	WQ	13.0	831212	71.00	289.22	56.29	10.12	0.1348	2.6899	36	6		M
1983	WR	12.5	831212	57.46	289.40	57.28	13.55	0.2517	3.2184	36	7		M
1983	WU	15.5	831212	0.37	12.99	60.46	10.47	0.2571	2.6637	36	6		E
1983	WV	13.0	831212	359.55	358.97	74.52	2.75	0.1717	3.1377	36	0		M
1983	XC	15.5	831212	26.58	308.87	83.91	7.64	0.1725	2.2918	37	0		M

1983 XG	13.0	831212	49.04	157.54	208.97	4.88	0.1596	3.1979	37	9		M
1983 XX	15.0	831212	10.88	160.35	262.28	12.69	0.1678	2.4028	27	0		B
1983 YD	14.0	840101	68.48	275.59	76.74	4.76	0.2326	2.5985	7	6	2	B
1984 AD	15.0	840101	43.14	88.74	299.80	22.65	0.3280	2.3807	6	3	2	B
1984 AP	13.0	840121	8.10	165.24	292.70	13.06	0.1190	2.7196	30	8		M
1984 AQ	13.5	840121	292.18	84.12	113.68	10.52	0.1754	2.5352	57	8		M
1984 BA	13.0	840121	244.64	340.81	258.41	5.10	0.1168	2.2371	15	7		M
1984 BF	15.0	840121	177.92	357.34	311.76	25.73	0.0372	1.9565	2	6	2	M
1984 BG	16.0	840121	40.53	312.23	142.74	28.20	0.0656	1.8278	2	6		M
1984 BH	15.5	840121	344.33	204.18	307.96	8.38	0.3370	2.8224	3	6		M
1984 BJ		840121	213.30	333.54	304.83	13.67	0.2236	2.9441	3	6		M
1984 BK	15.0	840121	357.40	178.63	305.20	2.56	0.1191	2.2399	3	6	2	M
1984 BL	13.5	840121	9.41	35.32	71.59	1.94	0.2420	3.0006	6	8	2	M
1984 BM	15.5	840121	58.48	303.46	91.49	2.80	0.2701	2.3888	3	6		M
1984 BO	13.5	840121	199.10	308.78	343.58	13.84	0.0849	2.4419	9	8		M
1984 BQ	14.0	840121	306.71	136.35	52.31	7.81	0.0628	2.3899	9	0		M
1984 BS	15.5	840121	22.97	346.66	108.89	5.80	0.0800	2.1456	5	6		M
1984 BT	12.5	840121	22.24	26.83	78.85	9.67	0.0490	3.2227	8	7		M

Note 1: double designations 1981 EZ17 = 1981 ED (l), 1981 GO1 = 1981 GS1 (M). 2: e assumed.

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ORBITAL ELEMENTS BY D. K. YEOMANS, JET PROPULSION LABORATORY.

Periodic Comet Crommelin (1983n)
Epoch 1984 Mar. 1.0 ET = JDE 2445760.5
T 1984 Feb. 20.16511 ET

q	0.7345239		(1950.0)	P	Q
n	0.03596526	Peri.	195.85090	+0.10142151	-0.88335104
a	9.0896524	Node	250.19384	+0.95738944	+0.21169038
e	0.9191912	Incl.	29.10290	+0.27040548	-0.41818433
P	27.40				

From 55 observations 1928-1984, mean residual 2".3. Nongravitational parameters A1 = +0.10, A2 = -0.0008.

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

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

(2996)* 1954 RJ = 1938 FO = 1940 RW = 1949 QW1 = 1956 AC = 1977 RF3 = 1977 TC2 = 1984 BD

Discovered 1954 Sept. 5 at the Goethe Link Observatory, Indiana University. The key identifications 1954 RJ = 1977 RF3 and 1954 RJ = 1984 BD are by E. Bowell and by T. Urata, respectively. The identification 1954 RJ = 1940 RW is also by Urata.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	252.30154		(1950.0)	P	Q
n	0.21239350	Peri.	305.18100	+0.16488055	+0.98592082
a	2.7821160	Node	334.26691	-0.88275772	+0.13492435
e	0.0294137	Incl.	3.67515	-0.43994682	+0.09877025
P	4.64	B(1,0)	13.0		

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

380319	012	1.1+	1.5+		541002	839	1.3+	1.5+		840105	688	0.9+	1.7+
400907	053	(20.2+	4.5-)X		541002	839	3.8-	1.8-		840108	688	0.3+	1.2-
490822	760	0.0	0.4-		560113	760	1.2+	0.8-		840108	688	1.2+	0.7-
490822	760	0.8-	0.3+		560113	760	0.6-	1.7-		840127	372	0.0	0.3+
540829	839	3.1+	1.4-		770912	095	0.0	0.5+		840127	372	1.7-	0.3+
540905	760	(0.06-	0.02+)X		770918	095	0.7+	1.4+		840129	372	0.5+	0.5+
540907	839	(24.8-	8.9-)		771007	095	1.3-	2.1+		840129	372	3.0-	1.7+
540907	839	(24.5-	6.4-)		840105	688	1.1+	0.1-					

(2997)* 1974 MJ = 1950 TA4 = 1977 EZ7

Discovered 1974 June 17 at the El Leoncito Station of the Felix Aguilar Observatory, University of Cuyo. The key identification 1974 MJ = 1977 EZ7 is by K. Hurukawa (JAM 1235). The identification 1974 MJ = 1950 TA4 is by L. D. Schmadel (MPC 7778).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

			(1950.0)	P	Q
M	147.16382				
n	0.24122788	Peri.	350.02534	+0.96524625	+0.26109371
a	2.5557462	Node	354.79769	-0.23027415	+0.82907905
e	0.1994858	Incl.	7.21711	-0.12358601	+0.49442694
P	4.09	B(1,0)	15.0		

Residuals in seconds of arc

501012	711	2.8+	5.6- Y		740720	808	1.0+	0.0		770314	381	0.0	1.9-
740617	808	0.4+	0.4-		740808	808	1.9+	0.9+		770315	381	0.6-	1.4-
740617	808	0.0	0.8-		740808	808	0.6+	2.6-		770315	381	2.0-	2.8-
740622	808	0.1-	0.0		740816	808	0.4-	0.5+		831206	688	0.8-	2.1-
740622	808	0.4-	0.2+		740816	808	0.3-	0.3+		831206	688	0.1-	0.8-
740716	808	0.2-	0.8-		740818	809	(3.7+	7.1-)		831206	801	0.3+	0.2+
740716	808	0.4+	0.5-		770312	381	0.7-	0.7-		840104	801	0.6+	1.7+
740717	808	0.9-	0.7-		770312	381	0.9-	0.6-					
740717	808	1.4-	0.7-		770314	381	0.4-	0.9-					

(2998)* 1975 TR3 = 1979 YJ4 = 1981 EU21

Discovered 1975 Oct. 3 by L. I. Chernykh at the Crimean Astrophysical Observatory. The key identification 1975 TR3 = 1981 EU21 is by S. J. Bus (MPC 7936).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

			(1950.0)	P	Q
M	157.44610				
n	0.26141214	Peri.	203.94760	+0.99963984	-0.01678509
a	2.4224355	Node	156.98478	+0.02308625	+0.93568264
e	0.1947811	Incl.	3.07002	-0.01368266	+0.35244326
P	3.77	B(1,0)	15.0		

Residuals in seconds of arc

751003	095	0.7+	0.9-		810307	413	2.5+	1.4-		810407	413	1.4+	0.4-
751013	095	0.2-	0.0		810311	413	1.9-	0.5+		810408	413	1.5-	1.6+
751106	095	0.4+	1.6-		810311	413	0.8+	1.4-		810411	413	1.7-	0.5+
791218	095	0.2-	0.3+		810316	413	0.6-	0.8-		810411	413	2.0+	0.7-
810302	413	0.6-	0.1-		810316	413	0.0	1.0-		831201	801	0.2+	0.3+
810302	413	4.4+	2.3-		810329	413	0.3-	0.7-		840103	801	0.0	1.1+
810303	413	1.1-	0.7+		810329	413	0.9-	0.8+					
810307	413	0.9-	0.7+		810407	413	2.9-	0.8+					

(2999)* 1981 CY = 1978 GT4 = 1978 JT

Discovered 1981 Feb. 6 by N. G. Thomas at the Anderson Mesa Station of the Lowell Observatory. The identification and double designation are by L. D. Schmadel (MPC 7780).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	58.20388	(1950.0)	P	Q	
n	0.28809972	Peri.	38.02831	-0.38108513	-0.91752083
a	2.2704267	Node	74.62971	+0.81667886	-0.39172056
e	0.1060891	Incl.	6.77245	+0.43337024	-0.06863332
P	3.42	B(1,0)	14.5		

Residuals in seconds of arc

780412	095	0.0	0.8+	831128	889	5.5+	2.0-	831205	567	1.3-	0.3-
780505	095	1.2+	2.1+	831128	889	3.7+	0.7+	831205	552	3.5-	0.3+
810206	688	0.3+	1.5+	831201	801	0.4-	2.2+	831205	552	2.6-	0.0
810206	688	1.2+	2.2+	831201	688	0.0	1.7-	831206	688	0.1-	0.5-
810309	688	0.1-	0.3+	831201	688	2.0+	1.8-	831206	688	1.8+	0.9-
810309	688	0.1+	0.9-	831201	889	0.8-	1.0+	831208	046	4.3-	0.5+
810325	688	0.4+	0.8-	831201	889	1.1-	2.2+	831208	046	0.5+	0.6+
810325	688	0.0	1.4-	831204	046	1.6-	0.4+	831209	688	1.1+	0.9-
810330	688	0.6-	1.8-	831204	046	2.2-	0.2-	831209	688	0.3-	0.8-
810330	688	0.9-	1.7-	831205	688	0.7+	0.5-	831229	688	0.7+	1.0+
831107	801	0.0	1.0+	831205	688	0.6-	0.7-	831229	688	1.4+	0.6+
831108	801	0.1-	0.7+	831205	046	1.8+	0.6-	840102	688	1.1-	0.0
831128	688	3.7+	1.6-	831205	046	4.2-	0.9-	840104	688	0.9+	0.1-
831128	688	2.2+	0.3+	831205	567	0.4-	2.1+	840104	688	1.1-	1.2-

(3000)* 1981 EG19 = 1961 XB = 1975 NK1 = 1979 UT4 = 1979 WC6

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

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	154.43526	(1950.0)	P	Q	
n	0.27345207	Peri.	173.02258	+0.97162824	-0.23590834
a	2.3507976	Node	200.64633	+0.21460278	+0.90940900
e	0.1812021	Incl.	2.74826	+0.09941940	+0.34252376
P	3.60	B(1,0)	14.0		

Residuals in seconds of arc

611203	760	1.1+	1.2+	810311	413	1.0-	0.9+	831103	801	0.3-	2.5+
611203	760	1.1-	1.7-	810311	413	0.0	0.3-	831206	801	1.3+	0.4+
750712	095	1.3+	0.4-	810316	413	0.6-	0.9+	831227	567	0.4+	0.2-
791017	095	1.1-	2.1-	810316	413	1.1+	1.0-	831228	567	1.8+	0.4+
791117	095	0.3+	1.1-	810329	413	0.2+	0.6-	840109	801	0.4-	1.1+
810302	413	1.5-	0.6+	810407	413	2.9-	0.6+	840125	567	0.4-	0.1+
810302	413	0.0	0.5-	810407	413	0.5+	1.0-	840125	567	0.7+	0.7-
810303	413	1.6+	1.1-	810408	413	0.3+	0.1-	840125	567	0.2-	1.8-
810307	413	0.6-	0.8+	810411	413	1.1-	0.6-				
810307	413	1.0+	0.4-	810411	413	0.2-	0.9-				

(3001)* 1982 BC1 = 1971 BJ1 = 1976 OB

Discovered 1982 Jan. 21 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	328.86869	(1950.0)	P	Q	
n	0.27251354	Peri.	136.60685	+0.24558509	-0.92806383
a	2.3561919	Node	297.33062	+0.78072829	+0.36055827
e	0.0699268	Incl.	18.37012	+0.57458793	-0.09324839
P	3.62	B(1,0)	13.5		

Residuals in seconds of arc

710127	095	0.8-	0.9-	820131	688	1.1+	1.2+	830702	675	0.1-	0.4+
760727	095	2.2+	2.9-	820221	688	0.0	2.4-	830810	474	0.6-	0.1-
820124	688	2.1-	1.0-	820221	688	0.1-	2.4-	830810	474	0.5-	0.4+
820124	688	0.3-	0.2-	820327	801	1.7+	2.3+				
820131	688	0.6-	1.4+	830701	675	0.2+	0.3+				

(3002)* 1982 FB3 = 1982 BR3 = 1982 DM4 = 1942 FG = 1959 LB = 1963 SC1
= 1965 AY = 1979 HU5 = 1980 TG11 = 1980 VB1

Discovered 1982 Mar. 20 by H. Debehogne at the European Southern Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 200.76315		(1950.0)	P	Q
n 0.29396372	Peri.	132.18846	-0.38313495	+0.91858437
a 2.2401318	Node	115.04395	-0.87586398	-0.32793137
e 0.1302187	Incl.	6.14665	-0.29337670	-0.22059865
P 3.35	B(1,0)	14.0		

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

420317 062	0.4+	0.1+	820320 809	0.0	0.3+	820328 809	0.2+	0.1+
420317 062	0.6-	1.4-	820320 809	0.1+	0.2+	820328 809	0.2-	0.0
420318 062	0.4-	0.3+	820320 809	0.0	0.6+	820328 809	0.3+	0.3-
590603 760	(0.02-	0.03-)X	820321 809	0.2+	0.2+	820329 809	0.8-	0.3-
630927 760	(96.9-	41.6-)X	820321 809	0.3+	0.5+	820329 809	0.2-	0.3-
650110 330	0.1-	2.7-	820321 809	0.0	0.1-	820329 809	0.1-	0.1+
790428 095	0.4-	1.5-	820323 809	0.5-	0.5+	820330 809	0.3-	0.1+
801008 095	2.2+	0.5+	820323 809	0.1-	0.4+	820330 809	0.4-	0.0
801110 511	0.7+	0.2-	820323 809	0.6-	0.3+	820330 809	0.1-	0.2+
801110 511	0.6-	0.6-	820324 809	0.4-	0.4+	820331 809	0.1+	0.2-
801110 511	1.8-	1.1-	820324 809	0.4-	0.5+	820331 809	0.2+	0.5-
820120 033	0.5+	0.8+	820324 809	0.3-	0.4+	820331 809	1.0+	1.9-
820120 033	0.3+	0.7+	820326 809	0.6+	0.2-	820401 809	0.3+	0.3-
820219 033	0.9+	0.4+	820326 809	0.3+	0.1-	820401 809	0.3-	0.1-
820219 033	0.4+	0.7+	820326 809	0.4+	0.4-	820401 809	0.0	0.2-

(3003)* 1983 YH = 1937 AE = 1951 WR1 = 1970 HC = 1974 DC1 = 1979 BJ

Discovered 1983 Dec. 28 by A. Mrkos at Klet.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 115.94769		(1950.0)	P	Q
n 0.18758157	Peri.	284.26488	+0.86369561	-0.46469836
a 3.0223350	Node	103.74207	+0.50397398	+0.79139470
e 0.1213879	Incl.	11.58992	+0.00633367	+0.39717736
P 5.25	B(1,0)	12.5		

Residuals in seconds of arc

370111 020	(9.1-	10.3+)X	790118 330	0.2+	1.7+	840105 688	0.6+	0.0
370113 020	(7.3+	1.8+)X	790124 095	1.1+	1.6-	840105 046	2.4+	2.9-
370121 020	(80.2+	23.3+)X	790125 330	0.9+	1.9+	840105 046	1.4-	1.8-
511129 711	0.7+	5.1+ Y	831228 046	1.3-	0.8-	840108 688	0.2+	0.3+
511129 711	3.9-	3.4+ Y	831228 046	2.3-	1.3-	840108 688	0.5-	0.3+
700427 095	1.1-	0.8+	840101 046	1.1+	2.5-	840126 688	1.1-	1.3-
700508 095	1.8+	1.9+	840101 046	1.4+	0.6-	840126 688	0.2+	1.6-
740216 095	0.5+	5.4+	840105 688	1.1+	0.8+	840204 688	(2.7+	1.3-)

1974 QU1 = 1983 YC

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

M 97.10632		(1950.0)	P	Q
n 0.22993598	Peri.	194.50654	+0.77187543	-0.63564040
a 2.6387543	Node	204.97539	+0.58631339	+0.71959882
e 0.2354852	Incl.	1.76752	+0.24585550	+0.27953321
P 4.29	B(1,0)	14.0		

Residuals in seconds of arc

740824 095	0.6-	0.1+	740919 095	1.6-	2.2-	831228 046	1.9+	2.6-
740827 095	1.0+	0.2-	740923 095	1.3+	0.9+	831228 046	2.7+	0.7+
740911 095	0.8-	1.3+	831225 046	0.7-	0.9-	840101 046	0.7-	1.6-
740914 095	0.8+	0.2+	831225 046	2.2-	2.5+	840101 046	1.0-	1.8+

1980 FB12 = 1976 GT = 1977 SG2
The identifications are by L. D. Schmadel.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	14.37742		(1950.0)		P		Q				
n	0.26182021	Peri.	106.35661		+0.22362150		+0.97467326				
a	2.4199225	Node	176.56265		-0.90842176		+0.20928871				
e	0.1978353	Incl.	2.23311		-0.35321853		+0.07880526				
P	3.76	B(1,0)	14.5								

Residuals in seconds of arc

760401	095	0.5-	0.9-	800320	805	0.3+	1.6+	800415	805	0.1-	1.2-
770919	095	0.2+	0.4-	800323	805	0.5-	1.0+	800416	805	0.5+	0.3-
800319	805	0.0	0.5-	800414	805	0.1+	0.5-				

1982 YA
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	98.26809		(1950.0)		P		Q
n	0.13810738	Peri.	143.63885		+0.49989482		-0.65434288
a	3.7067344	Node	269.16224		+0.59832147		+0.73458062
e	0.6972531	Incl.	34.57320		+0.62619213		-0.17951798
P	7.14	B(1,0)	17.5				

From 11 observations 1982 Dec. 21-1983 Jan. 17, mean residual 1".4.

1983 RD
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	129.08139		(1950.0)		P		Q
n	0.32617515	Peri.	192.94855		+0.99350737		-0.11217071
a	2.0901084	Node	173.40306		+0.11342633		+0.96369528
e	0.4866659	Incl.	9.51734		+0.00880729		+0.24229967
P	3.02	B(1,0)	18.0				

From 52 observations 1983 Sept. 7-1984 Jan. 4, mean residual 1".3.

1983 RX2 = 1976 YM1
The identification is by W. Landgraf.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	92.52417		(1950.0)		P		Q
n	0.25590719	Peri.	277.86266		+0.97826485		+0.18115608
a	2.4570571	Node	71.74307		-0.12203731		+0.89637588
e	0.1356990	Incl.	6.09896		-0.16764477		+0.40458960
P	3.85	B(1,0)	15.0				

Residuals in seconds of arc

761216	095	0.8+	0.1-	830903	809	0.3-	0.3+	830908	809	0.5-	0.8+
761218	095	0.3+	0.3-	830904	809	0.4-	0.4+	830908	809	1.0-	1.2+
761220	095	1.0-	0.1+	830904	809	0.3-	0.1+	830909	809	0.9+	0.5+
830901	809	0.2+	0.5-	830904	809	0.5-	0.8+	830909	809	0.6+	0.2+
830901	809	0.9-	0.6-	830906	809	0.2+	0.7-	830909	809	0.6+	0.3-
830901	809	0.5+	0.0	830906	809	0.9+	0.0	830910	809	0.7+	0.5+
830902	809	0.5+	0.1+	830906	809	1.0+	0.1-	830910	809	0.5+	0.3+
830902	809	0.1-	0.2-	830907	809	1.2+	0.0	830910	809	1.0+	0.1-
830902	809	0.2+	0.2+	830907	809	0.9+	0.1+	830911	809	0.7-	0.2-
830903	809	0.5-	0.3+	830907	809	1.2+	0.2+	830912	809	0.6-	0.4-
830903	809	0.6-	0.1+	830908	809	0.3-	0.8+	830912	809	1.7-	0.7-

1983 VW1 = 1952 BR = 1979 VP1 = 1979 YR1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M	85.17243		(1950.0)		P		Q
n	0.24514835	Peri.	168.77256		+0.56911240		-0.75766940
a	2.5284300	Node	245.75123		+0.72462865		+0.64575676
e	0.2138470	Incl.	20.50945		+0.38861856		-0.09452662
P	4.02	B(1,0)	13.5				

Residuals in seconds of arc

520121	711	(14.1-	6.2-)Y	831106	675	0.6-	0.7-	831109	046	1.1-	2.5-
520122	711	(31.0+	12.8-)Y	831107	675	1.2-	0.0	831110	046	2.8-	0.6-
791114	095	2.1+	1.5-	831108	675	0.8+	0.7+	831110	046	1.5-	2.7+
791114	095	1.3-	2.1+	831108	046	1.7+	2.7-	831209	688	2.4+	0.1-
791223	095	0.2-	0.6+	831109	046	1.0+	0.9-	831209	688	0.8+	0.2-
791223	095	0.4-	3.2-	831109	675	1.2+	0.3+	840124	675	0.1-	0.9+
831105	675	0.0	0.5+	831109	046	1.8-	3.7-				

1983 WB = 1967 UE = 1977 TZ6

The identifications are by S. Nakano and W. Landgraf, who found them independently.

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

M	7.17629		(1950.0)	P	Q
n	0.18885871	Peri.	55.06847	-0.60557654	-0.78010902
a	3.0087001	Node	72.97369	+0.66591461	-0.60490724
e	0.0669467	Incl.	9.46178	+0.43570034	-0.15974087
P	5.22	B(1,0)	12.0		

Residuals in seconds of arc

671029	095	0.6-	1.1+	831204	372	2.9-	0.4+	831209	688	0.5+	1.1-
771009	095	0.3+	0.5-	831205	688	0.7+	1.2-	831209	372	0.5+	0.3-
831128	688	0.9+	1.0-	831205	688	0.0	1.4-	831212	372	0.8-	2.9-
831128	688	0.7+	1.3-	831205	372	1.5-	1.3+	831212	372	0.8-	0.2+
831128	889	1.2-	4.0+	831205	372	1.1-	3.0+	831227	552	0.0	1.0+
831128	889	0.1-	3.8+	831205	552	3.4+	1.0+	831227	552	0.6+	1.7+
831128	372	0.6+	1.7-	831205	552	1.6+	1.1+	831229	688	0.1+	0.1+
831130	372	1.3-	3.3-	831206	688	1.4-	0.9-	831229	688	0.8-	0.0
831201	688	0.6+	1.3-	831206	688	1.1+	0.7-	840101	552	0.5+	2.2+
831201	688	0.6+	1.1-	831206	552	0.6-	0.8-	840101	552	1.3+	2.6+
831201	889	0.4-	1.3+	831206	552	0.8-	1.0-	840102	688	0.7+	0.5+
831201	889	1.5+	1.5+	831207	372	4.0+	0.6+	840104	688	0.4-	0.2-
831202	372	2.3-	0.6-	831208	552	1.1+	1.6-	840104	688	0.1-	2.9-
831202	372	1.3-	0.1-	831208	552	0.9+	0.4+				
831204	372	4.3-	0.1+	831209	688	0.7+	1.1-				

1983 WH1 = 1952 DY1 = 1957 AB = 1974 DR1

The key identification 1983 WH1 = 1957 AB is by W. Landgraf.

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

M	358.43047		(1950.0)	P	Q
n	0.17965474	Peri.	11.96201	-0.76393897	-0.61817864
a	3.1106021	Node	128.25953	+0.57087541	-0.78115820
e	0.0595321	Incl.	13.63283	+0.30082970	-0.08744729
P	5.49	B(1,0)	12.5		

Residuals in seconds of arc

520224	711	0.5-	0.3+ Y	831129	688	0.5-	0.9+	831229	688	1.2-	0.9+
570109	024	0.5-	1.9-	831129	688	0.7-	0.3-	831229	688	0.2-	0.4-
570128	024	1.5+	1.3-	831209	688	0.4+	0.6+				
740216	095	1.0+	2.3+	831209	688	1.0+	1.5+				

1984 AR = 1973 AC1

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

M	45.82254		(1950.0)	P	Q
n	0.17816566	Peri.	89.55206	-0.41294591	-0.91071936
a	3.1279099	Node	24.84290	+0.82768363	-0.37898514
e	0.1426270	Incl.	1.10734	+0.38002036	-0.16419654
P	5.53	B(1,0)	13.5		

Residuals in seconds of arc

730101	095	0.1+	5.7+	840105	688	1.4-	1.7-	840126	688	2.2+	1.4+
730102	095	0.4-	1.1+	840105	688	1.3-	0.1+	840126	688	1.4+	1.1+
730104	095	1.0+	2.5-	840108	688	0.8-	1.1+	840204	688	0.7-	0.9+
831209	688	0.1-	0.6+	840108	688	0.2+	0.8+	840204	688	0.4-	1.1-
831209	688	1.3+	1.6+	840108	688	1.0-	0.4+				
840105	688	1.4-	0.0	840108	688	0.4-	0.2+				

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

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

Comet IRAS (1983o)
T 1983 Nov. 28.02441 ET

			(1950.0)	P	Q
q	2.2546404	Peri.	333.99036	-0.76275691	-0.57193741
		Node	200.55877	-0.33216390	-0.05393593
e	1.0	Incl.	120.74543	-0.55485948	+0.81852215

From 7 observations 1983 Aug. 4-1984 Jan. 2.

Comet Bradfield (1984a)
T 1983 Dec. 28.24401 ET

			(1950.0)	P	Q
q	1.3672264	Peri.	219.56035	-0.79437422	+0.60539692
		Node	356.37365	-0.11775594	-0.23365374
e	1.0	Incl.	51.70522	-0.59590530	-0.76085510

From 5 observations 1984 Jan. 9-15.

(3004)* 1976 DD

Discovered 1976 Feb. 27 by R. M. West at the European Southern Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

			(1950.0)	P	Q
M	28.87761				
n	0.23671898	Peri.	211.18211	-0.95013420	-0.04307342
a	2.5880977	Node	322.23814	+0.26028330	-0.65501755
e	0.2642184	Incl.	30.28798	-0.17174865	-0.75438497
P	4.16	B(1,0)	16.0		

Residuals in seconds of arc

760227	809	0.9-	1.3-	760326	809	0.3-	0.0	760524	809	4.6-	0.5+
760227	809	0.1+	0.4+	760327	809	1.8-	0.2-	800113	801	0.3+	0.6+
760320	809	1.0-	1.3-	760327	809	0.3-	0.2-	800116	801	0.7+	0.5+
760320	809	1.3-	1.4-	760425	809	2.8+	2.2+	800120	801	(5.9-	5.2-)
760322	809	0.6-	0.4-	760426	809	1.4+	0.6-	800214	801	1.5+	1.6+
760322	809	2.2+	0.1+	760428	809	0.4+	0.3-	831214	675	0.3-	0.7-
760325	809	1.1-	0.2-	760429	809	0.7+	0.4-	831215	675	0.3-	0.3-
760325	809	1.0+	0.2+	760429	809	0.9+	1.0+	840124	675	0.5-	0.7-
760326	809	0.8-	0.3+	760524	809	2.5+	0.3-				

(3005)* 1979 QK2

Discovered 1979 Aug. 22 by C.-I. Lagerkvist at the European Southern Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

			(1950.0)	P	Q
M	206.16101				
n	0.27027151	Peri.	77.23785	-0.26907167	+0.96311799
a	2.3692044	Node	177.15068	-0.89879697	-0.25033798
e	0.1843289	Incl.	2.35742	-0.34606998	-0.09866430
P	3.65	B(1,0)	15.0		

Residuals in seconds of arc

790719 095	2.2-	2.9-	790826 809	0.7-	0.7+	820414 688	2.2-	0.4+
790822 809	1.0+	0.1+	790826 809	1.0-	0.4+	820424 801	1.5-	3.5+
790822 809	0.7-	0.3+	790830 809	0.8+	0.2-	820522 801	2.3+	0.3-
790822 809	0.3+	0.4-	790830 809	0.0	0.0	831008 801	0.9+	0.7+
790823 809	0.4+	1.4+	820321 688	3.2+	2.9-	831009 801	1.2-	0.8+
790823 809	1.3+	0.4+	820321 688	1.7-	2.4-	831010 801	0.5+	2.0-
790826 809	1.1+	1.4-	820414 688	0.5-	0.8-	831109 801	0.7+	1.8-

(3006)* 1979 SF11 = 1956 RQ = 1964 YA = 1977 DT6

Discovered 1979 Sept. 24 by N. S. Chernykh at the Crimean Astrophysical Observatory. The key identifications 1979 SF11 = 1956 RQ = 1977 DT6 are by L. D. Schmadel (MPC 7600).

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	125.36488		(1950.0)		P		Q	
n	0.25971024	Peri.	5.71272		+0.97094829		-0.23917137	
a	2.4330068	Node	8.13665		+0.21737649		+0.86846977	
e	0.1868547	Incl.	3.04362		+0.10003439		+0.43423185	
P	3.80	B(1,0)	15.0					

Residuals in seconds of arc

560909 760	2.4-	5.2+	790924 095	0.8+	0.0	831129 688	1.8+	1.0+
560909 760	1.0+	1.6-	791014 095	0.3+	1.2-	831201 688	0.1-	0.5-
641225 330(82.3+	2.0+)		791116 095	0.0	0.5+	831201 688	2.0+	1.1+
650101 330	0.2-	0.4+	791117 095	1.4-	0.0	840102 688	0.6-	0.8-
770219 381	1.4+	2.4+	791122 095	0.0	0.1-	840104 688	0.5+	1.1-
770219 381	0.1+	2.0+	831129 688	4.1-	0.2-	840104 688	1.7+	0.2-

(3007)* 1979 UC = 1978 GG3 = 1978 JH

Discovered 1979 Oct. 17 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	199.90850		(1950.0)		P		Q	
n	0.27045235	Peri.	251.87889		+0.76099201		+0.63455119	
a	2.3681482	Node	68.50689		-0.52670784		+0.72581947	
e	0.1329432	Incl.	8.34497		-0.37877435		+0.26557652	
P	3.64	B(1,0)	14.0					

Residuals in seconds of arc

780408 095	1.7-	3.9-	791207 688	0.1-	2.0-	831206 688	2.6-	1.5+
780506 330(52.4-	6.2-)		820621 688	0.6+	1.1-	840105 688	0.9+	1.2-
791017 688	0.2+	0.0	820621 688	0.5-	0.4+	840105 688	1.6-	1.8-
791028 688	0.6+	1.0-	831130 801	0.6-	0.2+	840109 801	0.2+	1.3+
791122 688	1.3+	1.5-	831206 688	3.7+	0.3+			

1934 AF = 1976 SF1 = 1984 AO

The key identification 1934 AF = 1984 AO is by E. Bowell. The identification 1934 AF = 1976 SF1 is by L. D. Schmadel.

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

M	26.16709		(1950.0)		P		Q	
n	0.17662677	Peri.	359.31402		-0.74993635		-0.66142316	
a	3.1460520	Node	139.27075		+0.60697193		-0.69445980	
e	0.1482105	Incl.	0.94120		+0.26302194		-0.28327545	
P	5.58	B(1,0)	13.5					

Residuals in seconds of arc

340107 024	1.2+	0.4+	840105 688	0.3+	1.4+	840108 688	0.4-	0.1-
340204 024	1.1-	1.8+	840105 688	1.2-	0.1+	840126 688	0.4+	1.0-
340209 024	0.9+	0.8+	840105 688	0.4-	0.8+	840126 688	0.4+	1.2-
340214 024	0.1+	1.1+	840108 688	0.4-	0.0	840204 688	0.1-	2.8-
340305 024	0.2-	0.1-	840108 688	0.3+	0.8+	840204 688	0.9+	1.3-
760924 095	0.4-	1.0+	840108 688	0.1+	0.0			

1981 DQ2 = 1976 YR4
The identification is by L. D. Schmadel.
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 77.15909		(1950.0)	P	Q
n 0.28900936	Peri.	231.34710	-0.38699871	-0.91809917
a 2.2656647	Node	241.62344	+0.87330166	-0.33515266
e 0.1331528	Incl.	5.58259	+0.29593278	-0.21158122
P 3.41	B(1,0)	15.5		

Residuals in seconds of arc

761218	095	0.4-	3.6+	810312	413	0.4-	1.0+	810409	413	0.8+	0.1+
810228	413	1.6-	0.1-	810312	413	0.2-	0.5+	840105	688	0.1-	1.8-
810228	413	0.8+	0.4+	810407	413	0.3-	0.7-	840106	552	4.4-	1.5-
810306	413	1.3-	1.7+	810407	413	1.8+	2.1-	840106	552	2.1-	0.1+
810306	413	1.4+	0.0	810408	413	1.2-	0.0	840108	688	3.8+	1.2-
810308	413	0.5-	1.2+	810408	413	0.2+	0.9-	840108	688	2.3+	0.8+
810308	413	1.3+	0.4+	810409	413	0.1-	0.1+				

1982 FT
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 16.92771		(1950.0)	P	Q
n 0.41705788	Peri.	234.51346	-0.72294149	+0.68730564
a 1.7742106	Node	348.32633	-0.46516314	-0.55961090
e 0.2837969	Incl.	20.38330	-0.51086089	-0.46308378
P 2.36	B(1,0)	16.0		

Residuals in seconds of arc

820329	805	0.0	1.8-	820527	474	0.3+	0.9+	820725	474	0.4-	1.0-
820330	805	0.3-	0.4-	820527	474	0.5-	0.3-	820820	474	0.9+	0.6+
820419	809	1.6+	1.6-	820623	474	0.3+	0.6+	820820	474	1.1+	0.2+
820420	809	2.3+	0.8-	820623	474	0.2+	1.1+	820921	474	0.4-	2.1-
820424	809	1.5-	1.6+	820722	474	1.7+	0.1+	820921	474	0.2-	1.4-
820424	809	1.0-	2.1+	820722	474	1.3+	0.1+	840124	675	0.2+	0.1-
820425	809	0.5-	0.1+	820725	474	0.8-	1.0-				

1982 HS
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M 219.72095		(1950.0)	P	Q
n 0.27367557	Peri.	229.12360	-0.00852147	+0.95700802
a 2.3495176	Node	43.18126	-0.74158140	+0.18845778
e 0.3110770	Incl.	25.06792	-0.67080877	-0.22049787
P 3.60	B(1,0)	14.5		

Residuals in seconds of arc

820428	704	0.6+	0.3-	820429	704	0.5-	0.3-	820525	675	0.5+	0.4-
820428	704	2.9+	2.2-	820429	704	2.2+	1.5+	820525	675	(6.1-	7.0-)
820428	704	1.0-	0.5+	820429	704	3.4+	1.6-	820526	675	0.5-	0.6-
820428	704	0.6+	0.6-	820429	704	1.4-	2.7+	820526	675	(12.0+	10.2+)
820428	704	2.9-	0.5+	820430	801	2.8+	1.6+	820527	801	1.1+	0.6-
820428	688	1.7-	1.4-	820504	704	3.4-	2.5+	820921	474	0.0	0.2+
820428	688	1.5+	2.6-	820504	704	0.6-	0.0	820921	474	0.3+	0.2-
820429	704	4.0-	1.0-	820504	704	0.1+	2.1+	831128	675	0.4+	0.4+
820429	704	0.3-	2.0-	820504	704	0.5+	3.0+	831129	675	0.9-	0.1+
820429	704	1.2+	1.8-	820504	704	0.7-	1.0+				

1982 MH
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5 (J-P)

M 77.46473		(1950.0)	P	Q
n 0.28980834	Peri.	33.59892	-0.03625217	-0.99768153
a 2.2614986	Node	58.54040	+0.90132609	-0.05753471
e 0.0681495	Incl.	3.87164	+0.43162141	+0.03634995
P 3.40	B(1,0)	15.5		

Residuals in seconds of arc

820626	474	0.5- 1.8+	820702	474	0.6- 0.5-	820726	474	1.2- 0.1-
820626	474	0.7- 2.2+	820722	474	0.4- 1.1+	820726	474	0.0 0.5+
820627	474	0.7- 0.2+	820722	474	0.6- 1.5+	820726	474	0.5- 0.5+
820627	474	0.3+ 0.5+	820724	474	1.7+ 0.3+	831205	474	0.1- 0.2-
820628	474	0.2+ 0.3-	820724	474	3.7+ 0.7+	831205	474	0.1+ 0.7-
820628	474	1.3+ 0.3+	820725	474	0.2- 0.1+			
820702	474	0.3- 0.7-	820725	474	0.6- 0.1-			

1982 TA
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	187.48330		(1950.0)	P	Q
n	0.28201115	Peri.	118.59723	-0.62102912	-0.78293218
a	2.3029890	Node	10.04389	+0.62559045	-0.52327847
e	0.7710444	Incl.	12.11626	+0.47218578	-0.33644738
P	3.49	B(1,0)	16.0		

From 46 observations 1982 Oct. 11-1983 June 12, mean residual 1".5.

1982 UM
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	113.50274		(1950.0)	P	Q
n	0.12589578	Peri.	307.50823	+0.98648148	+0.15480717
a	3.9427140	Node	43.66014	-0.11468405	+0.88647178
e	0.1774753	Incl.	4.46529	-0.11705490	+0.43612213
P	7.83	B(1,0)	12.0		

Residuals in seconds of arc

821017	688	0.0 0.3-	821115	688	0.3+ 0.3+	830120	801	0.6+ 0.6+
821017	688	0.0 0.1+	821115	688	0.0 0.3+	831128	675	0.0 0.1-
821024	688	0.4- 0.2+	821221	801	0.5- 1.5-	831129	675	0.1+ 0.5+
821024	688	0.1- 0.7+	830113	801	0.1- 0.5-			

1983 QD
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	39.78783		(1950.0)	P	Q
n	0.22748373	Peri.	121.52111	+0.26180046	-0.95336407
a	2.6576788	Node	312.51789	+0.80186666	+0.30146828
e	0.1669049	Incl.	11.75746	+0.53709437	+0.01462274
P	4.33	B(1,0)	12.5		

From 8 observations 1983 Aug. 31-Nov. 27, mean residual 0".7.

1983 TF2
Epoch 1983 Oct. 13.0 ET = JDE 2445620.5

M	283.80686		(1950.0)	P	Q
n	0.63343908	Peri.	121.05232	-0.66094198	-0.75003093
a	1.3427634	Node	10.43011	+0.63361080	-0.57537133
e	0.3870827	Incl.	7.83661	+0.40211074	-0.32619232
P	1.56	B(1,0)	18.5		

From 4 observations 1983 Oct. 5-8.

1983 VA
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	73.42471		(1950.0)	P	Q
n	0.23316989	Peri.	11.67881	+0.03311693	-0.96157158
a	2.6142939	Node	76.87492	+0.89291926	-0.09404283
e	0.6925371	Incl.	16.25189	+0.44899716	+0.25794583
P	4.23	B(1,0)	17.5		

From 6 observations 1983 Oct. 27-1984 Jan. 23, mean residual 2".4.

1984 AB
Epoch 1984 Jan. 21.0 ET = JDE 2445720.5

M	263.83187	(1950.0)	P	Q
n	0.49537178	Peri. 115.91246	-0.82793564	+0.49800024
a	1.5819104	Node 94.94084	-0.56072250	-0.74377024
e	0.0752337	Incl. 15.00323	+0.01062316	-0.44587171
P	1.99	B(1,0) 16.5		

From 15 observations 1984 Jan. 4-30.

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

The identifications are by W. Landgraf.

1983 VV1 = 1974 CQ = 1977 RG5
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	24.42512	(1950.0)	P	Q
n	0.18028881	Peri. 111.10505	-0.09212340	-0.99564025
a	3.1032983	Node 344.15969	+0.89250155	-0.07605155
e	0.0426576	Incl. 3.07053	+0.44153624	-0.05400607
P	5.47	B(1,0) 13.0		

Residuals in seconds of arc

740214 095	0.2+	2.0+	831108 381	0.2+	0.7+	831110 046	0.3+	1.1-
740218 095	0.0	0.1-	831108 046	(3.0-	2.3-)	831110 046	0.9-	0.8-
770909 095	0.5-	2.5+	831109 046	0.3+	0.7-	831205 552	1.8+	(2.5+)
831108 381	0.3-	0.2+	831109 046	0.4-	0.3-	831205 552	0.3+	1.2+

1983 WG = 1980 DM1
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	44.56935	(1950.0)	P	Q
n	0.20988745	Peri. 28.50336	-0.25132552	-0.94898117
a	2.8042178	Node 76.58506	+0.84666755	-0.31089614
e	0.2170534	Incl. 11.29084	+0.46903041	+0.05270978
P	4.70	B(1,0) 14.0		

Residuals in seconds of arc

800221 033	0.3-	0.2+	831205 688	0.6-	0.1-	831229 688	0.0	0.7-
800222 033	0.3+	0.2-	831206 688	0.5+	0.5+	831229 688	1.8+	0.6-
831128 688	0.7-	0.5+	831206 688	0.5+	0.3+	840101 552	(0.5+	0.1+)
831128 688	1.2-	1.2+	831209 688	0.4-	0.6-	840101 552	(0.1+	0.1+)
831201 688	0.6-	0.3-	831209 688	0.8-	0.1+	840102 688	(1.5+	0.6-)
831201 688	1.7+	1.0-	831227 552	1.5-	1.7+	840104 688	(0.8+	1.2-)
831205 688	1.8+	1.1-	831227 552	0.5-	(2.9+)	840104 688	(0.1+	4.9-)

1983 XS = 1974 CK
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	301.00915	(1950.0)	P	Q
n	0.18070573	Peri. 250.21168	-0.98107927	+0.17669962
a	3.0985233	Node 299.89460	-0.12502155	-0.89026190
e	0.1517115	Incl. 5.23658	-0.14782783	-0.41977491
P	5.45	B(1,0) 12.5		

Residuals in seconds of arc

740214 095	2.4+	1.4+	831108 381	0.3-	0.0	831205 046	0.2+	1.7+
740215 095	3.8-	1.5-	831204 046	0.5+	0.2+	831208 046	0.5+	2.1-
740218 095	0.6+	0.0	831204 046	0.9-	0.2-	831208 046	2.5-	0.1+
831108 381	0.2+	0.0	831205 046	0.9+	0.1+			

ORBITAL ELEMENTS BY L. K. KRISTENSEN, INSTITUTE OF PHYSICS, AARHUS.

1982 BH
Epoch 1984 Oct. 27.0 ET = JDE 2446000.5

M	289.80102	(1950.0)	P	Q
n	0.40225344	Peri. 218.24545	-0.40237466	+0.89831411
a	1.8174796	Node 29.29685	-0.72574605	-0.19553583
e	0.0531923	Incl. 21.13362	-0.55802088	-0.39344313
P	2.45	B(1,0) 15.1		

Residuals in seconds of arc

820128	054	0.5+	0.1-	820219	054	3.2-	1.9-	831011	054	3.2+	2.3-
820128	054	0.9+	0.1+	820220	054	0.9-	0.5-	831031	054	1.8+	0.5+
820130	054	0.0	0.0	820401	675	0.0	0.5+	831103	046	2.1-	1.8-
820131	054	0.0	0.0	820413	675	0.5+	0.1-	831103	046	1.5-	1.8-
820201	054	0.0	0.2-	820422	801	0.9+	0.3-	831113	054	0.3+	0.1+
820202	675	0.2+	0.4+	820519	801	0.2+	1.2+	840103	801	(1.2+	1.6+)
820213	675	(3.2-	3.3+)	830903	801	0.4-	1.4+				
820213	675	(4.5+	3.4+)	831007	801	1.0+	0.6+				

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NEW NAMES OF MINOR PLANETS.

(2177) Oliver = 6551 P-L

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

Named in honor of Bernard M. Oliver, retired Vice President for Research and Development of the Hewlett-Packard Company, where he was an innovator in the field of electronic instrumentation. He has made major contributions toward the search for extraterrestrial intelligence, the Monterey Institute for Research in Astronomy, and sky surveying with charge-coupled devices.

(2225) Serkowski = 6546 P-L

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

Named in memory of Krzysztof M. Serkowski (1930-1981), an astronomer distinguished particularly in the fields of interstellar polarization and the development of astronomical instrumentation. Despite a debilitating illness during the last eight years of his life, he remained actively working and maintained a serene and courageous attitude.

(2384) Schulhof = 1943 EC1

Discovered 1943 Mar. 2 by M. Laugier at Nice.

Named in memory of Leopold Schulhof (1847-1921), Hungarian-born astronomer who spent most of his working life in Paris, although he discovered (147) Protogeneia while a student in Vienna. His extensive computations on the orbits of comets and minor planets frequently involved the interplay of perturbations and determinacy, and he contributed much toward the recovery of lost objects. His very detailed study of the comet now known as P/Crommelin is acknowledged as that object comes now again to perihelion. Name proposed by B. G. Marsden, who found the identifications involving this planet.

(2389) Dibaj = 1977 QC1

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

Named in memory of Ernest Apushevich Dibaj (1931-1983), an astrophysicist known for his research on the interstellar medium, variable

stars and extragalactic systems. A professor at Moscow University, he was head of the Crimean Station of the Sternberg Astronomical Institute from 1962 to 1977.

(2402) Satpaev = 1979 OR13
Discovered 1979 July 31 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of Kanysh Imantaevich Satpaev (1899-1964), outstanding geologist. As president of the Academy of Sciences of the Kazakh SSR he contributed much to the development of astronomy in Kazakhstan.

(2420) Ciurlionis = 1975 TN
Discovered 1975 Oct. 3 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of M. K. Ciurlionis (1875-1911), a well-known Lithuanian painter and composer.

(2585) Irpedina = 1979 OJ15
Discovered 1979 July 21 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in honor of the Irkutsk Pedagogical Institute. The name is dedicated to fellow students of the discoverer there.

(2625) Jack London = 1976 JQ2
Discovered 1976 May 2 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named for the celebrated American writer Jack London (1876-1916).

(2626) Belnika = 1978 PP2
Discovered 1978 Aug. 8 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in honor of Nikolaj Alekseevich Belyaev, a celestial mechanician at the Institute for Theoretical Astronomy, known for his research on the dynamics of comets and the evolution of cometary orbits.

(2627) Churyumov = 1978 PP3
Discovered 1978 Aug. 8 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in honor of Klim Ivanovich Churyumov, an astronomer on the Astronomical Faculty of Kiev University known for his work on comets. He was a codiscoverer of periodic comet Churyumov-Gerasimenko in 1969.

(2646) Abetti = 1977 EC1
Discovered 1977 Mar. 13 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of Antonio Abetti (1846-1928) and of his son Giorgio Abetti (1882-1982), who each served as director of the Asiago Astrophysical Observatory. Collectively they made important contributions to the study of minor planets, solar physics, and the history of astronomy. Name proposed by the discoverer, following a suggestion from E. Colombini at the Osservatorio San Vittore, where the object was rediscovered as 1982 FB.

(2711) Aleksandrov = 1978 QB2
Discovered 1978 Aug. 31 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in honor of Anatolij Petrovich Aleksandrov, outstanding physicist, president of the USSR Academy of Sciences.

(2776) Baikal = 1976 SZ7
Discovered 1976 Sept. 25 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named for the large Siberian lake.

(2777) Shukshin = 1979 SY11
Discovered 1979 Sept. 24 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of Vasilij Makarovich Shukshin (1929-1974), distinguished Soviet writer, film director and actor.

(2785) Sedov = 1978 QN2
Discovered 1978 Aug. 31 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of Georgij Yakovlevich Sedov (1877-1914), celebrated Russian Arctic explorer who perished on an expedition to the North Pole.

(2786) Grinevia = 1978 RR5
Discovered 1978 Sept. 6 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in memory of the Soviet writer-romanticist Aleksandr Stepanovich Grinevskij (1880-1932).

(2797) Teucer = 1981 LK
Discovered 1981 June 4 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.
Named for the son of Telamon and half-brother of Ajax. This most renowned of the Greek archers disposed of many Trojan soldiers by springing out from his great shield to loose an arrow, then darting back behind its cover.

(2836) Sobolev = 1978 YQ
Discovered 1978 Dec. 22 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in honor of Academician Viktor Viktorovich Sobolev, professor at Leningrad University, distinguished theoretical astrophysicist, one of the founders of the modern theory of radiative transfer in stellar atmospheres, author of fundamental works on the theory of stellar spectra.

(2849) Shklovskij = 1976 GN3
Discovered 1976 Apr. 1 by N. S. Chernykh at the Crimean Astrophysical Observatory.
Named in honor of Iosif Samuilovich Shklovskij, corresponding member of the USSR Academy of Sciences, professor at Moscow University and member of the staff at the Space Research Institute. A brilliant popularizer of astronomy, he has also made substantial contributions to research on the solar corona, galactic radio emission and various cosmic objects.

(2882) Tedesco = 1981 OG
Discovered 1981 July 26 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.
Named in honor of Edward F. Tedesco, planetary scientist at the Jet Propulsion Laboratory, who has made wide-ranging contributions to minor-planet science, including studies of rotational brightness variation, pole and shape determination, and the compositional structure of the belt. He is currently engaged in analyzing observations of minor planets by the Infrared Astronomical Satellite.

(2897) Ole Romer = 1932 CK

Discovered 1932 Feb. 5 by K. Reinmuth at Heidelberg.

Named for Ole Romer (1644-1710), discoverer of the finite velocity of light and inventor of the transit circle. Born in Aarhus, he did his best astronomical work in Paris. Later professor of mathematics at the University of Copenhagen, he became extensively involved with terrestrial weights and measures, including the establishment of a temperature scale tied to the freezing and boiling points of water, the definition of the pound, and the measurement of spirit strength. He was also an authority on hydraulics and ballistics, and he served in various civil capacities, including mayor of Copenhagen, master of the mint, and head of the Danish state council. Name proposed by L. K. Kristensen, who found some of the identifications involving this planet.

(2909) Hoshi-no-ie = 1983 JA

Discovered 1983 May 9 by S. Sei at Chirorin.

Named for the discoverer's observatory. The English translation is "a star house".

(2920) Automedon = 1981 JR

Discovered 1981 May 3 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for the son of Diores and the charioteer of Achilles. Automedon killed the Trojan Aretus to avenge the death of Patroclus.

(2937) Gibbs = 1980 LA

Discovered 1980 June 14 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named in memory of Josiah Willard Gibbs (1839-1903), mathematician and physicist, who worked at Yale and Princeton Universities. Although his principal work concerned thermodynamics, theories of optics and vector analysis, he made significant contributions to minor-planet studies through his work on orbits.

(2938) Hopi = 1980 LB

Discovered 1980 June 14 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for the Pueblo Indian people, who have maintained a continuous presence in northeastern Arizona for almost a thousand years. The Hopis' vital cultural heritage is reflected in their elaborate ceremonies, in particular the kachina and snake dances, and in their distinctive arts and crafts.

(2939) Coconino = 1982 DP

Discovered 1982 Feb. 21 by E. Bowell at the Anderson Mesa Station of the Lowell Observatory.

Named for the county of Arizona of which Flagstaff is the county seat. The word Coconino derives from the Hopi koonina and refers primarily to the Supai and Hualapai Indian peoples living to the west of the Hopi. A secondary meaning applies to Hopi children not yet initiated into the religious practices of the Hopi kachina society.

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EPHEMERIDES.

Comet Bradfield (1984a) Elements MPC 8536

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m1
1984	02 10	19 14.56	-59 13.8	1.923	1.509	50.9	30.5	13.2
1984	02 20	20 18.69	-59 01.6					

1984 03 01	21 13.90	-57 33.7	2.044	1.649	52.9	28.7	13.7
1984 03 11	21 58.95	-55 25.9					
1984 03 21	22 35.10	-53 05.1	2.176	1.818	56.0	27.0	14.3
1984 03 31	23 04.24	-50 48.2					
1984 04 10	23 27.95	-48 45.1	2.288	2.005	61.1	25.9	14.8
1984 04 20	23 47.39	-47 01.0					
1984 04 30	00 03.33	-45 38.5	2.363	2.203	68.5	25.2	15.3
1984 05 10	00 16.24	-44 39.1					
1984 05 20	00 26.33	-44 03.0	2.396	2.408	78.5	24.3	15.7
1984 05 30	00 33.70	-43 50.1					
1984 06 09	00 38.23	-43 59.3	2.396	2.615	90.8	22.8	16.1
1984 06 19	00 39.75	-44 28.6					
1984 06 29	00 38.01	-45 14.6	2.384	2.823	105.0	20.4	16.4

1984 AB a,e,i = 1.58, 0.08, 15 Elements MPC 8540

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 02 10	05 32.09	+33 47.5	0.808	1.583	123.5	31.3	17.8
1984 02 20	05 37.12	+35 03.8					
1984 03 01	05 47.60	+36 02.2	0.954	1.562	106.9	37.4	18.2
1984 03 11	06 02.68	+36 43.8					
1984 03 21	06 21.52	+37 07.9	1.107	1.542	94.2	40.1	18.6
1984 03 31	06 43.33	+37 13.0					
1984 04 10	07 07.46	+36 57.4	1.253	1.523	84.2	40.9	18.8
1984 04 20	07 33.26	+36 19.7					
1984 04 30	08 00.18	+35 19.0	1.387	1.505	76.1	40.5	19.0
1984 05 10	08 27.75	+33 54.9					
1984 05 20	08 55.56	+32 08.1	1.509	1.490	69.3	39.4	19.2
1984 05 30	09 23.29	+29 59.4					
1984 06 09	09 50.77	+27 30.5	1.620	1.478	63.4	37.9	19.3
1984 06 19	10 17.84	+24 43.7					
1984 06 29	10 44.47	+21 41.2	1.723	1.469	58.2	36.1	19.3
1984 07 09	11 10.68	+18 25.8					
1984 07 19	11 36.51	+15 00.4	1.821	1.464	53.4	33.9	19.4

1983 VA a,e,i = 2.61, 0.69, 16 Elements MPC 8539

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 02 10	15 35.60	+17 54.2	0.549	1.155	93.1	58.6	17.9
1984 02 20	15 28.93	+19 25.2					
1984 03 01	15 16.90	+20 56.3	0.611	1.357	113.7	42.0	18.1
1984 03 11	14 59.31	+22 13.0					
1984 03 21	14 37.44	+22 56.0	0.685	1.560	135.5	26.6	18.3
1984 03 31	14 13.75	+22 51.3					
1984 04 10	13 51.28	+21 55.5	0.821	1.757	148.9	17.1	18.7
1984 04 20	13 32.50	+20 18.1					
1984 04 30	13 18.49	+18 14.3	1.044	1.946	143.0	18.2	19.5
1984 05 10	13 09.34	+15 57.3					
1984 05 20	13 04.48	+13 36.6	1.346	2.125	128.1	22.0	20.3
1984 05 30	13 03.15	+11 17.6					
1984 06 09	13 04.67	+09 02.7	1.704	2.295	112.6	24.1	21.0
1984 06 19	13 08.43	+06 53.1					
1984 06 29	13 13.94	+04 49.0	2.097	2.455	98.1	24.2	21.6
1984 07 09	13 20.86	+02 50.2					
1984 07 19	13 28.89	+00 56.6	2.505	2.607	84.2	22.8	22.1

1982 RA a,e,i = 1.58, 0.28, 33 Elements MPC 7602

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 04 10	21 09.79	-52 57.2	1.677	1.790	-1.74	-17.9	19.5
1984 04 20	21 41.69	-52 19.9					
1984 04 30	22 11.77	-51 31.6	1.470	1.726	-1.49	-24.9	19.1

1984 05 10	22 39.74	-50 35.7					
1984 05 20	23 05.42	-49 35.2	1.260	1.656	-1.24	-33.0	18.8
1984 05 30	23 28.65	-48 33.3					
1984 06 09	23 49.15	-47 32.5	1.049	1.581	-1.13	-43.0	18.3
1984 06 19	00 06.60	-46 34.1					
1984 06 29	00 20.44	-45 38.9	0.835	1.502	-1.41	-56.8	17.7
1984 07 09	00 29.73	-44 45.4					
1984 07 19	00 33.04	-43 47.1	0.622	1.421	-2.64	-76.3	16.9
1984 07 29	00 27.96	-42 29.9					
1984 08 08	00 10.78	-40 17.4	0.420	1.341	-6.03	-99.6	15.8
1984 08 18	23 37.03	-35 46.2					
1984 08 28	22 44.82	-26 21.5	0.266	1.267	-9.04	-117.0	14.3
1984 09 07	21 43.01	-10 23.5					
1984 09 17	20 48.77	+07 12.2	0.254	1.203	-5.00	-153.9	14.5
1984 09 27	20 11.30	+20 12.4					
1984 10 07	19 49.33	+28 33.5	0.371	1.156	-0.99	-141.4	15.8
1984 10 17	19 38.34	+34 11.3					
1984 10 27	19 34.94	+38 24.5	0.504	1.131	+1.17	-112.8	16.5
1984 11 06	19 37.15	+41 57.7					
1984 11 16	19 43.93	+45 14.8	0.608	1.132	+2.41	-91.5	16.9
1984 11 26	19 55.21	+48 30.6					
1984 12 06	20 11.59	+51 56.3	0.671	1.158	+3.04	-78.1	17.1

Periodic Comet Johnson (1983h) Elements MPC 7022

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984 05 20		01 59.22	+01 16.3	3.365	2.564	32.0	12.1	19.7
1984 05 30		02 15.89	+02 28.2					
1984 06 09		02 32.06	+03 31.6	3.283	2.622	42.2	15.1	19.8
1984 06 19		02 47.65	+04 26.1					
1984 06 29		03 02.58	+05 11.3	3.167	2.683	53.1	17.6	19.8
1984 07 09		03 16.72	+05 46.8					
1984 07 19		03 29.95	+06 12.7	3.018	2.747	65.0	19.6	19.8
1984 07 29		03 42.11	+06 28.8					
1984 08 08		03 53.03	+06 35.4	2.844	2.814	78.0	20.6	19.8
1984 08 18		04 02.51	+06 32.7					
1984 08 28		04 10.35	+06 21.5	2.655	2.882	92.5	20.5	19.7
1984 09 07		04 16.30	+06 02.4					
1984 09 17		04 20.16	+05 36.7	2.469	2.952	108.9	18.8	19.7
1984 09 27		04 21.75	+05 05.9					
1984 10 07		04 20.94	+04 32.4	2.310	3.022	127.3	15.2	19.6
1984 10 17		04 17.80	+03 58.8					
1984 10 27		04 12.51	+03 28.4	2.212	3.093	147.0	10.1	19.6
1984 11 06		04 05.53	+03 04.7					
1984 11 16		03 57.53	+02 50.9	2.208	3.164	162.2	5.5	19.7
1984 11 26		03 49.30	+02 49.3					
1984 12 06		03 41.65	+03 01.2	2.317	3.236	154.7	7.5	19.9
1984 12 16		03 35.26	+03 26.1					
1984 12 26		03 30.62	+04 02.7	2.533	3.306	135.4	12.0	20.2
1985 01 05		03 27.99	+04 49.1					
1985 01 15		03 27.42	+05 42.7	2.829	3.377	115.9	15.2	20.5

Periodic Comet Gunn Elements MPC 7773

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984 05 20		01 51.67	+04 39.3	4.539	3.716	31.7	8.2	19.0
1984 05 30		02 02.08	+05 37.4					
1984 06 09		02 12.00	+06 30.1	4.416	3.770	45.2	11.0	19.0
1984 06 19		02 21.34	+07 16.9					
1984 06 29		02 30.00	+07 57.7	4.239	3.824	59.4	13.2	19.0
1984 07 09		02 37.85	+08 32.2					

1984 07 19	02 44.77	+09 00.2	4.021	3.876	74.6	14.6	18.9
1984 07 29	02 50.59	+09 21.6					
1984 08 08	02 55.16	+09 36.2	3.777	3.927	90.9	15.0	18.8
1984 08 18	02 58.33	+09 43.9					
1984 08 28	02 59.95	+09 44.9	3.533	3.976	108.9	13.9	18.7
1984 09 07	02 59.90	+09 39.4					
1984 09 17	02 58.14	+09 27.8	3.321	4.025	128.6	11.3	18.7
1984 09 27	02 54.69	+09 11.0					
1984 10 07	02 49.71	+08 50.2	3.175	4.071	150.0	7.1	18.6
1984 10 17	02 43.53	+08 27.1					
1984 10 27	02 36.56	+08 03.9	3.132	4.117	170.8	2.2	18.6
1984 11 06	02 29.35	+07 42.9					
1984 11 16	02 22.45	+07 26.5	3.211	4.160	161.4	4.4	18.7
1984 11 26	02 16.37	+07 16.6					
1984 12 06	02 11.52	+07 14.6	3.407	4.203	139.3	8.8	18.9
1984 12 16	02 08.14	+07 20.9					
1984 12 26	02 06.37	+07 35.6	3.691	4.243	118.0	11.8	19.1
1985 01 05	02 06.22	+07 58.1					
1985 01 15	02 07.62	+08 27.7	4.028	4.282	98.3	13.1	19.3
1985 01 25	02 10.45	+09 03.3					
1985 02 04	02 14.57	+09 43.8	4.379	4.320	80.1	13.0	19.6
1985 02 14	02 19.82	+10 28.2					
1985 02 24	02 26.06	+11 15.4	4.714	4.356	63.1	11.7	19.8
1985 03 06	02 33.15	+12 04.5					
1985 03 16	02 40.95	+12 54.7	5.007	4.390	47.0	9.5	19.9
1985 03 26	02 49.37	+13 45.2					
1985 04 05	02 58.28	+14 35.3	5.242	4.423	31.8	6.8	20.1

Periodic Comet Faye Elements MPC 8287

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984 06 09	02 47.73	+15 35.2	2.370	1.625	33.6	20.3	17.5
1984 06 19	03 18.01	+17 00.3					
1984 06 29	03 48.78	+18 06.3	2.271	1.598	38.0	23.1	17.5
1984 07 09	04 19.74	+18 50.9					
1984 07 19	04 50.56	+19 13.0	2.190	1.596	42.5	25.5	17.5
1984 07 29	05 20.92	+19 12.5					
1984 08 08	05 50.44	+18 50.0	2.122	1.622	47.6	27.5	17.5
1984 08 18	06 18.83	+18 07.5					
1984 08 28	06 45.81	+17 07.4	2.060	1.672	53.6	29.1	17.6
1984 09 07	07 11.15	+15 52.6					
1984 09 17	07 34.70	+14 26.6	1.993	1.743	61.0	30.3	17.6
1984 09 27	07 56.31	+12 52.4					
1984 10 07	08 15.85	+11 13.5	1.914	1.832	70.0	30.8	17.6
1984 10 17	08 33.22	+09 33.0					
1984 10 27	08 48.26	+07 54.0	1.819	1.933	81.1	30.5	17.6
1984 11 06	09 00.81	+06 19.8					
1984 11 16	09 10.68	+04 53.4	1.711	2.045	94.7	28.8	17.6
1984 11 26	09 17.65	+03 38.1					
1984 12 06	09 21.52	+02 37.7	1.603	2.163	111.1	25.1	17.5
1984 12 16	09 22.16	+01 55.5					
1984 12 26	09 19.58	+01 34.8	1.518	2.285	130.7	19.0	17.3
1985 01 05	09 14.07	+01 37.7					
1985 01 15	09 06.29	+02 04.2	1.494	2.409	152.4	10.9	17.1
1985 01 25	08 57.19	+02 51.5					
1985 02 04	08 48.00	+03 54.1	1.566	2.535	166.5	5.2	17.1
1985 02 14	08 39.83	+05 04.4					
1985 02 24	08 33.54	+06 15.5	1.746	2.660	151.8	10.1	17.6
1985 03 06	08 29.67	+07 21.4					
1985 03 16	08 28.34	+08 18.4	2.022	2.784	131.6	15.5	18.2

1985 03 26	08 29.44	+09 04.6						
1985 04 05	08 32.73	+09 39.1	2.365	2.907	113.1	18.5	18.7
1985 04 15	08 37.88	+10 02.1					
1985 04 25	08 44.59	+10 14.0	2.745	3.028	96.5	19.3	19.2
1985 05 05	08 52.56	+10 15.6					
1985 05 15	09 01.53	+10 07.7	3.137	3.147	81.3	18.5	19.5
1985 05 25	09 11.27	+09 51.3					
1985 06 04	09 21.61	+09 27.0	3.521	3.263	67.1	16.6	19.8
1985 06 14	09 32.38	+08 55.8					
1985 06 24	09 43.47	+08 18.4	3.881	3.377	53.5	14.0	20.0
1985 07 04	09 54.76	+07 35.6					
1985 07 14	10 06.17	+06 48.2	4.200	3.488	40.3	10.9	20.2

Periodic Comet Wolf-Harrington Elements MPC 8289

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984 06 09	02 34.08	+25 33.7	2.652	1.910	34.9	17.7	18.4
1984 06 19	03 01.43	+26 52.8					
1984 06 29	03 29.96	+27 55.0	2.464	1.818	40.7	21.4	18.1
1984 07 09	03 59.52	+28 36.8					
1984 07 19	04 29.93	+28 54.9	2.281	1.740	46.2	24.9	17.7
1984 07 29	05 00.89	+28 46.5					
1984 08 08	05 32.01	+28 09.3	2.109	1.678	51.5	28.2	17.4
1984 08 18	06 02.91	+27 02.4					
1984 08 28	06 33.19	+25 25.9	1.951	1.636	56.9	31.2	17.1
1984 09 07	07 02.43	+23 21.0					
1984 09 17	07 30.35	+20 50.1	1.807	1.617	62.8	33.5	16.9
1984 09 27	07 56.70	+17 56.2					
1984 10 07	08 21.26	+14 43.2	1.677	1.622	69.4	35.2	16.7
1984 10 17	08 43.92	+11 15.1					
1984 10 27	09 04.53	+07 36.0	1.558	1.651	77.1	35.9	16.6
1984 11 06	09 22.95	+03 50.3					
1984 11 16	09 39.02	+00 02.1	1.449	1.702	86.4	35.4	16.6
1984 11 26	09 52.53	-03 44.3					
1984 12 06	10 03.19	-07 24.3	1.348	1.771	97.6	33.5	16.6
1984 12 16	10 10.75	-10 52.7					
1984 12 26	10 14.87	-14 03.6	1.262	1.856	110.9	29.7	16.7
1985 01 05	10 15.34	-16 49.4					
1985 01 15	10 12.22	-19 02.0	1.206	1.953	125.9	24.1	16.8
1985 01 25	10 05.86	-20 33.1					
1985 02 04	09 57.23	-21 16.5	1.200	2.058	140.4	17.8	17.0
1985 02 14	09 47.66	-21 11.3					
1985 02 24	09 38.64	-20 22.8	1.267	2.168	147.6	14.1	17.4
1985 03 06	09 31.52	-19 02.1					
1985 03 16	09 27.07	-17 23.2	1.417	2.283	141.7	15.7	17.8
1985 03 26	09 25.60	-15 38.8					
1985 04 05	09 27.05	-13 59.6	1.646	2.399	128.5	19.1	18.4
1985 04 15	09 31.07	-12 32.0					
1985 04 25	09 37.28	-11 19.6	1.933	2.517	114.0	21.4	18.9
1985 05 05	09 45.28	-10 24.0					
1985 05 15	09 54.68	-09 45.0	2.262	2.634	100.1	22.2	19.5
1985 05 25	10 05.18	-09 21.8					
1985 06 04	10 16.53	-09 13.2	2.612	2.750	86.9	21.6	20.0
1985 06 14	10 28.51	-09 17.4					
1985 06 24	10 40.96	-09 33.2	2.968	2.864	74.3	20.0	20.4

Periodic Comet Schaumasse Elements MPC 7660

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		m2
1984 06 29	03 50.27	+14 19.2	2.941	2.241	-0.93	-5.8	20.1
1984 07 09	04 11.04	+15 37.3					

1984 07 19	04 33.05	+16 50.1	2.627	2.073	-1.18	-6.2	19.8
1984 07 29	04 56.46	+17 56.5					
1984 08 08	05 21.43	+18 55.1	2.308	1.905	-1.51	-6.1	19.5
1984 08 18	05 48.15	+19 44.2					
1984 08 28	06 16.82	+20 21.6	2.000	1.740	-1.93	-5.2	19.1
1984 09 07	06 47.61	+20 44.6					
1984 09 17	07 20.69	+20 50.2	1.719	1.583	-2.42	-2.9	18.7
1984 09 27	07 56.12	+20 34.5					
1984 10 07	08 33.83	+19 53.9	1.484	1.440	-2.91	+1.5	18.3
1984 10 17	09 13.56	+18 45.1					
1984 10 27	09 54.82	+17 06.7	1.312	1.322	-3.19	+7.8	18.0
1984 11 06	10 36.85	+15 00.3					
1984 11 16	11 18.80	+12 30.5	1.211	1.242	-3.08	+14.1	17.8
1984 11 26	11 59.80	+09 45.5					
1984 12 06	12 39.06	+06 55.5	1.173	1.213	-2.63	+18.0	17.7
1984 12 16	13 16.02	+04 09.7					
1984 12 26	13 50.30	+01 36.1	1.175	1.239	-2.07	+19.0	17.8
1985 01 05	14 21.64	-00 39.8					
1985 01 15	14 49.89	-02 35.5	1.188	1.316	-1.63	+18.6	17.8
1985 01 25	15 14.92	-04 10.3					
1985 02 04	15 36.56	-05 25.0	1.190	1.432	-1.38	+18.1	17.9
1985 02 14	15 54.65	-06 22.0					
1985 02 24	16 08.94	-07 03.6	1.170	1.573	-1.31	+18.0	18.0
1985 03 06	16 19.16	-07 33.1					
1985 03 16	16 25.08	-07 53.9	1.135	1.730	-1.44	+18.2	18.0
1985 03 26	16 26.46	-08 09.1					
1985 04 05	16 23.30	-08 22.2	1.107	1.895	-1.70	+18.3	17.8
1985 04 15	16 15.98	-08 36.0					
1985 04 25	16 05.32	-08 52.8	1.125	2.063	-1.96	+17.6	17.7
1985 05 05	15 52.72	-09 14.3					
1985 05 15	15 39.79	-09 41.5	1.228	2.231	-1.99	+15.6	17.8
1985 05 25	15 28.05	-10 14.7					
1985 06 04	15 18.60	-10 53.7	1.434	2.397	-1.77	+12.9	18.5
1985 06 14	15 11.99	-11 37.8					
1985 06 24	15 08.33	-12 26.3	1.731	2.561	-1.45	+10.2	19.2
1985 07 04	15 07.45	-13 18.3					
1985 07 14	15 09.01	-14 12.7	2.095	2.721	-1.17	+7.9	19.9
1985 07 24	15 12.70	-15 08.5					
1985 08 03	15 18.17	-16 04.9	2.501	2.877	-0.95	+6.2	20.4

Comet IRAS (1983o) Elements MPC 8536

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	m2
1984 07 19	11 38.11	+37 23.8	3.959	3.415	51.2	13.4	18.3
1984 07 29	11 43.27	+37 15.1					
1984 08 08	11 49.35	+37 09.0	4.277	3.570	40.7	10.7	18.7
1984 08 18	11 56.16	+37 06.9					
1984 08 28	12 03.55	+37 10.0	4.508	3.728	35.2	9.0	19.0
1984 09 07	12 11.40	+37 19.8					
1984 09 17	12 19.58	+37 37.7	4.649	3.887	36.5	8.8	19.2
1984 09 27	12 28.00	+38 04.9					
1984 10 07	12 36.57	+38 43.0	4.705	4.047	44.1	9.9	19.4
1984 10 17	12 45.17	+39 33.3					
1984 10 27	12 53.72	+40 37.3	4.688	4.209	55.7	11.2	19.6
1984 11 06	13 02.09	+41 56.5					
1984 11 16	13 10.14	+43 31.8	4.621	4.370	69.3	12.2	19.7
1984 11 26	13 17.71	+45 24.3					
1984 12 06	13 24.60	+47 34.1	4.534	4.532	83.7	12.5	19.8
1984 12 16	13 30.54	+50 00.8					
1984 12 26	13 35.23	+52 42.8	4.464	4.694	97.5	12.0	20.0

1985 01 05	13 38.22	+55 37.3					
1985 01 15	13 39.00	+58 40.2	4.449	4.856	108.8	11.1	20.1
1985 01 25	13 36.86	+61 46.0					
1985 02 04	13 30.98	+64 47.8	4.519	5.018	115.1	10.2	20.3
1985 02 14	13 20.40	+67 37.8					
1985 02 24	13 04.24	+70 07.7	4.686	5.178	114.7	10.0	20.5

Periodic Comet Gehrels 3 (1977 VII) Elements MPC 7660

Date ET	R. A. (1950) Decl.	Delta	r	Variation		m2
1984 07 19	04 49.00 +22 26.2	4.302	3.617	-0.54	-0.8	19.8
1984 07 29	05 01.34 +22 43.9					
1984 08 08	05 13.15 +22 57.1	4.066	3.597	-0.58	-0.5	19.6
1984 08 18	05 24.31 +23 06.5					
1984 08 28	05 34.64 +23 12.2	3.792	3.578	-0.62	-0.3	19.4
1984 09 07	05 43.98 +23 14.8					
1984 09 17	05 52.14 +23 15.0	3.494	3.560	-0.68	-0.0	19.2
1984 09 27	05 58.91 +23 13.4					
1984 10 07	06 04.08 +23 10.7	3.191	3.544	-0.74	+0.2	19.0
1984 10 17	06 07.44 +23 07.5					
1984 10 27	06 08.80 +23 04.3	2.909	3.528	-0.82	+0.3	18.8
1984 11 06	06 08.06 +23 01.3					
1984 11 16	06 05.22 +22 58.6	2.680	3.514	-0.90	+0.2	18.6
1984 11 26	06 00.43 +22 55.8					
1984 12 06	05 54.08 +22 52.4	2.540	3.500	-0.96	-0.0	18.5
1984 12 16	05 46.76 +22 48.0					
1984 12 26	05 39.19 +22 42.6	2.513	3.488	-0.96	-0.3	18.4
1985 01 05	05 32.19 +22 36.8					
1985 01 15	05 26.43 +22 31.4	2.605	3.478	-0.91	-0.6	18.5
1985 01 25	05 22.43 +22 27.2					
1985 02 04	05 20.52 +22 25.1	2.793	3.468	-0.84	-0.6	18.6
1985 02 14	05 20.78 +22 25.2					
1985 02 24	05 23.17 +22 27.5	3.044	3.460	-0.76	-0.5	18.8
1985 03 06	05 27.56 +22 31.4					
1985 03 16	05 33.74 +22 36.0	3.324	3.454	-0.70	-0.3	19.0
1985 03 26	05 41.52 +22 40.5					
1985 04 05	05 50.67 +22 43.8	3.603	3.449	-0.65	-0.0	19.2
1985 04 15	06 00.99 +22 45.0					
1985 04 25	06 12.31 +22 43.4	3.861	3.445	-0.61	+0.3	19.3
1985 05 05	06 24.44 +22 38.1					
1985 05 15	06 37.24 +22 28.6	4.083	3.443	-0.59	+0.6	19.4
1985 05 25	06 50.57 +22 14.5					
1985 06 04	07 04.31 +21 55.4	4.260	3.442	-0.56	+0.9	19.5

1981 DQ2 a,e,i = 2.27, 0.13, 6 Elements MPC 8538

Date ET	R. A. (1950) Decl.	Delta	r	Elong.	Phase	Mag.
1984 02 10	06 18.18 +15 37.8	1.147	1.964	133.9	21.2	17.8
1984 02 20	06 19.83 +15 48.2					
1984 03 01	06 25.16 +16 00.1	1.323	1.968	115.7	27.0	18.2
1984 03 11	06 33.74 +16 10.6					
1984 03 21	06 45.04 +16 16.9	1.530	1.975	100.7	29.7	18.6
1984 03 31	06 58.56 +16 16.8					
1984 04 10	07 13.87 +16 08.6	1.751	1.986	88.0	30.3	18.9
1984 04 20	07 30.57 +15 50.9					
1984 04 30	07 48.33 +15 23.0	1.973	2.001	76.9	29.4	19.2
1984 05 10	08 06.90 +14 44.5					
1984 05 20	08 26.02 +13 55.3	2.190	2.020	66.8	27.4	19.4
1984 05 30	08 45.51 +12 55.7					
1984 06 09	09 05.25 +11 46.2	2.398	2.041	57.5	24.8	19.5

(3003) 1983 YH a,e,i = 3.02, 0.12, 12 Elements MPC 8533

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	02 10	06 20.61	+24 42.8	2.141	2.920	134.7	13.9	16.8
1984	02 20	06 19.17	+25 10.4					
1984	03 01	06 20.41	+25 33.2	2.392	2.944	114.5	17.8	17.1
1984	03 11	06 24.17	+25 51.5					
1984	03 21	06 30.17	+26 05.2	2.683	2.968	96.7	19.5	17.5
1984	03 31	06 38.11	+26 14.3					
1984	04 10	06 47.71	+26 18.3	2.983	2.993	80.9	19.3	17.7
1984	04 20	06 58.67	+26 17.1					
1984	04 30	07 10.75	+26 10.4	3.273	3.017	66.5	17.8	17.9
1984	05 10	07 23.74	+25 57.8					
1984	05 20	07 37.43	+25 39.4	3.535	3.041	53.3	15.5	18.0

1934 AF a,e,i = 3.15, 0.15, 1 Elements MPC 8537

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	02 10	06 33.79	+22 36.1	1.904	2.717	137.8	14.1	17.4
1984	02 20	06 32.08	+22 42.0					
1984	03 01	06 33.21	+22 45.5	2.100	2.705	117.5	19.0	17.7
1984	03 11	06 37.08	+22 46.4					
1984	03 21	06 43.41	+22 44.1	2.339	2.695	99.9	21.4	18.0
1984	03 31	06 51.89	+22 38.0					
1984	04 10	07 02.20	+22 27.1	2.592	2.688	84.5	21.8	18.2
1984	04 20	07 14.03	+22 10.8					
1984	04 30	07 27.12	+21 48.3	2.840	2.683	70.8	20.8	18.4
1984	05 10	07 41.21	+21 19.1					
1984	05 20	07 56.10	+20 42.9	3.070	2.680	58.3	18.7	18.5

1984 AR a,e,i = 3.13, 0.14, 1 Elements MPC 8535

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	02 10	06 44.33	+24 40.0	1.849	2.682	140.1	13.7	17.3
1984	02 20	06 42.25	+24 37.5					
1984	03 01	06 43.07	+24 31.6	2.050	2.683	119.7	18.7	17.6
1984	03 11	06 46.68	+24 22.7					
1984	03 21	06 52.78	+24 10.6	2.297	2.686	101.9	21.3	17.9
1984	03 31	07 01.05	+23 54.8					
1984	04 10	07 11.16	+23 34.7	2.561	2.691	86.4	21.8	18.2
1984	04 20	07 22.77	+23 09.6					
1984	04 30	07 35.61	+22 38.8	2.823	2.699	72.6	20.9	18.4
1984	05 10	07 49.43	+22 02.0					
1984	05 20	08 03.99	+21 18.7	3.070	2.709	60.0	18.9	18.5
1984	05 30	08 19.13	+20 29.0					
1984	06 09	08 34.69	+19 32.6	3.290	2.721	48.2	16.2	18.6

(2996) 1954 RJ a,e,i = 2.78, 0.03, 4 Elements MPC 8530

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	02 10	07 01.90	+25 58.9	2.004	2.861	143.8	11.8	17.1
1984	02 20	06 57.57	+25 48.0					
1984	03 01	06 56.05	+25 32.9	2.202	2.859	122.5	17.0	17.4
1984	03 11	06 57.32	+25 14.7					
1984	03 21	07 01.16	+24 53.8	2.451	2.856	103.7	19.8	17.7
1984	03 31	07 07.27	+24 30.2					
1984	04 10	07 15.32	+24 03.5	2.719	2.854	87.3	20.5	17.9
1984	04 20	07 25.01	+23 33.1					
1984	04 30	07 36.03	+22 58.6	2.984	2.851	72.6	19.7	18.1
1984	05 10	07 48.15	+22 19.3					
1984	05 20	08 01.14	+21 34.8	3.228	2.847	59.3	17.8	18.2
1984	05 30	08 14.82	+20 45.0					
1984	06 09	08 29.03	+19 49.5	3.440	2.843	46.9	15.1	18.3

1981 RF a,e,i = 2.43, 0.19, 3 Elements MPC 7368

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	03 01	15 30.48	-14 50.7	2.315	2.759	-0.93	+3.9	19.5
1984	03 11	15 34.36	-14 50.6					
1984	03 21	15 35.83	-14 41.5	2.039	2.732	-1.08	+4.4	19.1
1984	03 31	15 34.67	-14 23.6					
1984	04 10	15 30.82	-13 57.6	1.816	2.703	-1.23	+5.1	18.7
1984	04 20	15 24.46	-13 24.7					
1984	04 30	15 16.08	-12 47.2	1.678	2.672	-1.32	+5.8	18.3
1984	05 10	15 06.51	-12 08.8					
1984	05 20	14 56.81	-11 33.6	1.646	2.638	-1.31	+6.1	18.3
1984	05 30	14 48.02	-11 06.1					
1984	06 09	14 41.05	-10 49.9	1.718	2.603	-1.19	+5.8	18.6
1984	06 19	14 36.47	-10 46.9					
1984	06 29	14 34.54	-10 57.6	1.870	2.566	-1.05	+5.2	18.9
1984	07 09	14 35.29	-11 21.3					
1984	07 19	14 38.60	-11 56.4	2.066	2.527	-0.93	+4.7	19.1
1984	07 29	14 44.23	-12 41.0					
1984	08 08	14 52.00	-13 33.0	2.281	2.487	-0.85	+4.2	19.3

1980 FB12 a,e,i = 2.42, 0.20, 2 Elements MPC 8534

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	03 01	15 58.84	-18 49.4	1.784	2.167	98.7	26.9	18.1
1984	03 11	16 10.61	-19 07.1					
1984	03 21	16 20.38	-19 15.2	1.523	2.126	113.5	25.4	17.6
1984	03 31	16 27.69	-19 13.9					
1984	04 10	16 32.09	-19 03.8	1.293	2.088	130.5	21.4	17.1
1984	04 20	16 33.25	-18 45.6					
1984	04 30	16 31.01	-18 20.2	1.117	2.053	150.3	14.1	16.6
1984	05 10	16 25.56	-17 49.2					
1984	05 20	16 17.68	-17 15.2	1.015	2.022	172.0	4.0	16.1
1984	05 30	16 08.58	-16 42.0					
1984	06 09	15 59.85	-16 14.6	1.003	1.995	162.8	8.7	16.2
1984	06 19	15 52.97	-15 57.4					
1984	06 29	15 48.98	-15 53.6	1.074	1.973	141.4	18.7	16.6
1984	07 09	15 48.45	-16 04.1					
1984	07 19	15 51.46	-16 27.7	1.206	1.957	123.2	25.8	17.0
1984	07 29	15 57.82	-17 01.9					
1984	08 08	16 07.24	-17 43.6	1.377	1.946	108.0	29.7	17.3

1980 PM a,e,i = 2.61, 0.18, 14 Elements MPC 6702

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	20 45.53	-08 12.2	2.088	2.572	106.9	22.1	18.2
1984	05 30	20 50.35	-07 55.8					
1984	06 09	20 52.95	-07 52.8	1.821	2.532	123.9	19.4	17.8
1984	06 19	20 53.14	-08 06.4					
1984	06 29	20 50.81	-08 39.2	1.602	2.493	143.3	14.1	17.3
1984	07 09	20 46.02	-09 32.6					
1984	07 19	20 39.16	-10 45.7	1.458	2.454	164.8	6.2	16.9
1984	07 29	20 30.93	-12 14.5					
1984	08 08	20 22.35	-13 52.7	1.414	2.415	168.1	5.0	16.7
1984	08 18	20 14.59	-15 32.3					
1984	08 28	20 08.67	-17 06.2	1.471	2.377	146.1	13.7	17.0
1984	09 07	20 05.40	-18 28.9					
1984	09 17	20 05.17	-19 37.3	1.610	2.341	125.5	20.5	17.4
1984	09 27	20 08.04	-20 30.1					
1984	10 07	20 13.88	-21 07.0	1.799	2.306	107.5	24.4	17.7
1984	10 17	20 22.39	-21 28.2					
1984	10 27	20 33.22	-21 34.3	2.011	2.273	92.0	25.9	17.9

(2865) 1935 OK a,e,i = 2.56, 0.07, 14 Elements MPC 7830

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 02.41	-28 03.9	1.870	2.391	108.4	23.7	16.3
1984	05 30	21 07.19	-27 39.3					
1984	06 09	21 08.92	-27 21.3	1.662	2.400	125.6	20.1	16.0
1984	06 19	21 07.39	-27 09.0					
1984	06 29	21 02.53	-26 59.9	1.502	2.409	145.5	13.8	15.6
1984	07 09	20 54.61	-26 50.5					
1984	07 19	20 44.35	-26 35.9	1.419	2.420	166.8	5.5	15.3
1984	07 29	20 32.88	-26 12.2					
1984	08 08	20 21.63	-25 37.4	1.437	2.432	165.3	6.1	15.3
1984	08 18	20 11.96	-24 52.0					
1984	08 28	20 04.84	-23 58.6	1.556	2.444	143.8	14.1	15.7
1984	09 07	20 00.83	-23 00.1					
1984	09 17	20 00.00	-21 58.8	1.752	2.458	123.8	19.9	16.1
1984	09 27	20 02.17	-20 55.9					
1984	10 07	20 07.03	-19 51.7	1.999	2.472	106.2	22.8	16.5
1984	10 17	20 14.17	-18 45.6					
1984	10 27	20 23.23	-17 37.2	2.269	2.487	90.6	23.5	16.8

1980 UA a,e,i = 2.85, 0.08, 3 Elements MPC 7020

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	20 55.72	-19 22.6	2.454	2.926	107.8	19.2	18.7
1984	05 30	20 59.29	-19 21.6					
1984	06 09	21 00.64	-19 30.4	2.197	2.910	125.8	16.4	18.4
1984	06 19	20 59.64	-19 49.4					
1984	06 29	20 56.26	-20 18.0	1.995	2.895	146.1	11.3	18.1
1984	07 09	20 50.65	-20 54.1					
1984	07 19	20 43.26	-21 34.4	1.877	2.878	168.1	4.2	17.7
1984	07 29	20 34.77	-22 14.6					
1984	08 08	20 26.10	-22 50.4	1.863	2.862	167.7	4.3	17.7
1984	08 18	20 18.22	-23 18.5					
1984	08 28	20 11.96	-23 37.2	1.955	2.846	145.4	11.6	18.0
1984	09 07	20 07.96	-23 45.8					
1984	09 17	20 06.52	-23 45.0	2.131	2.829	124.9	16.9	18.3
1984	09 27	20 07.67	-23 35.5					
1984	10 07	20 11.32	-23 17.9	2.361	2.812	106.5	19.9	18.6
1984	10 17	20 17.23	-22 52.8					
1984	10 27	20 25.11	-22 20.5	2.614	2.796	90.0	20.8	18.8

1983 CZ2 a,e,i = 2.41, 0.17, 6 Elements MPC 8138

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 06.88	-20 15.6	2.248	2.701	105.5	21.2	19.4
1984	05 30	21 10.00	-19 58.6					
1984	06 09	21 10.57	-19 50.8	2.028	2.725	123.7	18.1	19.1
1984	06 19	21 08.46	-19 52.5					
1984	06 29	21 03.64	-20 02.8	1.856	2.746	144.3	12.5	18.8
1984	07 09	20 56.33	-20 19.5					
1984	07 19	20 47.10	-20 39.1	1.766	2.766	167.1	4.7	18.5
1984	07 29	20 36.78	-20 57.9					
1984	08 08	20 26.43	-21 12.3	1.782	2.783	168.5	4.2	18.5
1984	08 18	20 17.14	-21 19.9					
1984	08 28	20 09.77	-21 20.0	1.905	2.797	145.6	11.8	18.9
1984	09 07	20 04.90	-21 12.7					
1984	09 17	20 02.75	-20 58.9	2.113	2.809	124.7	17.1	19.3
1984	09 27	20 03.28	-20 39.0					
1984	10 07	20 06.32	-20 13.7	2.374	2.819	106.0	19.9	19.6
1984	10 17	20 11.57	-19 43.1					
1984	10 27	20 18.74	-19 07.1	2.658	2.826	89.3	20.6	19.9

1979 RZ a,e,i = 3.03, 0.10, 13 Elements MPC 8287

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 09.82	-01 16.8	2.505	2.843	98.9	20.6	17.7
1984	05 30	21 14.47	+00 01.1					
1984	06 09	21 17.17	+01 12.2	2.249	2.828	114.7	19.0	17.5
1984	06 19	21 17.79	+02 13.9					
1984	06 29	21 16.23	+03 02.8	2.032	2.814	131.8	15.6	17.1
1984	07 09	21 12.56	+03 35.6					
1984	07 19	21 07.05	+03 49.7	1.879	2.801	149.2	10.7	16.9
1984	07 29	21 00.18	+03 43.2					
1984	08 08	20 52.66	+03 16.4	1.815	2.789	159.9	7.2	16.7
1984	08 18	20 45.35	+02 31.9					
1984	08 28	20 39.07	+01 34.3	1.850	2.778	151.2	10.1	16.8
1984	09 07	20 34.54	+00 29.4					
1984	09 17	20 32.21	-00 36.8	1.977	2.768	133.7	15.2	17.0
1984	09 27	20 32.29	-01 39.5					
1984	10 07	20 34.79	-02 34.6	2.173	2.760	115.9	19.0	17.3
1984	10 17	20 39.58	-03 19.6					
1984	10 27	20 46.42	-03 53.1	2.410	2.753	99.4	20.9	17.6

1979 SQ11 a,e,i = 3.18, 0.17, 0 Elements MPC 7356

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	05 20	21 15.01	-16 21.5	2.548	2.938	-0.92	-4.0	18.3
1984	05 30	21 20.18	-16 00.0					
1984	06 09	21 23.38	-15 47.4	2.267	2.906	-1.05	-4.7	18.0
1984	06 19	21 24.46	-15 44.8					
1984	06 29	21 23.27	-15 52.7	2.031	2.874	-1.19	-5.4	17.6
1984	07 09	21 19.84	-16 10.9					
1984	07 19	21 14.39	-16 37.7	1.868	2.844	-1.31	-5.7	17.3
1984	07 29	21 07.38	-17 10.3					
1984	08 08	20 59.52	-17 44.8	1.802	2.815	-1.37	-5.4	16.8
1984	08 18	20 51.75	-18 17.0					
1984	08 28	20 44.95	-18 43.5	1.843	2.787	-1.32	-4.8	17.3
1984	09 07	20 39.91	-19 01.8					
1984	09 17	20 37.17	-19 10.8	1.977	2.761	-1.20	-4.2	17.5
1984	09 27	20 36.94	-19 10.2					
1984	10 07	20 39.26	-19 00.0	2.176	2.737	-1.07	-3.8	17.8
1984	10 17	20 43.97	-18 40.6					
1984	10 27	20 50.84	-18 12.1	2.411	2.715	-0.95	-3.6	18.1

1979 SO11 a,e,i = 3.14, 0.21, 1 Elements MPC 7356

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	05 20	21 10.81	-15 24.4	2.320	2.735	-1.07	-4.3	18.5
1984	05 30	21 16.87	-14 56.9					
1984	06 09	21 20.92	-14 38.3	2.046	2.699	-1.23	-5.2	18.1
1984	06 19	21 22.75	-14 30.3					
1984	06 29	21 22.21	-14 33.8	1.816	2.665	-1.41	-6.0	17.8
1984	07 09	21 19.27	-14 49.3					
1984	07 19	21 14.17	-15 15.2	1.656	2.633	-1.58	-6.4	17.4
1984	07 29	21 07.36	-15 49.1					
1984	08 08	20 59.64	-16 26.7	1.590	2.604	-1.65	-6.2	16.9
1984	08 18	20 51.99	-17 03.4					
1984	08 28	20 45.40	-17 35.1	1.628	2.577	-1.58	-5.5	17.3
1984	09 07	20 40.74	-17 58.7					
1984	09 17	20 38.55	-18 12.4	1.755	2.553	-1.43	-4.7	17.6
1984	09 27	20 39.06	-18 15.7					
1984	10 07	20 42.29	-18 08.3	1.946	2.532	-1.26	-4.3	17.9
1984	10 17	20 48.02	-17 50.4					
1984	10 27	20 55.98	-17 22.2	2.173	2.515	-1.12	-4.1	18.2

1982 BS a,e,i = 2.59, 0.17, 13 Elements MPC 6696

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	05 20	21 25.40	-14 43.0	2.361	2.720	-0.86	-7.4	18.5
1984	05 30	21 30.44	-13 41.2					
1984	06 09	21 33.33	-12 44.4	2.077	2.687	-0.99	-8.6	18.2
1984	06 19	21 33.86	-11 54.0					
1984	06 29	21 31.83	-11 11.1	1.832	2.652	-1.15	-9.8	17.8
1984	07 09	21 27.16	-10 36.9					
1984	07 19	21 20.08	-10 11.5	1.654	2.616	-1.30	-10.7	17.4
1984	07 29	21 11.04	-09 54.8					
1984	08 08	21 00.89	-09 45.5	1.571	2.580	-1.36	-11.0	17.0
1984	08 18	20 50.72	-09 41.5					
1984	08 28	20 41.65	-09 40.6	1.594	2.544	-1.30	-10.5	17.3
1984	09 07	20 34.64	-09 40.2					
1984	09 17	20 30.31	-09 38.0	1.711	2.507	-1.16	-9.6	17.6
1984	09 27	20 28.91	-09 32.1					
1984	10 07	20 30.46	-09 20.9	1.891	2.470	-1.01	-8.7	17.8
1984	10 17	20 34.73	-09 03.1					
1984	10 27	20 41.46	-08 37.7	2.102	2.434	-0.89	-7.9	18.1

(2832) 1975 EC1 a,e,i = 2.48, 0.08, 4 Elements MPC 7842

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 21.70	-11 48.9	2.280	2.644	99.6	22.2	18.1
1984	05 30	21 27.05	-11 19.3					
1984	06 09	21 30.21	-11 00.4	2.041	2.654	116.5	20.0	17.8
1984	06 19	21 30.99	-10 54.1					
1984	06 29	21 29.27	-11 01.8	1.838	2.663	135.7	15.5	17.5
1984	07 09	21 25.05	-11 24.1					
1984	07 19	21 18.61	-11 59.7	1.703	2.670	157.4	8.4	17.2
1984	07 29	21 10.46	-12 46.0					
1984	08 08	21 01.46	-13 38.4	1.663	2.676	176.6	1.3	16.7
1984	08 18	20 52.61	-14 31.8					
1984	08 28	20 44.91	-15 21.2	1.731	2.681	155.0	9.2	17.2
1984	09 07	20 39.19	-16 02.9					
1984	09 17	20 35.93	-16 34.8	1.894	2.684	133.3	15.8	17.6
1984	09 27	20 35.33	-16 55.8					
1984	10 07	20 37.36	-17 05.9	2.122	2.686	113.9	19.9	17.9
1984	10 17	20 41.82	-17 05.1					
1984	10 27	20 48.43	-16 53.9	2.384	2.687	96.6	21.6	18.2

(2879) 1932 CB1 a,e,i = 2.77, 0.14, 11 Elements MPC 7842

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 24.33	-09 10.6	2.647	2.964	98.1	19.8	17.4
1984	05 30	21 28.63	-08 52.9					
1984	06 09	21 30.95	-08 46.3	2.407	2.988	115.5	17.9	17.2
1984	06 19	21 31.18	-08 52.5					
1984	06 29	21 29.23	-09 12.7	2.204	3.010	135.0	13.8	16.9
1984	07 09	21 25.16	-09 47.0					
1984	07 19	21 19.26	-10 34.4	2.071	3.031	156.6	7.6	16.7
1984	07 29	21 11.97	-11 32.2					
1984	08 08	21 03.99	-12 36.3	2.038	3.051	176.0	1.3	16.3
1984	08 18	20 56.12	-13 41.7					
1984	08 28	20 49.15	-14 43.8	2.118	3.069	156.1	7.7	16.7
1984	09 07	20 43.76	-15 38.8					
1984	09 17	20 40.39	-16 24.2	2.298	3.085	134.4	13.5	17.1
1984	09 27	20 39.25	-16 59.0					
1984	10 07	20 40.37	-17 22.7	2.550	3.101	114.5	17.1	17.4
1984	10 17	20 43.63	-17 35.7					
1984	10 27	20 48.82	-17 38.3	2.841	3.114	96.5	18.5	17.7

1969 TP1 a,e,i = 3.01, 0.10, 10 Elements MPC 7666

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 22.49	-04 00.3	2.546	2.849	96.8	20.6	17.3
1984	05 30	21 27.98	-02 58.6					
1984	06 09	21 31.61	-02 04.4	2.279	2.831	112.8	19.3	17.0
1984	06 19	21 33.23	-01 20.2					
1984	06 29	21 32.71	-00 48.5	2.046	2.814	130.4	16.0	16.7
1984	07 09	21 30.02	-00 32.1					
1984	07 19	21 25.35	-00 32.8	1.874	2.797	149.4	10.6	16.3
1984	07 29	21 19.07	-00 51.4					
1984	08 08	21 11.81	-01 27.2	1.789	2.782	165.2	5.4	16.1
1984	08 18	21 04.40	-02 17.0					
1984	08 28	20 57.68	-03 16.1	1.808	2.767	157.3	8.1	16.2
1984	09 07	20 52.46	-04 19.0					
1984	09 17	20 49.30	-05 20.2	1.923	2.754	138.0	14.1	16.4
1984	09 27	20 48.49	-06 15.5					
1984	10 07	20 50.15	-07 01.5	2.114	2.742	119.0	18.6	16.7
1984	10 17	20 54.15	-07 36.3					
1984	10 27	21 00.31	-07 58.9	2.349	2.731	101.8	20.9	17.0

1980 XM a,e,i = 2.99, 0.10, 11 Elements MPC 7941

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 28.89	-28 01.3	2.291	2.701	102.8	21.4	17.0
1984	05 30	21 35.90	-28 12.5					
1984	06 09	21 40.61	-28 34.4	2.055	2.698	119.0	19.2	16.7
1984	06 19	21 42.77	-29 06.8					
1984	06 29	21 42.19	-29 48.3	1.863	2.696	136.9	14.9	16.3
1984	07 09	21 38.79	-30 35.2					
1984	07 19	21 32.80	-31 22.1	1.739	2.696	155.2	9.1	16.1
1984	07 29	21 24.72	-32 02.5					
1984	08 08	21 15.46	-32 29.6	1.709	2.697	163.8	6.0	15.9
1984	08 18	21 06.17	-32 38.8					
1984	08 28	20 57.97	-32 28.4	1.779	2.700	149.8	10.9	16.2
1984	09 07	20 51.83	-31 59.5					
1984	09 17	20 48.29	-31 15.0	1.938	2.705	130.9	16.3	16.5
1984	09 27	20 47.56	-30 18.5					
1984	10 07	20 49.58	-29 12.7	2.161	2.711	113.0	19.8	16.8
1984	10 17	20 54.08	-28 00.0					
1984	10 27	21 00.75	-26 41.7	2.420	2.719	96.6	21.3	17.1

(2973) 1951 AJ a,e,i = 2.47, 0.15, 2 Elements MPC 8395

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 31.04	-15 53.2	2.309	2.658	98.7	22.1	17.9
1984	05 30	21 37.39	-15 22.8					
1984	06 09	21 41.70	-15 01.8	2.033	2.631	115.2	20.4	17.6
1984	06 19	21 43.72	-14 51.6					
1984	06 29	21 43.20	-14 53.5	1.792	2.602	133.9	16.4	17.2
1984	07 09	21 40.04	-15 07.9					
1984	07 19	21 34.33	-15 33.5	1.615	2.573	155.2	9.5	16.8
1984	07 29	21 26.42	-16 07.5					
1984	08 08	21 17.07	-16 45.5	1.528	2.542	178.4	0.7	16.2
1984	08 18	21 07.34	-17 22.1					
1984	08 28	20 58.38	-17 52.7	1.546	2.510	157.5	8.8	16.6
1984	09 07	20 51.27	-18 13.9					
1984	09 17	20 46.74	-18 24.0	1.660	2.477	135.3	16.6	17.0
1984	09 27	20 45.14	-18 22.9					
1984	10 07	20 46.54	-18 10.6	1.839	2.444	115.7	21.6	17.3
1984	10 17	20 50.75	-17 47.7					
1984	10 27	20 57.48	-17 14.6	2.052	2.411	98.6	24.1	17.5

(2920) Automedon a,e,i = 5.20, 0.03, 21 Elements MPC 8142

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 33.50	+08 08.4	5.157	5.257	90.1	11.1	17.4
1984	05 30	21 35.23	+09 00.0					
1984	06 09	21 35.83	+09 46.6	4.871	5.253	106.7	10.7	17.3
1984	06 19	21 35.28	+10 26.7					
1984	06 29	21 33.61	+10 58.9	4.617	5.249	123.6	9.3	17.1
1984	07 09	21 30.87	+11 21.5					
1984	07 19	21 27.22	+11 33.5	4.425	5.244	140.0	7.2	17.0
1984	07 29	21 22.86	+11 34.0					
1984	08 08	21 18.08	+11 22.9	4.321	5.240	152.3	5.2	16.9
1984	08 18	21 13.21	+11 00.9					
1984	08 28	21 08.57	+10 29.2	4.321	5.235	152.1	5.2	16.9
1984	09 07	21 04.51	+09 50.0					
1984	09 17	21 01.29	+09 05.9	4.426	5.231	139.5	7.2	17.0
1984	09 27	20 59.13	+08 19.6					
1984	10 07	20 58.16	+07 33.6	4.621	5.227	122.5	9.3	17.1
1984	10 17	20 58.45	+06 50.3					
1984	10 27	20 59.99	+06 11.6	4.877	5.222	104.9	10.6	17.3

(2929) Harris a,e,i = 3.13, 0.07, 15 Elements MPC 8209

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 36.38	-09 07.2	2.989	3.243	95.3	18.1	17.8
1984	05 30	21 41.03	-08 57.7					
1984	06 09	21 43.95	-08 59.1	2.725	3.253	112.6	16.7	17.6
1984	06 19	21 45.03	-09 12.7					
1984	06 29	21 44.18	-09 39.7	2.495	3.262	131.8	13.4	17.4
1984	07 09	21 41.40	-10 20.2					
1984	07 19	21 36.86	-11 13.4	2.332	3.271	153.1	8.1	17.1
1984	07 29	21 30.88	-12 16.7					
1984	08 08	21 23.98	-13 26.4	2.267	3.279	175.7	1.3	16.7
1984	08 18	21 16.82	-14 37.8					
1984	08 28	21 10.11	-15 46.0	2.316	3.287	160.8	5.8	17.0
1984	09 07	21 04.53	-16 47.0					
1984	09 17	21 00.58	-17 38.0	2.471	3.294	138.7	11.6	17.3
1984	09 27	20 58.58	-18 17.6					
1984	10 07	20 58.66	-18 45.3	2.707	3.300	118.3	15.5	17.6
1984	10 17	21 00.80	-19 01.4					
1984	10 27	21 04.85	-19 06.6	2.989	3.306	99.8	17.2	17.9

A908 AA a,e,i = 3.95, 0.10, 11 Elements MPC 7605

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 45.19	-02 05.2	4.187	4.322	90.9	13.5	18.1
1984	05 30	21 48.06	-01 28.8					
1984	06 09	21 49.61	-00 58.7	3.890	4.316	108.2	12.9	17.9
1984	06 19	21 49.78	-00 36.4					
1984	06 29	21 48.54	-00 22.8	3.624	4.310	126.8	10.9	17.7
1984	07 09	21 45.93	-00 19.2					
1984	07 19	21 42.08	-00 26.0	3.421	4.303	146.2	7.5	17.5
1984	07 29	21 37.21	-00 43.3					
1984	08 08	21 31.66	-01 10.3	3.312	4.296	164.0	3.7	17.3
1984	08 18	21 25.84	-01 45.4					
1984	08 28	21 20.21	-02 26.3	3.315	4.288	162.3	4.1	17.3
1984	09 07	21 15.21	-03 10.2					
1984	09 17	21 11.23	-03 54.3	3.429	4.279	143.5	8.0	17.5
1984	09 27	21 08.54	-04 36.0					
1984	10 07	21 07.32	-05 13.1	3.636	4.270	123.6	11.2	17.7
1984	10 17	21 07.65	-05 43.9					
1984	10 27	21 09.50	-06 07.6	3.903	4.261	104.4	13.1	17.9

1981 EE a,e,i = 3.16, 0.22, 15 Elements MPC 6895

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 40.84	-14 41.7	2.929	3.199	96.1	18.3	17.3
1984	05 30	21 46.61	-14 46.2					
1984	06 09	21 50.77	-15 02.5	2.616	3.156	113.1	17.2	17.0
1984	06 19	21 53.14	-15 31.9					
1984	06 29	21 53.54	-16 15.4	2.340	3.112	131.9	14.1	16.6
1984	07 09	21 51.86	-17 13.0					
1984	07 19	21 48.14	-18 22.9	2.131	3.069	152.6	8.8	16.3
1984	07 29	21 42.59	-19 41.8					
1984	08 08	21 35.66	-21 04.4	2.017	3.025	172.4	2.6	15.9
1984	08 18	21 28.04	-22 24.3					
1984	08 28	21 20.55	-23 35.6	2.014	2.980	159.4	6.8	16.0
1984	09 07	21 14.08	-24 33.6					
1984	09 17	21 09.32	-25 15.9	2.114	2.936	137.7	13.3	16.3
1984	09 27	21 06.78	-25 41.8					
1984	10 07	21 06.72	-25 52.1	2.289	2.893	117.7	17.8	16.5
1984	10 17	21 09.13	-25 48.1					
1984	10 27	21 13.88	-25 31.3	2.507	2.850	99.8	20.1	16.7

(2804) Yrjo a,e,i = 3.02, 0.08, 11 Elements MPC 7463

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 39.16	-16 41.6	2.479	2.791	97.1	21.1	17.2
1984	05 30	21 46.21	-16 46.5					
1984	06 09	21 51.36	-17 04.2	2.232	2.798	113.6	19.4	16.9
1984	06 19	21 54.40	-17 35.9					
1984	06 29	21 55.17	-18 22.3	2.020	2.806	132.1	15.6	16.6
1984	07 09	21 53.57	-19 22.5					
1984	07 19	21 49.70	-20 33.4	1.873	2.814	152.5	9.6	16.3
1984	07 29	21 43.84	-21 50.4					
1984	08 08	21 36.61	-23 06.9	1.818	2.824	170.8	3.3	16.0
1984	08 18	21 28.84	-24 16.2					
1984	08 28	21 21.45	-25 12.6	1.870	2.834	158.5	7.5	16.3
1984	09 07	21 15.35	-25 52.7					
1984	09 17	21 11.23	-26 15.4	2.021	2.846	137.7	13.8	16.6
1984	09 27	21 09.44	-26 21.5					
1984	10 07	21 10.14	-26 12.7	2.246	2.858	118.3	17.9	16.9
1984	10 17	21 13.23	-25 51.0					
1984	10 27	21 18.50	-25 18.0	2.513	2.871	100.8	19.9	17.2

1981 WU a,e,i = 2.25, 0.17, 3 Elements MPC 6629

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	05 20	21 31.59	-12 32.2	1.868	2.238	-1.35	-5.1	18.7
1984	05 30	21 41.50	-11 45.2					
1984	06 09	21 49.52	-11 07.5	1.606	2.199	-1.60	-6.5	18.3
1984	06 19	21 55.33	-10 42.0					
1984	06 29	21 58.60	-10 31.8	1.371	2.160	-1.93	-8.2	17.9
1984	07 09	21 59.00	-10 39.6					
1984	07 19	21 56.39	-11 06.7	1.186	2.121	-2.30	-9.7	17.3
1984	07 29	21 50.83	-11 52.7					
1984	08 08	21 42.88	-12 53.6	1.075	2.083	-2.57	-10.3	16.8
1984	08 18	21 33.59	-14 02.3					
1984	08 28	21 24.38	-15 10.0	1.056	2.047	-2.57	-9.2	16.8
1984	09 07	21 16.77	-16 08.0					
1984	09 17	21 11.96	-16 50.5	1.126	2.012	-2.30	-7.4	17.2
1984	09 27	21 10.60	-17 14.9					
1984	10 07	21 12.89	-17 20.4	1.261	1.980	-1.97	-6.2	17.6
1984	10 17	21 18.61	-17 07.6					
1984	10 27	21 27.38	-16 37.7	1.433	1.952	-1.69	-5.7	17.9

(2987) 4583 P-L a,e,i = 2.89, 0.07, 1 Elements MPC 8400

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 52.18	-12 10.7	2.847	3.065	92.6	19.3	18.6
1984	05 30	21 57.82	-11 40.2					
1984	06 09	22 01.70	-11 18.8	2.579	3.069	109.3	18.2	18.4
1984	06 19	22 03.66	-11 07.8					
1984	06 29	22 03.56	-11 08.3	2.339	3.071	127.9	15.1	18.1
1984	07 09	22 01.33	-11 20.7					
1984	07 19	21 57.05	-11 44.4	2.159	3.073	148.7	9.9	17.8
1984	07 29	21 50.97	-12 17.8					
1984	08 08	21 43.59	-12 57.9	2.068	3.074	171.3	2.9	17.5
1984	08 18	21 35.60	-13 40.6					
1984	08 28	21 27.80	-14 21.7	2.086	3.074	165.3	4.8	17.6
1984	09 07	21 20.98	-14 57.4					
1984	09 17	21 15.80	-15 24.9	2.212	3.073	142.8	11.4	17.9
1984	09 27	21 12.65	-15 42.8					
1984	10 07	21 11.76	-15 50.4	2.421	3.072	122.2	16.0	18.2
1984	10 17	21 13.11	-15 47.7					
1984	10 27	21 16.57	-15 35.1	2.682	3.070	103.5	18.3	18.5

1980 RU a,e,i = 2.58, 0.14, 15 Elements MPC 7601

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 53.01	-26 59.3	2.112	2.456	97.4	24.1	18.6
1984	05 30	22 01.98	-26 29.3					
1984	06 09	22 08.72	-26 07.6	1.851	2.426	112.4	22.8	18.3
1984	06 19	22 12.92	-25 54.8					
1984	06 29	22 14.22	-25 50.9	1.618	2.396	129.4	19.1	17.9
1984	07 09	22 12.32	-25 54.2					
1984	07 19	22 07.14	-26 01.1	1.439	2.367	148.7	12.9	17.5
1984	07 29	21 58.87	-26 06.3					
1984	08 08	21 48.24	-26 02.9	1.341	2.340	166.9	5.6	17.1
1984	08 18	21 36.46	-25 44.9					
1984	08 28	21 25.01	-25 08.9	1.343	2.315	159.1	8.9	17.2
1984	09 07	21 15.37	-24 15.0					
1984	09 17	21 08.56	-23 06.2	1.439	2.291	138.5	16.9	17.5
1984	09 27	21 05.10	-21 46.4					
1984	10 07	21 05.06	-20 18.9	1.607	2.270	119.3	22.6	17.8
1984	10 17	21 08.18	-18 45.9					
1984	10 27	21 14.09	-17 08.6	1.817	2.251	102.5	25.5	18.1

1979 OA a,e,i = 2.91, 0.38, 25 Elements MPC 6950

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	05 20	21 59.12	-15 13.5	1.479	1.822	92.1	33.7	17.4
1984	05 30	22 09.84	-11 41.9					
1984	06 09	22 17.70	-08 03.9	1.312	1.849	104.5	32.1	17.2
1984	06 19	22 22.40	-04 21.8					
1984	06 29	22 23.62	-00 38.8	1.170	1.887	119.1	28.1	16.9
1984	07 09	22 21.07	+02 59.4					
1984	07 19	22 14.77	+06 24.7	1.075	1.937	135.6	21.6	16.6
1984	07 29	22 05.06	+09 26.6					
1984	08 08	21 52.92	+11 53.9	1.052	1.995	149.9	14.8	16.4
1984	08 18	21 39.85	+13 39.1					
1984	08 28	21 27.56	+14 40.7	1.115	2.060	151.6	13.5	16.6
1984	09 07	21 17.58	+15 04.4					
1984	09 17	21 10.88	+15 00.6	1.263	2.132	139.8	17.7	17.1
1984	09 27	21 07.79	+14 40.4					
1984	10 07	21 08.24	+14 13.8	1.478	2.208	124.9	21.8	17.6
1984	10 17	21 11.84	+13 48.4					
1984	10 27	21 18.14	+13 28.8	1.740	2.287	110.6	24.0	18.1

1981 WP1 a,e,i = 2.37, 0.15, 8 Elements MPC 6646

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 05 20	21 32.30	-21 12.8	1.758	2.177	100.1	27.2	18.0
1984 05 30	21 43.89	-21 09.4					
1984 06 09	21 53.50	-21 19.4	1.518	2.146	114.4	25.5	17.7
1984 06 19	22 00.78	-21 45.2					
1984 06 29	22 05.35	-22 28.5	1.310	2.118	130.8	21.3	17.2
1984 07 09	22 06.81	-23 29.4					
1984 07 19	22 04.97	-24 44.6	1.154	2.093	149.2	14.4	16.7
1984 07 29	21 59.88	-26 07.6					
1984 08 08	21 52.11	-27 28.0	1.073	2.070	165.2	7.2	16.4
1984 08 18	21 42.83	-28 33.8					
1984 08 28	21 33.59	-29 15.6	1.081	2.050	157.2	11.0	16.5
1984 09 07	21 26.02	-29 28.4					
1984 09 17	21 21.36	-29 12.8	1.173	2.034	138.1	19.3	16.8
1984 09 27	21 20.19	-28 32.4					
1984 10 07	21 22.64	-27 31.7	1.325	2.022	120.3	25.3	17.2
1984 10 17	21 28.41	-26 14.8					
1984 10 27	21 37.03	-24 44.7	1.515	2.015	104.9	28.5	17.6

1979 SU11 a,e,i = 3.14, 0.17, 3 Elements MPC 7356

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 05 20	21 46.64	-15 02.7	2.472	2.750	-0.98	-4.5	18.2
1984 05 30	21 54.59	-14 33.0					
1984 06 09	22 00.79	-14 12.8	2.196	2.724	-1.11	-5.4	17.9
1984 06 19	22 05.04	-14 03.5					
1984 06 29	22 07.11	-14 06.7	1.951	2.700	-1.27	-6.3	17.5
1984 07 09	22 06.85	-14 22.9					
1984 07 19	22 04.24	-14 51.4	1.761	2.678	-1.43	-7.0	17.1
1984 07 29	21 59.44	-15 30.3					
1984 08 08	21 52.92	-16 15.4	1.654	2.658	-1.56	-7.2	16.7
1984 08 18	21 45.42	-17 01.5					
1984 08 28	21 37.88	-17 43.0	1.649	2.641	-1.56	-6.6	16.8
1984 09 07	21 31.29	-18 15.2					
1984 09 17	21 26.49	-18 35.0	1.745	2.627	-1.45	-5.7	17.1
1984 09 27	21 24.00	-18 41.3					
1984 10 07	21 24.10	-18 34.0	1.920	2.615	-1.29	-5.0	17.4
1984 10 17	21 26.77	-18 13.8					
1984 10 27	21 31.83	-17 41.8	2.146	2.606	-1.13	-4.6	17.7

1979 SU9 a,e,i = 3.11, 0.17, 0 Elements MPC 7137

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 06 09	22 09.40	-11 41.2	2.473	2.945	-0.90	-5.0	18.3
1984 06 19	22 12.99	-11 21.7					
1984 06 29	22 14.57	-11 13.2	2.203	2.913	-1.02	-5.8	17.9
1984 07 09	22 14.00	-11 16.7					
1984 07 19	22 11.25	-11 32.2	1.985	2.880	-1.16	-6.4	17.6
1984 07 29	22 06.43	-11 58.7					
1984 08 08	21 59.92	-12 33.6	1.850	2.849	-1.26	-6.7	17.2
1984 08 18	21 52.36	-13 13.0					
1984 08 28	21 44.55	-13 52.3	1.819	2.818	-1.28	-6.4	17.1
1984 09 07	21 37.41	-14 26.9					
1984 09 17	21 31.77	-14 53.2	1.893	2.788	-1.20	-5.8	17.4
1984 09 27	21 28.19	-15 08.8					
1984 10 07	21 27.03	-15 12.8	2.053	2.760	-1.08	-5.1	17.7
1984 10 17	21 28.36	-15 04.9					
1984 10 27	21 32.07	-14 45.6	2.267	2.733	-0.96	-4.6	17.9
1984 11 06	21 37.98	-14 15.2					
1984 11 16	21 45.79	-13 34.5	2.507	2.708	-0.86	-4.4	18.2

(2869) 1980 RM2 a,e,i = 2.63, 0.18, 13 Elements MPC 7832

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 16.30	-26 42.6	1.591	2.171	110.9	25.9	16.3
1984	06 19	22 22.89	-26 30.6					
1984	06 29	22 26.34	-26 29.2	1.409	2.177	126.8	22.0	15.9
1984	07 09	22 26.31	-26 36.9					
1984	07 19	22 22.70	-26 49.8	1.274	2.187	145.2	15.4	15.6
1984	07 29	22 15.71	-27 01.9					
1984	08 08	22 06.05	-27 05.6	1.211	2.201	163.2	7.7	15.3
1984	08 18	21 55.00	-26 53.6					
1984	08 28	21 44.11	-26 21.8	1.240	2.219	160.9	8.6	15.4
1984	09 07	21 34.91	-25 30.0					
1984	09 17	21 28.46	-24 21.3	1.362	2.241	142.0	16.0	15.8
1984	09 27	21 25.26	-23 00.3					
1984	10 07	21 25.36	-21 30.8	1.558	2.266	123.3	21.6	16.2
1984	10 17	21 28.49	-19 55.7					
1984	10 27	21 34.23	-18 16.5	1.802	2.294	106.6	24.5	16.6
1984	11 06	21 42.18	-16 33.8					
1984	11 16	21 51.90	-14 48.1	2.073	2.324	91.8	25.2	17.0

1979 SZ9 a,e,i = 3.10, 0.18, 0 Elements MPC 7137

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 09	22 08.81	-11 36.7	2.128	2.623	-1.14	-6.2	17.7
1984	06 19	22 13.89	-11 08.7					
1984	06 29	22 16.81	-10 52.4	1.883	2.601	-1.31	-7.3	17.4
1984	07 09	22 17.37	-10 49.3					
1984	07 19	22 15.53	-10 59.7	1.689	2.582	-1.49	-8.3	17.0
1984	07 29	22 11.38	-11 22.8					
1984	08 08	22 05.30	-11 56.1	1.570	2.566	-1.63	-8.8	16.6
1984	08 18	21 57.99	-12 35.0					
1984	08 28	21 50.37	-13 14.5	1.551	2.553	-1.65	-8.4	16.5
1984	09 07	21 43.47	-13 49.1					
1984	09 17	21 38.20	-14 14.6	1.632	2.543	-1.54	-7.5	16.9
1984	09 27	21 35.19	-14 28.5					
1984	10 07	21 34.77	-14 29.6	1.797	2.536	-1.37	-6.6	17.2
1984	10 17	21 36.97	-14 17.8					
1984	10 27	21 41.63	-13 53.5	2.017	2.533	-1.19	-5.9	17.5
1984	11 06	21 48.52	-13 17.6					
1984	11 16	21 57.30	-12 30.7	2.267	2.532	-1.05	-5.5	17.8

(2933) Amber a,e,i = 2.61, 0.05, 7 Elements MPC 8211

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 17.85	-11 55.4	2.023	2.499	105.9	23.0	17.0
1984	06 19	22 23.71	-11 53.7					
1984	06 29	22 27.36	-12 07.7	1.792	2.494	122.8	20.0	16.7
1984	07 09	22 28.54	-12 39.1					
1984	07 19	22 27.15	-13 27.6	1.607	2.490	142.3	14.4	16.3
1984	07 29	22 23.20	-14 31.3					
1984	08 08	22 17.04	-15 45.8	1.497	2.487	164.0	6.5	16.0
1984	08 18	22 09.35	-17 03.7					
1984	08 28	22 01.08	-18 17.2	1.484	2.485	169.8	4.1	15.9
1984	09 07	21 53.38	-19 18.7					
1984	09 17	21 47.26	-20 03.1	1.574	2.483	147.9	12.4	16.2
1984	09 27	21 43.46	-20 28.6					
1984	10 07	21 42.37	-20 35.0	1.746	2.483	127.3	18.7	16.6
1984	10 17	21 44.03	-20 24.0					
1984	10 27	21 48.30	-19 57.5	1.973	2.483	109.1	22.2	17.0
1984	11 06	21 54.89	-19 17.2					
1984	11 16	22 03.47	-18 25.1	2.226	2.485	93.1	23.4	17.3

(2797) Teucer a,e,i = 5.20, 0.09, 22 Elements MPC 7458

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 29.16	-33 37.9	5.201	5.630	110.0	9.8	17.1
1984	06 19	22 30.24	-34 19.1					
1984	06 29	22 30.01	-35 05.4	4.951	5.624	127.1	8.3	16.9
1984	07 09	22 28.45	-35 55.0					
1984	07 19	22 25.61	-36 45.3	4.771	5.617	143.2	6.2	16.8
1984	07 29	22 21.60	-37 33.6					
1984	08 08	22 16.67	-38 16.8	4.684	5.611	153.6	4.6	16.7
1984	08 18	22 11.12	-38 52.0					
1984	08 28	22 05.33	-39 17.2	4.704	5.604	150.3	5.1	16.7
1984	09 07	21 59.74	-39 30.7					
1984	09 17	21 54.74	-39 32.2	4.828	5.597	136.2	7.1	16.8
1984	09 27	21 50.68	-39 22.0					
1984	10 07	21 47.81	-39 01.2	5.036	5.589	119.0	9.0	17.0
1984	10 17	21 46.29	-38 31.1					
1984	10 27	21 46.18	-37 53.5	5.300	5.582	101.4	10.1	17.1
1984	11 06	21 47.46	-37 09.6					
1984	11 16	21 50.06	-36 20.9	5.587	5.574	84.2	10.2	17.2

1979 WO a,e,i = 3.20, 0.13, 11 Elements MPC 7374

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 31.38	-23 17.1	2.759	3.201	106.6	17.7	17.1
1984	06 19	22 35.17	-23 31.6					
1984	06 29	22 36.97	-23 57.0	2.494	3.176	124.0	15.4	16.8
1984	07 09	22 36.58	-24 32.3					
1984	07 19	22 33.96	-25 15.2	2.283	3.151	142.7	11.3	16.5
1984	07 29	22 29.16	-26 01.9					
1984	08 08	22 22.46	-26 47.5	2.153	3.127	160.3	6.3	16.3
1984	08 18	22 14.45	-27 26.0					
1984	08 28	22 05.86	-27 52.3	2.128	3.102	161.5	5.9	16.2
1984	09 07	21 57.63	-28 02.6					
1984	09 17	21 50.59	-27 55.6	2.207	3.078	144.0	11.1	16.4
1984	09 27	21 45.40	-27 31.8					
1984	10 07	21 42.47	-26 53.1	2.374	3.053	124.5	15.6	16.7
1984	10 17	21 41.94	-26 02.0					
1984	10 27	21 43.74	-25 00.7	2.597	3.030	106.3	18.4	16.9
1984	11 06	21 47.71	-23 51.0					
1984	11 16	21 53.60	-22 34.4	2.848	3.006	89.5	19.2	17.1

(2842) 1950 OD a,e,i = 2.62, 0.10, 12 Elements MPC 7664

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 41.15	-05 58.4	2.540	2.868	98.3	20.5	17.8
1984	06 19	22 44.83	-04 58.7					
1984	06 29	22 46.47	-04 07.7	2.285	2.872	115.4	18.6	17.5
1984	07 09	22 45.90	-03 26.8					
1984	07 19	22 43.03	-02 57.4	2.068	2.875	134.7	14.6	17.2
1984	07 29	22 37.88	-02 40.4					
1984	08 08	22 30.72	-02 36.0	1.920	2.876	156.0	8.3	16.9
1984	08 18	22 22.07	-02 43.1					
1984	08 28	22 12.71	-02 59.5	1.871	2.876	172.4	2.6	16.6
1984	09 07	22 03.55	-03 21.6					
1984	09 17	21 55.51	-03 45.2	1.934	2.874	154.6	8.6	16.9
1984	09 27	21 49.29	-04 06.6					
1984	10 07	21 45.36	-04 22.3	2.094	2.871	133.0	14.7	17.2
1984	10 17	21 43.91	-04 30.2					
1984	10 27	21 44.88	-04 28.8	2.323	2.866	113.4	18.6	17.5
1984	11 06	21 48.14	-04 17.5					
1984	11 16	21 53.42	-03 56.1	2.587	2.860	95.7	20.1	17.8

1983 LF a,e,i = 2.63, 0.09, 11 Elements MPC 8136

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 09	22 39.79	-04 34.6	2.239	2.586	-0.84	-8.0	16.8
1984	06 19	22 44.46	-03 17.3					
1984	06 29	22 46.94	-02 08.8	2.013	2.605	-0.95	-8.8	16.6
1984	07 09	22 47.03	-01 11.1					
1984	07 19	22 44.60	-00 26.1	1.822	2.624	-1.08	-9.7	16.3
1984	07 29	22 39.70	+00 04.5					
1984	08 08	22 32.59	+00 19.6	1.696	2.644	-1.21	-10.6	16.0
1984	08 18	22 23.89	+00 19.5					
1984	08 28	22 14.44	+00 06.1	1.663	2.663	-1.25	-10.9	15.8
1984	09 07	22 05.28	-00 16.9					
1984	09 17	21 57.39	-00 44.4	1.737	2.681	-1.18	-10.4	16.0
1984	09 27	21 51.50	-01 11.8					
1984	10 07	21 48.09	-01 34.5	1.906	2.700	-1.05	-9.4	16.4
1984	10 17	21 47.29	-01 49.6					
1984	10 27	21 49.00	-01 55.1	2.143	2.717	-0.91	-8.2	16.8
1984	11 06	21 53.04	-01 49.9					
1984	11 16	21 59.10	-01 33.8	2.418	2.734	-0.79	-7.2	17.1

(2803) Vilho a,e,i = 3.16, 0.16, 1 Elements MPC 7462

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 35.20	-10 21.1	2.845	3.202	101.3	18.1	18.2
1984	06 19	22 39.18	-10 00.5					
1984	06 29	22 41.41	-09 50.1	2.554	3.171	118.8	16.3	17.9
1984	07 09	22 41.70	-09 51.0					
1984	07 19	22 39.99	-10 03.4	2.308	3.140	138.3	12.4	17.6
1984	07 29	22 36.30	-10 26.9					
1984	08 08	22 30.81	-10 59.7	2.137	3.108	159.8	6.5	17.2
1984	08 18	22 23.97	-11 38.5					
1984	08 28	22 16.37	-12 19.4	2.068	3.077	176.8	1.1	16.8
1984	09 07	22 08.80	-12 57.9					
1984	09 17	22 02.07	-13 29.7	2.109	3.045	154.0	8.3	17.2
1984	09 27	21 56.83	-13 52.1					
1984	10 07	21 53.57	-14 03.1	2.249	3.013	132.3	14.2	17.5
1984	10 17	21 52.54	-14 02.2					
1984	10 27	21 53.78	-13 49.6	2.456	2.982	112.6	17.9	17.7
1984	11 06	21 57.20	-13 25.6					
1984	11 16	22 02.59	-12 51.2	2.698	2.951	94.9	19.5	18.0

1980 YH a,e,i = 3.16, 0.14, 18 Elements MPC 6894

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 38.29	-12 45.7	3.024	3.377	101.5	17.1	17.9
1984	06 19	22 42.39	-13 08.4					
1984	06 29	22 44.83	-13 44.7	2.736	3.353	119.4	15.3	17.7
1984	07 09	22 45.46	-14 35.2					
1984	07 19	22 44.20	-15 39.3	2.495	3.329	138.9	11.6	17.4
1984	07 29	22 41.05	-16 55.2					
1984	08 08	22 36.18	-18 19.0	2.336	3.304	159.5	6.2	17.1
1984	08 18	22 29.96	-19 45.6					
1984	08 28	22 22.95	-21 08.8	2.282	3.279	168.7	3.4	16.9
1984	09 07	22 15.85	-22 22.5					
1984	09 17	22 09.42	-23 22.2	2.342	3.253	150.2	8.8	17.1
1984	09 27	22 04.30	-24 05.0					
1984	10 07	22 01.00	-24 30.2	2.499	3.226	129.3	13.9	17.4
1984	10 17	21 59.78	-24 38.7					
1984	10 27	22 00.73	-24 31.9	2.721	3.199	110.0	17.0	17.6
1984	11 06	22 03.78	-24 11.7					
1984	11 16	22 08.76	-23 39.8	2.973	3.172	92.4	18.1	17.8

1979 SA12 a,e,i = 3.12, 0.18, 1 Elements MPC 7373

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 37.44	-09 19.2	2.619	2.975	100.4	19.6	17.9
1984	06 19	22 42.47	-08 49.7					
1984	06 29	22 45.72	-08 30.7	2.332	2.941	117.3	17.9	17.6
1984	07 09	22 46.97	-08 23.4					
1984	07 19	22 46.12	-08 28.6	2.086	2.906	136.3	14.0	17.2
1984	07 29	22 43.11	-08 46.3					
1984	08 08	22 38.10	-09 15.4	1.909	2.872	157.5	7.8	16.9
1984	08 18	22 31.50	-09 52.8					
1984	08 28	22 23.93	-10 34.7	1.829	2.839	179.3	0.3	16.2
1984	09 07	22 16.25	-11 15.7					
1984	09 17	22 09.33	-11 51.2	1.858	2.807	156.3	8.3	16.8
1984	09 27	22 03.94	-12 17.3					
1984	10 07	22 00.67	-12 31.5	1.983	2.776	134.4	14.9	17.0
1984	10 17	21 59.78	-12 32.9					
1984	10 27	22 01.33	-12 21.3	2.177	2.746	114.8	19.2	17.3
1984	11 06	22 05.22	-11 57.2					
1984	11 16	22 11.23	-11 21.3	2.408	2.718	97.4	21.1	17.6

(2913) 1931 TK a,e,i = 2.71, 0.20, 16 Elements MPC 8139

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 44.67	-28 43.0	2.262	2.715	105.5	21.1	18.4
1984	06 19	22 51.19	-29 07.8					
1984	06 29	22 55.46	-29 46.0	2.003	2.674	121.1	19.0	18.1
1984	07 09	22 57.13	-30 36.5					
1984	07 19	22 55.94	-31 36.5	1.789	2.632	137.8	15.0	17.7
1984	07 29	22 51.69	-32 40.6					
1984	08 08	22 44.52	-33 41.0	1.647	2.590	152.6	10.4	17.4
1984	08 18	22 34.98	-34 28.1					
1984	08 28	22 24.04	-34 53.2	1.596	2.548	155.0	9.6	17.3
1984	09 07	22 13.07	-34 50.0					
1984	09 17	22 03.44	-34 17.1	1.641	2.506	141.4	14.5	17.4
1984	09 27	21 56.22	-33 17.2					
1984	10 07	21 52.06	-31 55.1	1.766	2.465	123.8	19.7	17.6
1984	10 17	21 51.12	-30 16.3					
1984	10 27	21 53.25	-28 25.4	1.944	2.425	106.8	23.1	17.9
1984	11 06	21 58.15	-26 25.7					
1984	11 16	22 05.40	-24 19.5	2.148	2.387	91.4	24.5	18.1

1931 TY1 a,e,i = 2.23, 0.21, 6 Elements MPC 7468

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 10.69	-04 39.1	1.301	1.844	104.8	32.2	17.1
1984	06 19	22 22.08	-02 39.7					
1984	06 29	22 31.26	-00 46.6	1.103	1.813	117.5	29.8	16.7
1984	07 09	22 37.84	+00 55.9					
1984	07 19	22 41.46	+02 23.1	0.938	1.788	132.4	24.8	16.2
1984	07 29	22 41.81	+03 29.2					
1984	08 08	22 38.88	+04 08.3	0.818	1.771	150.1	16.6	15.7
1984	08 18	22 33.15	+04 16.8					
1984	08 28	22 25.66	+03 54.0	0.763	1.761	166.2	7.9	15.3
1984	09 07	22 18.00	+03 05.1					
1984	09 17	22 11.87	+02 01.0	0.785	1.759	158.2	12.3	15.5
1984	09 27	22 08.57	+00 53.9					
1984	10 07	22 08.88	-00 04.9	0.881	1.765	139.6	21.6	16.0
1984	10 17	22 12.88	-00 47.6					
1984	10 27	22 20.30	-01 10.6	1.032	1.778	122.8	28.0	16.5
1984	11 06	22 30.67	-01 12.5					
1984	11 16	22 43.43	-00 54.3	1.222	1.799	108.5	31.4	16.9

1983 HF a,e,i = 2.76, 0.14, 19 Elements MPC 8213

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 37.54	+13 17.8	2.364	2.597	91.5	23.0	17.5
1984	06 19	22 43.47	+14 45.5					
1984	06 29	22 47.42	+16 02.1	2.157	2.625	105.9	21.9	17.3
1984	07 09	22 49.20	+17 03.7					
1984	07 19	22 48.71	+17 46.6	1.972	2.653	121.9	19.0	17.0
1984	07 29	22 45.94	+18 06.6					
1984	08 08	22 41.08	+17 59.6	1.832	2.682	139.1	14.3	16.8
1984	08 18	22 34.63	+17 23.5					
1984	08 28	22 27.26	+16 18.3	1.767	2.711	153.8	9.5	16.6
1984	09 07	22 19.89	+14 47.9					
1984	09 17	22 13.41	+12 59.8	1.800	2.740	154.1	9.2	16.7
1984	09 27	22 08.55	+11 03.1					
1984	10 07	22 05.84	+09 07.3	1.933	2.768	139.3	13.6	17.0
1984	10 17	22 05.47	+07 20.3					
1984	10 27	22 07.44	+05 47.3	2.148	2.797	121.3	17.7	17.3
1984	11 06	22 11.62	+04 31.6					
1984	11 16	22 17.74	+03 34.1	2.419	2.825	103.9	19.9	17.6

1981 UN a,e,i = 2.23, 0.09, 2 Elements MPC 6629

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 09	22 29.90	-07 10.8	1.679	2.126	-1.45	-8.3	17.9
1984	06 19	22 38.69	-06 05.3					
1984	06 29	22 45.29	-05 11.1	1.451	2.107	-1.71	-10.0	17.5
1984	07 09	22 49.35	-04 31.3					
1984	07 19	22 50.57	-04 08.6	1.256	2.090	-2.04	-12.0	17.1
1984	07 29	22 48.71	-04 05.3					
1984	08 08	22 43.83	-04 22.5	1.114	2.074	-2.38	-13.9	16.6
1984	08 18	22 36.41	-04 58.3					
1984	08 28	22 27.38	-05 48.1	1.051	2.060	-2.53	-14.5	16.1
1984	09 07	22 18.14	-06 44.0					
1984	09 17	22 10.16	-07 37.2	1.082	2.048	-2.39	-13.4	16.5
1984	09 27	22 04.62	-08 20.3					
1984	10 07	22 02.29	-08 48.0	1.197	2.038	-2.06	-11.4	16.9
1984	10 17	22 03.35	-08 58.1					
1984	10 27	22 07.67	-08 50.3	1.371	2.031	-1.73	-9.7	17.3
1984	11 06	22 14.90	-08 25.0					
1984	11 16	22 24.61	-07 43.7	1.579	2.027	-1.47	-8.5	17.7

1981 WB1 a,e,i = 2.27, 0.16, 5 Elements MPC 6629

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 09	22 36.58	-02 57.5	2.047	2.411	-1.11	-5.0	19.0
1984	06 19	22 43.68	-02 02.5					
1984	06 29	22 48.84	-01 18.8	1.781	2.380	-1.30	-5.9	18.7
1984	07 09	22 51.75	-00 49.6					
1984	07 19	22 52.17	-00 37.7	1.546	2.347	-1.55	-7.1	18.2
1984	07 29	22 49.89	-00 45.9					
1984	08 08	22 44.94	-01 16.0	1.367	2.313	-1.79	-8.4	17.8
1984	08 18	22 37.70	-02 07.1					
1984	08 28	22 28.90	-03 15.8	1.272	2.278	-1.92	-9.0	17.3
1984	09 07	22 19.68	-04 35.0					
1984	09 17	22 11.35	-05 55.6	1.277	2.242	-1.85	-8.4	17.5
1984	09 27	22 05.01	-07 08.8					
1984	10 07	22 01.49	-08 07.9	1.375	2.206	-1.64	-7.0	17.8
1984	10 17	22 01.13	-08 49.1					
1984	10 27	22 03.94	-09 10.8	1.537	2.170	-1.42	-5.8	18.2
1984	11 06	22 09.70	-09 13.2					
1984	11 16	22 18.05	-08 57.3	1.731	2.135	-1.25	-5.1	18.5

1979 SL9 a,e,i = 3.14, 0.15, 1 Elements MPC 7137

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 09	22 44.59	-07 29.4	2.556	2.880	-0.80	-4.4	17.3
1984	06 19	22 49.65	-07 00.7					
1984	06 29	22 52.80	-06 43.8	2.328	2.908	-0.88	-5.0	17.1
1984	07 09	22 53.86	-06 40.0					
1984	07 19	22 52.77	-06 49.8	2.137	2.936	-0.98	-5.5	16.8
1984	07 29	22 49.56	-07 13.0					
1984	08 08	22 44.45	-07 48.0	2.013	2.966	-1.07	-6.0	16.6
1984	08 18	22 37.90	-08 31.5					
1984	08 28	22 30.55	-09 19.3	1.985	2.995	-1.11	-6.0	16.1
1984	09 07	22 23.19	-10 06.4					
1984	09 17	22 16.61	-10 48.1	2.068	3.025	-1.08	-5.6	16.6
1984	09 27	22 11.48	-11 20.7					
1984	10 07	22 08.24	-11 42.0	2.252	3.055	-0.98	-4.9	17.0
1984	10 17	22 07.12	-11 51.1					
1984	10 27	22 08.13	-11 48.1	2.510	3.085	-0.86	-4.3	17.3
1984	11 06	22 11.17	-11 33.5					
1984	11 16	22 16.02	-11 08.2	2.811	3.115	-0.76	-3.9	17.6

1983 DG a,e,i = 2.40, 0.13, 8 Elements MPC 7935

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 09	22 52.86	-13 56.4	1.941	2.322	-1.01	-9.5	18.4
1984	06 19	22 59.72	-13 15.2					
1984	06 29	23 04.18	-12 46.4	1.738	2.351	-1.14	-10.9	18.1
1984	07 09	23 05.92	-12 31.2					
1984	07 19	23 04.76	-12 29.7	1.566	2.380	-1.32	-12.3	17.8
1984	07 29	23 00.61	-12 40.8					
1984	08 08	22 53.66	-13 01.8	1.453	2.409	-1.50	-13.2	17.5
1984	08 18	22 44.53	-13 27.7					
1984	08 28	22 34.16	-13 53.0	1.430	2.438	-1.58	-12.9	17.1
1984	09 07	22 23.81	-14 11.8					
1984	09 17	22 14.69	-14 19.7	1.512	2.466	-1.50	-11.5	17.6
1984	09 27	22 07.74	-14 14.9					
1984	10 07	22 03.53	-13 57.0	1.688	2.493	-1.31	-9.9	18.0
1984	10 17	22 02.22	-13 26.9					
1984	10 27	22 03.67	-12 45.7	1.930	2.519	-1.10	-8.5	18.4
1984	11 06	22 07.63	-11 54.8					
1984	11 16	22 13.74	-10 55.0	2.209	2.544	-0.93	-7.5	18.8

(2909) Hoshi-no-ie a,e,i = 3.03, 0.11, 11 Elements MPC 8063

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 42.32	-19 07.4	2.396	2.802	102.8	20.7	16.6
1984	06 19	22 48.95	-19 27.0					
1984	06 29	22 53.66	-20 01.2	2.142	2.784	119.2	18.6	16.3
1984	07 09	22 56.19	-20 50.2					
1984	07 19	22 56.39	-21 52.7	1.934	2.768	137.3	14.4	16.0
1984	07 29	22 54.15	-23 05.6					
1984	08 08	22 49.59	-24 23.6	1.798	2.753	155.4	8.8	15.7
1984	08 18	22 43.13	-25 39.1					
1984	08 28	22 35.45	-26 44.4	1.757	2.739	163.0	6.2	15.5
1984	09 07	22 27.51	-27 32.2					
1984	09 17	22 20.34	-27 58.2	1.818	2.726	148.6	11.1	15.7
1984	09 27	22 14.80	-28 01.3					
1984	10 07	22 11.51	-27 42.4	1.967	2.715	129.6	16.5	16.0
1984	10 17	22 10.76	-27 04.7					
1984	10 27	22 12.54	-26 11.1	2.177	2.706	111.6	20.0	16.3
1984	11 06	22 16.72	-25 04.5					
1984	11 16	22 23.01	-23 47.3	2.421	2.698	95.3	21.4	16.6

1980 VR1 a,e,i = 2.88, 0.03, 18 Elements MPC 8061

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 53.53	-29 46.8	2.504	2.920	103.9	19.7	17.8
1984	06 19	22 59.80	-30 29.3					
1984	06 29	23 03.93	-31 25.4	2.275	2.915	119.6	17.6	17.5
1984	07 09	23 05.63	-32 33.5					
1984	07 19	23 04.69	-33 50.1	2.094	2.910	135.8	14.1	17.2
1984	07 29	23 01.02	-35 09.9					
1984	08 08	22 54.76	-36 25.1	1.986	2.904	149.4	10.3	17.0
1984	08 18	22 46.42	-37 27.3					
1984	08 28	22 36.80	-38 08.6	1.970	2.899	151.6	9.5	17.0
1984	09 07	22 27.02	-38 23.7					
1984	09 17	22 18.22	-38 11.0	2.051	2.893	140.0	12.9	17.2
1984	09 27	22 11.30	-37 32.4					
1984	10 07	22 06.88	-36 31.7	2.213	2.887	123.5	16.8	17.4
1984	10 17	22 05.17	-35 13.7					
1984	10 27	22 06.11	-33 42.9	2.431	2.882	106.9	19.3	17.7
1984	11 06	22 09.50	-32 02.6					
1984	11 16	22 15.01	-30 15.6	2.680	2.876	91.2	20.1	17.9

(2962) 1940 YF a,e,i = 2.57, 0.04, 16 Elements MPC 8387

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 53.53	-26 57.0	2.216	2.637	103.0	22.0	16.8
1984	06 19	23 00.62	-27 33.4					
1984	06 29	23 05.43	-28 24.9	1.999	2.642	118.7	19.7	16.6
1984	07 09	23 07.64	-29 30.7					
1984	07 19	23 07.00	-30 47.4	1.825	2.647	135.4	15.6	16.3
1984	07 29	23 03.39	-32 09.8					
1984	08 08	22 56.93	-33 29.6	1.721	2.651	150.5	10.9	16.0
1984	08 18	22 48.16	-34 37.3					
1984	08 28	22 37.97	-35 23.9	1.708	2.655	154.3	9.5	16.0
1984	09 07	22 27.61	-35 43.1					
1984	09 17	22 18.36	-35 32.8	1.792	2.658	142.2	13.4	16.2
1984	09 27	22 11.21	-34 55.2					
1984	10 07	22 06.79	-33 54.6	1.957	2.661	125.1	17.9	16.5
1984	10 17	22 05.29	-32 36.2					
1984	10 27	22 06.61	-31 04.8	2.179	2.663	108.2	20.8	16.8
1984	11 06	22 10.48	-29 23.9					
1984	11 16	22 16.54	-27 36.1	2.431	2.664	92.5	21.8	17.1

(2984) 1981 YD a,e,i = 2.47, 0.13, 3 Elements MPC 8399

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 55.26	-10 04.0	2.486	2.791	96.6	21.2	18.2
1984	06 19	23 00.97	-09 43.7					
1984	06 29	23 04.81	-09 35.8	2.221	2.785	113.3	19.6	17.9
1984	07 09	23 06.52	-09 41.7					
1984	07 19	23 05.93	-10 02.1	1.989	2.776	132.2	15.7	17.6
1984	07 29	23 02.93	-10 36.8					
1984	08 08	22 57.61	-11 23.7	1.821	2.766	153.6	9.4	17.2
1984	08 18	22 50.32	-12 18.9					
1984	08 28	22 41.70	-13 17.0	1.746	2.753	174.7	1.9	16.8
1984	09 07	22 32.64	-14 11.4					
1984	09 17	22 24.15	-14 56.3	1.781	2.739	158.1	7.9	17.1
1984	09 27	22 17.15	-15 27.6					
1984	10 07	22 12.30	-15 43.2	1.916	2.723	135.8	14.8	17.4
1984	10 17	22 09.96	-15 42.9					
1984	10 27	22 10.21	-15 27.6	2.122	2.705	115.7	19.3	17.7
1984	11 06	22 12.95	-14 58.7					
1984	11 16	22 17.92	-14 17.7	2.365	2.685	97.8	21.4	18.0

1934 CY a,e,i = 2.67, 0.13, 10 Elements MPC 6944

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	23 01.08	-01 31.7	2.789	3.002	92.0	19.8	19.1
1984	06 19	23 05.72	-00 27.0					
1984	06 29	23 08.60	+00 29.9	2.515	2.997	108.5	18.8	18.8
1984	07 09	23 09.52	+01 17.3					
1984	07 19	23 08.34	+01 53.6	2.269	2.991	126.9	15.8	18.5
1984	07 29	23 04.99	+02 17.2					
1984	08 08	22 59.54	+02 26.7	2.080	2.983	147.2	10.6	18.2
1984	08 18	22 52.33	+02 22.0					
1984	08 28	22 43.89	+02 04.0	1.981	2.974	167.1	4.3	17.9
1984	09 07	22 34.99	+01 35.4					
1984	09 17	22 26.52	+01 00.2	1.991	2.963	162.0	6.0	18.0
1984	09 27	22 19.28	+00 23.2					
1984	10 07	22 13.91	-00 10.9	2.108	2.951	140.8	12.4	18.3
1984	10 17	22 10.78	-00 38.2					
1984	10 27	22 10.03	-00 56.2	2.307	2.937	120.4	17.0	18.5
1984	11 06	22 11.62	-01 03.2					
1984	11 16	22 15.36	-00 58.7	2.553	2.922	101.9	19.3	18.8

1982 BM1 a,e,i = 2.92, 0.04, 2 Elements MPC 6708

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 58.10	-09 27.3	2.724	3.001	95.8	19.7	18.0
1984	06 19	23 03.38	-09 02.6					
1984	06 29	23 06.88	-08 49.1	2.467	3.007	112.6	18.2	17.8
1984	07 09	23 08.41	-08 47.8					
1984	07 19	23 07.84	-08 59.1	2.243	3.014	131.4	14.6	17.5
1984	07 29	23 05.13	-09 22.7					
1984	08 08	23 00.39	-09 57.0	2.083	3.019	152.5	8.9	17.2
1984	08 18	22 53.97	-10 38.9					
1984	08 28	22 46.41	-11 24.1	2.017	3.024	174.5	1.8	16.8
1984	09 07	22 38.48	-12 07.6					
1984	09 17	22 31.01	-12 44.5	2.062	3.029	160.7	6.3	17.1
1984	09 27	22 24.74	-13 11.5					
1984	10 07	22 20.25	-13 26.1	2.212	3.033	138.5	12.6	17.4
1984	10 17	22 17.88	-13 27.8					
1984	10 27	22 17.73	-13 16.8	2.439	3.037	118.2	16.8	17.7
1984	11 06	22 19.76	-12 53.9					
1984	11 16	22 23.77	-12 20.1	2.711	3.040	99.9	18.7	18.0

1953 EE a,e,i = 2.86, 0.20, 16 Elements MPC 6894

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	23 18.67	-16 38.0	3.148	3.372	93.9	17.5	18.0
1984	06 19	23 23.04	-16 23.2					
1984	06 29	23 25.72	-16 18.3	2.859	3.358	110.9	16.4	17.8
1984	07 09	23 26.53	-16 23.8					
1984	07 19	23 25.31	-16 38.8	2.601	3.342	129.6	13.6	17.5
1984	07 29	23 21.97	-17 02.2					
1984	08 08	23 16.56	-17 31.3	2.408	3.324	149.8	8.8	17.2
1984	08 18	23 09.35	-18 02.2					
1984	08 28	23 00.79	-18 30.6	2.310	3.304	167.8	3.7	16.9
1984	09 07	22 51.58	-18 51.8					
1984	09 17	22 42.54	-19 02.1	2.326	3.282	158.7	6.4	17.0
1984	09 27	22 34.44	-18 59.3					
1984	10 07	22 27.95	-18 42.8	2.450	3.259	137.7	11.9	17.3
1984	10 17	22 23.48	-18 13.3					
1984	10 27	22 21.24	-17 32.3	2.655	3.234	117.3	15.9	17.5
1984	11 06	22 21.22	-16 41.2					
1984	11 16	22 23.29	-15 41.5	2.908	3.207	98.5	17.8	17.8

(2926) 1980 KG a,e,i = 2.27, 0.12, 3 Elements MPC 8146

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	22 56.36	-02 21.8	1.800	2.119	93.4	28.6	18.1
1984	06 19	23 05.86	-01 06.9					
1984	06 29	23 13.24	-00 04.3	1.604	2.144	107.7	26.9	17.8
1984	07 09	23 18.18	+00 43.2					
1984	07 19	23 20.40	+01 12.8	1.426	2.169	124.5	22.7	17.5
1984	07 29	23 19.68	+01 21.9					
1984	08 08	23 15.97	+01 08.5	1.290	2.196	144.5	15.6	17.1
1984	08 18	23 09.61	+00 32.8					
1984	08 28	23 01.26	-00 22.1	1.228	2.223	166.9	5.9	16.8
1984	09 07	22 52.04	-01 29.9					
1984	09 17	22 43.26	-02 41.6	1.261	2.250	166.5	6.0	16.9
1984	09 27	22 36.09	-03 48.5					
1984	10 07	22 31.41	-04 43.3	1.391	2.278	144.1	14.9	17.3
1984	10 17	22 29.63	-05 21.6					
1984	10 27	22 30.77	-05 42.0	1.598	2.305	123.9	21.0	17.8
1984	11 06	22 34.66	-05 44.4					
1984	11 16	22 40.93	-05 30.0	1.851	2.331	106.3	24.0	18.2

1980 SD a,e,i = 2.59, 0.18, 13 Elements MPC 7779

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 09	23 05.23	-21 43.6	1.727	2.132	98.7	28.1	18.5
1984	06 19	23 16.01	-21 13.6					
1984	06 29	23 24.37	-20 56.1	1.535	2.142	112.6	26.0	18.2
1984	07 09	23 29.94	-20 51.9					
1984	07 19	23 32.38	-21 00.5	1.369	2.157	128.9	21.5	17.8
1984	07 29	23 31.40	-21 19.7					
1984	08 08	23 26.92	-21 44.5	1.252	2.176	147.4	14.6	17.5
1984	08 18	23 19.32	-22 07.5					
1984	08 28	23 09.40	-22 20.3	1.210	2.198	163.6	7.4	17.3
1984	09 07	22 58.51	-22 15.3					
1984	09 17	22 48.19	-21 48.2	1.263	2.224	157.3	10.1	17.5
1984	09 27	22 39.75	-20 59.1					
1984	10 07	22 34.13	-19 50.8	1.406	2.253	138.3	17.2	17.9
1984	10 17	22 31.66	-18 27.8					
1984	10 27	22 32.28	-16 54.1	1.620	2.284	119.9	22.2	18.4
1984	11 06	22 35.74	-15 12.5					
1984	11 16	22 41.60	-13 25.3	1.879	2.318	103.5	24.5	18.8

1981 WR a,e,i = 2.28, 0.08, 4 Elements MPC 6629

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 09	23 01.63	-08 39.1	2.073	2.381	-1.08	-5.6	18.6
1984	06 19	23 10.49	-08 07.2					
1984	06 29	23 17.52	-07 48.8	1.821	2.366	-1.24	-6.7	18.3
1984	07 09	23 22.42	-07 46.1					
1984	07 19	23 24.90	-08 01.1	1.593	2.351	-1.46	-8.1	17.9
1984	07 29	23 24.68	-08 34.7					
1984	08 08	23 21.62	-09 26.4	1.416	2.335	-1.70	-9.4	17.5
1984	08 18	23 15.89	-10 32.8					
1984	08 28	23 07.96	-11 47.9	1.318	2.318	-1.87	-9.8	17.1
1984	09 07	22 58.78	-13 02.7					
1984	09 17	22 49.58	-14 07.9	1.320	2.301	-1.86	-8.9	17.2
1984	09 27	22 41.62	-14 56.3					
1984	10 07	22 35.93	-15 23.4	1.418	2.283	-1.68	-7.4	17.5
1984	10 17	22 33.12	-15 28.5					
1984	10 27	22 33.35	-15 12.7	1.588	2.265	-1.44	-6.3	17.9
1984	11 06	22 36.55	-14 38.3					
1984	11 16	22 42.39	-13 47.7	1.800	2.247	-1.23	-5.7	18.2

(2880) Nihondaira a,e,i = 2.20, 0.17, 6 Elements MPC 7843

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 20.21	-13 39.9	1.241	1.867	111.2	30.5	16.5
1984	07 09	23 28.22	-13 24.4					
1984	07 19	23 33.00	-13 26.8	1.095	1.889	127.0	25.5	16.2
1984	07 29	23 34.17	-13 47.3					
1984	08 08	23 31.52	-14 23.2	0.989	1.915	146.0	17.2	15.8
1984	08 18	23 25.32	-15 08.2					
1984	08 28	23 16.32	-15 53.3	0.949	1.945	166.2	7.1	15.5
1984	09 07	23 05.93	-16 28.0					
1984	09 17	22 55.89	-16 43.7	0.996	1.978	162.5	8.8	15.7
1984	09 27	22 47.73	-16 36.8					
1984	10 07	22 42.54	-16 07.1	1.130	2.013	142.0	17.8	16.2
1984	10 17	22 40.75	-15 17.7					
1984	10 27	22 42.27	-14 12.3	1.330	2.051	123.3	23.9	16.7
1984	11 06	22 46.79	-12 53.9					
1984	11 16	22 53.84	-11 25.2	1.574	2.089	107.0	26.9	17.2
1984	11 26	23 02.98	-09 48.2					
1984	12 06	23 13.82	-08 04.5	1.842	2.129	92.7	27.5	17.6

1982 BJ1 a,e,i = 2.60, 0.20, 13 Elements MPC 6830

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 35.01	-07 54.1	2.619	3.056	105.8	18.7	18.4
1984	07 09	23 38.40	-08 16.9					
1984	07 19	23 39.88	-08 55.3	2.351	3.038	124.0	16.1	18.1
1984	07 29	23 39.28	-09 49.5					
1984	08 08	23 36.54	-10 58.4	2.136	3.017	144.2	11.3	17.8
1984	08 18	23 31.75	-12 18.8					
1984	08 28	23 25.20	-13 45.8	2.007	2.994	164.8	5.1	17.5
1984	09 07	23 17.47	-15 12.4					
1984	09 17	23 09.33	-16 31.3	1.988	2.968	164.4	5.2	17.4
1984	09 27	23 01.65	-17 36.2					
1984	10 07	22 55.24	-18 22.7	2.079	2.941	143.2	11.7	17.7
1984	10 17	22 50.71	-18 49.2					
1984	10 27	22 48.42	-18 56.2	2.256	2.911	122.4	16.8	18.0
1984	11 06	22 48.50	-18 45.2					
1984	11 16	22 50.87	-18 18.4	2.484	2.880	103.5	19.5	18.2
1984	11 26	22 55.36	-17 38.1					
1984	12 06	23 01.74	-16 46.2	2.730	2.847	86.6	20.2	18.4

1979 MK2 a,e,i = 2.70, 0.22, 7 Elements MPC 8149

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 40.79	-06 51.6	2.575	2.989	104.0	19.3	18.4
1984	07 09	23 43.82	-07 01.1					
1984	07 19	23 44.84	-07 24.9	2.356	3.023	122.3	16.5	18.1
1984	07 29	23 43.72	-08 03.0					
1984	08 08	23 40.44	-08 53.9	2.187	3.056	142.7	11.6	17.9
1984	08 18	23 35.19	-09 54.9					
1984	08 28	23 28.33	-11 01.5	2.101	3.086	164.4	5.0	17.6
1984	09 07	23 20.48	-12 07.8					
1984	09 17	23 12.40	-13 07.9	2.125	3.115	167.7	3.9	17.6
1984	09 27	23 04.89	-13 56.8					
1984	10 07	22 58.66	-14 31.0	2.261	3.141	146.1	10.2	18.0
1984	10 17	22 54.23	-14 49.1					
1984	10 27	22 51.86	-14 51.5	2.488	3.165	125.0	14.9	18.3
1984	11 06	22 51.63	-14 39.2					
1984	11 16	22 53.45	-14 14.0	2.773	3.187	105.8	17.4	18.6
1984	11 26	22 57.13	-13 37.6					
1984	12 06	23 02.48	-12 51.5	3.082	3.206	88.2	17.9	18.9

1942 RN a,e,i = 2.61, 0.14, 10 Elements MPC 7767

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 32.41	+00 21.5	2.384	2.796	103.1	20.7	16.2
1984	07 09	23 36.87	+00 34.1					
1984	07 19	23 39.41	+00 31.4	2.113	2.771	120.5	18.4	15.9
1984	07 29	23 39.84	+00 11.4					
1984	08 08	23 38.02	-00 27.3	1.886	2.744	140.3	13.6	15.5
1984	08 18	23 34.01	-01 24.3					
1984	08 28	23 28.07	-02 37.5	1.736	2.717	162.7	6.3	15.1
1984	09 07	23 20.77	-04 02.1					
1984	09 17	23 12.93	-05 31.0	1.688	2.688	173.2	2.5	14.8
1984	09 27	23 05.48	-06 56.3					
1984	10 07	22 59.32	-08 10.4	1.750	2.659	149.4	11.0	15.2
1984	10 17	22 55.16	-09 08.3					
1984	10 27	22 53.39	-09 47.3	1.902	2.629	127.6	17.4	15.5
1984	11 06	22 54.16	-10 06.7					
1984	11 16	22 57.39	-10 07.5	2.112	2.599	108.3	21.2	15.8
1984	11 26	23 02.87	-09 51.3					
1984	12 06	23 10.36	-09 19.9	2.348	2.568	91.4	22.6	16.0

(2957) 1934 CB1 a,e,i = 3.02, 0.09, 9 Elements MPC 8286

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 36.75	+08 18.7	2.439	2.782	98.8	21.2	16.1
1984	07 09	23 41.22	+09 24.0					
1984	07 19	23 43.76	+10 17.6	2.205	2.792	115.1	19.2	15.9
1984	07 29	23 44.18	+10 57.2					
1984	08 08	23 42.41	+11 20.2	2.007	2.802	133.4	15.3	15.6
1984	08 18	23 38.52	+11 24.5					
1984	08 28	23 32.82	+11 08.8	1.876	2.814	153.0	9.4	15.3
1984	09 07	23 25.87	+10 33.8					
1984	09 17	23 18.44	+09 42.6	1.838	2.826	167.0	4.6	15.1
1984	09 27	23 11.39	+08 40.3					
1984	10 07	23 05.54	+07 33.8	1.907	2.840	154.1	8.8	15.4
1984	10 17	23 01.51	+06 29.8					
1984	10 27	22 59.66	+05 34.0	2.073	2.854	134.0	14.5	15.7
1984	11 06	23 00.12	+04 50.3					
1984	11 16	23 02.80	+04 20.7	2.310	2.869	114.8	18.2	16.0
1984	11 26	23 07.54	+04 05.9					
1984	12 06	23 14.10	+04 05.6	2.587	2.884	97.4	19.8	16.3

1982 FJ a,e,i = 3.20, 0.06, 16 Elements MPC 6879

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 29	23 52.48	-08 17.4	2.944	3.307	-0.52	-6.9	18.1
1984	07 09	23 54.85	-07 51.2					
1984	07 19	23 55.37	-07 34.3	2.690	3.316	-0.58	-7.6	17.9
1984	07 29	23 53.90	-07 26.9					
1984	08 08	23 50.42	-07 28.1	2.483	3.324	-0.64	-8.2	17.6
1984	08 18	23 45.04	-07 36.5					
1984	08 28	23 38.06	-07 49.7	2.357	3.332	-0.69	-8.6	17.4
1984	09 07	23 29.99	-08 04.6					
1984	09 17	23 21.51	-08 17.7	2.340	3.339	-0.71	-8.5	17.2
1984	09 27	23 13.35	-08 25.8					
1984	10 07	23 06.22	-08 26.3	2.438	3.346	-0.68	-8.0	17.5
1984	10 17	23 00.66	-08 17.6					
1984	10 27	22 57.02	-07 59.3	2.636	3.353	-0.62	-7.3	17.8
1984	11 06	22 55.43	-07 31.2					
1984	11 16	22 55.86	-06 53.9	2.900	3.359	-0.55	-6.6	18.1
1984	11 26	22 58.20	-06 08.1					
1984	12 06	23 02.25	-05 14.5	3.198	3.364	-0.49	-6.0	18.4

1974 SO2 a,e,i = 2.24, 0.09, 5 Elements MPC 7362

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 43.84	+04 55.6	2.072	2.442	98.7	24.3	17.6
1984	07 09	23 49.42	+05 58.3					
1984	07 19	23 52.88	+06 48.6	1.832	2.439	114.7	22.2	17.3
1984	07 29	23 53.93	+07 23.8					
1984	08 08	23 52.34	+07 41.0	1.624	2.434	133.3	17.6	16.9
1984	08 18	23 48.08	+07 37.9					
1984	08 28	23 41.36	+07 13.1	1.477	2.427	154.4	10.3	16.5
1984	09 07	23 32.78	+06 27.5					
1984	09 17	23 23.31	+05 25.2	1.421	2.419	171.4	3.6	16.2
1984	09 27	23 14.09	+04 13.2					
1984	10 07	23 06.31	+03 00.3	1.470	2.409	154.2	10.4	16.5
1984	10 17	23 00.83	+01 54.9					
1984	10 27	22 58.12	+01 02.7	1.611	2.397	132.5	17.8	16.8
1984	11 06	22 58.35	+00 27.6					
1984	11 16	23 01.37	+00 10.6	1.816	2.384	113.1	22.4	17.2
1984	11 26	23 06.90	+00 11.3					
1984	12 06	23 14.64	+00 28.8	2.052	2.369	96.2	24.4	17.5

(2924) 1977 DJ2 a,e,i = 2.89, 0.05, 3 Elements MPC 8146

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 45.39	-04 19.7	2.367	2.764	102.0	21.1	17.6
1984	07 09	23 50.43	-04 03.1					
1984	07 19	23 53.49	-04 00.2	2.130	2.770	119.1	18.7	17.3
1984	07 29	23 54.38	-04 11.9					
1984	08 08	23 52.99	-04 38.4	1.934	2.776	138.5	14.0	17.0
1984	08 18	23 49.37	-05 18.1					
1984	08 28	23 43.78	-06 08.4	1.811	2.783	160.2	7.1	16.7
1984	09 07	23 36.75	-07 04.3					
1984	09 17	23 29.06	-07 59.7	1.788	2.790	174.1	2.1	16.4
1984	09 27	23 21.58	-08 48.7					
1984	10 07	23 15.21	-09 25.9	1.874	2.798	152.3	9.6	16.8
1984	10 17	23 10.60	-09 48.3					
1984	10 27	23 08.15	-09 54.7	2.054	2.806	130.8	15.5	17.2
1984	11 06	23 08.04	-09 45.1					
1984	11 16	23 10.18	-09 20.8	2.297	2.815	111.5	19.1	17.5
1984	11 26	23 14.42	-08 43.5					
1984	12 06	23 20.52	-07 54.6	2.574	2.824	94.2	20.4	17.8

6611 P-L a,e,i = 2.52, 0.22, 3 Elements MPC 7944

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 37.08	-00 32.9	2.000	2.431	102.4	24.1	19.0
1984	07 09	23 44.00	+00 10.4					
1984	07 19	23 49.00	+00 40.6	1.728	2.383	118.3	22.1	18.6
1984	07 29	23 51.79	+00 55.1					
1984	08 08	23 52.07	+00 51.5	1.492	2.335	136.6	17.4	18.1
1984	08 18	23 49.72	+00 28.5					
1984	08 28	23 44.79	-00 13.7	1.320	2.288	157.9	9.5	17.6
1984	09 07	23 37.75	-01 12.3					
1984	09 17	23 29.47	-02 21.3	1.237	2.242	178.1	0.9	17.0
1984	09 27	23 21.10	-03 32.1					
1984	10 07	23 13.95	-04 35.4	1.255	2.198	154.2	11.4	17.5
1984	10 17	23 09.04	-05 23.7					
1984	10 27	23 07.03	-05 52.5	1.358	2.156	132.3	19.9	17.8
1984	11 06	23 08.17	-05 59.7					
1984	11 16	23 12.37	-05 46.0	1.519	2.117	113.5	25.4	18.1
1984	11 26	23 19.35	-05 12.7					
1984	12 06	23 28.80	-04 21.8	1.708	2.081	97.5	28.0	18.4

1983 EA a,e,i = 1.89, 0.13, 24 Elements MPC 8136

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 29	00 17.35	-22 59.2	1.586	2.049	-1.01	-19.6	19.2
1984	07 09	00 24.98	-22 30.1					
1984	07 19	00 29.72	-22 12.8	1.360	2.024	-1.22	-23.6	18.8
1984	07 29	00 30.96	-22 06.4					
1984	08 08	00 28.05	-22 07.7	1.160	1.996	-1.58	-27.6	18.3
1984	08 18	00 20.51	-22 10.2					
1984	08 28	00 08.21	-22 04.4	1.014	1.966	-1.98	-29.9	17.8
1984	09 07	23 51.88	-21 37.5					
1984	09 17	23 33.31	-20 38.6	0.954	1.934	-2.15	-28.9	17.5
1984	09 27	23 14.94	-19 03.9					
1984	10 07	22 59.27	-16 57.7	0.995	1.901	-1.89	-26.1	17.8
1984	10 17	22 47.87	-14 30.1					
1984	10 27	22 41.29	-11 51.2	1.120	1.868	-1.46	-23.4	18.2
1984	11 06	22 39.39	-09 07.5					
1984	11 16	22 41.57	-06 22.5	1.293	1.834	-1.12	-21.3	18.6
1984	11 26	22 47.19	-03 37.4					
1984	12 06	22 55.68	-00 51.7	1.485	1.800	-0.90	-19.6	18.9

1983 CB3 a,e,i = 2.26, 0.13, 6 Elements MPC 7935

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 29	23 58.37	+03 17.8	1.927	2.271	-1.01	-8.1	18.3
1984	07 09	00 04.93	+04 34.6					
1984	07 19	00 09.22	+05 39.4	1.722	2.299	-1.16	-8.9	18.0
1984	07 29	00 10.93	+06 30.2					
1984	08 08	00 09.80	+07 04.3	1.544	2.328	-1.36	-10.1	17.7
1984	08 18	00 05.76	+07 19.8					
1984	08 28	23 58.99	+07 15.2	1.420	2.355	-1.54	-11.4	17.4
1984	09 07	23 50.08	+06 50.9					
1984	09 17	23 40.01	+06 10.5	1.382	2.380	-1.61	-12.2	17.1
1984	09 27	23 30.01	+05 19.6					
1984	10 07	23 21.31	+04 26.4	1.449	2.405	-1.51	-11.8	17.4
1984	10 17	23 14.85	+03 38.3					
1984	10 27	23 11.16	+03 01.0	1.611	2.428	-1.31	-10.4	17.8
1984	11 06	23 10.39	+02 38.2					
1984	11 16	23 12.41	+02 31.1	1.842	2.449	-1.11	-8.9	18.3
1984	11 26	23 16.92	+02 39.5					
1984	12 06	23 23.62	+03 02.7	2.111	2.468	-0.95	-7.6	18.6

1940 WL a,e,i = 3.15, 0.11, 4 Elements MPC 8138

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	23 52.45	-04 36.9	2.478	2.845	100.5	20.6	17.2
1984	07 09	23 58.21	-04 21.4					
1984	07 19	00 02.16	-04 19.1	2.220	2.833	117.2	18.6	16.9
1984	07 29	00 04.10	-04 30.8					
1984	08 08	00 03.87	-04 56.9	2.003	2.822	136.0	14.4	16.6
1984	08 18	00 01.47	-05 36.2					
1984	08 28	23 57.04	-06 26.2	1.855	2.813	157.0	8.1	16.3
1984	09 07	23 50.98	-07 22.3					
1984	09 17	23 43.98	-08 18.8	1.804	2.806	173.9	2.2	15.9
1984	09 27	23 36.84	-09 09.5					
1984	10 07	23 30.45	-09 48.7	1.861	2.800	155.2	8.6	16.3
1984	10 17	23 25.55	-10 12.7					
1984	10 27	23 22.63	-10 19.9	2.014	2.796	133.8	14.9	16.6
1984	11 06	23 21.97	-10 10.2					
1984	11 16	23 23.59	-09 44.9	2.236	2.793	114.4	18.8	16.9
1984	11 26	23 27.36	-09 05.6					
1984	12 06	23 33.08	-08 14.0	2.496	2.793	97.0	20.5	17.2

1982 BS1 a,e,i = 2.45, 0.15, 7 Elements MPC 6817

Date	ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984	06 29	23 50.10	-01 31.7	2.153	2.533	-1.05	-4.6	18.7
1984	07 09	23 57.01	-01 12.4					
1984	07 19	00 02.07	-01 08.5	1.884	2.502	-1.23	-5.5	18.4
1984	07 29	00 04.99	-01 22.1					
1984	08 08	00 05.51	-01 55.0	1.649	2.469	-1.44	-6.6	17.9
1984	08 18	00 03.48	-02 47.4					
1984	08 28	23 58.95	-03 57.6	1.479	2.436	-1.64	-7.5	17.5
1984	09 07	23 52.30	-05 21.1					
1984	09 17	23 44.28	-06 50.0	1.400	2.403	-1.73	-7.6	17.0
1984	09 27	23 35.90	-08 15.2					
1984	10 07	23 28.35	-09 27.2	1.426	2.370	-1.66	-6.7	17.4
1984	10 17	23 22.64	-10 19.5					
1984	10 27	23 19.43	-10 48.9	1.544	2.336	-1.48	-5.5	17.7
1984	11 06	23 19.07	-10 54.9					
1984	11 16	23 21.56	-10 39.1	1.723	2.304	-1.29	-4.7	18.0
1984	11 26	23 26.68	-10 04.0					
1984	12 06	23 34.17	-09 12.0	1.934	2.272	-1.13	-4.3	18.3

(2905) 1982 BZ2 a,e,i = 2.80, 0.10, 9 Elements MPC 8059

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	00 08.05	-04 38.5	2.565	2.871	96.9	20.6	17.8
1984	07 09	00 12.74	-04 05.1					
1984	07 19	00 15.50	-03 42.7	2.325	2.889	113.9	18.8	17.6
1984	07 29	00 16.13	-03 32.2					
1984	08 08	00 14.48	-03 33.6	2.119	2.907	133.1	14.8	17.3
1984	08 18	00 10.56	-03 46.0					
1984	08 28	00 04.54	-04 07.8	1.980	2.925	154.7	8.5	17.0
1984	09 07	23 56.86	-04 35.6					
1984	09 17	23 48.22	-05 05.2	1.938	2.942	176.2	1.3	16.6
1984	09 27	23 39.47	-05 31.9					
1984	10 07	23 31.49	-05 51.4	2.009	2.958	157.6	7.4	17.0
1984	10 17	23 25.04	-06 00.6					
1984	10 27	23 20.59	-05 57.9	2.183	2.973	135.3	13.6	17.4
1984	11 06	23 18.42	-05 42.6					
1984	11 16	23 18.52	-05 15.4	2.431	2.987	115.1	17.4	17.7
1984	11 26	23 20.76	-04 37.0					
1984	12 06	23 24.96	-03 48.6	2.719	3.001	96.9	19.0	18.0

1980 LE a,e,i = 2.38, 0.16, 5 Elements MPC 7839

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	00 02.28	+02 48.2	1.763	2.116	95.3	28.6	18.0
1984	07 09	00 10.83	+04 16.2					
1984	07 19	00 17.13	+05 32.3	1.574	2.144	109.9	26.5	17.8
1984	07 29	00 20.83	+06 34.3					
1984	08 08	00 21.63	+07 19.8	1.407	2.175	127.1	21.8	17.4
1984	08 18	00 19.36	+07 46.4					
1984	08 28	00 14.08	+07 52.4	1.287	2.207	147.6	14.2	17.1
1984	09 07	00 06.27	+07 37.4					
1984	09 17	23 56.88	+07 04.4	1.246	2.241	169.3	4.8	16.8
1984	09 27	23 47.13	+06 18.8					
1984	10 07	23 38.38	+05 28.6	1.303	2.276	162.3	7.7	17.0
1984	10 17	23 31.72	+04 42.2					
1984	10 27	23 27.81	+04 05.9	1.456	2.311	140.4	15.9	17.5
1984	11 06	23 26.88	+03 44.0					
1984	11 16	23 28.83	+03 38.2	1.681	2.346	120.7	21.2	18.0
1984	11 26	23 33.37	+03 48.3					
1984	12 06	23 40.17	+04 13.3	1.949	2.380	103.5	23.7	18.4

1980 TB5 a,e,i = 2.57, 0.18, 15 Elements MPC 7941

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	00 23.38	-00 41.2	2.274	2.520	91.9	23.8	17.3
1984	07 09	00 29.16	+00 32.2					
1984	07 19	00 32.85	+01 36.3	2.057	2.559	107.8	22.2	17.1
1984	07 29	00 34.18	+02 29.9					
1984	08 08	00 32.91	+03 12.0	1.864	2.596	126.3	18.3	16.8
1984	08 18	00 28.95	+03 41.8					
1984	08 28	00 22.39	+03 58.9	1.724	2.633	147.6	11.8	16.6
1984	09 07	00 13.63	+04 03.9					
1984	09 17	00 03.45	+03 58.7	1.673	2.670	170.8	3.4	16.2
1984	09 27	23 52.85	+03 46.7					
1984	10 07	23 42.96	+03 32.4	1.732	2.705	163.3	6.1	16.5
1984	10 17	23 34.71	+03 20.5					
1984	10 27	23 28.77	+03 14.8	1.898	2.738	140.5	13.4	16.9
1984	11 06	23 25.44	+03 18.2					
1984	11 16	23 24.73	+03 32.1	2.144	2.770	119.7	18.1	17.3
1984	11 26	23 26.48	+03 56.8					
1984	12 06	23 30.42	+04 32.1	2.435	2.801	101.4	20.2	17.6

(2897) Ole Romer a,e,i = 2.25, 0.10, 6 Elements MPC 8057

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	00 19.65	-04 39.1	2.177	2.471	94.3	24.2	18.2
1984	07 09	00 27.22	-04 07.6					
1984	07 19	00 32.91	-03 49.1	1.928	2.466	109.8	22.8	17.9
1984	07 29	00 36.38	-03 44.9					
1984	08 08	00 37.32	-03 56.0	1.704	2.459	127.8	19.0	17.5
1984	08 18	00 35.53	-04 22.0					
1984	08 28	00 30.91	-05 01.4	1.532	2.451	148.4	12.5	17.2
1984	09 07	00 23.70	-05 50.2					
1984	09 17	00 14.53	-06 42.4	1.445	2.440	169.8	4.2	16.8
1984	09 27	00 04.38	-07 30.5					
1984	10 07	23 54.48	-08 07.2	1.462	2.428	160.8	7.8	16.9
1984	10 17	23 46.03	-08 27.2					
1984	10 27	23 39.89	-08 27.9	1.579	2.415	138.4	15.9	17.3
1984	11 06	23 36.56	-08 09.3					
1984	11 16	23 36.15	-07 32.9	1.769	2.399	118.1	21.3	17.6
1984	11 26	23 38.51	-06 40.9					
1984	12 06	23 43.39	-05 35.5	1.999	2.382	100.4	24.0	17.9

1976 US2 a,e,i = 2.57, 0.11, 15 Elements MPC 8391

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	06 29	00 11.10	+16 11.5	2.232	2.419	87.9	24.8	18.2
1984	07 09	00 19.62	+17 30.5					
1984	07 19	00 26.32	+18 37.5	2.016	2.440	102.1	24.0	18.0
1984	07 29	00 30.92	+19 29.9					
1984	08 08	00 33.15	+20 04.3	1.814	2.463	118.4	21.2	17.7
1984	08 18	00 32.83	+20 17.4					
1984	08 28	00 29.93	+20 05.4	1.649	2.486	137.1	16.1	17.4
1984	09 07	00 24.70	+19 25.7					
1984	09 17	00 17.72	+18 18.0	1.554	2.510	157.0	9.0	17.2
1984	09 27	00 09.86	+16 45.7					
1984	10 07	00 02.22	+14 56.3	1.555	2.533	164.9	5.9	17.1
1984	10 17	23 55.80	+13 00.2					
1984	10 27	23 51.37	+11 08.2	1.663	2.557	147.5	12.1	17.4
1984	11 06	23 49.39	+09 29.2					
1984	11 16	23 49.97	+08 08.7	1.860	2.581	127.2	17.8	17.8
1984	11 26	23 53.00	+07 09.2					
1984	12 06	23 58.26	+06 30.8	2.118	2.604	108.5	21.0	18.2

1937 AC a,e,i = 2.56, 0.09, 14 Elements MPC 6701

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	07 19	00 40.55	+14 10.5	2.373	2.754	101.0	21.2	18.1
1984	07 29	00 43.37	+15 35.5					
1984	08 08	00 43.98	+16 51.5	2.122	2.746	117.8	19.1	17.8
1984	08 18	00 42.17	+17 56.1					
1984	08 28	00 37.81	+18 46.0	1.914	2.737	136.5	14.7	17.4
1984	09 07	00 31.03	+19 18.0					
1984	09 17	00 22.29	+19 29.5	1.780	2.726	155.4	8.8	17.1
1984	09 27	00 12.35	+19 19.7					
1984	10 07	00 02.28	+18 50.6	1.746	2.715	162.2	6.4	17.0
1984	10 17	23 53.18	+18 07.7					
1984	10 27	23 45.96	+17 18.1	1.818	2.702	146.3	11.8	17.2
1984	11 06	23 41.26	+16 29.5					
1984	11 16	23 39.33	+15 48.1	1.980	2.688	126.5	17.2	17.5
1984	11 26	23 40.16	+15 18.2					
1984	12 06	23 43.58	+15 02.3	2.199	2.674	108.1	20.5	17.8
1984	12 16	23 49.29	+15 00.9					
1984	12 26	23 57.00	+15 13.8	2.444	2.659	91.5	21.7	18.1

(2834) Christy Carol a,e,i = 2.54, 0.15, 6 Elements MPC 7612

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	07 19	00 33.84	+08 44.6	2.364	2.801	104.8	20.5	17.8
1984	07 29	00 37.33	+09 09.7					
1984	08 08	00 38.75	+09 20.2	2.098	2.777	122.5	17.9	17.4
1984	08 18	00 37.94	+09 14.5					
1984	08 28	00 34.81	+08 50.9	1.879	2.751	142.7	12.9	17.1
1984	09 07	00 29.49	+08 09.0					
1984	09 17	00 22.42	+07 10.5	1.741	2.725	165.2	5.4	16.7
1984	09 27	00 14.27	+05 59.2					
1984	10 07	00 06.00	+04 41.7	1.708	2.696	169.2	4.0	16.5
1984	10 17	23 58.57	+03 25.5					
1984	10 27	23 52.80	+02 18.0	1.785	2.667	145.9	12.1	16.9
1984	11 06	23 49.29	+01 24.7					
1984	11 16	23 48.29	+00 48.8	1.949	2.636	124.3	18.1	17.2
1984	11 26	23 49.83	+00 31.0					
1984	12 06	23 53.77	+00 31.2	2.166	2.604	105.2	21.4	17.4
1984	12 16	23 59.86	+00 47.7					
1984	12 26	00 07.86	+01 18.7	2.403	2.571	88.4	22.5	17.7

1981 YR1 a,e,i = 2.36, 0.20, 25 Elements MPC 7615

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	07 19	00 40.94	-26 30.0	2.067	2.655	114.5	20.4	19.0
1984	07 29	00 45.89	-28 21.3					
1984	08 08	00 48.30	-30 28.2	1.867	2.622	128.5	17.6	18.7
1984	08 18	00 47.86	-32 44.9					
1984	08 28	00 44.35	-35 02.3	1.734	2.587	139.5	14.7	18.4
1984	09 07	00 37.84	-37 08.5					
1984	09 17	00 28.86	-38 50.8	1.683	2.550	141.8	14.1	18.3
1984	09 27	00 18.39	-39 58.5					
1984	10 07	00 07.79	-40 24.6	1.717	2.510	133.3	16.8	18.4
1984	10 17	23 58.44	-40 08.4					
1984	10 27	23 51.44	-39 13.8	1.822	2.469	119.6	20.5	18.5
1984	11 06	23 47.44	-37 47.1					
1984	11 16	23 46.59	-35 55.7	1.973	2.427	105.1	23.2	18.7
1984	11 26	23 48.74	-33 45.7					
1984	12 06	23 53.59	-31 22.2	2.148	2.383	91.2	24.4	18.9
1984	12 16	00 00.75	-28 49.3					
1984	12 26	00 09.86	-26 09.6	2.328	2.338	78.4	24.3	19.0

1981 EP a,e,i = 3.15, 0.18, 24 Elements MPC 8381

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	07 19	00 31.08	+04 03.4	2.664	3.120	107.3	18.1	17.5
1984	07 29	00 34.53	+03 30.5					
1984	08 08	00 36.19	+02 39.6	2.380	3.085	125.8	15.5	17.2
1984	08 18	00 35.93	+01 29.9					
1984	08 28	00 33.71	+00 02.0	2.156	3.050	146.5	10.5	16.8
1984	09 07	00 29.69	-01 41.6					
1984	09 17	00 24.21	-03 35.9	2.023	3.014	168.2	3.9	16.4
1984	09 27	00 17.83	-05 33.5					
1984	10 07	00 11.29	-07 26.0	2.005	2.979	164.1	5.3	16.5
1984	10 17	00 05.37	-09 05.5					
1984	10 27	00 00.73	-10 26.1	2.099	2.944	141.7	12.1	16.7
1984	11 06	23 57.92	-11 24.7					
1984	11 16	23 57.20	-12 00.8	2.279	2.909	120.6	17.0	17.0
1984	11 26	23 58.66	-12 15.6					
1984	12 06	00 02.22	-12 11.3	2.508	2.876	101.8	19.6	17.2
1984	12 16	00 07.73	-11 50.5					
1984	12 26	00 14.99	-11 15.9	2.753	2.843	85.1	20.2	17.4

(2887) 1977 QD5 a,e,i = 2.26, 0.15, 4 Elements MPC 7940

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	07 19	00 37.90	-00 14.8	1.586	2.124	107.4	27.2	17.3
1984	07 29	00 43.81	-00 10.9					
1984	08 08	00 46.93	-00 26.7	1.416	2.158	124.4	22.8	17.0
1984	08 18	00 47.00	-01 02.2					
1984	08 28	00 43.92	-01 56.3	1.289	2.192	144.6	15.5	16.6
1984	09 07	00 37.91	-03 04.8					
1984	09 17	00 29.66	-04 20.3	1.237	2.227	166.8	5.9	16.3
1984	09 27	00 20.22	-05 33.6					
1984	10 07	00 10.94	-06 35.0	1.282	2.261	164.7	6.7	16.4
1984	10 17	00 03.08	-07 17.3					
1984	10 27	23 57.52	-07 37.2	1.425	2.295	142.6	15.3	16.9
1984	11 06	23 54.78	-07 34.2					
1984	11 16	23 54.91	-07 10.5	1.643	2.328	122.4	21.0	17.4
1984	11 26	23 57.74	-06 29.0					
1984	12 06	00 02.97	-05 32.7	1.907	2.360	104.8	23.8	17.8
1984	12 16	00 10.24	-04 24.6					
1984	12 26	00 19.24	-03 06.9	2.192	2.391	89.3	24.3	18.2

1973 SX3 a,e,i = 3.16, 0.14, 8 Elements MPC 7366

Date	ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984	07 19	00 38.81	-04 10.9	2.221	2.721	108.6	20.7	16.9
1984	07 29	00 42.77	-03 58.2					
1984	08 08	00 44.55	-03 57.9	1.994	2.718	126.1	17.6	16.6
1984	08 18	00 43.98	-04 09.2					
1984	08 28	00 41.03	-04 30.8	1.821	2.717	145.9	12.0	16.2
1984	09 07	00 35.87	-04 59.7					
1984	09 17	00 28.98	-05 31.5	1.730	2.718	166.7	4.9	15.9
1984	09 27	00 21.07	-06 00.9					
1984	10 07	00 13.09	-06 22.5	1.744	2.722	165.2	5.4	16.0
1984	10 17	00 05.98	-06 32.0					
1984	10 27	00 00.49	-06 27.1	1.862	2.728	143.8	12.4	16.3
1984	11 06	23 57.16	-06 06.7					
1984	11 16	23 56.20	-05 31.8	2.063	2.736	123.5	17.6	16.7
1984	11 26	23 57.59	-04 43.7					
1984	12 06	00 01.19	-03 44.0	2.318	2.745	105.2	20.3	17.0
1984	12 16	00 06.77	-02 34.6					
1984	12 26	00 14.07	-01 17.1	2.597	2.757	88.8	20.9	17.3

1977 EO1 a,e,i = 3.03, 0.16, 3 Elements MPC 7228

Date ET	R. A. (1950)	Decl.	Delta	r	Elong.	Phase	Mag.
1984 07 19	00 50.41	+02 24.1	2.814	3.207	103.5	17.9	19.2
1984 07 29	00 52.89	+02 34.6					
1984 08 08	00 53.47	+02 33.3	2.583	3.234	121.8	15.4	19.0
1984 08 18	00 52.06	+02 20.2					
1984 08 28	00 48.68	+01 55.9	2.402	3.260	142.3	10.9	18.7
1984 09 07	00 43.50	+01 21.7					
1984 09 17	00 36.91	+00 40.7	2.305	3.285	164.8	4.6	18.5
1984 09 27	00 29.47	-00 03.5					
1984 10 07	00 21.87	-00 46.3	2.319	3.309	170.8	2.8	18.4
1984 10 17	00 14.83	-01 23.4					
1984 10 27	00 08.98	-01 51.1	2.448	3.332	148.0	9.1	18.8
1984 11 06	00 04.78	-02 07.2					
1984 11 16	00 02.46	-02 10.6	2.672	3.354	126.3	13.7	19.1
1984 11 26	00 02.11	-02 01.4					
1984 12 06	00 03.67	-01 40.3	2.958	3.374	106.6	16.3	19.4
1984 12 16	00 06.99	-01 08.4					
1984 12 26	00 11.87	-00 27.2	3.271	3.393	88.6	16.8	19.6

1980 PZ a,e,i = 2.45, 0.19, 10 Elements MPC 6939

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 07 19	00 50.47	+11 05.5	1.585	2.027	-1.40	-12.6	18.2
1984 07 29	00 58.00	+13 06.3					
1984 08 08	01 02.91	+14 57.0	1.409	2.051	-1.65	-13.5	17.9
1984 08 18	01 04.85	+16 34.9					
1984 08 28	01 03.46	+17 56.2	1.263	2.079	-1.96	-14.9	17.6
1984 09 07	00 58.68	+18 56.5					
1984 09 17	00 50.90	+19 31.6	1.173	2.111	-2.22	-16.9	17.3
1984 09 27	00 40.98	+19 38.9					
1984 10 07	00 30.36	+19 19.9	1.165	2.147	-2.23	-18.3	17.1
1984 10 17	00 20.60	+18 41.2					
1984 10 27	00 13.02	+17 52.2	1.253	2.184	-1.99	-17.7	17.5
1984 11 06	00 08.51	+17 03.6					
1984 11 16	00 07.32	+16 23.4	1.426	2.224	-1.66	-15.4	17.9
1984 11 26	00 09.35	+15 56.5					
1984 12 06	00 14.29	+15 45.3	1.661	2.265	-1.39	-12.8	18.4
1984 12 16	00 21.70	+15 49.8					
1984 12 26	00 31.20	+16 08.8	1.931	2.307	-1.18	-10.4	18.8

1978 PH3 a,e,i = 3.19, 0.19, 0 Elements MPC 7136

Date ET	R. A. (1950)	Decl.	Delta	r	Variation		Mag.
1984 07 19	00 58.67	+06 40.0	2.481	2.839	-0.81	-5.0	18.2
1984 07 29	01 03.14	+07 08.8					
1984 08 08	01 05.59	+07 25.1	2.265	2.874	-0.90	-5.5	18.0
1984 08 18	01 05.88	+07 28.0					
1984 08 28	01 03.93	+07 17.1	2.090	2.910	-1.00	-6.1	17.7
1984 09 07	00 59.86	+06 52.7					
1984 09 17	00 54.01	+06 16.7	1.987	2.947	-1.08	-6.7	17.5
1984 09 27	00 46.92	+05 32.2					
1984 10 07	00 39.37	+04 43.9	1.986	2.984	-1.09	-6.9	17.1
1984 10 17	00 32.19	+03 57.2					
1984 10 27	00 26.12	+03 17.0	2.097	3.022	-1.02	-6.6	17.7
1984 11 06	00 21.74	+02 47.3					
1984 11 16	00 19.37	+02 30.3	2.308	3.060	-0.92	-5.9	18.1
1984 11 26	00 19.11	+02 27.0					
1984 12 06	00 20.92	+02 37.1	2.588	3.098	-0.80	-5.2	18.4
1984 12 16	00 24.61	+02 59.4					
1984 12 26	00 29.99	+03 32.7	2.904	3.136	-0.71	-4.5	18.7